1. GENERAL CONDITIONS

- A. THE SPECIFICATIONS HEREINAFTER SHALL BE SUPERSEDED BY THE BUILDING OWNER'S RULES AND REGULATIONS WHEN A CONFLICT OCCURS.
- B. THESE DRAWINGS INDICATE THE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. FINAL LOCATION AND MOUNTING ORIENTATION OF ALL DIFFUSERS, THERMOSTATS AND OTHER VISIBLE DEVICES ARE TO BE VERIFIED BY THE ARCHITECT.
- C. PRIOR TO STARTING ANY WORK, PURCHASING OF EQUIPMENT, ETC., COORDINATE THE WORK WITH OTHER TRADES. CONFER WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION; ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT OF OTHERS WITH THE BUILDING CONSTRUCTION AND WITH ARCHITECTURAL FINISH SO THAT IT WILL HARMONIZE IN SERVICE AND APPEARANCE. IN THE EVENT THERE IS A CONFLICT IN COORDINATION BETWEEN TRADES, THE ARCHITECT/ENGINEER OR OWNER/TENANT REPRESENTATIVE WILL RESOLVE IT.
- D. INTERRUPTION OF EXISTING BUILDING SERVICES IN ORDER TO MAKE NEW CONNECTIONS TO EXISTING PIPING, DUCTS, ETC. SHALL NOT BE DONE WITHOUT APPROVAL. ALL EXISTING SERVICE SHUT—DOWNS SHALL BE SUPERVISED AND AS DIRECTED BY THE BUILDING OWNER. THE CONTRACTOR SHALL SUBMIT REQUEST AT LEAST 48 HOURS PRIOR TO ANY REQUESTED SHUTDOWN
- LEAST 48 HOURS PRIOR TO ANY REQUESTED SHUTDOWN.

 E. ALL PARTS OF THE WORK AND ASSOCIATED EQUIPMENT SHALL BE TESTED AND ADJUSTED TO WORK PROPERLY
- F. WHEN CONFLICTS OCCUR IN THE SPECIFICATIONS OR ON THE DRAWINGS, OR BETWEEN EITHER, THE ITEMS OF GREATER QUANTITY OR HIGHER COST SHALL BE PROVIDED.
- G. THE CONTRACTOR SHALL PROVIDE ALL ITEMS OF LABOR OR MATERIALS NOT SPECIFICALLY INDICATED, BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATION.
- H. THE WORK UNDER THIS CONTRACT SHALL BE PERFORMED AND COORDINATED SIMULTANEOUSLY WITH WORK OF OTHER TRADES SO AS NOT TO DELAY THE OVERALL PROGRESS OF WORK.
- I. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST OR STOLEN, WITHOUT ADDITIONAL COSTS TO THE OWNER/TENANT.
- 2. APPROVALS AND SUBSTITUTIONS

AND BE LEFT IN PERFECT OPERATING CONDITION.

