

Order Plans @ WWWW.IJDeLine.com

MECHANICAL AND PLUMBING GENERAL NOTES

- 1. ALL WORK SHALL COMPLY WITH ALL LOCAL BUILDING CODES, LAWS, REGULATIONS, ORDINANCES, SMACNA STANDARDS, AND ASHRAE GUIDELINES.
2. THE WORK SHALL CONSIST OF ALL LABOR AND MATERIAL TO COMPLETELY INSTALL ALL WORKS AS SHOWN ON THESE DRAWINGS.
3. COORDINATE LOCATION OF PIPE ROUTING, DUCTWORK AND DIFFUSERS WITH LIGHT FIXTURES WITH ELECTRICAL CONTRACTOR. RELOCATE PIPING WORK, DUCTWORK, IF NECESSARY, AS DIRECTED BY THE ARCHITECT/ENGINEER.
4. ALL WORK ASSOCIATED WITH THE SCOPE OF THIS PROJECT INCLUDING EQUIPMENT, ACCESSORIES, DEVICES, SYSTEMS, ETC. SHALL BE COVERED BY A ONE YEAR GUARANTEE WHICH SHALL START AT THE TIME OF FINAL ACCEPTANCE BY THE OWNER. ANY DEFECTS IN PRODUCTS, INSTALLATION WORKMANSHIP SHALL BE CORRECTED AT NO ADDITIONAL CHARGE AND SHALL INCLUDE ANY NECESSARY REPAIRS TO WALLS, FLOORS, MILLWORK, ETC. WHICH SHALL BE REPAIRED BACK TO NEW AND FINISHED CONDITION.
5. THE CONTRACTOR SHALL KEEP A RECORD OF THE CHANGES WHICH ARE IN CONFLICT WITH THESE DRAWINGS AND SPECIFICATIONS. AT THE COMPLETION OF THIS WORK THE CONTRACTOR SHALL SUBMIT "AS BUILT" PRINTS TO THE OWNER.
6. THE DRAWINGS ARE DIAGRAMATIC AND DO NOT NECESSARILY SHOW THE EXACT ROUTING OR DETAILED FITTINGS. ALL WORK SHALL BE INSTALLED AS A COMPLETE SYSTEM WITH NECESSARY COMPONENTS, FITTINGS, STUBS, ETC. ALL CONNECTIONS AND VALVES SHALL BE INSTALLED SO THAT THEY ARE ACCESSIBLE.
1. REFER TO THE ENTIRE CONTRACT DRAWING SET AND SPECIFICATIONS FOR DIMENSIONS, DIMENSIONS, CEILING HEIGHTS, DOOR SIZES, ROOF FINISHES, STRUCTURAL DETAILS, LOCATIONS OF DUCTWORK, PIPING AND STRUCTURAL MEMBERS. INSTALL THE MECHANICAL SYSTEMS SO AS NOT TO INTERFERE WITH THE INSTALLATION OR FUNCTION OF ANY OTHER TRADES WORK.
2. ALL DUCT AND PIPING MUST BE CONCEALED ABOVE THE CEILING OR IN THE WALLS UNLESS OTHERWISE NOTED.
3. COORDINATE DIFFUSER LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN TO VERIFY FRAME TYPES BASED ON CEILING TYPE.
4. COORDINATE VALVE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN TO MAKE CERTAIN NONE ARE INSTALLED OVER GYPSUM OR DANGEROUS MATERIALS.
5. THE CONTRACTOR SHALL INSTALL ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND ACCORDING TO GENERALLY ACCEPTED PRACTICES OF FIRST CLASS WORKMANSHIP.
6. THERMOSTATS SHALL BE LOCATED IN EACH ZONE AS INDICATED ON PLAN. THE EXACT LOCATION ON THE WALL SHALL BE AS DIRECTED BY THE ARCHITECT.
7. CONTRACTOR SHALL PROVIDE (3) SETS OF FILTERS FOR EACH FAN COIL ONE DURING CONSTRUCTION AND ONE SET AT COMPLETION OF CONSTRUCTION. FILTERS SHALL BE 1" THICK, FLEATED, MINIMUM 90% EFFICIENT (MERV RATING OF 3).
8. ALL DIMENSIONS OF EXISTING CONSTRUCTION ARE APPROXIMATE. THE CONTRACTOR SHALL MAKE ALL NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURES, AND EQUIPMENT TO VERIFY DIMENSIONS SHOWN ON THE DRAWINGS. PROVIDE PROPER DIMENSIONS NOT SHOWN PRIOR TO EQUIPMENT FABRICATION. ALL COST FOR MODIFICATIONS OF NEW CONSTRUCTION DUE TO LACK OF COORDINATION OF DIMENSIONS BY FIELD MEASUREMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
9. ALL PIPING, DUCTWORK, INSULATION, CONSTRUCTION STANDARDS, ETC. MUST BE EQUAL TO OR GREATER THAN EXISTING BUILDING STANDARDS. THE USE OF WOOD FIBER DUCT BOARD AND PVC IS NOT PERMITTED.
10. LANDLORD SHALL HAVE FIRST REPAIR FOR EXISTING EQUIPMENT AND MATERIALS SHOWN OR LISTED TO BE REMOVED FROM THE PREMISES. EQUIPMENT AND MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE IF NOT ACCEPTED BY THE LANDLORD.
11. CONTRACTOR SHALL PROVIDE MANUAL VOLUME DAMPER AT SUPPLY AND/OR RETURN AIR TAKEOFFS IF NONE EXIST TO PROPERLY BALANCE SYSTEMS WITHIN THE SCOPE OF WORK.
12. CONTRACTOR SHALL CLEAN AND/OR PAINT EXISTING AIR DISTRIBUTION DEVICES TO REPAIR.

