

ABBREVIATIONS:		PIPING SYMBOLS:		DUCTWORK SYMBOLS:			GENERAL NOTES:		DESIGN ARCHITECT																																																																																																																																																																																																																																																																																																																																																																																																																																								
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PIPE</td><td>MECH</td><td>MECHANICAL</td></tr><tr><td>BTU</td><td>BRITISH THERMAL UNIT</td><td>MEZZ</td><td>MEZZANINE</td></tr><tr><td>BTUH</td><td>BRITISH THERMAL UNIT/HOUR</td><td>MFR</td><td>MANUFACTURER</td></tr><tr><td>CEH</td><td>CEILING ELECTRIC HEATER</td><td>MIN</td><td>MINIMUM</td></tr><tr><td>CF</td><td>CEILING FAN</td><td>MOC</td><td>MAX OVER CURRENT PROTECTION</td></tr><tr><td>CH</td><td>CONVECTOR HEATER</td><td>N/A</td><td>NOT APPLICABLE</td></tr><tr><td>CL</td><td>CENTERLINE</td><td>NC</td><td>NOISE CRITERIA</td></tr><tr><td>CLG</td><td>CEILING</td><td>NIC</td><td>NOT IN CONTRACT</td></tr><tr><td>COL</td><td>COLUMN</td><td>NOM</td><td>NOMINAL</td></tr><tr><td>CORR</td><td>CORRIDOR</td><td>NTS</td><td>NOT TO SCALE</td></tr><tr><td>CUF</td><td>CUBIC FEET</td><td>OB</td><td>OCTAVE BAND</td></tr><tr><td>CUH</td><td>CABINET UNIT HEATER</td><td>OD</td><td>OUTSIDE DIAMETER</td></tr><tr><td>°F</td><td>DEGREES FAHRENHEIT</td><td>ODP</td><td>OPEN DRIP PROOF</td></tr><tr><td>°C</td><td>DEGREES CELSIUS</td><td>OV</td><td>OUTLET VELOCITY</td></tr><tr><td>Ø</td><td>DIAMETER</td><td>PCF</td><td>POUNDS PER CUBIC FOOT</td></tr><tr><td>D</td><td>DRAIN</td><td>PD</td><td>PRESSURE DROP</td></tr><tr><td>DB</td><td>DRY BULB TEMPERATURE</td><td>PH</td><td>PHASE</td></tr><tr><td>DDC</td><td>DIRECT DIGITAL CONTROL</td><td>PSIG</td><td>POUNDS PER SQUARE INCH GAUGE</td></tr><tr><td>DIA</td><td>DIAMETER</td><td>RET</td><td>RETURN</td></tr><tr><td>DIM</td><td>DIMENSION</td><td>REOD</td><td>REQUIRED</td></tr><tr><td>DN</td><td>DOWN</td><td>RH</td><td>RELATIVE HUMIDITY</td></tr><tr><td>DWG</td><td>DRAWING</td><td>RM</td><td>ROOM</td></tr><tr><td>EA</td><td>EACH</td><td>RPM</td><td>REVOLUTIONS PER MINUTE</td></tr><tr><td>EAT</td><td>ENTERING AIR TEMPERATURE</td><td>SPECS</td><td>SPECIFICATIONS</td></tr><tr><td>EHU</td><td>ELECTRIC CABINET UNIT HEATER</td><td>SQ</td><td>SQUARE</td></tr><tr><td>ELEC</td><td>ELECTRICAL</td><td>SQFT</td><td>SQUARE FEET</td></tr><tr><td>ELEV</td><td>ELEVATION</td><td>STD</td><td>STANDARD</td></tr><tr><td>ENT</td><td>ENTERING</td><td>SUP</td><td>SUPPLY</td></tr><tr><td>EQUIP</td><td>EQUIPMENT</td><td>TEMP</td><td>TEMPERATURE</td></tr><tr><td>EXH</td><td>EXHAUST</td><td>TOP</td><td>TOP OF DUCT</td></tr><tr><td>FLEX</td><td>FLEXIBLE</td><td>TOP</td><td>TOP OF PIPE</td></tr><tr><td>FLR</td><td>FLOOR</td><td>TYP</td><td>TYPICAL</td></tr><tr><td>FFM</td><td>FEET