- A. IT IS THE INTENT OF THESE SPECIFICATIONS THAT WHENEVER A MANUFACTURER IS SPECIFIED AND SUBSTITUTIONS ARE PROPOSED, THEY SHALL CONFORM IN ALL ASPECTS TO THE SPECIFIED ITEM. CRITERIA AS DELINEATED FOR EQUIPMENT SHALL BE INTERPRETED AS MINIMUM PERFORMANCE REQUIREMENTS. ALL SUBSTITUTIONS MUST BE APPROVED BY THE ARCHITECT/ENGINEER OR OWNER/TENANTS' REPRESENTATIVE.
- B. SUBSTITUTED EQUIPMENT, WHERE PERMITTED, MUST CONFORM TO SPACE REQUIREMENTS. ANY SUBSTITUTED EQUIPMENT THAT CANNOT MEET SPACE REQUIREMENTS, WHETHER APPROVED OR NOT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ANY MODIFICATION OR RELATED SYSTEMS OR ADDITIONAL COSTS THAT RESULT FROM SUBSTITUTED EQUIPMENT SHALL BE BORNE BY THIS CONTRACTOR.
- C. IT SHALL BE MANDATORY FOR THIS CONTRACTOR TO SUBMIT HIS PROPOSAL PRICE BASED ON SPECIFIED MANUFACTURER OR SUPPLIER OF MATERIALS OR SERVICES. IF THE CONTRACTOR DESIRES TO SUBSTITUTE OTHER THAN SPECIFIED, HE SHALL SUBMIT SEPARATE PRICES FOR EACH OF THESE ITEMS, FOR ADDITIONS OR DEDUCTIONS TO CONTRACT PROPOSAL PRICE, FOR ACCEPTANCE OR REJECTION AT THE TIME WHEN BIDS ARE DUE. SHOULD THESE SUBSTITUTIONS BE REJECTED, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE SPECIFIED MATERIALS AND SERVICES.
- 3. SHOP DRAWINGS AND EQUIPMENT SUBMISSIONS
- A. ONE (1) SEPIA, TWO (2) COPIES OF DUCTWORK, PIPING AND EQUIPMENT LAYOUTS, AND FOUR (4) COPIES OF MATERIAL AND CERTIFIED EQUIPMENT MANUFACTURER'S DATA, SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION, ERECTION OR PURCHASE.
- B. SUBMIT SHOP DRAWINGS OF THE FOLLOWING:
- 1. DUCTWORK LAYOUTS AND SHEETMETAL SHOP STANDARDS.
- 2. PIPE LAYOUTS.
- 3. MATERIAL SCHEDULES.
- 4. EQUIPMENT.
- 5. AUTOMATIC CONTROLS.
- 4. RECORD DRAWINGS
- A. REPRODUCIBLE RECORD DRAWINGS SHALL BE SUPPLIED, UPON WHICH CORRECTIONS SHALL BE MADE, TO PROVIDE AN ACCURATE AND COMPLETE RECORD OF THE WORK AS INSTALLED.
- B. REPRODUCIBLE DRAWINGS SHALL BE OBTAINED FROM THE ENGINEER WITH COST BORNE BY THIS CONTRACTOR.
- 5. CLEANING, TESTING, ADJUSTMENT AND BALANCING
- A. CHEMICALLY CLEAN ALL NEW PIPING SYSTEMS WITH A NON-FOAMING, LIQUID DETERGENT DISPERSING CLEANER THEN FLUSH THOROUGHLY UNTIL CLEAN WATER IS OBTAINED. PROVIDE ALL VALVED OUTLETS TO FILL AND FLUSH THE SYSTEM. PROVIDE ALL BLIND FLANGES AND CAPS REQUIRED TO ISOLATE EQUIPMENT..
- B. HYDROSTATICALLY TEST WATER PIPING AT 1.5 TIMES ACTUAL MAXIMUM WORKING PRESSURE FOR EIGHT (8)
- C. CLEAN ALL DUCTWORK BEFORE TESTING.
- D. LOW PRESSURE DUCTWORK (-2" WG TO +2" WG) TEST TO BE AN AUDIBLE AND VISUAL CHECK FOR LEAKS. MAXIMUM LEAKAGE TO BE 5%.
- E. MEDIUM PRESSURE DUCTWORK (BELOW −2" WG AND ABOVE +2" WG) TO BE PRESSURE TESTED WITH A BLOWER AND ORIFICE PLATE. MAXIMUM LEAKAGE TO BE 5%.
- F. MAKE ALL REQUIRED ADJUSTMENTS OF AIR AND WATER SYSTEM DEVICES UNTIL ALL SPECIFIED PERFORMANCES ARE MET.
- G. AIR AND WATER SYSTEM BALANCING SHALL BE PERFORMED BY AN ORGANIZATION SPECIALIZING IN THE PROCEDURES TO DO SO, HAVING AT LEAST FIVE (5) YEARS EXPERIENCE.
- H. BALANCING CONTRACTOR SHALL BALANCE ALL DIFFUSERS, SUPPLY FANS, EXHAUST FANS AND WATER FLOWS
 TO THE QUANTITIES INDICATED ON THE DRAWINGS. AIR AND WATER FLOWS TO BE WITHIN 5% OF THE DESIGN
 FLOW QUANTITIES.
- I. SUBMIT THREE (3) COPIES OF BALANCE REPORTS TO THE ENGINEER FOR REVIEW.