FIRE PROTECTION NOTES

- 1. CONTRACTOR SHALL PROVIDE SPRINKLER DRAWINGS IN COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND IN ACCORDANCE WITH NFPA. CONTRACTOR SHALL PROVIDE GUARANTEE COVERING ALL WORK AND MATERIALS FOR ONE YEAR.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING AND TESTING DATA AND PREPARING HYDRAULIC CALCULATION, PRESSURE LOSS, FLOW, AND CAPACITY CURVES.
3. CONTRACTOR TO CONFIRM MANUFACTURER'S SUPPLY LIST AND INFORMATION PRIOR TO SYSTEM MODIFICATION, INSTALLATION, OR REPAIR.
4. CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF ALL HEADS. INSURE WORK WILL NOT COME IN CONTACT WITH ELECTRICAL, MECHANICAL, AND ALL OTHER TRADES WORK.
5. THE WATERPROOFING (MATS, EXISTING TYPE) SPRINKLER HEADS AND RELEVING RINKLE LAYOUT SHALL COMPLY WITH NFPA 13.
6. SPRINKLER HEADS SHALL BE AS FOLLOWS: SCHEDULE 40 BLACK STEEL FOR 1" AND SMALLER PIPE SIZES. 10 BLACK STEEL MAY BE USED FOR 2-1/2" AND LARGER PIPE SIZES.

MECHANICAL (HVAC & PLUMBING) SPECIFICATIONS

- GENERAL CONDITIONS: OTHER CONTRACT DOCUMENTS
1. THE GENERAL CONDITIONS AND OTHER CONTRACT DOCUMENTS AS SET FORTH HEREBY ARE TO BE INCORPORATED INTO AND BECOME A PART OF THE SPECIFICATIONS FOR THE WORK UNDER THIS DIVISION.
B. CODES AND PERMITS
1. THE CONTRACTOR SHALL REMAIN THE MECHANICAL CONTRACTOR SHALL THOROUGHLY INSPECT AND TEST THE OPERATION OF THE EXISTING HEATING/COOLING SYSTEM PRIOR TO TEST, BALANCE AND SUBMIT ANY REPAIR/REPLACEMENT RECOMMENDATIONS TO THE ENGINEER, TEST AND BALANCE REPORT SHALL INCLUDE EXISTING DIFFUSERS WITH TAGS SHOWING EXISTING AIRFLOW READINGS.
M. INSULATION
1. ALL INSULATION SHALL BE INSTALLED OVER CLEAN DRY SURFACES. INSULATION MUST BE DRY AND IN GOOD CONDITION. USE OF DAMAGED INSULATION WILL NOT BE ACCEPTABLE. NO INSULATION SHALL BE APPLIED PRIOR TO PRESSURE TEST COMPLETION OF THE RESPECTIVE PIPING SYSTEMS. INSTALLATION SHALL BE CONTINUOUS.
2. FIBERGLASS PIPE INSULATION SHALL BE INSTALLED WITH JOINTS BUTTED TIGHTLY TOGETHER. JOINTS SHALL BE SEALED WITH FACTORY APPLIED ADHESIVE BUTT JOINTS TO BE SEALED WITH BUTT STEPS, HAVING FACTORY APPLIED ADHESIVE VALVES AND FITTINGS SHALL BE INSULATED USING INTERSECTING SECTIONS OF INSULATION. INSULATION CENTER, OR PRE-MOLDED FITTING INSULATION ON THE INSULATION APPLIED TO THE VALVES, FITTINGS AND THROUGH HANGERS SHALL BE COVERED WITH THE SAME TYPE OF COVERING AS USED ON THE PIPE. INSULATION PIPE SHIELDS TO BE PROVIDED AT ALL SUPPORTS.
3. PROVIDE THE FOLLOWING INSULATION PRODUCTS AS MANUFACTURED BY OUREN-CORNING. INSULATION PRODUCTS AS MANUFACTURED BY AIRPROMING. CERTAIN FIBER OR KNAUF ARE ACCEPTABLE. ADHESIVE SHALL BE BENLUMIN FORTER OR EQUAL.
4. SUPPLY AND OUTSIDE AIR DUCT SHALL BE MINIMUM R9.0 OR R9.0 WHEN INSTALLED IN UNCONDITIONED SPACE. RETURN AIR SHALL BE INSULATED WHEN INSTALLED IN UNCONDITIONED SPACE, OR AS NOTED. EXHAUST DUCT SHALL BE INSULATED WHERE NOTED.
5. MATERIALS
5.1. DOMESTIC HOT WATER: 1" THICK ABSJUL FIBERGLASS FOR PIPE SIZES 1/4" OR SMALLER, 1-1/2" THICK ABSJUL FIBERGLASS FOR PIPE SIZES 1/2" TO 1" GREATER DOMESTIC COLD WATER: 1" THICK ABSJUL FIBERGLASS.
5.2. SUPPLY DUCT: 2" MINIMUM THICK DUCT INSULATION.
5.3. REFRIGERANT PIPING: 1" THICK ABSJUL FIBERGLASS.
5.4. ALL INSULATION SHALL MEET 3000 PLUME AND SMOKE SPREAD RATINGS FOR PLENUM APPLICATIONS.
6. EXISTING 1/2" NEW PVC OR NON-COMPLIANT PLENUM RATED MATERIALS SHALL BE REPLACED WITH 1/2" NEW PVC OR NON-COMPLIANT PRODUCT OR CONSTRUCTED WITH PLENUM COMPLIANT MATERIALS.