PER MINUTE</td><td>UH</td><td>UNIT HEATER</td></tr><tr><td>FT</td><td>FEET</td><td>V</td><td>VENT</td></tr><tr><td>FTR</td><td>FINNED TUBE RADIATION</td><td>VEL</td><td>VELOCITY</td></tr><tr><td>FT/SEC</td><td>FEET PER SECOND</td><td>VFD</td><td>VARIABLE FREQUENCY DRIVE</td></tr><tr><td>G</td><td>GALLONS</td><td>VTR</td><td>VENT THROUGH 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THE SCOPE OF WORK SHALL INCLUDE PROVIDING ALL WORK INDICATED, AND COORDINATION WITH ALL TRADES. SCOPE OF WORK IS INDICATED ON THE CONTRACT DOCUMENTS INCLUDING THE DRAWINGS AND THE SPECIFICATIONS. WORK INDICATED IN ANY CONTRACT DOCUMENT SHALL BE CONSIDERED PART OF THE SCOPE OF WORK. IN GENERAL, WORK REQUIREMENTS ARE NOT INDICATED IN BOTH DOCUMENTS. WHERE DOCUMENTS CONFLICT WITHIN THEMSELVES OR WITH CODES AND REGULATIONS, PROVIDE THE HIGHER QUANTITY AND QUALITY AND FOLLOW THE STRICTER REQUIREMENTS.</p> <p>2. ALL MOUNTING HEIGHTS ARE TO BOTTOM UNLESS OTHERWISE INDICATED.</p> <p>3. IF EXACT MOUNTING OR RACEWAY ROUTINGS ARE NOT INDICATED (LOCATION OR HEIGHT) COORDINATE WITH OTHER TRADES AND REQUEST CLARIFICATION PRIOR TO ROUGHING, OR INSTALLATION.</p> <p>4. DRAWINGS ARE DIAGRAMMATIC. DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.</p> <p>5. REFER TO SPECIFICATIONS ON DRAWINGS FOR ADDITIONAL REQUIREMENTS.</p> <p>6. SHEETMETAL FITTINGS INDICATED ARE TO BE PROVIDED. NO SUBSTITUTES SHALL BE ALLOWED WITHOUT PRIOR WRITTEN CONSENT FROM THE ARCHITECT.</p> <p>7. INSTALL DUCTS & PIPING CONCEALED. UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL WORK SHALL BE INSTALLED AS CLOSE TO WALL AND UNDERSIDE OF BEAMS & JOISTS.</p> <p>8. INSTALL THERMOSTATS AT LOCATIONS SHOWN PER PLANS OR AS DIRECTED BY ARCHITECT. MOUNT WITH CENTERLINE AT 3'–8" A.F.F. UNLESS INDICATED OTHERWISE.</p> <p>9. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING & DUCTWORK (INCLUDING DIVIDED DUCTS) & TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST.</p> <p>10. SUPPORT ALL EQUIPMENT, PIPING & DUCTWORK FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT OF ALL WEIGHTS & METHODS OF SUPPORT.</p> <p>11. ALL CONTROL WIRE & CONDUIT SHALL COMPLY WITH ELECTRICAL CODE & ELECTRICAL SPECIFICATIONS.</p> <p>12. COORDINATE WITH REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.</p> <p>13. INTERNAL AIR FLOW DIMENSIONS ARE INDICATED FOR DUCTS.</p> <p>14. ALL MATERIALS & EQUIPMENT SHALL BE NEW.</p> <p>15. DIFFUSERS SIZES ARE NECK SIZES: REGISTER & GRILLE SIZE ARE NOMINAL.</p> <p>16. THE INSIDE OF DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.</p> <p>17. INSULATE PIPING & DUCTWORK AS SPECIFIED: PERFORM TEST SPECIFIED BEFORE INSULATION.</p> <p>18. ELBOWS IN DUCT SYSTEMS SHALL BE LONG RADIUS (CENTERLINE RADIUS = 1.5 DUCT WIDTH) WHERE SPACE PERMITS. WHERE LIMITED CLEARANCE OCCURS, PROVIDE STANDARD RADIUS ELBOW WITH FULL LENGTH SPLITTER VANES.</p>		
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PART 1 – GENERAL

