

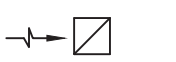






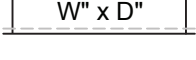
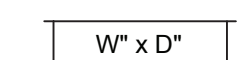











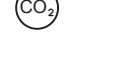
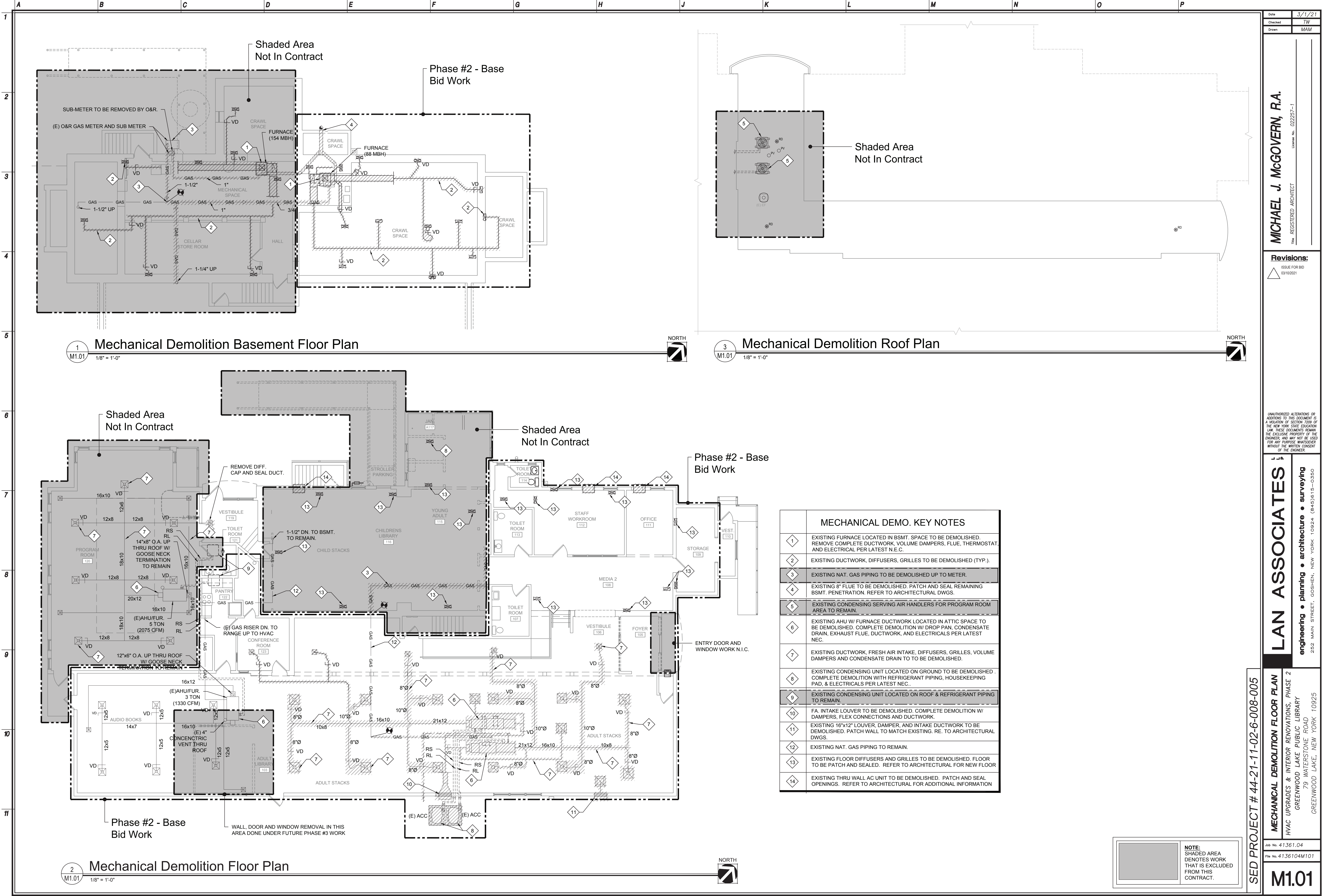