6. VERIFYING EXISTING CONDITIONS

- A. THE CONTRACTOR SHALL VISIT THE PREMISES TO DETERMINE EXISTING CONDITIONS AND COMPARE SAME WITH DRAWINGS AND SPECIFICATIONS AND SATISFY HIMSELF OF ALL CONDITIONS PRIOR TO THE SUBMISSION OF A BID PROPOSAL.
- B. THE CONTRACTOR SHALL VISIT THE PREMISES TO DETERMINE ACCESS OF MATERIAL AND EQUIPMENT TO THE FINAL INSTALLED LOCATION PRIOR TO SUBMITTING HIS BID.
- C. NO ALLOWANCES WILL BE MADE FOR FAILURE TO COMPLY WITH THESE REQUIREMENTS AND A BID PROPOSAL SHALL BE CONSTRUED AS EVIDENCE HE HAS DONE SO.

- D. RETAIN ALL EXISTING MECHANICAL WORK OUTSIDE THE PROJECT AREA UNLESS OTHERWISE NOTED.
- E. MAINTAIN SERVICE CONTINUITY TO ALL AREAS NOT BEING RENOVATED.

7. REMOVALS AND ALTERATIONS

- A. THE CONTRACTOR SHALL REMOVE, RELOCATE, REPLACE, ADJUST, ADAPT AND MODIFY EXISTING EQUIPMENT AND/OR SYSTEMS AS REQUIRED BY THE DRAWINGS OR SPECIFICATION, AND AS MAY BE REQUIRED FOR THE COMPLETION OF WORK IN THIS CONTRACT.
- B. ALL REMOVED EQUIPMENT AND MATERIAL SHALL BE REMOVED FROM THE PROJECT SITE.

8. ACCESS DOORS IN FINISHED CONSTRUCTION

- A. THIS CONTRACTOR SHALL PREPARE A LIST OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, WHICH SHALL BE SUPPLIED TO THE GENERAL CONTRACTOR WHO SHALL FURNISH AND INSTALL SAME. ACCESS DOORS SHALL BE OF AMPLE SIZE AND MINIMUM OF 18" X 18"
- B. THIS CONTRACTOR, IN ADVANCE OF CEILING INSTALLATION, SHALL SUITABLY FIELD TAG AND IDENTIFY ALL CONCEALED EQUIPMENT WHICH REQUIRE ACCESS DOOR PROVISIONS.

9. IDENTIFICATION OF EQUIPMENT AND CONTROLS

- A. ALL EQUIPMENT SHALL BE LABELED WITH BLACK BAKELITE PLATES WITH WHITE ENGRAVED UPPER CASE LETTERS ENCLOSED BY WHITE BORDER ON BEVELED EDGE SCREWED THEREON, WHICH SHALL INDICATE SYSTEMS SERVICE.
- B. ALL PIPING SYSTEMS SHALL BE IDENTIFIED AS TO THEIR CONTENTS AND DIRECTION OF FLOW WITH PVC PIPING BANDS AT MAXIMUM OF 30 FEET SPACING ON STRAIGHT RUNS, AND AT ALL VALVE LOCATIONS.
- C. ALL VALVES SHALL BE TAGGED WITH 2" BRASS PLATED TAGS AND CHAINS. A VALVE CHART SCHEDULE, FRAMED AND WALL MOUNTED, SHALL BE INSTALLED WHERE DIRECTED.