D. DRAWINGS

- 1. DRAWINGS AND SPECIFICATIONS ARE TO BE CONSIDERED AS SUPPLEMENTING EACH OTHER. WORK SPECIFIED SHALL BE PERFORMED OR FURNISHED AS THOUGH MENTIONED IN BOTH SPECIFICATIONS AND DRAWINGS.
2. THE DRAWINGS ARE DIAGRAMATIC ONLY AND ARE INTENDED TO SHOW APPROXIMATE LOCATIONS. DO NOT SCALE.

E. SHOP DRAWINGS

- 1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON THE TERMS OF EQUIPMENT AND SYSTEMS AS NECESSARY TO CLEARLY SHOW EQUIPMENT AND CONSTRUCTION.

F. SUPERVISION

- 1. THE CONTRACTOR SHALL HAVE IN CHARGE OF THE WORK, A COMPETENT SUPERVISOR WITH EXPERIENCE IN THE WORK TO BE INSTALLED UNDER THIS CONTRACT.

G. COORDINATION

- 1. THE CONTRACTOR SHALL COORDINATE HIS WORK AND COOPERATE WITH THE OTHER CONTRACTORS. HE SHALL ARRANGE HIS WORK WITH THEM SO THAT THERE WILL BE NO DELAY IN THE PROPER INSTALLATION.
2. EXAMINE WORK OF OTHER TRADES WHICH COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. DO NOT ATTACH TO COVER, OR FINISH AGAINST ANY DEFECTIVE WORK, OR INSTALL WORK OF THIS DIVISION IN A MANNER WHICH WILL PREVENT OTHER TRADES FROM PROPERLY INSTALLING THEIR WORK. CONSULT ALL DRAWINGS, SPECIFICATIONS AND DETAILS OF OTHER DIVISIONS OF THE WORK.

H. CUTTING AND PATCHING

- 1. ALL CUTTING AND PATCHING WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL MATCH NEW AND/OR EXISTING CONDITIONS.

I. GUARANTEE AND WARRANTIES

- 1. CONTRACTOR SHALL WARRANT THAT EQUIPMENT AND ALL WORK IS INSTALLED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE AND THAT ALL EQUIPMENT WILL MEET REQUIREMENTS SPECIFIED. ANY EQUIPMENT FAILING TO PERFORM OR FUNCTION AS SPECIFIED SHALL BE REPLACED WITH COMPLYING EQUIPMENT, WITHOUT COST TO THE OWNER.
2. GUARANTEE AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS. MAKE GOOD REPAIR OR REPLACE ANY DEFECTIVE WORK, MATERIAL OR EQUIPMENT WITHIN (1) ONE YEAR FROM DATE OF ACCEPTANCE.