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REVIEW OF SHOP DRAWINGS/SUBMITTALS BY THE ARCH/ENGR DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING THE CURRENT MODEL NUMBERS, TYPE, & FEATURES OF ALL EQUIPMENTS & MATERIALS.</div> <div>16. THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH CERTIFICATES OF INSURANCE PRIOR TO STARTING THE WORK.</div> <div>17. THE CONTRACTOR SHALL SHALL BE RESPONSIBLE FOR SHORING AND BRACING OF EXISTING STRUCTURES AS NEEDED TO COMPLETE THE NEW WORK.</div> <div>18. ALL MANUFACTURER'S MATERIALS, COMPONENTS, FASTENERS, ASSEMBLIES, ETC. SHALL BE HANDLED AND INSTALLED IN ACCORDANCE TO WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. WHERE BRAND NAMES AND MANUFACTURED PRODUCTS ARE CALLED FOR, APPROVED EQUALS WHICH MEET APPLICABLE STANDARDS AND SPECIFICATIONS MAY BE SUBSTITUTED WITH WRITTEN PERMISSION OF THE ENGINEER AND THE OWNER. WHENEVER BRAND NAMES OR SPECIFIC PRODUCT SYSTEMS ARE INDICATED IT SHALL BE CLEARLY UNDERSTOOD THAT SUCH IDENTIFICATION IS FOR THE PURPOSE OF ILLUSTRATING THE TYPE OF PRODUCT AND DEGREE OF QUALITY DESIRED. SUCH IDENTIFICATION IN NO WAY PRECLUDES THE CONTRACTOR FROM USING PRODUCTS OF OTHER MANUFACTURERS WHICH CAN BE SHOWN IN ADVANCE TO BE OF LIKE AND OF EQUAL OR BETTER QUALITY.</div> <div>19. ALL CHANGES SHALL BE REQUESTED IN WRITING AND MAY ONLY BE APPROVED IN WRITING BY THE ARCHITECT AND THE OWNER PRIOR TO ANY CHANGES BEING MADE.</div> <div>20. THE ARCHITECT/ENGINEER HAS THE RIGHT TO REJECT ANY PORTION OF WORK THAT IS POORLY INSTALLED, DOES NOT MEET INDUSTRY STANDARD, UNAUTHORIZED, OR WORK DONE CONTRARY TO THE THE INTENT OF THE CONTRACT DOCUMENTS. SUCH WORK SHALL BE REPLACED, REPAIRED OR REMOVED AT THE CONTRACTOR'S EXPENSE.</div> <div>21. CONTRACTOR SHALL GUARANTEE ALL HIS WORK AND THE WORK OF HIS SUBCONTRACTORS FOR A PERIOD OF ONE YEAR AFTER RECEIVING FINAL ACCEPTANCE AND DO ALL REPAIR WORK AND REPLACEMENT AS NECESSARY DURING THAT PERIOD AT THE CONTRACTOR'S EXPENSE.</div> <div>22. IN NO EVENT SHALL STRUCTURAL MEMBERS BE CUT OR DRILLED WITHOUT THE WRITTEN APPROVAL OF A LICENSED STRUCTURAL ENGINEER.</div> <div>23. CONTRACTOR SHALL PROVIDE SAFE AND SANITARY CONDITIONS WHERE DEMOLITION AND WRECKING OPERATIONS ARE BEING CARRIED ON. WORK SHALL BE EXECUTED IN SUCH A MANNER THAT HAZARD FROM FIRE, POSSIBILITY OF INJURY, DANGER TO HEALTH AND CONDITIONS WHICH MAY CONSTITUTE A PUBLIC NUISANCE SHALL BE MINIMIZED.</div> <div>24. ENGINEER/OWNER MAY ASK THE CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS & SUBMITTALS OF ANY/ALL PARTS OF THIS PROJECT WHICH THE ENGINEER/OWNER DEEMS NECESSARY FOR.</div>		<div>1. PROCURE AND PAY ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT THE WORK SHOWN. OBTAIN AND PAY FOR ALL FEES.</div> <div>2. COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND CODES, ORDINANCES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITIES CONTROLLING OR LIMITING THE METHODS, MATERIALS TO BE USED OR ACTIONS OF THOSE EMPLOYED.</div> <div>3. GUARANTEE HVAC SYSTEM FOR A PERIOD OF ONE (1) YEAR FROM OWNER'S ACCEPTANCE TO BE FREE FROM DEFECTS AND REPAIR OR REPLACE, AT NO COST TO OWNER, FAILURES OR DEFECTS.</div> <div>4. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL HIS DEBRIS.</div> <div>5. BALANCE HVAC SYSTEM TO QUANTITIES INDICATED. CONTRACTOR TO SUBMIT FOUR (4) SETS OF AIR AND UNIT BALANCING REPORT TO ENGINEER/OWNER PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.</div> <div>6. BIDDERS FOR THIS WORK SHALL VISIT THE PREMISES AND CAREFULLY EXAMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING BIDS. NOT ALL EXISTING CONDITIONS HAVE BEEN IDENTIFIED ON DRAWINGS. CONTRACTOR SHALL NOTIFY ENGINEER, OF ALL DISCREPANCIES PRIOR TO SUBMITTING BID.</div> <div>7. ALL BIDDERS SHALL ALSO FAMILIARIZE THEMSELVES WITH THE MEANS OF ENTRANCE AND EXIT AT THE PROPERTY AND ALL OTHER INFORMATION NECESSARY TO PROPERLY CARRY OUT THE WORK.</div> <div>8. THE CONTRACTOR SHALL, WITH THE APPROVAL OF THE ENGINEER AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE ALL NECESSARY CHANGES OR MODIFICATIONS TO LOCATIONS AS MAY BE NECESSARY TO SUIT REQUIREMENTS AND CONDITIONS FOR THE PROPER AND CONVENIENTLY ACCESSIBLE LOCATIONS OF ALL PARTS OF EACH SYSTEM.</div> <div>9. SMALL DETAILS ARE NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OR WORK SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST.</div> <div>10. THE CONTRACTOR SHALL NOTE THAT ALL SERVICE CONNECTIONS MAY NOT BE SHOWN IN TRUE POSITIONS. EACH BIDDER IS CAUTIONED, THEREFORE, TO VERIFY SAME WITH FIELD CONDITIONS.</div> <div>11. CONTRACTOR SHALL CHECK FOR INTERFERENCE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION OF PIPING AND DUCTWORK.</div> <div>12. IF AN ITEM OF EQUIPMENT OTHER THAN THE ITEM(S) SPECIFIED IS APPROVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST ARISING OUT OF ADDITIONAL OR CHANGED GENERAL CONSTRUCTION AND MECHANICAL WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT.</div> <div>13. ALL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS.</div> <div>14. PROVIDE TWO (2) SETS OF SPARE FILTERS FOR THE INSTALLED RTUS, HVAC & OTHER EQUIPMENT.</div> <div>15. PROVIDE TWO-YEARS PREVENTIVE & REGULAR MAINTENANCE SERVICE FOR ALL INSTALLED HVAC SYSTEM. THIS INCLUDES A MINIMUM OF THREE (3) PERIODIC SERVICE VISITS PER YEAR TO INSPECT, TEST & CHECK ALL COMPONENTS OF HVAC UNITS AND ANY ADDITIONAL VISITS REQUIRED IF ANY HVAC UNIT FAILS. ALL NECESSARY BELT ALIGNMENTS, PROPER REFRIGERANT CHARGE, PROPER OPERATIONS OF ALL DAMPERS, DDC CONTROLS, ETC. IS INCLUDED IN THIS SCOPE OF WORK.</div> <div>16. PROVIDE FIRE DAMPERS/ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS, IRRESPECTIVE OF WHETHER IT IS INDICATED ON THE DRAWINGS OR NOT.</div> <div>17. PROVIDE FIRE STOPPING AROUND ALL OPENINGS FOR DUCT, PIPING, CONDUIT, ETC. PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS.</div> <div>18. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND RESTORATION OF AREAS OF MECHANICAL REMOVALS.</div> <div>19. CONTRACTOR IS RESPONSIBLE FOR PROVIDING DUMPSTER/CONTAINER SERVICES AND LABOR TO KEEP THE BUILDING FREE OF DEBRIS.</div> <div>20. CONTRACTOR TO PROVIDE TWO (2) SEPARATE TRAINING SESSIONS (FOUR WEEKS APART) ON PROPER OPERATION & TROUBLESHOOTING OF NEW HVAC SYSTEM & CONTROLS.</div> <div>21. CONTRACTOR TO NOTE THAT BOTH DWGS. & SPECS. ARE COLLECTIVELY A PART OF BID REQUIREMENTS. IN CASE OF ANY DIFFERENCES BETWEEN VARIOUS DWGS. OR BETWEEN DWGS. & SPECS, THE MOST STRINGENT REQUIREMENT WILL PREVAIL.</div> <div>22. CONTRACTOR TO SUBMIT FOUR (4) SETS OF OPERATION & MAINTENANCE MANUALS, INCLUDING A SUMMARY SHEET OF ALL EQUIPMENT MANUFACTURERS/MODEL'S/SERIAL #'S, SHOP DRAWING SUBMITTALS, WARRANTY INFORMATION, Q&M MANUALS, PROJECT INFORMATION, CONTACT DETAILS & AS-BUILT DRAWINGS.</div> <div>23. CONTRACTOR TO PROVIDE FOUR (4) SETS AND AN ELECTRONIC COPY OF AS-BUILT DRAWINGS OF THE ENTIRE SYSTEM.</div>		<div>EQUIPMENT:</div> <ul style="list-style-type: none">REFER TO SCHEDULES FOR UNIT MANUFACTURER, SIZE, AND CAPACITY DATA. <div>DUCTWORK:</div> <ul style="list-style-type: none">INDOOR AIR DUCTWORK SHALL BE GALVANIZED STEEL CONSTRUCTION. WEIGHTS AND CONSTRUCTION DETAIL SHALL BE IN ACCORDANCE WITH THE LATEST ASHRAE GUIDE AND/OR SMACNA STANDARDS. MIN. 24 GAUGE DUCTWORK SHALL BE USED FOR THE PROJECT.ALL ROUND DUCTWORK SHALL BE DOUBLE-WALL SPIRAL DUCTWORK (SOLID W/ 1" THICK 3-LBS DENSITY INSULATION).FLEXIBLE DUCTWORK: SHALL NOT EXCEED FOUR (4) FEET IN LENGTH. FOR ANY HORIZONTAL FLEX DUCT BRANCH TO A CEILING DIFFUSER, FURNISH A 90° BRACE TO MAINTAIN A LONG RADIUS ELBOW TO THE DIFFUSER (TITUS MAKE, MODEL "FLEXRIGHT" OR APPROVAL EQUAL MANUFACTURERS).FIRE DAMPER: PHILLIPS SERIES 2 U.L. LABELED DAMPER OR APPROVED EQUAL. <div>AIR DEVICES:</div> <ul style="list-style-type: none">CD - TITUS MAKE, MODEL TMS (24"x24" OR 12"x12" MODULE WITH ROUND NECK).RAR - TITUS MAKE, MODEL 350-R.EAR - TITUS MAKE, MODEL 355-R.GRG - TITUS MAKE,MODEL 350-R.SD - TITUS MAKE, MODEL 250SR - TITUS MAKE, MODEL 250 <div>NOTES:</div> <div>1. ALL CEILING DIFFUSERS LOCATED IN GYPSUM BOARD AND/OR CONCEALED SPLINE CEILINGS SHALL BE PROVIDED WITH FRAME TYPE FOR SURFACE MOUNTING.</div> <div>2. PROVIDE FACTORY INSTALLED 90° BLANK-OFF PLATE(S) IN ALL 2 AND 3 WAY DIFFUSERS.</div> <div>3. COLOR OF NEW AIR INLETS & OUTLETS SHALL MATCH THE CEILING COLOR.</div> <div>4. NC RATING OF ALL CD's SHALL NOT EXCEED 20. NC RATING OF ALL RAR's/EAR's SHALL NOT EXCEED 22.</div> <div>PIPING:</div> <ul style="list-style-type: none">REFRIGERANT PIPING SHALL BE HARD COPPER TYPE "K" WITH BRAZED FITTINGS.CONDENSATE DRAIN PIPING SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER SOLDERED FITTINGS. REFER TO PLUMBING DRAWINGS. <div>INSULATION:</div> <ul style="list-style-type: none">EXTERNAL DUCT INSULATION: 1" THICK, MIN. 1.5 LB. DENSITY FIBERGLASS DUCT INSULATION WITH REINFORCED FOIL FACED FLAME RESISTANT KRAFT VAPOR BARRIER, ADHERED TO DUCT W/ SEALED LAPS AND TAPED JOINTS. (TYP. FOR UN-LINED S.A./R.A. DUCTWORK & E.A. DUCTWORK ABOVE CLG.).INTERNALLY LINED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID INSULATION ADHERED TO DUCT. DUCTS WIDER THAN 12" TO HAVE WELDED PINS AND WASHERS. DUCT DIMENSIONS AS INDICATED ARE CLEAR INSIDE DUCT DIMENSIONS. (AS NOTED ON DWGS.) <div>NOTES:</div> <div>1. ALL SUPPLY & RETURN AIR DUCTWORK SHALL BE INTERNALLY LINED FOR A MIN. OF 25' TO AND FROM ANY RTUS. ALL MA UNITS SHALL BE EXTERNALLY INSULATED ONLY AVOID INTERNALLY LINING.</div> <div>DUCT INSULATION NOTE: PROVIDE A MINIMUM 6" OVERLAP WHERE INTERNAL INSULATION ENDS AND EXTERNAL INSULATION BEGINS.</div> <div>FRESH AIR INTAKE AND EXPOSED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID FIBERGLASS DUCT INSULATION WITH FOIL FACING VAPOR BARRIER FASTENED WITH WELDED CLIPS, CEMENTED JOINTS WITH ALUMINUM TAPE.</div> <div>INTERIOR REFRIGERANT SUCTION & HOT GAS BYPASS PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL).</div> <div>EXTERIOR REFRIGERANT SUCTION, LIQUID & HOT GAS BYPASS PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL) & BE PROVIDED WITH MIN. 30 MIL PVC FILED APPLIED JACKETS.</div>		<div>ROUND SUPPLY AIR CEILING DIFFUSER (SAD) WITH NECK SIZE AND AND CFM INDICATED ON PLANS.</div> <div>4-WAY SUPPLY AIR CEILING DIFFUSER (CD) WITH NECK SIZE AND AND CFM INDICATED ON PLANS.</div> <div>RETURN AIR REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.</div> <div>EXHAUST AIR REGISTER (EAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.</div> <div>SUPPLY AIR CEILING REGISTER/GRILLE (SAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.</div> <div>RETURN AIR REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLAN</div> <div>POINT OF CONNECTION OF NEW PIPING/DUCTWORK TO EXISTING</div> <div>POINT OF DISCONNECTION OF NEW PIPING/DUCTWORK TO EXISTING</div> <div>INDICATES HARD DUCT WITH INTERNAL LINING (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH).</div> <div>INDICATES HARD DUCT (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH).</div> <div>DUCT TURN UP (SUPPLY, RETURN, EXHAUST)</div> <div>DUCT TURN DOWN (SUPPLY, RETURN, EXHAUST)</div> <div>DUCT SMOKE DETECTOR WITH ACCESS DOOR</div> <div>FIRE/DAMPER WITH ACCESS DOOR</div> <div>VOLUME DAMPER</div> <div>BACK DRAFT DAMPER</div> <div>INDICATES NEW ROOM THERMOSTAT</div> <div>ROOM NAME</div> <div>ROOM NUMBER</div> <div>REVISION</div> <div>PIPE TURN UP</div> <div>PIPE TURN DOWN</div> <div>DIFFUSER LABEL LEGEND</div> <div>INDICATES CARBON DIOXIDE SENSOR</div>		<div>& = AND</div> <div>@ = AT</div> <div>ø = DIAMETER OR ROUND</div> <div>AC = AIR CONDITIONING UNIT</div> <div>ACCU = AIR COOLED CONDENSING UNIT</div> <div>AD = ACCESS DOOR</div> <div>ADD'L = ADDITIONAL</div> <div>AFF = ABOVE FINISHED FLOOR</div> <div>ALT = ALTERNATE</div> <div>BDD = BACK DRAFT DAMPER</div> <div>BLDG = BUILDING</div> <div>BMS = BUILDING MANAGEMENT SYSTEM</div> <div>CAV = CONSTANT AIR VOLUME</div> <div>CDP = CONDENSATE DRAIN PUMP</div> <div>CFM = CUBIC FEET PER MINUTE</div> <div>CLG = CEILING</div> <div>DDC = DIRECT DIGITAL CONTROL</div> <div>DIA = DIAMETER</div> <div>DN = DOWN</div> <div>DSD = DUCT SMOKE DETECTOR</div> <div>DWG = DRAWING</div> <div>EA = EACH</div> <div>EAR = EXHAUST AIR REGISTER</div> <div>EAT = ENTERING AIR TEMPERATURE</div> <div>EF = EXHAUST FAN</div> <div>ET = EXPANSION TANK</div> <div>EXIST = EXISTING</div> <div>FAI = FRESH AIR INTAKE</div> <div>FC = FLEXIBLE CONNECTION</div> <div>FD = FIRE DAMPER</div> <div>FPT = FUNCTIONAL PERFORMANCE TEST</div> <div>HVAC = HEAT/VENTILATION/AIR CONDITIONING</div> <div>ID = INSIDE DIAMETER (DIM)</div> <div>IN = INCH</div> <div>INFO = INFORMATION</div> <div>LAT = LEAVING AIR TEMPERATURE</div> <div>LDB = LEAVING DRY BULB</div> <div>LSD = LINEAR SLOT DIFFUSER</div> <div>LWB = LEAVING WET BULB</div> <div>MAF = MAKEUP AIR SUPPLY FAN</div> <div>MAX = MAXIMUM</div> <div>MECH = MECHANICAL</div> <div>MFR = MANUFACTURER</div> <div>MIN = MINIMUM</div> <div>NK = NECK SIZE</div> <div>NTS = NOT TO SCALE</div> <div>OA = OUTSIDE AIR</div> <div>OD = OUTSIDE DIAMETER</div> <div>RA = RETURN AIR</div> <div>RAR = RETURN AIR REGISTER</div> <div>RL = REFRIGERANT LIQUID LINE</div> <div>RS = REFRIGERANT SUCTION LINE</div> <div>RTU = ROOFTOP HVAC UNIT</div> <div>SA = SUPPLY AIR</div> <div>SAD = SUPPLY AIR DIFFUSER</div> <div>SAR = SUPPLY AIR REGISTER</div> <div>SD = SPLITTER DAMPER</div> <div>SPEC = SPECIFICATION</div> <div>SS = STAINLESS STEEL</div> <div>TAB = TESTING, ADJUSTING & BALANCING</div> <div>TYP = TYPICAL</div> <div>VAV = VARIABLE AIR VOLUME</div> <div>VD = VOLUME DAMPER</div> <div>VFD = VARIABLE FREQUENCY DRIVE</div> <div>W/ = WITH</div>	