10. CODES, PERMITS AND INSPECTIONS

- A. ALL WORK SHALL MEET OR EXCEED LATEST REQUIREMENTS OF STATE, COUNTY, MUNICIPAL AND OTHER AUTHORITIES EXERCISING JURISDICTION OVER THE WORK OF THIS PROJECT.
- B. FILE ALL DOCUMENTS, AS REQUIRED, TO OBTAIN APPROVALS FROM AUTHORITIES HAVING JURISDICTION AND PAY ALL FILING FEES.
- C. THIS CONTRACTOR SHALL PERFORM CONTROLLED INSPECTIONS AS REQUIRED BY STATE AND LOCAL AUTHORITIES.

11. GUARANTEES

- A. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR OTHER DEFECTS. ALL DEFECTIVE MATERIAL OR WORK SHALL BE REPLACED OR REPAIRED.
- B. THE GUARANTEE PERIOD SHALL BE FOR ONE (1) YEAR FROM THE DATE OF ACCEPTANCE, WHICH SHALL BE THE DATE OF FINAL PAYMENT OR THE DATE OF FORMAL NOTICE OF ACCEPTANCE, WHICHEVER IS EARLIER.

12. WORK INCLUDED

- A. THE WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
- 1. SHEETMETAL DUCT, AIR INLETS AND OUTLETS, AND ALL APPURTENANCES.
- 2. SUPPLEMENTAL AIR CONDITIONING UNITS.
- 3. CHILLED WATER PIPING COMPLETE WITH VALVES, INSULATION, AND ALL REQUIRED ACCESSORIES.
- 4. HOT WATER AND CONDENSATE RETURN PIPING COMPLETE WITH VALVES, INSULATION, AND ALL REQUIRED ACCESSORIES.
- 5. SUPPLEMENTAL EXHAUST AND/OR OUTSIDE AIR SYSTEMS.
- 6. FIRE/SMOKE DAMPERS TO MAINTAIN THE CONTINUITY OF BUILDING SMOKE CONTROL SYSTEMS.
- 7. PRIME PAINTING.
- 8. SUPPORTS, ANCHORS, HANGERS, AND AUXILIARY STRUCTURAL MEMBERS REQUIRED FOR SUPPORT OF MECHANICAL WORK.
- 9. AUTOMATIC TEMPERATURE CONTROLS.
- 10. CUTTING AND ROUGH PATCHING.
- 11. SYSTEM ACTIVATION AND START-UP.
- 12. FIRESTOPPING OF WALL AND FLOOR PIPE AND DUCT PENETRATIONS.
- 13. RIGGING, HOISTING AND SCAFFOLDING.
- 14. MOTOR STARTERS AND CONTROLLERS WITH ASSOCIATED FUSES.
- 15. INSTALL DUCT TYPE SMOKE DETECTORS.

13. WORK INCLUDED UNDER OTHER SECTIONS

- A. THE FOLLOWING WORK WILL BE DONE UNDER OTHER SECTIONS:
- 1. FINISH PAINTING AND PATCHING.
- 2. MASONRY AND CONCRETE FOUNDATIONS FOR EQUIPMENT.
- 3. ELECTRICAL WIRING FOR POWER, AND FIRE ALARM INTERLOCKING CONTROLS.
- 4. FURNISH AND INSTALL ACCESS DOORS IN FINISHED CONSTRUCTION.
- 5. ELECTRICAL DISCONNECT SWITCHES.
- 6. FURNISHING DUCT TYPE SMOKE DETECTORS.