J. INSTALLATION REQUIREMENTS

- 1. LOCATIONS OF PIPING, EQUIPMENT, DUCTS, ETC. ON THE DRAWINGS IS DIAGRAMATIC. INDICATED PROTECTORS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. EXACT LOCATIONS SHALL BE SUBJECT TO FIELD MEASUREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ANY PART OF THE WORK UP TO THE TYPE OF ROUGH-IN WITH AN ADDITIONAL COST.
K. TEST AND ADJUSTMENTS
1. OBTAIN ALL INSPECTIONS REQUIRED BY THE JURISDICTIONS, RULES, REGULATIONS OF AUTHORITIES HAVING JURISDICTION. FURNISH CERTIFICATE OF EACH INSPECTION. ALL INSPECTIONS SHALL BE PREPARED BY THE POWER AND LABOR CONTRACTOR FOR INSPECTION AND TEST.
2. PRESSURE TESTS
A. ALL PIPING SHALL BE GIVEN A HYDROSTATIC PRESSURE TEST. THE TEST PRESSURE SHALL BE EQUAL TO THE DESIGN PRESSURE OF THE SYSTEM PLUS 25%.
B. REFRIGERANT PIPING SHALL BE GIVEN A LEAK TEST. THE TEST PRESSURE SHALL BE AS SPECIFIED BY THE MANUFACTURER'S DATA AND LOCAL AUTHORITY.
L. HVAC SYSTEMS ADJUSTMENTS AND BALANCE
1. PROVIDE A COMPLETE TEST AND BALANCE OF THE SYSTEMS THAT SERVE THE BUILDING. THE TEST AND BALANCE CONTRACTOR MUST BE A DIFFERENT COMPANY THAN THE MECHANICAL CONTRACTOR.
2. THE TEST AND BALANCE SHALL BE PERFORMED BY AN AABC OR NEBB CERTIFIED TEST AND BALANCE CONTRACTOR THAT MUST BE A DIFFERENT COMPANY THAN THE MECHANICAL CONTRACTOR.
3. SUBMIT A CERTIFIED TEST AND BALANCE REPORT TO THE ENGINEER FOR APPROVAL. REPORT SHALL INCLUDE (AT A MINIMUM) THE FOLLOWING:
A. COMPLETE DATA FOR ALL FLOWED DEVICES.
B. DIFFUSER LAYOUT (DRAWING) DEPICTING ALL DIFFUSERS AND EQUIPMENT.
C. AIRFLOW AT INT. SUPPLY, RETURN AND OUTSIDE AIR (IF APPLICABLE) CONNECTIONS.
D. AIRFLOW AT INT. SUPPLY AIR DIFFUSERS.
E. AIRFLOW AT ALL EXHAUST GRILLES.
F. AIRFLOW AT OUTSIDE AIR CONNECTIONS.
G. AIR TEMPERATURE INLET AND OUTLET AT EACH NEW HEATING OR COOLING COIL. DISCHARGE MAY BE RECORDING AT A DIFFUSER OUTLET.
H. WATER FLOW AT INT. COILS.
I. ENTERING AND LEAVING WATER TEMPERATURE.
J. WATER FLOW AT PUMP DISCHARGE.
K. PRESSURE AND TEMPERATURE AT DISCHARGE.
4. FINAL DIFFUSER READINGS THAT DIFFER FROM THE DRAWINGS BY MORE THAN THE LIMITS ABOVE SHALL BE NOTED IN THE REPORT.
5. EXISTING EQUIPMENT TO REMAIN: THE MECHANICAL CONTRACTOR SHALL THOROUGHLY INSPECT AND TEST THE OPERATION OF THE EXISTING HEATING/COOLING SYSTEM PRIOR TO TEST, BALANCE AND SUBMIT ANY REPAIR/REPLACEMENT RECOMMENDATIONS TO THE ENGINEER, TEST AND BALANCE REPORT SHALL INCLUDE EXISTING DIFFUSERS WITH TAGS SHOWING EXISTING AIRFLOW READINGS.

K. TEST AND ADJUSTMENTS

- 1. OBTAIN ALL INSPECTIONS REQUIRED BY THE JURISDICTIONS, RULES, REGULATIONS OF AUTHORITIES HAVING JURISDICTION. FURNISH CERTIFICATE OF EACH INSPECTION. ALL INSPECTIONS SHALL BE PREPARED BY THE POWER AND LABOR CONTRACTOR FOR INSPECTION AND TEST.
2. PRESSURE TESTS
A. ALL PIPING SHALL BE GIVEN A HYDROSTATIC PRESSURE TEST. THE TEST PRESSURE SHALL BE EQUAL TO THE DESIGN PRESSURE OF THE SYSTEM PLUS 25%.
B. REFRIGERANT PIPING SHALL BE GIVEN A LEAK TEST. THE TEST PRESSURE SHALL BE AS SPECIFIED BY THE MANUFACTURER'S DATA AND LOCAL AUTHORITY.

L. HVAC SYSTEMS ADJUSTMENTS AND BALANCE

- 1. PROVIDE A COMPLETE TEST AND BALANCE OF THE SYSTEMS THAT SERVE THE BUILDING. THE TEST AND BALANCE CONTRACTOR MUST BE A DIFFERENT COMPANY THAN THE MECHANICAL CONTRACTOR.
2. THE TEST AND BALANCE SHALL BE PERFORMED BY AN AABC OR NEBB CERTIFIED TEST AND BALANCE CONTRACTOR THAT MUST BE A DIFFERENT COMPANY THAN THE MECHANICAL CONTRACTOR.
3. SUBMIT A CERTIFIED TEST AND BALANCE REPORT TO THE ENGINEER FOR APPROVAL. REPORT SHALL INCLUDE (AT A MINIMUM) THE FOLLOWING:
A. COMPLETE DATA FOR ALL FLOWED DEVICES.
B. DIFFUSER LAYOUT (DRAWING) DEPICTING ALL DIFFUSERS AND EQUIPMENT.
C. AIRFLOW AT INT. SUPPLY, RETURN AND OUTSIDE AIR (IF APPLICABLE) CONNECTIONS.
D. AIRFLOW AT INT. SUPPLY AIR DIFFUSERS.
E. AIRFLOW AT ALL EXHAUST GRILLES.
F. AIRFLOW AT OUTSIDE AIR CONNECTIONS.
G. AIR TEMPERATURE INLET AND OUTLET AT EACH NEW HEATING OR COOLING COIL. DISCHARGE MAY BE RECORDING AT A DIFFUSER OUTLET.
H. WATER FLOW AT INT. COILS.
I. ENTERING AND LEAVING WATER TEMPERATURE.
J. WATER FLOW AT PUMP DISCHARGE.
K. PRESSURE AND TEMPERATURE AT DISCHARGE.
4. FINAL DIFFUSER READINGS THAT DIFFER FROM THE DRAWINGS BY MORE THAN THE LIMITS ABOVE SHALL BE NOTED IN THE REPORT.
5. EXISTING EQUIPMENT TO REMAIN: THE MECHANICAL CONTRACTOR SHALL THOROUGHLY INSPECT AND TEST THE OPERATION OF THE EXISTING HEATING/COOLING SYSTEM PRIOR TO TEST, BALANCE AND SUBMIT ANY REPAIR/REPLACEMENT RECOMMENDATIONS TO THE ENGINEER, TEST AND BALANCE REPORT SHALL INCLUDE EXISTING DIFFUSERS WITH TAGS SHOWING EXISTING AIRFLOW READINGS.