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SHALL BE REMOVED AND THE WORK AREA SHALL BE LEFT CLEAN TO THE OWNER'S SATISFACTION.</div></div> <div><div>9.</div><div>ALL WORK SHALL BE SCHEDULED IN COMPLIANCE WITH THE OWNER'S REQUIREMENTS FOR THE USE OF THE EXISTING FACILITY.</div></div> <div><div>10.</div><div>CONTRACTOR SHALL FURNISH ALL EQUIPMENT THAT MAY BE REQUIRED TO PERFORM THE WORK INDICATED IN A SAFE AND ORDERLY MANNER, AND AS NECESSARY FOR A PROPER OPERATIONAL SYSTEM.</div></div> <div><div>11.</div><div>CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION AND TEMPORARY SUPPORT OF ANY UTILITIES ENCOUNTERED DURING THE COURSE OF HIS WORK AND TO ENSURE THE OWNER'S FACILITY TO BE OPERATIONAL.</div></div> <div><div>12.</div><div>CONTRACTOR SHALL REVIEW DRAWINGS AND FIELD VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES AND ADDRESS ALL QUESTIONS TO ENGINEER PRIOR TO COMMENCING WORK.</div></div> <div><div>13.</div><div>CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, FILLING AND CLEANING UPON COMPLETION OF WORK.</div></div> <div><div>14.</div><div>CONTRACTOR SHALL NOT SCALE DRAWINGS FOR DIMENSIONS. ALL WRITTEN OR DIMENSIONED INFORMATION TAKES PRECEDENCE OVER THE DRAWING.</div></div> <div><div>15.</div><div>CONTRACTOR SHALL SUBMIT, WHERE REQUIRED BY THE ARCH/ENGR, SHOP DRAWINGS AND SUBMITTALS FOR APPROVAL PRIOR TO THE START OF FABRICATION OF THOSE ITEMS. THIS INCLUDES ALL EQUIPMENT, SCHEMATIC DUCTWORK AND PIPING LAYOUT, ETC. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL EQUIPMENT ETC WILL FIT (WITH PROPER MAINTENANCE CLEARANCES) AT ALL LOCATIONS. REVIEW OF SHOP DRAWINGS/SUBMITTALS BY THE ARCH/ENGR DOES NOT RELIEVE THE CONTRACTOR FROM PROVIDING THE CURRENT MODEL NUMBERS, TYPE, & FEATURES OF ALL EQUIPMENT'S & MATERIALS.</div></div> <div><div>16.</div><div>THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH CERTIFICATES OF INSURANCE PRIOR TO STARTING THE WORK.</div></div> <div><div>17.</div><div>THE CONTRACTOR SHALL SHALL BE RESPONSIBLE FOR SHORING AND BRACING OF EXISTING STRUCTURES AS NEEDED TO COMPLETE THE NEW WORK.</div></div> <div><div>18.</div><div>ALL MANUFACTURER'S MATERIALS, COMPONENTS, FASTENERS, ASSEMBLIES, ETC. SHALL BE HANDLED AND INSTALLED IN ACCORDANCE TO WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS. WHERE BRAND NAMES AND MANUFACTURED PRODUCTS ARE CALLED FOR, APPROVED EQUALS WHICH MEET APPLICABLE STANDARDS AND SPECIFICATIONS MAY BE SUBSTITUTED WITH WRITTEN PERMISSION OF THE ENGINEER AND THE OWNER. WHENEVER BRAND NAMES OR SPECIFIC PRODUCT SYSTEMS ARE INDICATED IT SHALL BE CLEARLY UNDERSTOOD THAT SUCH IDENTIFICATION IS FOR THE PURPOSE OF ILLUSTRATING THE TYPE OF PRODUCT AND DEGREE OF QUALITY DESIRED. SUCH IDENTIFICATION IN NO WAY PRECLUDES THE CONTRACTOR FROM USING PRODUCTS OF OTHER MANUFACTURERS WHICH CAN BE SHOWN IN ADVANCE TO BE OF LIKE AND OF EQUAL OR BETTER QUALITY.</div></div> <div><div>19.</div><div>ALL CHANGES SHALL BE REQUESTED IN WRITING AND MAY ONLY BE APPROVED IN WRITING BY THE ARCHITECT AND THE OWNER PRIOR TO ANY CHANGES BEING MADE.</div></div> <div><div>20.</div><div>THE ARCHITECT/ENGINEER HAS THE RIGHT TO REJECT ANY PORTION OF WORK THAT IS POORLY INSTALLED, DOES NOT MEET INDUSTRY STANDARD, UNAUTHORIZED, OR WORK DONE CONTRARY TO THE THE INTENT OF THE CONTRACT DOCUMENTS. SUCH WORK SHALL BE REPLACED, REPAIRED OR REMOVED AT THE CONTRACTOR'S EXPENSE.</div></div> <div><div>21.</div><div>CONTRACTOR SHALL GUARANTEE ALL HIS WORK AND THE WORK OF HIS SUBCONTRACTORS FOR A PERIOD OF ONE YEAR AFTER RECEIVING FINAL ACCEPTANCE AND DO ALL REPAIR WORK AND REPLACEMENT AS NECESSARY DURING THAT PERIOD AT THE CONTRACTOR'S EXPENSE.</div></div> <div><div>22.</div><div>IN NO EVENT SHALL STRUCTURAL MEMBERS BE CUT OR DRILLED WITHOUT THE WRITTEN APPROVAL OF A LICENSED STRUCTURAL ENGINEER.</div></div> <div><div>23.</div><div>CONTRACTOR SHALL PROVIDE SAFE AND SANITARY CONDITIONS WHERE DEMOLITION AND WRECKING OPERATIONS ARE BEING CARRIED ON. WORK SHALL BE EXECUTED IN SUCH A MANNER THAT HAZARD FROM FIRE, POSSIBILITY OF INJURY, DANGER TO HEALTH AND CONDITIONS WHICH MAY CONSTITUTE A PUBLIC NUISANCE SHALL BE MINIMIZED.</div></div> <div><div>24.</div><div>ENGINEER/OWNER MAY ASK THE CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS & SUBMITTALS OF ANY/ALL PARTS OF THIS PROJECT WHICH THE ENGINEER/OWNER DEEMS NECESSARY FOR.</div></div>	<div><div>1.</div><div>PROCURE AND PAY ALL NECESSARY PERMITS AND LICENSES REQUIRED TO CARRY OUT THE WORK SHOWN. OBTAIN AND PAY FOR ALL FEES.</div></div> <div><div>2.</div><div>COMPLY WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND CODES, ORDINANCES, RULES AND REGULATIONS OF HEALTH, PUBLIC OR OTHER AUTHORITIES CONTROLLING OR LIMITING THE METHODS, MATERIALS TO BE USED OR ACTIONS OF THOSE EMPLOYED.</div></div> <div><div>3.</div><div>GUARANTEE HVAC SYSTEM FOR A PERIOD OF ONE (1) YEAR FROM OWNER'S ACCEPTANCE TO BE FREE FROM DEFECTS AND REPAIR OR REPLACE, AT NO COST TO OWNER, FAILURES OR DEFECTS.</div></div> <div><div>4.</div><div>MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL HIS DEBRIS.</div></div> <div><div>5.</div><div>BALANCE HVAC SYSTEM TO QUANTITIES INDICATED. CONTRACTOR TO SUBMIT FOUR (4) SETS OF AIR AND UNIT BALANCING REPORT TO ENGINEER/OWNER PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.</div></div> <div><div>6.</div><div>BIDDERS FOR THIS WORK SHALL VISIT THE PREMISES AND CAREFULLY EXAMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING BIDS. NOT ALL EXISTING CONDITIONS HAVE BEEN IDENTIFIED ON DRAWINGS. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL DISCREPANCIES PRIOR TO SUBMITTING BID.</div></div> <div><div>7.</div><div>ALL BIDDERS SHALL ALSO FAMILIARIZE THEMSELVES WITH THE MEANS OF ENTRANCE AND EXIT AT THE PROPERTY AND ALL OTHER INFORMATION NECESSARY TO PROPERLY CARRY OUT THE WORK.</div></div> <div><div>8.</div><div>THE CONTRACTOR SHALL, WITH THE APPROVAL OF THE ENGINEER AND WITHOUT ADDITIONAL COST TO THE OWNER, MAKE ALL NECESSARY CHANGES OR MODIFICATIONS TO LOCATIONS AS MAY BE NECESSARY TO SUIT REQUIREMENTS AND CONDITIONS FOR THE PROPER AND CONVENIENTLY ACCESSIBLE LOCATIONS OF ALL PARTS OF EACH SYSTEM.</div></div> <div><div>9.</div><div>SMALL DETAILS ARE NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OR WORK SHALL BE FURNISHED AND INSTALLED AT NO ADDITIONAL COST.</div></div> <div><div>10.</div><div>THE CONTRACTOR SHALL NOTE THAT ALL SERVICE CONNECTIONS MAY NOT BE SHOWN IN TRUE POSITIONS. EACH BIDDER IS CAUTIONED, THEREFORE, TO VERIFY SAME WITH FIELD CONDITIONS.</div></div> <div><div>11.</div><div>CONTRACTOR SHALL CHECK FOR INTERFERENCE AND VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION OF PIPING AND DUCTWORK.</div></div> <div><div>12.</div><div>IF AN ITEM OF EQUIPMENT OTHER THAN THE ITEM(S) SPECIFIED IS APPROVED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COST ARISING OUT OF ADDITIONAL OR CHANGED GENERAL CONSTRUCTION AND MECHANICAL WORK REQUIRED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT.</div></div> <div><div>13.</div><div>ALL EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS AND RECOMMENDATIONS.</div></div> <div><div>14.</div><div>PROVIDE TWO (2) SETS OF SPARE FILTERS FOR THE INSTALLED RTUs, HVAC & OTHER EQUIPMENT.</div></div> <div><div>15.</div><div>PROVIDE TWO-YEARS PREVENTIVE & REGULAR MAINTENANCE SERVICE FOR ALL INSTALLED HVAC SYSTEM. THIS INCLUDES A MINIMUM OF THREE (3) PERIODIC SERVICE VISITS PER YEAR TO INSPECT, TEST & CHECK ALL COMPONENTS OF HVAC UNITS AND ANY ADDITIONAL VISITS REQUIRED IF ANY HVAC UNIT FAILS. ALL NECESSARY BELT ALIGNMENTS, PROPER REFRIGERANT CHARGE, PROPER OPERATIONS OF ALL DAMPERS, DDC CONTROLS, ETC. IS INCLUDED IN THIS SCOPE OF WORK.</div></div> <div><div>16.</div><div>PROVIDE FIRE DAMPERS/ACCESS DOORS AT ALL DUCT PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS, IRRESPECTIVE OF WHETHER IT IS INDICATED ON THE DRAWINGS OR NOT.</div></div> <div><div>17.</div><div>PROVIDE FIRE STOPPING AROUND ALL OPENINGS FOR DUCT, PIPING, CONDUIT, ETC. PENETRATIONS THROUGH CORRIDORS, SLABS AND OTHER RATED PARTITIONS.</div></div> <div><div>18.</div><div>MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND RESTORATION OF AREAS OF MECHANICAL REMOVALS.</div></div> <div><div>19.</div><div>CONTRACTOR IS RESPONSIBLE FOR PROVIDING DUMPSTER/CONTAINER SERVICES AND LABOR TO KEEP THE BUILDING FREE OF DEBRIS.</div></div> <div><div>20.</div><div>CONTRACTOR TO PROVIDE TWO (2) SEPARATE TRAINING SESSIONS (FOUR WEEKS APART) ON PROPER OPERATION & TROUBLESHOOTING OF NEW HVAC SYSTEM & CONTROLS.</div></div> <div><div>21.</div><div>CONTRACTOR TO NOTE THAT BOTH DWGS. & SPECS. ARE COLLECTIVELY A PART OF BID REQUIREMENTS. IN CASE OF ANY DIFFERENCES BETWEEN VARIOUS DWGS. OR BETWEEN DWGS. & SPECS, THE MOST STRINGENT REQUIREMENT WILL PREVAIL.</div></div> <div><div>22.</div><div>CONTRACTOR TO SUBMIT FOUR (4) SETS OF OPERATION & MAINTENANCE MANUALS, INCLUDING A SUMMARY SHEET OF ALL EQUIPMENT MANUFACTURERS/MODEL'S/SERIAL #S, SHOP DRAWING SUBMITTALS, WARRANTY INFORMATION, O&M MANUALS, PROJECT INFORMATION, CONTACT DETAILS & AS-BUILT DRAWINGS.