1.1 RELATED DOCUMENTS

ALL APPLICABLE REQUIREMENTS OF OTHER PORTIONS OF THE CONTRACT DOCUMENTS APPLY TO THE WORK OF THIS SECTION INCLUDING, BUT NOT LIMITED TO, ALL DRAWINGS, ALL SPECIFICATIONS, GENERAL CONDITIONS, AND GENERAL REQUIREMENTS INCLUDING SUBMITTALS.

1.2 WORK INCLUDED

THESE DRAWING SPECIFICATIONS AND THE EQUIPMENT SCHEDULES ON THE DRAWINGS ARE INTENDED TO PROVIDE THAT ALL MATERIAL AND LABOR BE FURNISHED TO INSTALL A COMPLETE HEATING, VENTILATION AND AIR CONDITIONING SYSTEM FOR THE PROJECT. THE CONSTRUCTION DOCUMENTS ARE PROVIDED TO ILLUSTRATE THE DESIGN AND GENERAL TYPE OF CONSTRUCTION DESIRED, AND IMPLY THE FINEST QUALITY OF CONSTRUCTION, MATERIAL, AND WORKMANSHIP.

1.3 APPLICABLE CODES AND STANDARDS

APPLICABLE CODES: ALL LOCAL AND STATE BUILDING CODES.

APPLICABILITY OF STANDARDS: EXCEPT WHERE THE CONTRACT DOCUMENTS INCLUDE MORE STRINGENT REQUIREMENTS, APPLICABLE CONSTRUCTION INDUSTRY STANDARDS HAVE THE SAME FORCE AND EFFECT AS IF BOUND OR COPIED DIRECTLY INTO THE CONTRACT DOCUMENTS. SUCH STANDARDS ARE MADE A PART OF THE CONTRACT DOCUMENTS BY REFERENCE.

CONFLICTING REQUIREMENTS: WHERE COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED, AND THE STANDARDS ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, REFER REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, AND UNCERTAINTIES TO THE A/E FOR A DECISION BEFORE PROCEEDING.

PUBLICATION DATES: WHERE THE DATE OF ISSUE OF A REFERENCED STANDARD IS NOT SPECIFIED, COMPLY WITH THE STANDARD IN EFFECT AS OF DATE OF CONTRACT DOCUMENTS.

ABBREVIATIONS AND NAMES: TRADE ASSOCIATION NAMES AND TITLES OF GENERAL STANDARDS ARE FREQUENTLY ABBREVIATED. THE FOLLOWING ACRONYMS OR ABBREVIATIONS AS REFERENCED IN CONTRACT DOCUMENTS ARE DEFINED TO MEAN THE ASSOCIATED NAMES. NAMES AND ADDRESSES ARE SUBJECT TO CHANGE AND ARE BELIEVED TO BE BUT ARE NOT ASSURED TO BE ACCURATE AND UP TO DATE AS OF DATE OF CONTRACT DOCUMENTS.

ANSI – AMERICAN NATIONAL STANDARDS INSTITUTE
ARI – AIR CONDITIONING AND REFRIGERATION INSTITUTE
ASHRAE – AMERICAN SOCIETY OF HEATING, REFRIGERATING
ASME – AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM – AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS – AMERICAN WELDING SOCIETY
AWWA – AMERICAN WATER WORKS ASSOCIATION
NEC – NATIONAL ELECTRIC CODE
NFPA – NATIONAL FIRE PROTECTION ASSOCIATION
UL – UNDERWRITERS LABORATORIES
EPA – ENVIRONMENTAL PROTECTION AGENCY
OSHA – OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

1.4 SUBMITTALS

PRIOR TO THE PERFORMANCE OF ANY WORK OR INSTALLATION OF ANY MATERIALS, OBTAIN APPROVAL FROM THE A/E BY SUBMITTING SHOP DRAWINGS AND DATA SHEETS.

SUBMITTAL OF SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES WILL BE ACCEPTED ONLY WHEN SUBMITTED BY THE CONTRACTOR. DATA SUBMITTED FROM SUBCONTRACTORS AND MATERIAL SUPPLIERS DIRECTLY TO THE ENGINEER OF RECORD WILL NOT BE PROCESSED. CERTIFIED DRAWINGS AND CATALOG DATA SHEETS SHALL SHOW:

1. APPLICABLE SPECIFICATION SECTION NUMBER AND EQUIPMENT TAG NUMBER.
2. PRINCIPAL DIMENSIONS AND DETAILS OF CONSTRUCTION.
3. WEIGHTS: INFORMATION REQUIRED FOR THE DESIGN OF SUPPORTS AND FOUNDATIONS.
4. SIZES AND LOCATIONS OF PIPING AND CONNECTIONS.
5. PERFORMANCE DATA CERTIFIED BY THE MANUFACTURER FOR THE EQUIPMENT FURNISHED.
6. SUBMIT SCHEDULE OF PROPOSED PIPING, VALVES, SPECIALTIES, ETC.