M. INSULATION

- 1. ALL INSULATION SHALL BE INSTALLED OVER CLEAN DRY SURFACES. INSULATION MUST BE DRY AND IN GOOD CONDITION. USE OF DAMAGED INSULATION WILL NOT BE ACCEPTABLE. NO INSULATION SHALL BE APPLIED PRIOR TO PRESSURE TEST COMPLETION OF THE RESPECTIVE PIPING SYSTEMS. INSTALLATION SHALL BE CONTINUOUS.
2. FIBERGLASS PIPE INSULATION SHALL BE INSTALLED WITH JOINTS BUTTED TIGHTLY TOGETHER. JOINTS SHALL BE SEALED WITH FACTORY APPLIED ADHESIVE BUTT JOINTS TO BE SEALED WITH BUTT STEPS, HAVING FACTORY APPLIED ADHESIVE VALVES AND FITTINGS SHALL BE INSULATED USING INTERSECTING SECTIONS OF INSULATION. INSULATION CENTER, OR PRE-MOLDED FITTING INSULATION ON THE INSULATION APPLIED TO THE VALVES, FITTINGS AND THROUGH HANGERS SHALL BE COVERED WITH THE SAME TYPE OF COVERING AS USED ON THE PIPE. INSULATION PIPE SHIELDS TO BE PROVIDED AT ALL SUPPORTS.
3. PROVIDE THE FOLLOWING INSULATION PRODUCTS AS MANUFACTURED BY OUREN-CORNING. INSULATION PRODUCTS AS MANUFACTURED BY AIRPROMING. CERTAIN FIBER OR KNAUF ARE ACCEPTABLE. ADHESIVE SHALL BE BENLUMIN FORTER OR EQUAL.
4. SUPPLY AND OUTSIDE AIR DUCT SHALL BE MINIMUM R9.0 OR R9.0 WHEN INSTALLED IN UNCONDITIONED SPACE. RETURN AIR SHALL BE INSULATED WHEN INSTALLED IN UNCONDITIONED SPACE, OR AS NOTED. EXHAUST DUCT SHALL BE INSULATED WHERE NOTED.

N. DUCTWORK

- 1. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN COMPLIANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS (0605 ED. OR LATER).
2. NEW DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL AND INSTALLED AS SHOWN ON THE DRAWINGS. ALL SHEETMETAL DUCT JOINTS 1/2" SEAMS (MINIMUM SEAL CLASS B) SHALL BE SEALED WITH TAPE AND MATES AS LISTED IN ASHRAE 90.1 AND 188.
3. DUCT SEALS INDICATED ON PLANS ARE FREE INSIDE CLEAR DIMENSIONS UNLESS OTHERWISE NOTED.
4. LEAKAGE RATE ALLOWANCE SHALL BE THE LESSER OF SMACNA CLASS B LEAKAGE CALCULATION OR 9% OF SYSTEM CFM.
5. LOW PRESSURE FLEXIBLE DUCTWORK SHALL BE LIMITED TO 6' IN LENGTH. FLEXIBLE DUCT SHALL BE INSTALLED IN A RIGID EXTENDED CONDITION FREE OF SAGS AND KINKS, USING ONLY THE MINIMUM LENGTH REQUIRED TO MAKE THE CONNECTION. FLEXIBLE DUCT SHALL BE LISTED AS A CLASS B AIR DUCT AND SHALL COMPLY WITH ASHRAE 90.1 AND 188. DUCT SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25, A MAXIMUM SMOKE RATING OF 50, SHALL BE RATED FOR PROLONGED POSITIVE AND NEGATIVE PRESSURE OF 1/2" W.G. INSULATION SHALL BE A MINIMUM OF 2" THICK DENSITY FIBERGLASS WITH A MINIMUM VALUE OF R9.0. FLEXIBLE DUCT SHALL BE THE HEAVIEST TYPE PERMITTED BY THE MANUFACTURER.
6. EXISTING FLEXIBLE DUCT REPAIR TORN OR DAMAGED VAPOR BARRIER/JACKET WITH DUCT TAPES LISTED AND LABELED TO A. 1/2" IF INTERNAL CORE IS PENETRATED, REPLACE FLEXIBLE DUCT OR TREAT AS SPLICE.
7. ELBOUS 45 DEGREES 1/2" GREATER IN ALL DUCT SYSTEMS MUST BE WITH FULL RADIUS OR INTERSECTING V-BOUNDED V-BOUNDED V-BOUNDED.
8. INSTALL TURNING VANES FOR ALL RECTANGULAR INTERSECTING DUCTS FOR DUCTS WITH VELOCITIES LESS THAN 1,200 FPM. PROVIDE THE FOLLOWING TYPE:
13. FOR DUCTS WITH VELOCITIES GREATER THAN 1,200 FPM, PROVIDE DOUBLE WALL TYPE.
9. FREE DAMPERS IN DUCTWORK SHALL BE TYPE 'B' STYLE. SHALL BE SHOWN OUTSIDE OF AIRSTREAM.