</div></div> <div><div>23.</div><div>CONTRACTOR TO PROVIDE FOUR (4) SETS AND AN ELECTRONIC COPY OF AS-BUILT DRAWINGS OF THE ENTIRE SYSTEM.</div></div>	<div><div>EQUIPMENT:</div><div><div>•</div><div>REFER TO SCHEDULES FOR UNIT MANUFACTURER, SIZE, AND CAPACITY DATA.</div></div></div> <div><div>DUCTWORK:</div><div><div>•</div><div>INDOOR AIR DUCTWORK SHALL BE GALVANIZED STEEL CONSTRUCTION. WEIGHTS AND CONSTRUCTION DETAIL SHALL BE IN ACCORDANCE WITH THE LATEST ASHRAE GUIDE AND/OR SMACNA STANDARDS. MIN. 24 GAUGE DUCTWORK SHALL BE USED FOR THE PROJECT.</div></div><div><div>•</div><div>ALL ROUND DUCTWORK SHALL BE DOUBLE-WALL SPIRAL DUCTWORK (SOLID W/ 1" THICK 3-LBS DENSITY INSULATION).</div></div><div><div>•</div><div>FLEXIBLE DUCTWORK: SHALL NOT EXCEED FOUR (4) FEET IN LENGTH. FOR ANY HORIZONTAL FLEX DUCT BRANCH TO A CEILING DIFFUSER, FURNISH A 90° BRACE TO MAINTAIN A LONG RADIUS ELBOW TO THE DIFFUSER (TITUS MAKE, MODEL "FLEXRIGHT" OR APPROVAL EQUAL MANUFACTURERS).</div></div><div><div>•</div><div>FIRE DAMPER: PHILLIPS SERIES 2 U.L. LABELED DAMPER OR APPROVED EQUAL.</div></div></div> <div><div>AIR DEVICES:</div><div><div>•</div><div>CD - TITUS MAKE, MODEL TMS (24"x24" OR 12"x12" MODULE WITH ROUND NECK).</div></div><div><div>•</div><div>RAR - TITUS MAKE, MODEL 350-R.</div></div><div><div>•</div><div>EAR - TITUS MAKE, MODEL 355-R.</div></div><div><div>•</div><div>GRG - TITUS MAKE,MODEL 350-R</div></div><div><div>•</div><div>SD - TITUS MAKE, MODEL 250</div></div><div><div>•</div><div>SR - TITUS MAKE, MODEL 250</div></div></div> <div><div>NOTES:</div><div><div>1.</div><div>ALL CEILING DIFFUSERS LOCATED IN GYPSUM BOARD AND/OR CONCEALED SPLINE CEILINGS SHALL BE PROVIDED WITH FRAME TYPE FOR SURFACE MOUNTING.</div></div><div><div>2.</div><div>PROVIDE FACTORY INSTALLED 90° BLANK-OFF PLATE(S) IN ALL 2 AND 3 WAY DIFFUSERS.</div></div><div><div>3.</div><div>COLOR OF NEW AIR INLETS & OUTLETS SHALL MATCH THE CEILING COLOR.</div></div><div><div>4.</div><div>NC RATING OF ALL CDs SHALL NOT EXCEED 20. NC RATING OF ALL RARs/EARS SHALL NOT EXCEED 22.</div></div></div> <div><div>PIPING:</div><div><div>•</div><div>REFRIGERANT PIPING SHALL BE HARD COPPER TYPE "K" WITH BRAZED FITTINGS.</div></div><div><div>•</div><div>CONDENSATE DRAIN PIPING SHALL BE HARD COPPER TYPE "L" WITH WROUGHT COPPER SOLDERED FITTINGS. REFER TO PLUMBING DRAWINGS.</div></div></div> <div><div>INSULATION:</div><div><div>•</div><div>EXTERNAL DUCT INSULATION: 1" THICK, MIN. 1.5 LB. DENSITY FIBERGLASS DUCT INSULATION WITH REINFORCED FOIL FACED FLAME RESISTANT KRAFT VAPOR BARRIER, ADHERED TO DUCT W/ SEALED LAPS AND TAPED JOINTS. (TYP. FOR UN-LINED S.A./R.A. DUCTWORK & E.A. DUCTWORK ABOVE CLG.).</div></div><div><div>•</div><div>INTERNALLY LINED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID INSULATION ADHERED TO DUCT. DUCTS WIDER THAN 12" TO HAVE WELDED PINS AND WASHERS. DUCT DIMENSIONS AS INDICATED ARE CLEAR INSIDE DUCT DIMENSIONS. (AS NOTED ON DWGS.)</div></div></div> <div><div>NOTES:</div><div><div>1.</div><div>ALL SUPPLY & RETURN AIR DUCTWORK SHALL BE INTERNALLY LINED FOR A MIN. OF 25' TO AND FROM ANY RTUs. ALL MA UNITS SHALL BE EXTERNALLY INSULATED ONLY AVOID INTERNALLY LINING.</div></div><div><div>•</div><div>DUCT INSULATION NOTE: PROVIDE A MINIMUM 6" OVERLAP WHERE INTERNAL INSULATION ENDS AND EXTERNAL INSULATION BEGINS.</div></div><div><div>•</div><div>FRESH AIR INTAKE AND EXPOSED DUCT: 1" THICK, MIN. 2 LB. DENSITY RIGID FIBERGLASS DUCT INSULATION WITH FOIL FACING VAPOR BARRIER FASTENED WITH WELDED CLIPS, CEMENTED JOINTS WITH ALUMINUM TAPE.</div></div><div><div>•</div><div>INTERIOR REFRIGERANT SUCTION & HOT GAS BYPASS PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL).</div></div><div><div>•</div><div>EXTERIOR REFRIGERANT SUCTION, LIQUID & HOT GAS BYPASS PIPING SHALL BE INSULATED WITH 1" THICK FLEXIBLE ELASTOMERIC INSULATION (AP ARMAFLEX BLACK LAPSEAL OR APPROVED EQUAL) & BE PROVIDED WITH MIN. 30 MIL PVC FILED APPLIED JACKETS.</div></div></div>	<div><div>NOT TO SCALE</div></div> <div><div> = ROUND SUPPLY AIR CEILING DIFFUSER (SAD) WITH NECK SIZE AND AND CFM INDICATED ON PLANS.</div><div><div> = 4-WAY SUPPLY AIR CEILING DIFFUSER (CD) WITH NECK SIZE AND AND CFM INDICATED ON PLANS.</div><div><div> = RETURN AIR REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.</div><div><div> = EXHAUST AIR REGISTER (EAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.</div><div><div> = SUPPLY AIR CEILING REGISTER/GRILLE (SAR) WITH NECK SIZE AND CFM INDICATED ON PLANS.</div><div><div> = RETURN AIR REGISTER (RAR) WITH NECK SIZE AND CFM INDICATED ON PLAN</div><div><div> = POINT OF CONNECTION OF NEW PIPING/DUCTWORK TO EXISTING</div><div><div> = POINT OF DISCONNECTION OF NEW PIPING/DUCTWORK TO EXISTING</div><div><div> = INDICATES HARD DUCT WITH INTERNAL LINING (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH).</div><div><div> = INDICATES HARD DUCT (DIMENSIONS ARE INSIDE CLEAR WIDTH & DEPTH).</div><div><div> = DUCT TURN UP (SUPPLY, RETURN, EXHAUST)</div><div><div> = DUCT TURN DOWN (SUPPLY, RETURN, EXHAUST)</div><div><div> = DUCT SMOKE DETECTOR WITH ACCESS DOOR</div><div><div> = FIRE/DAMPER WITH ACCESS DOOR</div><div><div> = VOLUME DAMPER</div><div><div> = BACK DRAFT DAMPER</div><div><div> = INDICATES NEW ROOM THERMOSTAT</div><div><div> = ROOM NAME ROOM NUMBER</div><div><div> = REVISION</div><div><div> = PIPE TURN UP</div><div><div> = PIPE TURN DOWN</div><div><div> = <div><div>DIFFUSER LABEL LEGEND</div><div><div>SAD</div><div>8"ø</div><div>130</div><div>1</div></div><div><div>AIR DEVICE TYPE</div><div>NUMBER OF DIFFUSERS</div><div>CUBIC FEET PER MINUTE (CFM)</div></div></div></div><div><div> = INDICATES CARBON DIOXIDE SENSOR</div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div></div>	<div><div>& = AND</div><div>@ = AT</div><div>ø = DIAMETER OR ROUND</div><div>AC = AIR CONDITIONING UNIT</div><div>ACCU = AIR COOLED CONDENSING UNIT</div><div>AD = ACCESS DOOR</div><div>ADD'L = ADDITIONAL</div><div>AFF = ABOVE FINISHED FLOOR</div><div>ALT = ALTERNATE</div><div>BDD = BACK DRAFT DAMPER</div><div>BLDG = BUILDING</div><div>BMS = BUILDING MANAGEMENT SYSTEM</div><div>CAV = CONSTANT AIR VOLUME</div><div>CDP = CONDENSATE DRAIN PUMP</div><div>CFM = CUBIC FEET PER MINUTE</div><div>CLG = CEILING</div><div>DDC = DIRECT DIGITAL CONTROL</div><div>DIA = DIAMETER</div><div>DN = DOWN</div><div>DSD = DUCT SMOKE DETECTOR</div><div>DWG = DRAWING</div><div>EA = EACH</div><div>EAR = EXHAUST AIR REGISTER</div><div>EAT = ENTERING AIR TEMPERATURE</div><div>EF = EXHAUST FAN</div><div>ET = EXPANSION TANK</div><div>EXIST = EXISTING</div><div>FAI = FRESH AIR INTAKE</div><div>FC = FLEXIBLE CONNECTION</div><div>FD = FIRE DAMPER</div><div>FPT = FUNCTIONAL PERFORMANCE TEST</div><div>HVAC = HEAT/VENTILATION/AIR CONDITIONING</div><div>ID = INSIDE DIAMETER (DIM)</div><div>IN = INCH</div><div>INFO = INFORMATION</div><div>LAT = LEAVING AIR TEMPERATURE</div><div>LDB = LEAVING DRY BULB</div><div>LSD = LINEAR SLOT DIFFUSER</div><div>LWB = LEAVING WET BULB</div><div>MAF = MAKEUP AIR SUPPLY FAN</div><div>MAX = MAXIMUM</div><div>MECH = MECHANICAL</div><div>MFR = MANUFACTURER</div><div>MIN = MINIMUM</div><div>NK = NECK SIZE</div><div>NTS = NOT TO SCALE</div><div>OA = OUTSIDE AIR</div><div>OD = OUTSIDE DIAMETER</div><div>RA = RETURN AIR</div><div>RAR = RETURN AIR REGISTER</div><div>RL = REFRIGERANT LIQUID LINE</div><div>RS = REFRIGERANT SUCTION LINE</div><div>RTU = ROOFTOP HVAC UNIT</div><div>SA = SUPPLY AIR</div><div>SAD = SUPPLY AIR DIFFUSER</div><div>SAR = SUPPLY AIR REGISTER</div><div>SD = SPLITTER DAMPER</div><div>SPEC = SPECIFICATION</div><div>SS = STAINLESS STEEL</div><div>TAB = TESTING, ADJUSTING & BALANCING</div><div>TYP = TYPICAL</div><div>VAV = VARIABLE AIR VOLUME</div><div>VD = VOLUME DAMPER</div><div>VFD = VARIABLE FREQUENCY DRIVE</div><div>W/ = WITH</div></div>
	<div><div>GENERAL CONSTRUCTION NOTES</div><div><div>1.</div><div>CONTRACTOR IS RESPONSIBLE TO CORE DRILL ALL WALLS, FLOORS, CEILING, ROOF ETC. FOR ALL PIPE & DUCT PENETRATIONS. SEAL OPENING WITH 2-HOUR FIRE BARRIER CAULK. SEE DRAWINGS FOR APPROXIMATE LOCATIONS OF PIPE, DUCT, ETC ROUTING.</div></div><div><div>2.</div><div>CONTRACTOR TO REFER TO MECHANICAL DRAWINGS FOR PAINTING, FURNISHING AND INSTALLING ACCESS PANELS, CUTOUT LOCATIONS, ETC.</div></div><div><div>3.</div><div>ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING & RELOCATING EXISTING ELECTRICAL, FIRE ALARM DEVICES, ETC. TO ACCOMMODATE INSTALLATION OF NEW HVAC EQUIPMENT, PIPING & DUCTWORK. CHECK IN FIELD.</div></div><div><div>4.</div><div>GENERAL CONTRACTOR SHALL REMOVE EXISTING CEILING TILES AND CEILING GRID TO ACCOMMODATE THE INSTALLATION OF NEW UNITS, PIPING & DUCTWORK. RE-INSTALL ALL CEILING TILES BACK TO MATCH EXISTING. REMOVE & REPLACE ALL DAMAGED TILES & CEILING GRID. CHECK IN FIELD.</div></div></div>			