APPROVAL OF SHOP DRAWINGS DOES NOT RELEASE CONTRACTOR FROM RESPONSIBILITY OF COORDINATING HIS WORK AT JOB SITE AND TAKING FIELD MEASUREMENTS. IN CASES WHERE INTERFERENCES BECOME APPARENT, THE CONTRACTOR SHALL NOTIFY A/E SO THAT SUCH INTERFERENCES MAY BE RESOLVED PRIOR TO PROCEEDING WITH SHOP WORK. NO CLAIM WILL BE ALLOWED FOR WORK THAT MIGHT HAVE TO BE MOVED OR REPLACED BASED ON A CLAIM THAT WORK WAS PLACED IN ACCORDANCE WITH DIMENSIONS SHOWN ON AN APPROVED SHOP DRAWING.

1.5 COORDINATION

COORDINATE WITH THE BUILDING TRADES:

1. STRUCTURAL MEMBERS, PADS, AND BUILDING OPENINGS FOR FIXTURES, EQUIPMENT, PIPING, ETC., FOR USE BY THIS CONTRACTOR SHOWN ON THE ARCHITECTURAL AND STRUCTURAL PLANS ARE THE COORDINATION RESPONSIBILITY OF THIS CONTRACTOR. THIS CONTRACTOR WILL PAY FOR ANY CHANGES IN THE ABOVE REQUIREMENTS AFTER LETTING AND ACCEPTING THE CONTRACT.
2. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT, DIRECTIONS AND SIZES OF EQUIPMENT, PIPING, ETC. IT IS NOT INTENDED TO SHOW EVERY OFFSET AND FITTING OF EVERY SITE DIFFICULTY THAT MAY BE ENCOUNTERED, BUT THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AND PERFORM ALL LABOR NECESSARY TO MAKE COMPLETE WORKING SYSTEMS, READY FOR USE, WITHOUT EXTRA CHARGE TO THE OWNER OR A/E. ALL MEASUREMENTS MUST BE VERIFIED ON THE JOBSITE.
3. EXAMINE THE SITE AND ALL DRAWINGS BEFORE PROCEEDING WITH THE LAYOUT AND INSTALLATION OF THIS TO SUIT ACTUAL CONDITIONS. CONFER AND COOPERATE WITH OTHER TRADES ON THE JOB SO THAT ALL WORK WILL BE INSTALLED IN PROPER RELATIONSHIP. PRECISE LOCATION OF PARTS TO COORDINATE WITH OTHER WORK IS THE RESPONSIBILITY OF THIS CONTRACTOR. ALL SYSTEMS SHALL BE INSTALLED TO PROVIDE MAXIMUM HEADROOM, EXCEPT WHERE DIMENSIONED OTHERWISE ON THE DRAWINGS.

1.6 RECORD DOCUMENTS

RECORD DRAWINGS: MAINTAIN A CLEAN, UNDAMAGED SET OF PRINTS OF CONTRACT DRAWINGS AND SHOP DRAWINGS. MARK THE SET TO SHOW THE ACTUAL INSTALLATION WHERE THE INSTALLATION VARIES SUBSTANTIALLY FROM THE WORK AS ORIGINALLY SHOWN. MARK WHICHEVER DRAWING IS MOST CAPABLE OF SHOWING CONDITIONS FULLY AND ACCURATELY; WHERE SHOP DRAWINGS ARE USED, RECORD A CROSS-REFERENCE AT THE CORRESPONDING LOCATION ON THE CONTRACT DRAWINGS. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND RECORD LATER.

1. MARK NEW INFORMATION THAT IS IMPORTANT TO THE OWNER, BUT WAS NOT SHOWN ON CONTRACT DRAWINGS OR SHOP DRAWINGS.
2. ORGANIZE RECORD DRAWING SHEETS INTO MANAGEABLE SETS, BIND WITH DURABLE PAPER COVER SHEETS, AND PRINT SUITABLE TITLES, DATES AND OTHER IDENTIFICATION ON THE COVER OF EACH SET.
3. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E., TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.).
4. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
5. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
6. INCLUDE ALL "CORRECTED FOR RECORD" SHOP DRAWINGS TO REFLECT APPROVALS RECEIVED.