O. MATERIALS

- 1. PIPE AND FITTINGS DOMESTIC WATER: TYPE 1 HARD COPPER.
2. REFRIGERANT PIPING: TYPE 1 HARD COPPER TUBING, NON-LEAD CAST IRON OR STEEL (EXCEPT IN RETURN AIR PLenums).
3. GAS PIPING: TYPE 1 HARD COPPER TUBING, NON-LEAD CAST IRON BUILDING GAS PIPING. ABOVE GROUND INTERIOR: NON-LEAD CAST IRON BUILDING GAS PIPING. BELOW GROUND INTERIOR: NON-LEAD CAST IRON BUILDING GAS PIPING. SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT FOR PIPE SIZES 1/2" OR LARGER. 1/8" PER FOOT FOR PIPE SIZES 3/4" TO 1". 1/16" PER FOOT FOR PIPE SIZES 1-1/2" OR GREATER.
4. CONDENSATE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT.

P. WASTE SYSTEMS

- 1. RUN ALL DRAINAGE PIPING AS DIRECT AS POSSIBLE. ACTUAL LOCATION OF DRAINS AND WASTE PIPING MUST MEET THE VARIOUS BUILDING CONDITIONS. DO ANY WORK NECESSARY TO CONCEAL PIPING OR CLEAR PIPING OF OTHER TRADES.
2. HUB DRAINS SHALL BE PROVIDED WITH TRAP PRIMER.
3. WASTE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT FOR PIPE SIZES 2-1/2" OR LARGER, 1/8" PER FOOT FOR PIPE SIZES 3" TO 4" AND 1/16" PER FOOT FOR PIPE SIZES 4" OR GREATER.
4. CONDENSATE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT.

Q. PIPING HANGER SPACINGS

- 1. INSTALL HANGERS AND SUPPORTS IN PIPING SYSTEMS TO REMOVE STRESS FROM SYSTEM. SPACE HANGERS AND SUPPORTS PER THE FOLLOWING TABLE:
1. COPPER PIPE: 1/4" OR SMALLER - 4' MAXIMUM SPACINGS. 1/2" OR LARGER - 10' MAXIMUM SPACINGS.
2. STEEL PIPE: ALL SIZES - 8' MAXIMUM SPACINGS (SPACINGS OF 10' MAY BE USED WHEN 10' PIPE LENGTHS ARE UTILIZED).
3. PVC PIPE: ALL SIZES - 4' MAXIMUM SPACINGS.
4. CPVC PIPE: 1" OR SMALLER - 3' MAXIMUM SPACINGS. 1-1/4" OR LARGER - 4' MAXIMUM SPACINGS.

R. VALVES

- 1. VALVES IN WATER PIPING SHALL BE VALVES WITH SCRIBED ENDS, MIN 150 LBS. SUP. VALVES USED FOR SHUT-OFF AND BALANCING SHALL BE EQUIPPED WITH MEMORY STOP.
2. THE TERM "TURNED" SHALL BE CONSIDERED TO INCLUDE FURNISHING OF WIRE CONDUIT, MISCELLANEOUS MATERIALS AND LABOR AS REQUIRED FOR MOUNTING AND CONNECTING ELECTRICAL CONTROL DEVICES, AND CONNECTING ELECTRICAL DEVICES, AND PROVIDING ELECTRICAL INTERLOCKS BETWEEN EQUIPMENT.

S. WIRING

- 1. ALL WIRING INCIDENTAL TO THIS TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
2. THE TERM "TURNED" SHALL BE CONSIDERED TO INCLUDE FURNISHING OF WIRE CONDUIT, MISCELLANEOUS MATERIALS AND LABOR AS REQUIRED FOR MOUNTING AND CONNECTING ELECTRICAL CONTROL DEVICES, AND CONNECTING ELECTRICAL DEVICES, AND PROVIDING ELECTRICAL INTERLOCKS BETWEEN EQUIPMENT.