Date3/1/21

CheckedTW

DrawnMAM

MICHAEL J. MCGOVERN, R.A.

REGISTERED ARCHITECT

License No. 022257-1

Revisions:

ISSUE FOR BID

03/10/2021

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engineering • planning • architecture • surveying

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SED PROJECT # 44-21-11-02-6-008-005

MECHANICAL DEMOLITION FLOOR PLAN

HVAC UPGRADES & INTERIOR RENOVATIONS, PHASE 2

GREENWOOD LAKE PUBLIC LIBRARY

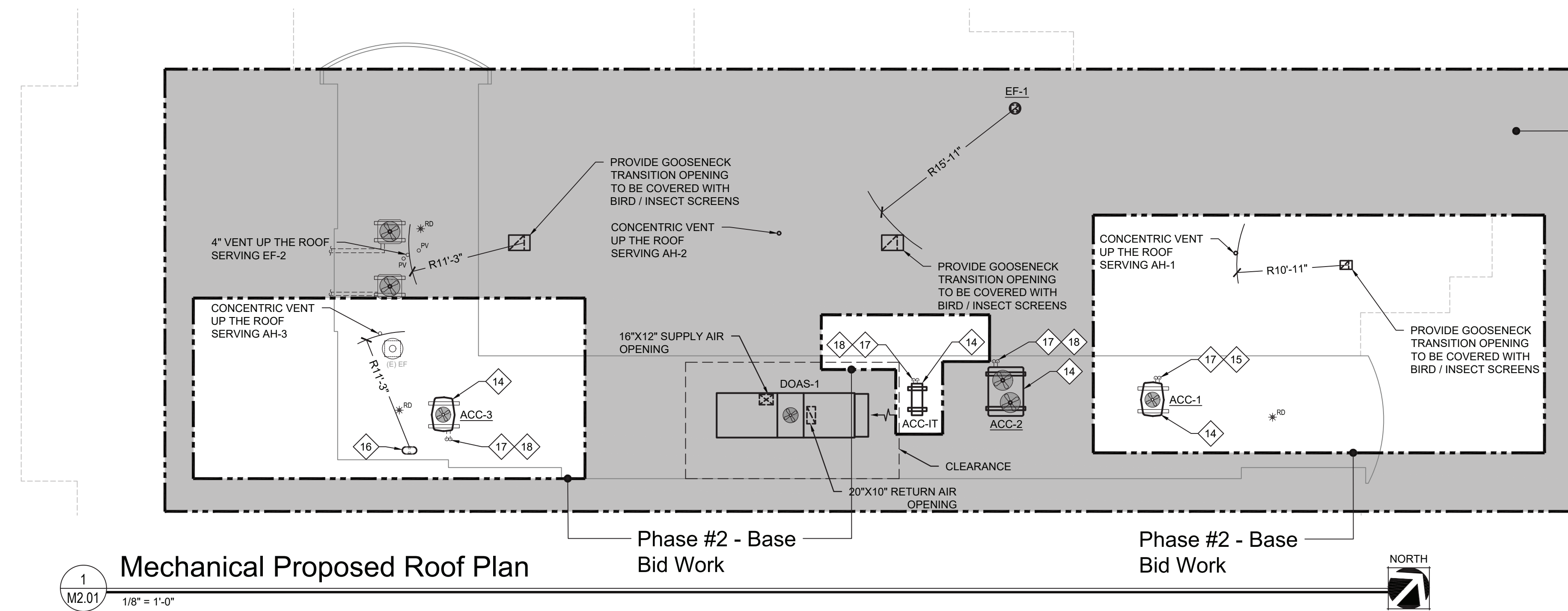
79 WATERSTONE ROAD

GREENWOOD LAKE, NEW YORK 10925

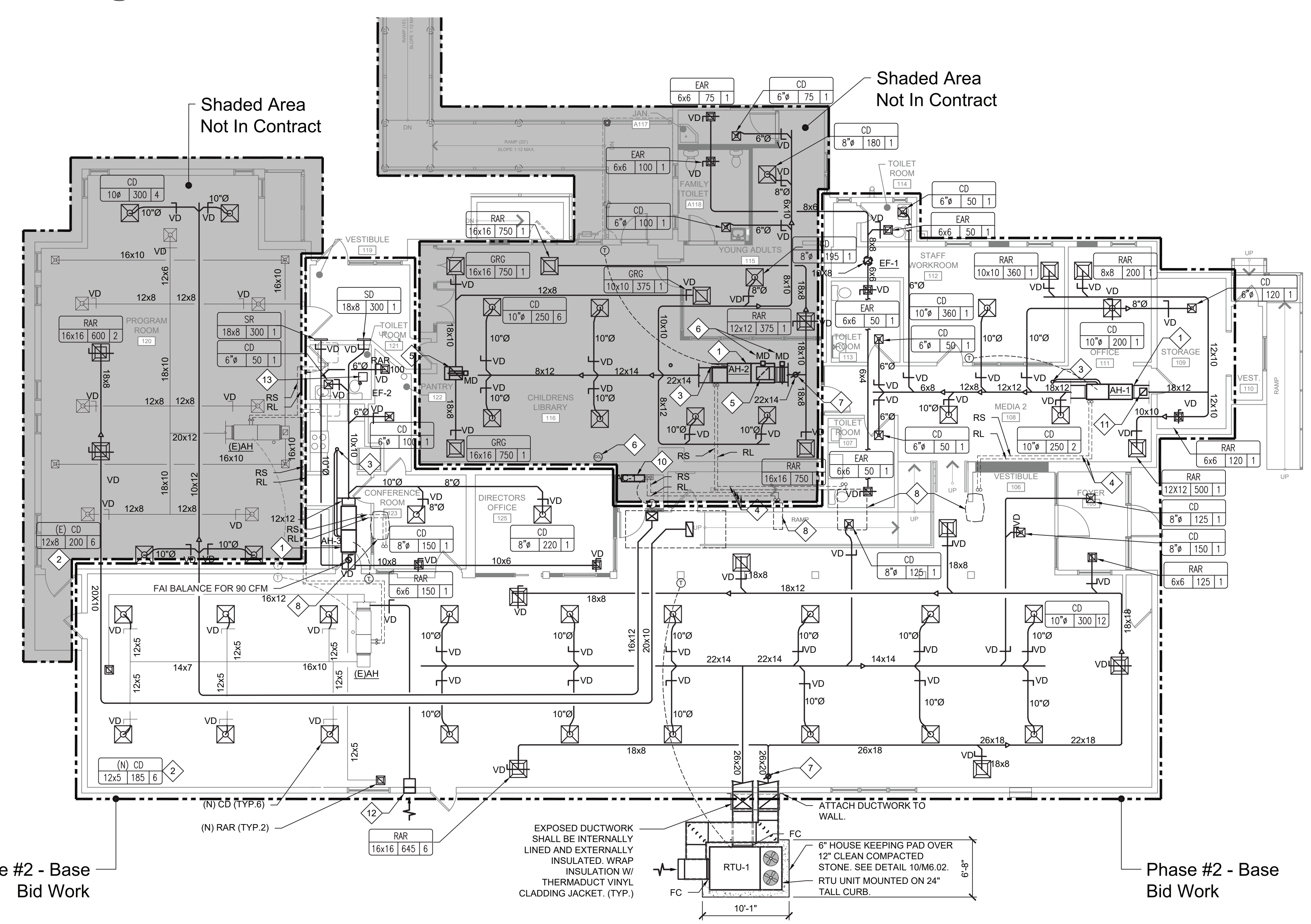
Job No. 41361.04

File No. 4136104M101

M1.01



1 Mechanical Proposed Roof Plan
1/8" = 1'-0"



2 Mechanical Proposed Floor Plan
1/8" = 1'-0"

MECHANICAL KEY NOTES	
1	INSTALL AH UNIT IN PLENUM SPACE. INSTALL FLEXIBLE CONNECTION AT UNIT OUTLET AND INLET.
2	RE-BALANCE AIR FLOW TO THE SHOWN CFM
3	PROVIDE AND INSTALL 4" CONCENTRIC VENT FROM AH UNIT THRU ROOF.
4	RUN REFRIGERANT PIPING AS HIGH AS POSSIBLE TO THE STRUCTURE.
5	PROVIDE MOTORIZED DAMPER AT 18x18 DUCT RISER. DUCTWORK SHALL PENETRATE THE ROOF AND TERMINATE W/ GOOSE NECK TRANSITION. BALANCE FOR 2000 CFM MAX FOR ECONOMIZER AND 385 CFM MIN.
6	UNIT SHALL BE PROVIDED W/ CO2 DEMAND CONTROLLED VENTILATION CONTROLS TO VARY O.A. TO MAINTAIN CONSTANT DIFFERENTIAL OF 600 PPM (ADJUSTABLE) BETWEEN RETURN AIR & OUTDOOR AIR.
7	PROVIDE AND INSTALL SMOKE DETECTOR W/ ACCESS DOOR.
8	CONDENSING UNIT LOCATED ON ROOF ABOVE.
9	RELIEF AIR TRANSFER GRILLE AND LOUVER TO BE CLEAN
11	PROVIDE 10x10 DUCT RISER PENETRATION THRU ROOF FOR FRESH AIR INTAKE. TERMINATE 36" ABOVE ROOF W/ GOOSE NECK TRANSITION. BALANCE FOR 190 CFM.
12	PROVIDE 16x12 " F&I RUSKIN ESD-403" F.A. LOUVER W/ BACKDRAFT DAMPER, BIRD & INSECT SCREEN. BALANCE TO 145 CFM.
13	CEILING MOUNTED EXHAUST FAN. ROUTE 4" PIPE UP THRU ROOF & TERMINATE WITH A GOOSENECK TRANSITION.
14	PROVIDE (N) CONDENSING UNITS ON ROOF. EQUIPMENT SHALL BE MOUNTED ON (N) EQUIPMENT SUPPORT RAILS.
15	(N) 7/8" SUCTION, 3/8" LIQUID, & INTERCONNECTED WIRING DN. IN PIPE PORTAL THRU ROOF TO AH-1.
16	TERMINATE 10"Ø FRESH AIR INTAKE DUCT 36" ABOVE FINISHED ROOF W/ GOOSENECK TRANSITION.
17	SUCTION & LIQUID PIPING SHALL BE INSULATED. PROVIDE JACKET AROUND INSULATION. (TYP.)
18	PROVIDE SUCTION & LIQUID UP IN CURB MOUNTED PIPE PORTAL TO ACC ON ROOF. CONSULT MFR REP FOR REFRIGERANT PIPE SIZES AND ROUTING.

ADD ALTERNATE #1: Contractor shall provide and install air handling unit AH-1, air conditioning condensing unit ACC-1 and all appurtenances necessary for a complete and functional installation per the contract documents. See specification section 011000 for additional information.

ADD ALTERNATE #2: Contractor shall provide and install air handling unit AH-3, air conditioning condensing unit ACC-3 and all appurtenances necessary for a complete and functional installation per the contract documents. See specification section 011000 for additional information.

NOTE:
SHADED AREA
DENOTES WORK
THAT IS EXCLUDED
FROM THIS
CONTRACT.

3/1/21

TW

MAM

MICHAEL J. MCGOVERN, R.A.

REGISTERED ARCHITECT

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SED PROJECT # 44-21-11-02-6-008-005

MECHANICAL PROPOSED FLOOR PLAN

HVAC UPGRADES & INTERIOR RENOVATIONS, PHASE 2

GREENWOOD LAKE PUBLIC LIBRARY

79 WATERSTONE ROAD

GREENWOOD LAKE, NEW YORK 10925

Job No. 41361.04

File No. 4136104M2.01

M2.01

VENTILATION SCHEDULE

Unit	Room	Floor	Required O.A. per	Require d	No. of	Required O.A. per	Required OA For	Total Min. O.A. Required (CFM)	Zone Air Distribution Effectiveness	Zone Min. O.A. Required (CFM)	Design		
Served	Name	Area (Sq. Ft.)	Sq. Ft.	Space	People	Person	Occupant s				O.A. (CFM)	E.A. (CFM)	Remarks
(E) AH	103 ADULT LIBRARY (SOUTH-WING)	958	0.06	57.5	11	5	55	112	0.80	141	145		
RTU-1	103 ADULT LIBRARY (NORTH-WING)	1,186	0.06	71.2	10	5	50	121	0.80	151	155		
RTU-1	103 ADULT LIBRARY (MID-SECTION)	1,237	0.06	74.2	10	5	50	124	0.80	155	155		
(E) AH	104 FOYER	91	0.06	5.5	0	0	0	5	0.80	7	10		NOT SERVING
AH-1	105 VESTIBULE	172	0.06	10.3	0	0	0	10	0.80	13	15		
AH-1	107 TOILET ROOM	80	0	0	0	0	0	-	0	0	-	50	50 CFM PER W.C.
AH-1	108 MEDIA 2	382	0.06	22.9	7	5	35	58	0.80	72	75		
AH-1	109 STORAGE	140	0.12	16.8	0	0	0	17	0.80	21	25		
AH-1	110 VESTIBULE	39	0.06	2.3	0	0	0	2	0	0	0		NOT SERVING
AH-1	111 OFFICE	129	0.06	7.7	2	5	10	18	0.80	22	25		
AH-1	112 STAFF WORKROOM	281	0.06	16.9	3	5	15	32	0.80	40	40		
AH-1	113 TOILET ROOM	75	0	0	0	0	0	-	0	0	0	50	
AH-1	114 TOILET ROOM	26	0	0	0	0	0	-	0	0	0	50	
AH-2	115 YOUNG ADULT	300	0.12	36.0	15	5	75	111	0.80	139	140		
AH-2	116 CHILDRENS LIBRARY	979	0.12	117.5	10	5	50	167	0.80	209	210		
AH-2	A117 JANITOR CLOSET	32	1.00	32	0	0	0	32	0	32	35		
AH-2	A118 FAMILY TOILET	87	0	0	0	0	0	-	0	0	-	100	
AH-3	119 VESTIBULE	120	0.06	7.2	0	0	0	7	0.80	9	10		
(E) AH/DOAS	120 PROGRAM ROOM	1,335	0.06	80.1	90	5	450	530	0.80	663	1,200		
AH-3	121 TOILET ROOM	45	0	0	0	0	0	-	0	0	-	50	
AH-3	122 PANTRY	59	0.3	17.7	0	0	0	18	0.80	22	400		0.3 CFM/FT² KITCHENETTES, 400 CFM KITCHEN HOOD
AH-3	123 CONFERENCE ROOM	117	0.06	7.0	8	5	40	47	0.80	59	60		
AH-3	125 DIRECTORS OFFICE	183	0.06	11.0	1	5	5	16	0.80	20	20		
AC-1	126 MDF	21	0	0	0	0	0	0	0	0	0		
	TOTAL	8,074		594	167		835	1,429		1,775.1	2,320	700	

Shaded Area Not In Contract

Phase #2 - Base Bid Work

Shaded Area Not In Contract

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AIR HANDLER UNIT SCHEDULE

MARK No.	CFM	MIN. O.A. (CFM)	SUPPLY HP	ESP IN.	COOLING TMBH	SMBH	EER	MBH	HEATING MBH	NG PRESS.	ELECTRIC DATA VOLT - PH - HZ	MODEL & MANUFACTURER	REMARKS
AH-1	1400	190	1	0.7	55.5	38.3	11.7	110	80	7"	208 - 3 - 60	CH33-50 LENNOX	PROVIDE FILTER, DX COOLING COIL, NAT. GAS FURNACE AND DISCONNECT SWITCH.
AH-2	2000	385	1/2	0.7	55.5	54.5	11.2	110	80	7"	208 - 3 - 60	CX35-60 LENNOX	PROVIDE FILTER, DX COOLING COIL, DISCONNECT SWITCH, SMOKE DETECTOR, NAT. GAS FURNACE, ECONOMIZER W/ ENTHALPY CONTROL, CO2 DEMAND CONTROLLED VENTILATION TO VARY O.A. TO MAINTAIN CONSTANT DIFFERENTIAL OF 600 PPM (ADJUSTABLE) BETWEEN RETURN AIR & OUTDOOR AIR.
AH-3	810	90	1	0.7	21.6	17.5	11.2	80	80	7"	208 - 3 - 60	CH35-30 LENNOX	PROVIDE FILTER, DX COOLING COIL, NAT. GAS FURNACE AND DISCONNECT SWITCH.