1.7 MAINTENANCE MANUALS

ORGANIZE OPERATING AND MAINTENANCE DATA INTO SUITABLE SETS OF MANAGEABLE SIZE. BIND PROPERLY INDEXED DATA IN INDIVIDUAL HEAVY-DUTY 2-INCH, 3-RING VINYL-COVERED BINDERS, WITH POCKET FOLDERS FOR FOLDED SHEET INFORMATION. MARK APPROPRIATE IDENTIFICATION ON FRONT AND SPINE OF EACH BINDER. INCLUDE THE FOLLOWING TYPES OF INFORMATION:

1. COPIES OF WARRANTIES.
2. WIRING DIAGRAMS.
3. INSPECTION PROCEDURES.
4. APPROVED SHOP DRAWINGS AND PRODUCT DATA.
5. DESCRIPTION OF FUNCTION, NORMAL OPERATING CHARACTERISTICS AND LIMITATIONS, PERFORMANCE CURVES, ENGINEERING DATA AND TESTS, AND COMPLETE NOMENCLATURE AND COMMERCIAL NUMBERS OF REPLACEMENT PARTS.
6. MANUFACTURER'S PRINTED OPERATING PROCEDURES TO INCLUDE START-UP, BREAK-IN, AND ROUTINE AND NORMAL OPERATING INSTRUCTIONS; REGULATION, CONTROL, STOPPING, SHUTDOWN, AND EMERGENCY INSTRUCTIONS; AND SUMMER AND WINTER OPERATING INSTRUCTIONS.
7. MAINTENANCE PROCEDURES FOR ROUTINE PREVENTATIVE MAINTENANCE AND TROUBLESHOOTING; DISASSEMBLY, REPAIR, AND REASSEMBLY; ALIGNING AND ADJUSTING INSTRUCTIONS.
8. SERVICING INSTRUCTIONS AND LUBRICATION CHARTS AND SCHEDULES.

THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL INTERIOR DETAILS, FLOOR PLANS, ELEVATIONS, AND OTHER CONTRACT DRAWINGS AND HE SHALL COORDINATE HIS WORK WITH THAT OF THE OTHER TRADES TO AVOID INTERFERENCE, ASSURE ALL SCHEDULES ARE MET, AND ALL WORK IS DONE IN CONFORMANCE TO MANUFACTURER'S REQUIREMENTS. THE PLANS ARE DIAGRAMMATIC AND SHOW GENERALLY THE LOCATIONS OF THE EQUIPMENT AND OR NOT TO BE SCALED, ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AT THE BUILDING.

1.8 REGULATIONS AND PERMITS

THE CONTRACTOR SHALL GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION.

1.9 CUTTING AND PATCHING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING AS REQUIRED FOR PROPER INSTALLATION OF THE MATERIAL AND EQUIPMENT. PROTECT THE STRUCTURE, FURNISHINGS, FINISHES, AND ADJACENT MATERIALS NOT INDICATED OR SCHEDULED TO BE REMOVED. PROVIDE AND MAINTAIN TEMPORARY PARTITIONS OR DUST BARRIERS ADEQUATE TO PREVENT THE SPREAD OF DUST AND DIRT TO ADJACENT AREAS.

1.10 CLEANING AND CLOSEOUT

ALL WORK SHALL BE INSPECTED, TESTED AND APPROVED BEFORE BEING CONCEALED OR PLACED IN OPERATION. UPON COMPLETION OF THE WORK, ALL EQUIPMENT INSTALLED AS SPECIFIED IN THIS SECTION, AND ALL AREAS WHERE WORK WAS PERFORMED, SHALL BE CLEANED TO PROVIDE OPERATING CONDITIONS SATISFACTORY TO THE A/E.

1.11 DAMAGE AND RESTORATION

DURING CONSTRUCTION AND UNTIL EXPIRATION OF THE GUARANTEE PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO THE PREMISES DUE TO POOR WORKMANSHIP, FAULTY MATERIAL OR EQUIPMENT.