14. OPERATING AND MAINTENANCE INSTRUCTIONS

- A. AFTER FINAL TEST AND ADJUSTMENTS FULLY INSTRUCT TENANT/OWNER'S OPERATING PERSONNEL IN ALL DETAILS OF OPERATION FOR EQUIPMENT INSTALLED. A SIGNED RECEIPT, WHICH SHALL BE OBTAINED FROM THE OPERATOR, SHALL BE CONSTRUED AS EVIDENCE THAT INSTRUCTIONS WERE SATISFACTORY.
- B. FURNISH THREE (3) COPIES OF WRITTEN DESCRIPTIONS OF ALL SYSTEMS COVERING ALL MANUAL OPERATING PROCEDURES, AUTOMATIC CONTROL DESCRIPTIONS, AND AUTOMATIC CONTROL TEMPERATURE AND PRESSURE SETTINGS. WRITTEN DESCRIPTIONS SHALL INCLUDE MAINTENANCE AND LUBRICATION SCHEDULES, PARTS LISTS PERFORMANCE CURVES AND DATA, WIRING DIAGRAMS, MANUFACTURERS RECOMMENDED OPERATING AND MAINTENANCE INSTRUCTIONS, SPARE PARTS RECOMMENDATIONS, AND TROUBLE SHOOTING DIAGNOSTIC INSTRUCTIONS. THEY SHALL BE CLEARLY MARKED TO INDICATE APPLICABILITY.

15. SHEETMETAL DUCTWORK

- A. ALL DUCTWORK AIR CHAMBERS, CASINGS, ENCLOSURES, DAMPERS, AND ALL AUXILIARY DEVICES AND WORK NECESSARY TO MAKE THE VARIOUS AIR CONDITIONING AND VENTILATING SYSTEMS COMPLETE AND READY FOR SATISFACTORY OPERATION, SHALL BE FURNISHED AND INSTALLED.
- B. ALL LOW PRESSURE DUCTWORK SHALL BE GALVANIZED STEEL, EXCEPT WHERE OTHERWISE SPECIFIED WITH GAUGES, BRACING AND CONSTRUCTION IN ACCORDANCE WITH THE 1985 SMACNA DUCT MANUAL STANDARDS. TOTAL AIR VOLUME FOR LOW PRESSURE DUCT SYSTEMS SHALL BE AT LEAST 95% OF FAN SUPPLY VOLUME WHEN MEASURED BY DUCT TRAVERSES WITH A PITOT TUBE AND WATER MANOMETER.
- C. IN ACCORDANCE WITH SMACNA STANDARDS, PROVIDE DUCTWORK CASING ACCESS DOORS TO ALL CONCEALED CONTROLS. FUSIBLE LINKS OR DAMPERS. ETC.
- D. PROVIDE MANUAL DAMPERS IN EACH SPLIT OR TAP CONNECTION TO TRUNK DUCTS FOR BALANCING PURPOSES, EACH PROVIDED WITH OPERATOR AND LOCKING DEVICE. LOCATIONS TO BE AS INDICATED ON PLANS.
- E. PROVIDE FUSIBLE LINK FIRE DAMPERS AT LOCATIONS SHOWN ON DRAWINGS AND WHERE NECESSARY TO COMPLY WITH LOCAL OR OTHER AGENCIES OR JURISDICTIONS REQUIRING THEIR INSTALLATION, AND IN COMPLIANCE WITH THEIR CONSTRUCTION REQUIREMENTS. FIRE DAMPERS SHALL BE U.L. LISTED.
- F. WHERE DUCTS ARE SHOWN TO BE ACOUSTICALLY LINED, THE SIZES SHOWN ON THE PLANS SHALL BE THE CLEAR INSIDE DIMENSIONS WHEN LINING IS TO BE PROVIDED.
- G. ANGLES AND OTHER STRUCTURAL SHAPES USED IN CONNECTION WITH BOTH STEEL AND ALUMINUM SHEETS SHALL BE ZINC-COATED STEEL. HANGER SHALL BE 3/8" MINIMUM DIAMETER NOT ROLLED MILL STEEL.

H. DUCTWORK UPSTREAM OF AIR TERMINAL BOXES SHALL BE MEDIUM PRESSURE CONSTRUCTION. DUCTWORK

DOWNSTREAM OF TERMINAL BOXES SHALL BE OF LOW PRESSURE CONSTRUCTION.