Phase #2 - Base Bid Work

Shaded Area Not In Contract

AIR-COOLED CONDENSING UNIT SCHEDULE

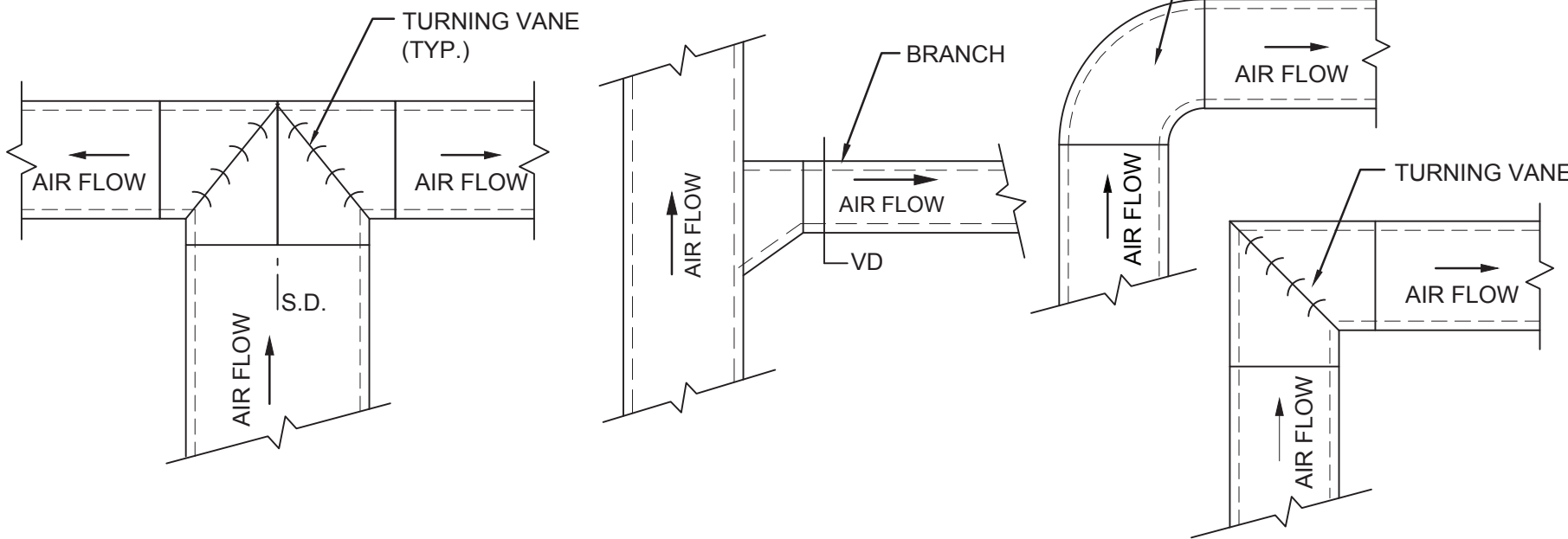
MARK No.	AMBIENT TEMP.	SUCTION TEMP.	COOLING TMBH	ELECTRIC DATA VOLT - PH - HZ	COMPRES. TYPE	COND./FAN CAPACITY MBH	MCA	MOP	MODEL & MANUFACTURER	REMARKS
ACC-1	95°F	45°F	55.5	208 - 3 - 60	1 -	1 -	22.4A	35A	SSB060HE LENNOX	LOW AMBIENT CONTROL, DISCONNECT SWITCH, & HOT-GAS BYPASS
ACC-2	95°F	45°F	55.5	208 - 3 - 60	2 -	2 -	30.5A	50A	GSX13060 LENNOX	LOW AMBIENT CONTROL, DISCONNECT SWITCH & HOT-GAS BYPASS
ACC-3	95°F	45°F	21.6	208 - 3 - 60	1 -	1 -	16.2A	25A	SSB036H4 LENNOX	LOW AMBIENT CONTROL, DISCONNECT SWITCH & HOT-GAS BYPASS

Phase #2 - Base Bid Work

Shaded Area Not In Contract

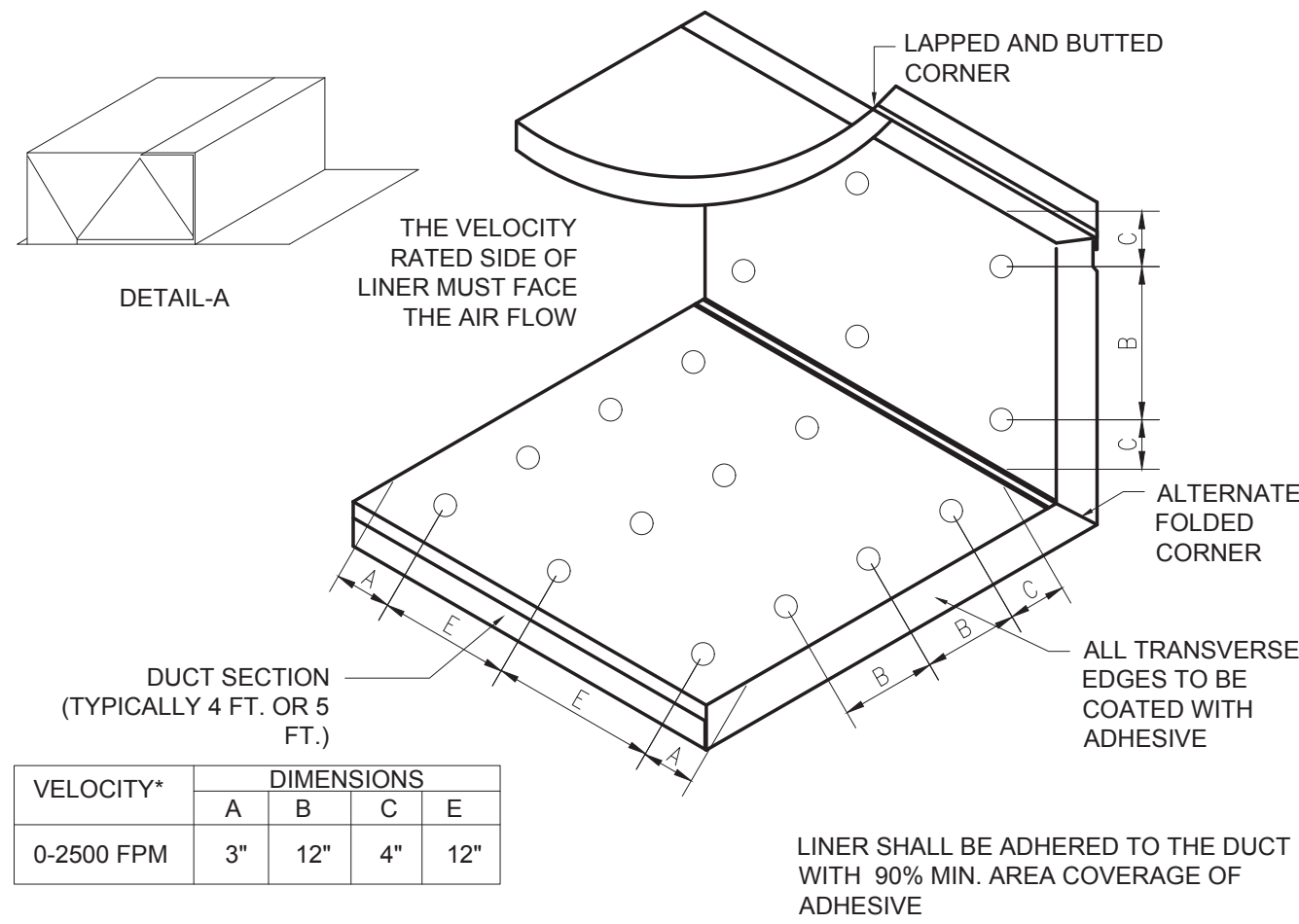
DEDICATED OUTSIDE AIR SYSTEM W/ HEAT RECOVERY SCHEDULE

UNIT No.	EQUIP. SERVED	MFG./R.	MODEL No.	SA (CFM)	E.S.P.	EXHAUST AIR (CFM)	E.S.P.	GROSS COOLING CAPACITY MBH	GROSS SENSIBLE CAPACITY MBH	NET TOTAL CAPACITY MBH	NET SENSIBLE CAPACITY MBH	EAT DB°F/ WB°F/	LAT DB°F/ WB°F/	LAT DB°F/ WB°F/ (REHEAT)	ARI EER	REFRIG. TYPE	HEATING TYPE	INPUT HEATING CAPACITY MBH	OUTPUT HEATING CAPACITY MBH	EAT °F	LAT °F	HEATING STAGES	AFUE	GAS PRESSURE MIN. - MAX. INCHES W.C.	ENERGY RECOVERY WHEEL				APPROX. UNIT WT. (LBS)	UNIT DIMENSIONS (LxWxH) (IN.)	ELECTRICAL		REMARKS																																																																																																																																																																																																																																																																						
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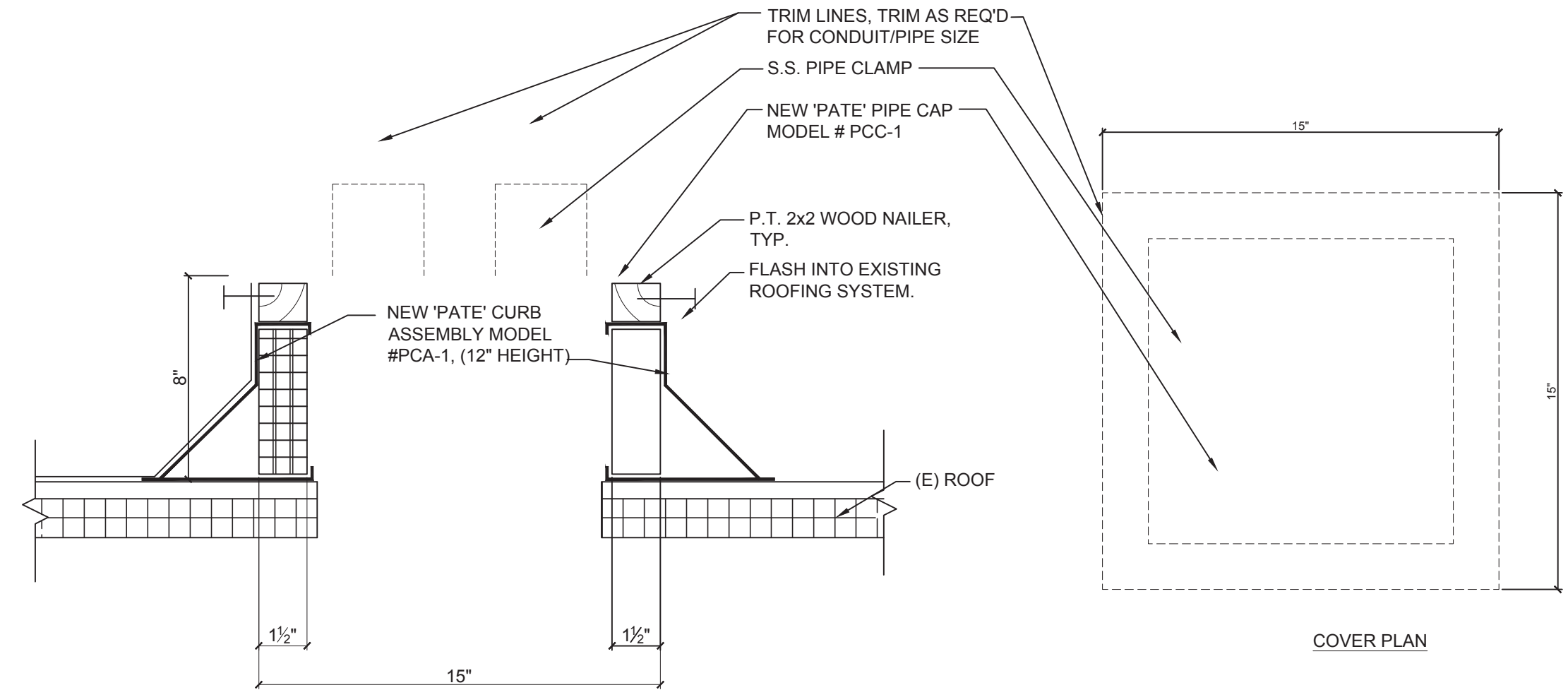
1 DUCT TAKE-OFF & TURN DETAIL