T. EQUIPMENT

- 1. SEE SCHEDULES ON DRAWINGS.
2. THE BASIS OF DESIGN INDICATED ON ALL SCHEDULES CONTAINED ON THESE DRAWINGS INDICATES MINIMUM QUALITY AND CONSTRUCTION STANDARDS. ALTERNATE MANUFACTURERS EQUIPMENT MAY BE USED SO LONG AS THE EQUIPMENT / DEVICE MEETS OR EXCEEDS THE QUALITY OF THE BASIS OF DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SPACE REQUIREMENTS FOR ALTERNATE EQUIPMENT.
3. WHERE A PRODUCT IS SUBSTITUTED FOR A BASIS OF DESIGN PRODUCT, THE CONTRACTOR SHALL NOTIFY THE DESIGN TEAM THAT CHANGES IN PRODUCT MAY BE MANDATORY IN ORDER TO PERMIT THE USE AND THE INSTALLATION OF THE SUBSTITUTED PRODUCT. SHOP DRAWING SUBMITTALS FOR A SUBSTITUTE PRODUCT SHALL INCLUDE A COMPLETE SCHEDULE OF CHANGES IN PROJECT DESIGN, IF ANY, WHICH MUST BE MADE IN ORDER TO PERMIT USE AND INSTALLATION OF THE SUBSTITUTED PRODUCT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADES FOR USE OF THE SUBSTITUTED PRODUCT. THE CONTRACTOR SHALL BEAR ALL EXPENSES RELATED TO THE USE OF A SUBSTITUTE PRODUCT.

U. CONTROLS

- 1. PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT WITH LCD DISPLAY & AUTO-CHANGEOVER.

N. DUCTWORK

- 1. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN COMPLIANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS (0605 ED. OR LATER).
2. NEW DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL AND INSTALLED AS SHOWN ON THE DRAWINGS. ALL SHEETMETAL DUCT JOINTS 1/2" SEAMS (MINIMUM SEAL CLASS B) SHALL BE SEALED WITH TAPE AND MATES AS LISTED IN ASHRAE 90.1 AND 188.
3. DUCT SEALS INDICATED ON PLANS ARE FREE INSIDE CLEAR DIMENSIONS UNLESS OTHERWISE NOTED.
4. LEAKAGE RATE ALLOWANCE SHALL BE THE LESSER OF SMACNA CLASS B LEAKAGE CALCULATION OR 9% OF SYSTEM CFM.
5. LOW PRESSURE FLEXIBLE DUCTWORK SHALL BE LIMITED TO 6' IN LENGTH. FLEXIBLE DUCT SHALL BE INSTALLED IN A RIGID EXTENDED CONDITION FREE OF SAGS AND KINKS, USING ONLY THE MINIMUM LENGTH REQUIRED TO MAKE THE CONNECTION. FLEXIBLE DUCT SHALL BE LISTED AS A CLASS B AIR DUCT AND SHALL COMPLY WITH ASHRAE 90.1 AND 188. DUCT SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25, A MAXIMUM SMOKE RATING OF 50, SHALL BE RATED FOR PROLONGED POSITIVE AND NEGATIVE PRESSURE OF 1/2" W.G. INSULATION SHALL BE A MINIMUM OF 2" THICK DENSITY FIBERGLASS WITH A MINIMUM VALUE OF R9.0. FLEXIBLE DUCT SHALL BE THE HEAVIEST TYPE PERMITTED BY THE MANUFACTURER.
6. EXISTING FLEXIBLE DUCT REPAIR TORN OR DAMAGED VAPOR BARRIER/JACKET WITH DUCT TAPES LISTED AND LABELED TO A. 1/2" IF INTERNAL CORE IS PENETRATED, REPLACE FLEXIBLE DUCT OR TREAT AS SPLICE.
7. ELBOUS 45 DEGREES 1/2" GREATER IN ALL DUCT SYSTEMS MUST BE WITH FULL RADIUS OR INTERSECTING V-BOUNDED V-BOUNDED V-BOUNDED.
8. INSTALL TURNING VANES FOR ALL RECTANGULAR INTERSECTING DUCTS FOR DUCTS WITH VELOCITIES LESS THAN 1,200 FPM. PROVIDE THE FOLLOWING TYPE:
13. FOR DUCTS WITH VELOCITIES GREATER THAN 1,200 FPM, PROVIDE DOUBLE WALL TYPE.
9. FREE DAMPERS IN DUCTWORK SHALL BE TYPE 'B' STYLE. SHALL BE SHOWN OUTSIDE OF AIRSTREAM.

O. MATERIALS

- 1. PIPE AND FITTINGS DOMESTIC WATER: TYPE 1 HARD COPPER.
2. REFRIGERANT PIPING: TYPE 1 HARD COPPER TUBING, NON-LEAD CAST IRON OR STEEL (EXCEPT IN RETURN AIR PLenums).
3. GAS PIPING: TYPE 1 HARD COPPER TUBING, NON-LEAD CAST IRON BUILDING GAS PIPING. ABOVE GROUND INTERIOR: NON-LEAD CAST IRON BUILDING GAS PIPING. BELOW GROUND INTERIOR: NON-LEAD CAST IRON BUILDING GAS PIPING. SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT FOR PIPE SIZES 1/2" OR LARGER. 1/8" PER FOOT FOR PIPE SIZES 3/4" TO 1". 1/16" PER FOOT FOR PIPE SIZES 1-1/2" OR GREATER.
4. CONDENSATE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT.