I. FLEXIBLE CONNECTIONS SHALL BE USED AT ALL DUCT CONNECTIONS TO ROTATING EQUIPMENT. FLEXIBLE DUCT SHALL NOT EXCEED SIX (6) INCHES IN LENGTH AND BE CONSTRUCTED OF FIBERGLASS CLOTH, STEEL SPRING FRAME, VAPOR BARRIER AND FIRE RATED CONFORMING TO NFPA 90A.

16. ACOUSTICAL LINING

- A. ACOUSTICAL LINING SHALL BE OWENS—CORNING AEROFLEX 300 OR APPROVED EQUAL; THICKNESS SHALL BE ONE INCH (1").
- B. THE MATERIAL SHALL BE SPECIFICALLY DESIGNED FOR THIS APPLICATION AND SHALL HAVE VINYL OR NEOPRENE COATING WHICH SHALL PREVENT EROSION, FLAKING OR PEELING OF THE LINING DUE TO THE AIR MOTION FOR THE WORKING VELOCITIES, AND SHALL BE FIRE RESISTANT, ODORLESS AND VERMIN—PROOF. PROVIDE A PERFORATED METAL LINER WHERE VELOCITIES EXCEED 2000 FPM.
- C. ABUTTING SEAMS TO BE CAULKED AND SEALED.
- D. AIR CONDITIONING SYSTEMS SHALL HAVE 25 FEET MINIMUM SUPPLY DUCT LINING.
- E. ALL JOINTS AND CONNECTIONS SHALL BE CAULKED AIRTIGHT WITH HIGH PRESSURE SEALANT.

17. GRILLES, REGISTERS AND DIFFUSERS

- A. FURNISH AND INSTALL ALL METAL DIFFUSERS, GRILLES AND REGISTERS WITH MANUFACTURERS' MODELS, SIZES, ACCESSORIES, FINISHES, ETC. SUBMIT FOR APPROVAL PRIOR TO RELEASE FOR FABRICATION AND DELIVERY.
- B. A SCHEDULE OF DIFFUSERS, GRILLES AND REGISTERS WITH MANUFACTURERS' MODELS, SIZES, ACCESSORIES, FINISHES, ETC., SHALL BE SUBMITTED FOR APPROVAL PRIOR TO RELEASE FOR FABRICATION AND DELIVERY.
- C. DUCTWORK LAYOUTS AND ROUTES AS SHOWN ON THE DRAWINGS ARE SCHEMATIC. THEREFORE, CHANGES IN DUCT SIZES AND/OR LOCATIONS SHALL BE MADE WHERE NECESSARY TO CONFORM TO SPACE CONDITIONS OR OBTAIN MAXIMUM HEADROOM CONDITIONS WITHOUT ADDITIONAL COSTS TO THE OWNER.
- D. AIR DIFFUSERS AND GRILLES SHALL BE LOCATED IN CONFORMANCE TO ARCHITECTURAL REFLECTED CEILING PLANS.
- E. FRAMING FOR ALL AIR DISTRIBUTION DEVICES SHALL CONFORM TO AND ACCOMMODATE THE CEILING CONSTRUCTION.
- 1. SQUARE CEILING DIFFUSERS FURNISHED WITH OPPOSED BLADE DAMPERS ALUMINUM AND WHITE FINISH.
- 2. REGISTERS AND GRILLES SHALL BE ALUMINUM. STANDARD WITH WHITE FINISH. SUPPLY AND RETURN REGISTERS SHALL INCORPORATE OPPOSED BLADE DAMPERS.

18. INSULATION

A. ALL PIPING, DUCTWORK AND EQUIPMENT THAT TRANSMITS OR RECEIVES HEAT, WILL FORM CONDENSATION, OR IS SUBJECT TO FREEZING, SHALL BE INSULATED UNLESS IT IS SPECIFICALLY STATED OTHERWISE. INSULATION SHALL CONFORM TO RECOMMENDATIONS OF THE NFPA AND SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM—E—84, NFPA 255, OR UL—723, NOT EXCEEDING FLAME SPREAD 25 AND SMOKE DEVELOPED 50.