NOT TO SCALE



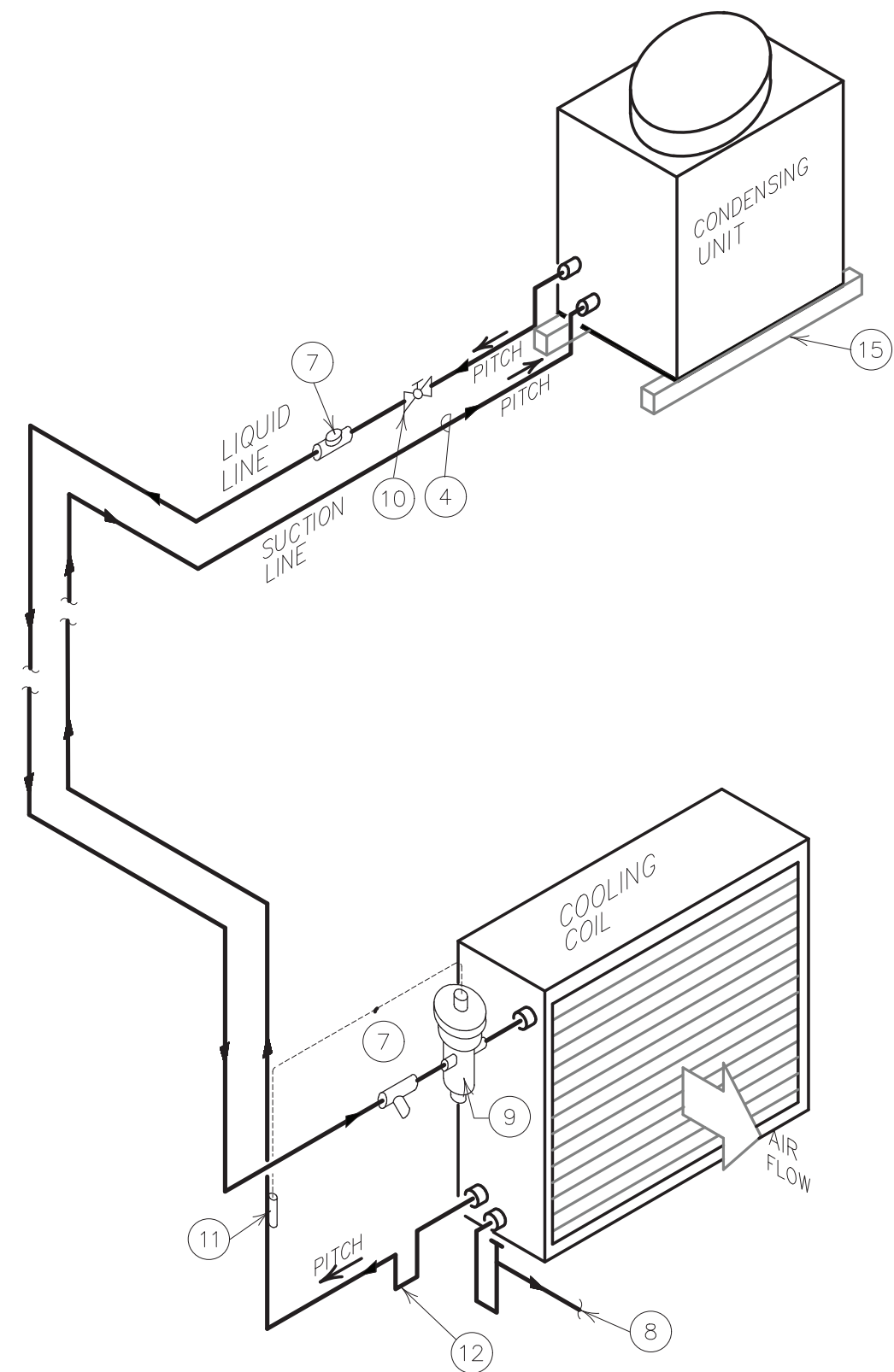
2 DUCT LINER INSULATION DETAIL

NOT TO SCALE



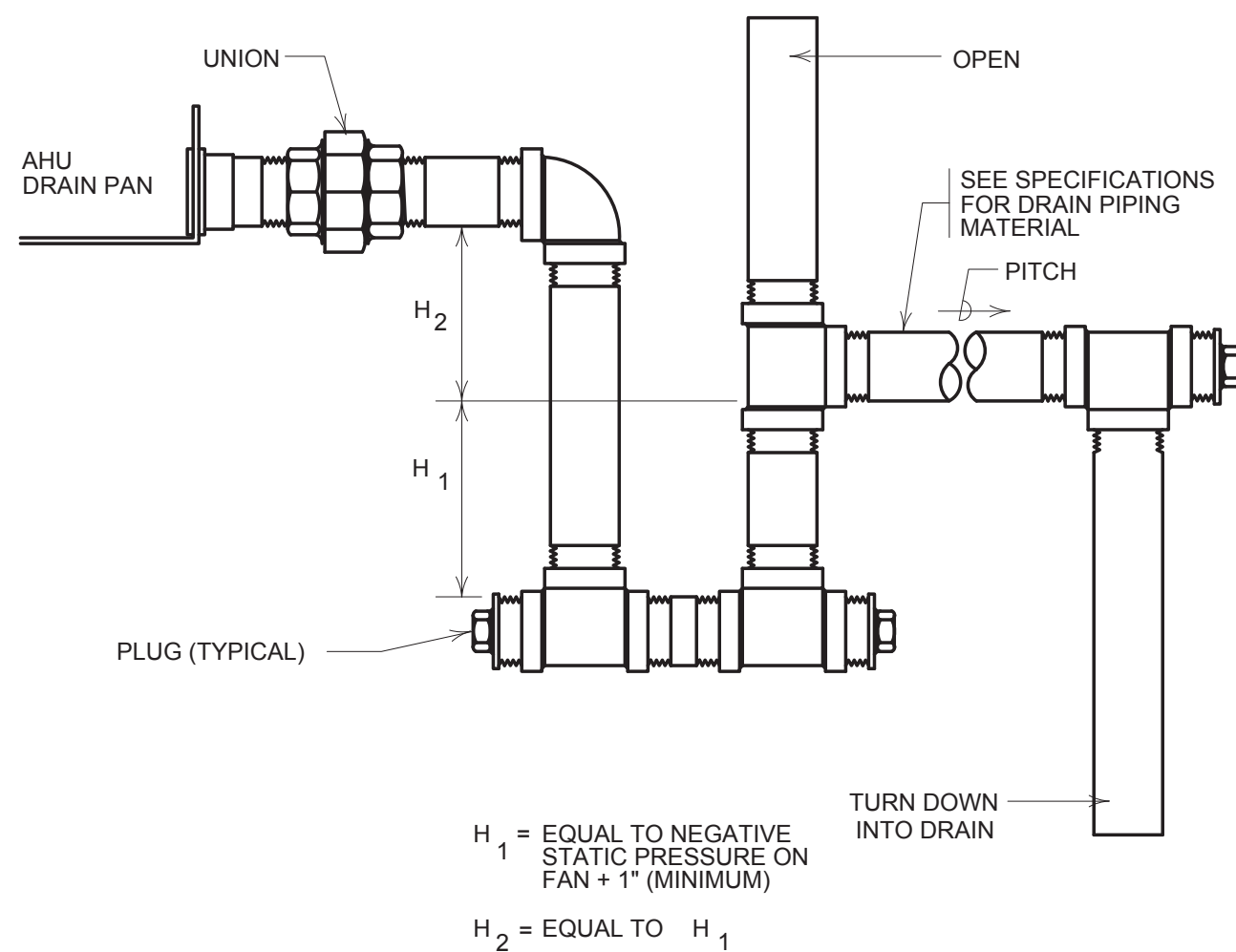
3 PIPE PORTAL DETAIL

NOT TO SCALE



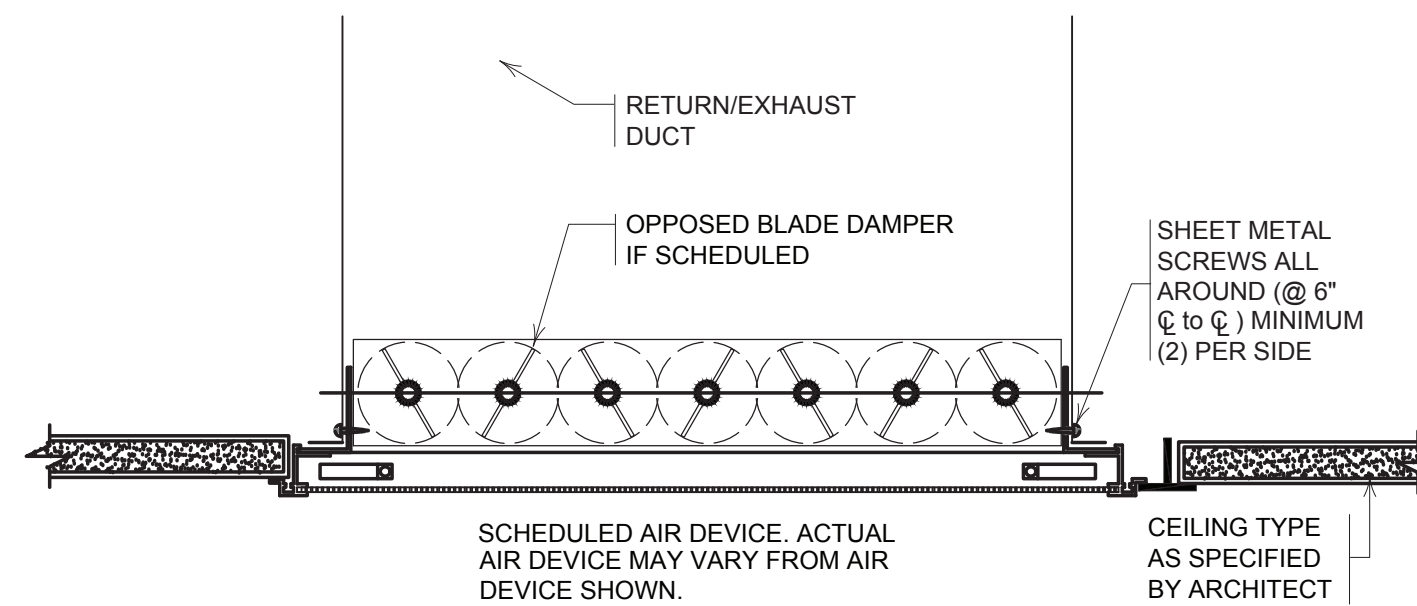
4 TYPICAL DX COOLING COIL DETAIL

NOT TO SCALE



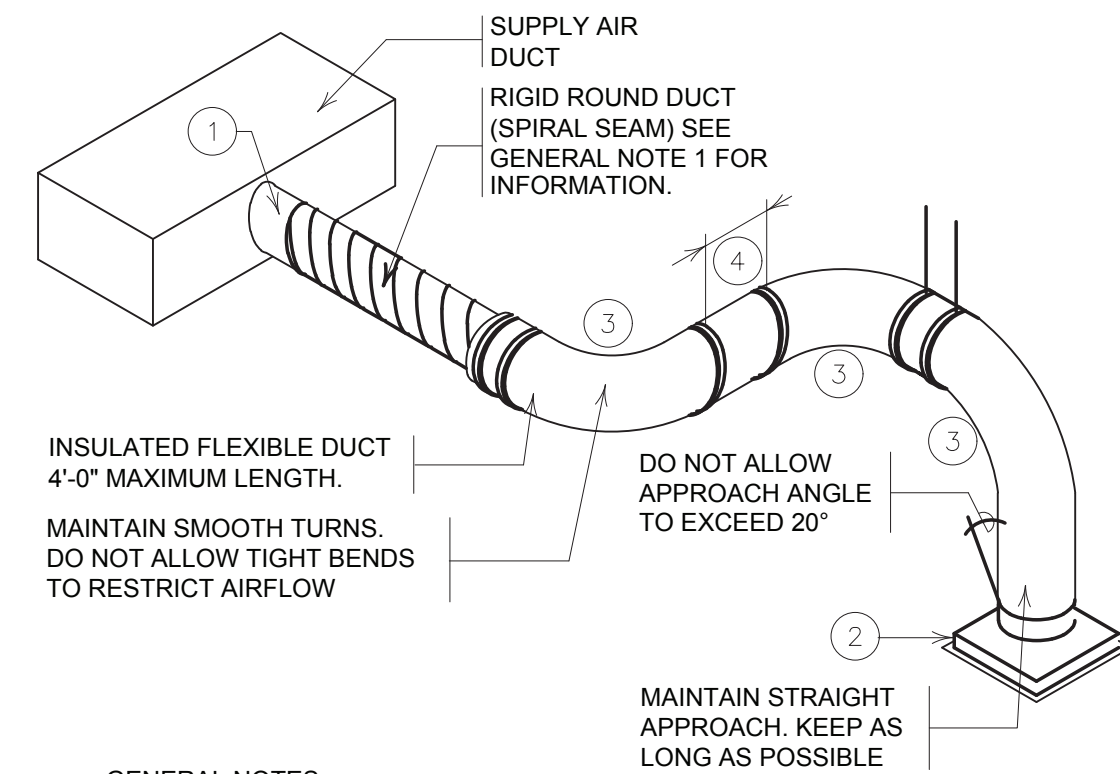
5 DRAW-THROUGH UNIT DETAIL

NOT TO SCALE



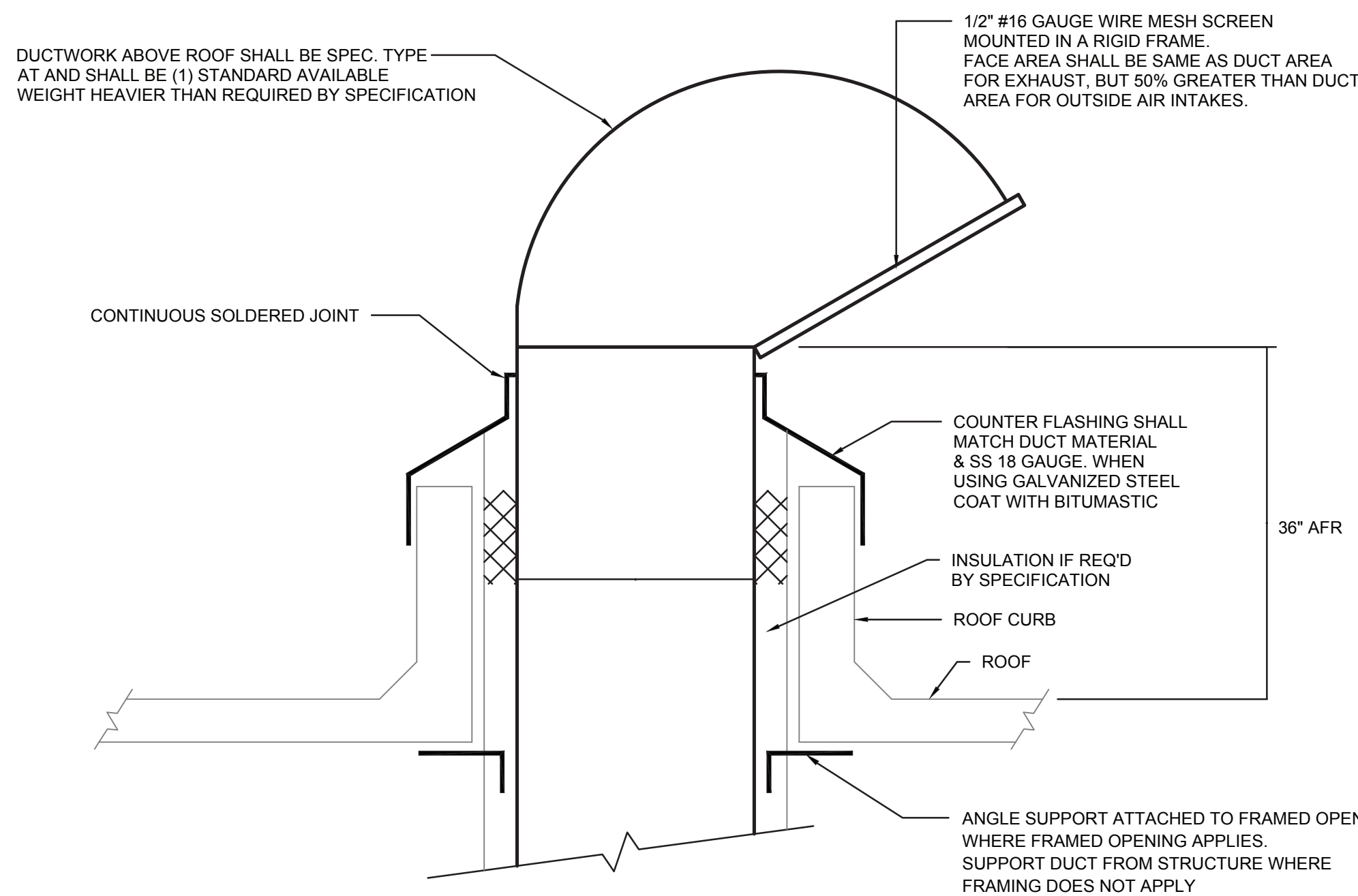
6 DUCTED RETURN AIR GRILLE DETAIL

NOT TO SCALE



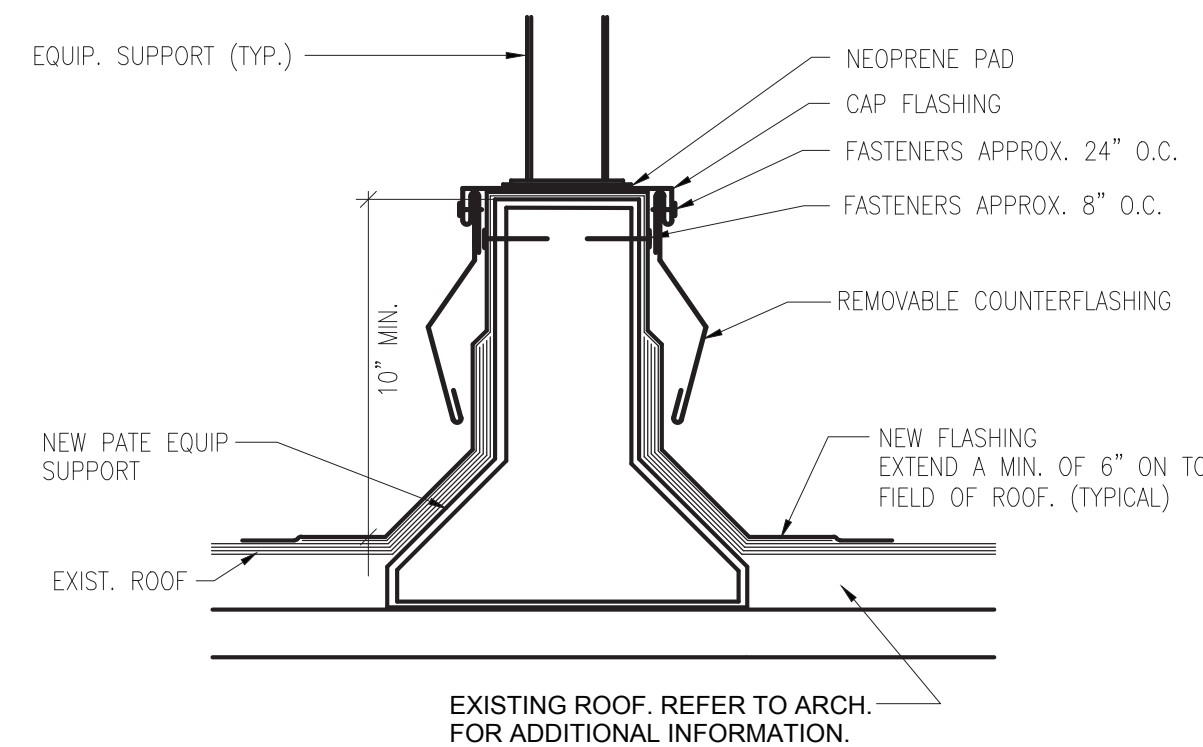
7 FLEXIBLE DUCT APPROACH TO DIFFUSER

NOT TO SCALE



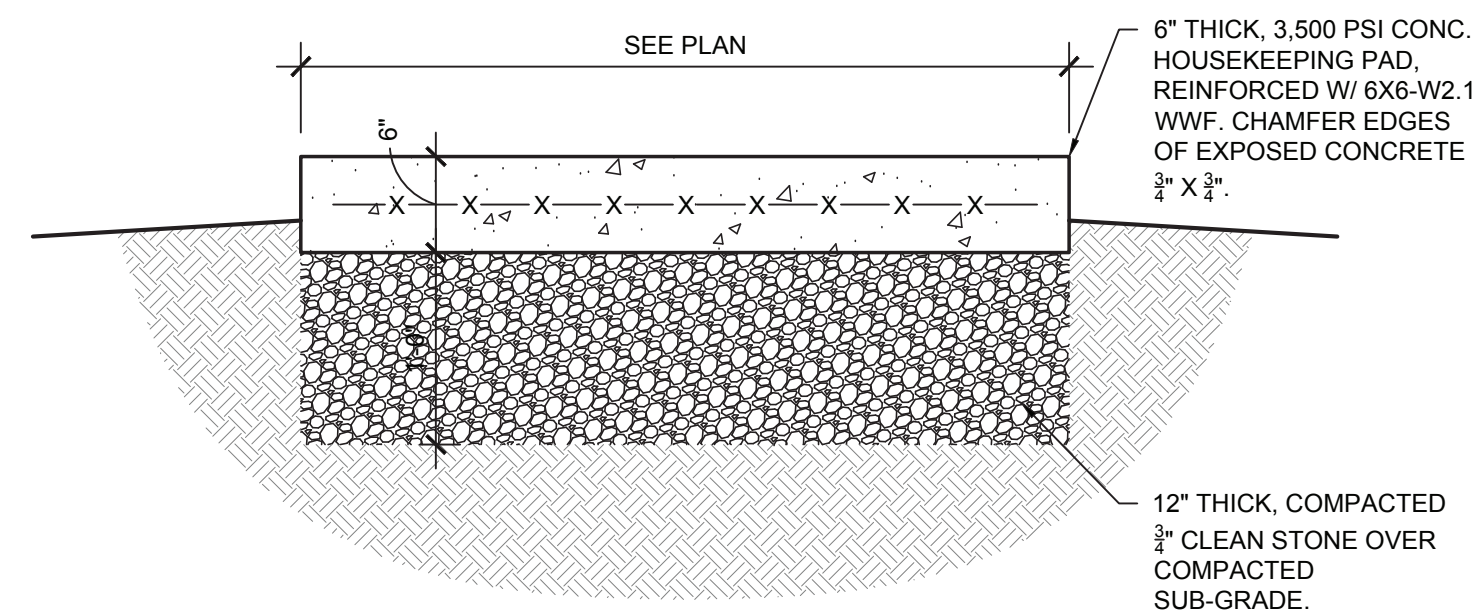
8 GOOSENECK TRANSITION DETAIL

NOT TO SCALE



9 EQUIPMENT SUPPORT DETAIL

NOT TO SCALE



10 HOUSEKEEPING PAD DETAIL

NOT TO SCALE

- NOTES:
- ALL REFRIGERANT LINES SHALL BE SIZED BY EQUIPMENT MANUFACTURER FOR FIELD CONDITIONS, ACTUAL LENGTH AND NUMBER OF FITTINGS, ETC. PITCH LINES IN DIRECTION OF REFRIGERANT FLOW TO FACILITATE OIL RETURN TO COMPRESSOR. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 - REFRIGERANT LINES SHALL BE TYPE "L" HARD DRAWN "ACR" TUBING THAT HAS BEEN CLEANED AND CAPPED FOR REFRIGERATION SERVICE. FITTINGS SHALL BE WROUGHT