P. WASTE SYSTEMS

- 1. RUN ALL DRAINAGE PIPING AS DIRECT AS POSSIBLE. ACTUAL LOCATION OF DRAINS AND WASTE PIPING MUST MEET THE VARIOUS BUILDING CONDITIONS. DO ANY WORK NECESSARY TO CONCEAL PIPING OR CLEAR PIPING OF OTHER TRADES.
2. HUB DRAINS SHALL BE PROVIDED WITH TRAP PRIMER.
3. WASTE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT FOR PIPE SIZES 2-1/2" OR LARGER, 1/8" PER FOOT FOR PIPE SIZES 3" TO 4" AND 1/16" PER FOOT FOR PIPE SIZES 4" OR GREATER.
4. CONDENSATE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT.

Q. PIPING HANGER SPACINGS

- 1. INSTALL HANGERS AND SUPPORTS IN PIPING SYSTEMS TO REMOVE STRESS FROM SYSTEM. SPACE HANGERS AND SUPPORTS PER THE FOLLOWING TABLE:
1. COPPER PIPE: 1/4" OR SMALLER - 4' MAXIMUM SPACINGS. 1/2" OR LARGER - 10' MAXIMUM SPACINGS.
2. STEEL PIPE: ALL SIZES - 8' MAXIMUM SPACINGS (SPACINGS OF 10' MAY BE USED WHEN 10' PIPE LENGTHS ARE UTILIZED).
3. PVC PIPE: ALL SIZES - 4' MAXIMUM SPACINGS.
4. CPVC PIPE: 1" OR SMALLER - 3' MAXIMUM SPACINGS. 1-1/4" OR LARGER - 4' MAXIMUM SPACINGS.

R. VALVES

- 1. VALVES IN WATER PIPING SHALL BE VALVES WITH SCRIBED ENDS, MIN 150 LBS. SUP. VALVES USED FOR SHUT-OFF AND BALANCING SHALL BE EQUIPPED WITH MEMORY STOP.
2. THE TERM "TURNED" SHALL BE CONSIDERED TO INCLUDE FURNISHING OF WIRE CONDUIT, MISCELLANEOUS MATERIALS AND LABOR AS REQUIRED FOR MOUNTING AND CONNECTING ELECTRICAL CONTROL DEVICES, AND CONNECTING ELECTRICAL DEVICES, AND PROVIDING ELECTRICAL INTERLOCKS BETWEEN EQUIPMENT.

S. WIRING

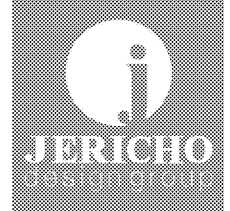
- 1. ALL WIRING INCIDENTAL TO THIS TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR.
2. THE TERM "TURNED" SHALL BE CONSIDERED TO INCLUDE FURNISHING OF WIRE CONDUIT, MISCELLANEOUS MATERIALS AND LABOR AS REQUIRED FOR MOUNTING AND CONNECTING ELECTRICAL CONTROL DEVICES, AND CONNECTING ELECTRICAL DEVICES, AND PROVIDING ELECTRICAL INTERLOCKS BETWEEN EQUIPMENT.

T. EQUIPMENT

- 1. SEE SCHEDULES ON DRAWINGS.
2. THE BASIS OF DESIGN INDICATED ON ALL SCHEDULES CONTAINED ON THESE DRAWINGS INDICATES MINIMUM QUALITY AND CONSTRUCTION STANDARDS. ALTERNATE MANUFACTURERS EQUIPMENT MAY BE USED SO LONG AS THE EQUIPMENT / DEVICE MEETS OR EXCEEDS THE QUALITY OF THE BASIS OF DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SPACE REQUIREMENTS FOR ALTERNATE EQUIPMENT.
3. WHERE A PRODUCT IS SUBSTITUTED FOR A BASIS OF DESIGN PRODUCT, THE CONTRACTOR SHALL NOTIFY THE DESIGN TEAM THAT CHANGES IN PRODUCT MAY BE MANDATORY IN ORDER TO PERMIT THE USE AND THE INSTALLATION OF THE SUBSTITUTED PRODUCT. SHOP DRAWING SUBMITTALS FOR A SUBSTITUTE PRODUCT SHALL INCLUDE A COMPLETE SCHEDULE OF CHANGES IN PROJECT DESIGN, IF ANY, WHICH MUST BE MADE IN ORDER TO PERMIT USE AND INSTALLATION OF THE SUBSTITUTED PRODUCT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADES FOR USE OF THE SUBSTITUTED PRODUCT. THE CONTRACTOR SHALL BEAR ALL EXPENSES RELATED TO THE USE OF A SUBSTITUTE PRODUCT.

U. CONTROLS

- 1. PROVIDE WITH 7-DAY PROGRAMMABLE THERMOSTAT WITH LCD DISPLAY & AUTO-CHANGEOVER.



102 May Alco Park Road, Suite 103 Cumming, GA 30040



PRESS BOX EXPANSION
RIVERSIDE MILITARY ACADEMY
2001 RIVERSIDE DR.
GAINESVILLE, GA 30601

PRINT RECORD

Table with columns: No., DATE, DESCRIPTION. Row 1: 12/20/2019 BID & PERMIT SET

Drawn By: KO, Checked By: KB, Date: 12/20/2019, Job No.: 19046

Sheet Title: MECHANICAL SPECIFICATIONS

Sheet No.: M-0.2, RELEASED FOR CONSTRUCTION