B. DUCTWORK INSULATION

- 1. CONDITIONED SUPPLY AIR DUCTS IN AIR CONDITIONED SPACE: ONE AND A HALF INCH $(1\ 1/2")$ FIBERGLASS WITH VAPOR SEAL.
- 2. OUTSIDE AIR DUCTS, INTAKE AND EXHAUST PLENUMS: TWO INCHES (2") FIBERGLASS WITH EXTERNAL VAPOR SEAL. ABUTTING SEAMS TO BE SEALED.

C. PIPE INSULATION

- 1. CONDENSATE DRAIN: 1" FIBERGLASS
- 2. HOT WATER PIPE: 1 1/2" FIBERGLASS
- 3. CHILLED WATER PIPE: 1" FIBERGLASS
- D. PERFORM ALL WORK IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- E. SEAL ALL VAPOR BARRIERS CONTINUOUS AND THROUGHOUT AGAINST MOISTURE PENETRATIONS.
- F. PIPE FITTINGS, FLANGES AND VALVES SHALL BE INSULATED.
- G. PROTECT PIPE INSULATION AT HANGERS, GUIDES AND ROLLERS BY 16 GAUGE GALVANIZED METAL SHIELD ON OUTSIDE OF THE INSULATION AND VAPOR BARRIER.

19. SLEEVES AND ESCUTCHEONS FOR PIPING

- A. PIPING THROUGH FLOORS OR ROOFS SHALL BE SCHEDULE 40 STEEL AND THROUGH INTERIOR WALLS AND PARTITIONS 318 GAUGE GALVANIZED STEEL.
- B. SPACE BETWEEN PIPE OR PIPE INSULATION SHALL BE CAULKED WITH INCOMBUSTIBLE MATERIAL, ROPE OR MINERAL WOOL TO WITHIN 1/2" OF WALL SPACES AND FILLED WITH CAULKING COMPOUND TO WALL SPACES.

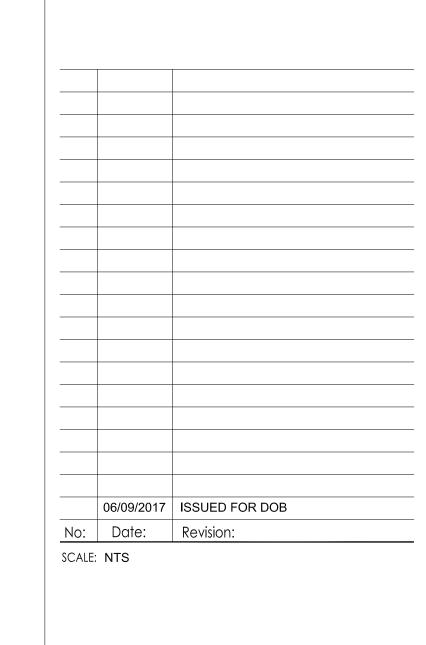
20. INSTALLATION OF PIPING — GENERAL

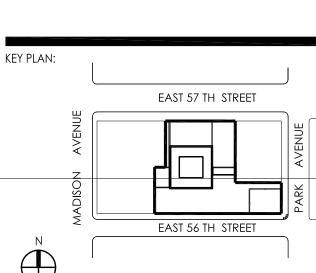
- A. FURNISH AND INSTALL PIPING SYSTEMS WHICH ARE SCHEMATICALLY INDICATED ON THE DRAWINGS IN CONFORMANCE TO THE LATEST ASME CODE FOR PRESSURE PIPING.
- B. PROVIDE PROPER PROVISION FOR EXPANSION OF CONSTRUCTION OR PIPING TO PREVENT STRAIN TO THE APPARATUS CONNECTED THEREWITH AND TO THE BUILDING STRUCTURE.

HM 78 A-B

PROJECT:

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DRAWING TITLE:

MECHANICAL SPECIFICATION

SHEET 1

SEAL & SIGNATURE:

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