COPPER AND SHALL BE INSTALLED WITH SILVER SOLDER JOINTS. THE END OF ALL PIPING AND THE INSIDE OF ALL FITTINGS SHALL BE CAREFULLY CLEANED BEFORE JOINING. NO ACID SHALL BE USED IN CLEANING OR AS A FLUX IN SOLDERING JOINTS. BLEED NITROGEN GAS THROUGH ALL PIPING WHILE SOLDERING.
 - SUCCTION LINE "P"-TRAPS SHALL BE AS PER MANUFACTURER RECOMMENDATIONS. RE: TO SPECIFICATIONS.
 - SUCCTION LINE INSULATION SHALL BE EQUAL TO ARMSTRONG "ARMAFLEX". FINISH WITH 0.16" THICK ALUMINUM JACKET HAVING STRAPS @ 12" CENTER TO CENTER. INSTALL INSULATION AND METAL JACKET AS PER MANUFACTURER RECOMMENDATIONS.
 - PRIOR TO EQUIPMENT INSTALLATION FINAL LOCATION SHALL BE APPROVED BY OWNER OR PROJECT ARCHITECT.
 - SOLENOID VALVE.
 - COMBINATION SIGHT GLASS / MOISTURE INDICATOR.
 - ROUTE DRAIN LINE TO SERVICE SINK (SEE DRAIN DETAIL)
 - THERMOSTATIC EXPANSION VALVE.
 - REFRIGERANT SHUT-OFF VALVE.
 - THERMAL EXPANSION BULB. LOCATE 18 PIPE DIAMETERS AND 2 ELBOWS FROM COOLING COIL CONNECTION.
 - SUCCTION LINE TRAP TO PREVENT ERRATIC OPERATION OF THE THERMAL EXPANSION VALVE.
 - ROOF MOUNTED EQUIPMENT RAILS. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.