PART 2 – PRODUCTS

2.0 SPLIT SYSTEM HEATING/COOLING UNITS

SPLIT SYSTEM HEATING/COOLING UNITS SHALL BE MANUFACTURED WITH DIMENSIONS, CAPACITIES, AND ELECTRICAL CHARACTERISTICS AS SCHEDULED. THE EQUIPMENT SHALL COMPLY WITH THE REQUIREMENTS AND TERMS OF ETL'S LISTING, LABELING AND FOLLOW-UP SERVICE AGREEMENT. ALL APPLICABLE SECTIONS OF THE UNIT SHALL BEAR THE ETL LABEL. THE ETL LISTING SHALL BE INCLUSIVE OF ALL HEATING OPTIONS INCORPORATED IN THE EQUIPMENT DESIGN.

PROTECT UNITS FROM PHYSICAL DAMAGE BY STORING OFF SITE UNTIL ROOF MOUNTING CURBS ARE IN PLACE, READY FOR IMMEDIATE INSTALLATION OF UNITS.

PROVIDE A 1 YEAR EQUIPMENT WARRANTY EFFECTIVE FROM THE OPENING DAY OF THE FACILITY. PROVIDE AN ADDITIONAL 5 YEAR WARRANTY ON COMPRESSORS, 15 YEAR WARRANTY ON HEAT EXCHANGERS.

CONTRACTOR SHALL INCLUDE MAINTENANCE ITEMS AS OUTLINED MANUFACTURER'S OPERATING AND MAINTENANCE DATA. INCLUDE MINIMUM OF: (6) FILTER REPLACEMENTS, (1) FAN BELT REPLACEMENT, AND CONTROLS CHECK-OUT, ADJUSTMENTS, AND RECALIBRATION.

2.1 DUCTWORK

THE TERM "DUCTWORK" SHALL MEAN: DUCTS, DAMPERS, FRAMES, RODS, HANGERS, AUXILIARY STEEL AND OTHER MATERIALS USED IN THE COMPLETE INSTALLATION.

DUCT DIMENSIONS ARE CLEAR INSIDE DIMENSIONS.

DUCTWORK CONSTRUCTION AND INSTALLATION SHALL CONFORM TO THE LATEST EDITIONS OF THE APPLICABLE HVAC DUCT CONSTRUCTION STANDARDS, PUBLISHED BY SMACNA, FOR LOW PRESSURE DUCT SYSTEMS.

GALVANIZED SHEET STEEL SHALL BE LOCK FORMING QUALITY, ASTM A 527, COATING DESIGNATION G 90. PROVIDE MILL PHOSPHATIZED FINISH FOR EXPOSED SURFACES OF DUCTS EXPOSED TO VIEW.

SEAL ALL TRANSVERSE JOINTS WITH WATER AND FIRE RESISTANT SEALER EQUAL TO 3M DUCT SEALER 800. LONGITUDINAL JOINTS, WHICH LEAK, SHALL ALSO BE TAPED.

TAPE ALL TRANSVERSE JOINTS (AFTER SEALING) WITH 3M DUCT TAPE OR APPROVED EQUAL. LONGITUDINAL JOINTS, WHICH HAVE BEEN SEALED, SHALL ALSO BE TAPED.

DUCTWORK SHALL BE AIRTIGHT, BRACED AND STIFFENED. DUCTWORK SHALL NOT BREATHE, RATTLE, VIBRATE OR SAG.

TURNING VANES IN SQUARE ELBOWS SHALL BE AIRFOIL TYPE. TURNING VANES IN ACOUSTICALLY LINED DUCTWORK SHALL BE AIRFOIL TYPE OF PERFORATED METAL AND FILLED WITH FIBERGLASS.

ACCESS PANELS SHALL BE INSTALLED IN DUCTWORK AT ALL DAMPERS, FIRE DAMPERS, COILS, AUTOMATIC TEMPERATURE CONTROLLING DEVICES REQUIRING ACCESS FOR MAINTENANCE AND CLEANING. DUCT ACCESS SHALL BE BY A LATCHED AND HINGED, 1 INCH THICK INSULATED DOUBLE PANEL BY C. E. SPARROW CO. OR APPROVED EQUAL. MINIMUM DOOR SIZE SHALL BE 12"x12" OR LARGEST STOCK SIZE WHICH WILL FIT IN CASES WHERE DUCTS ARE TOO SMALL FOR 12"x12" ACCESS DOORS.

FLEXIBLE CONNECTIONS SHALL BE NEOPRENE COATED GLASS FIBER CLOTH, SUITABLE FOR 15 INCH W.G. PRESSURE AND ABSOLUTELY AIR TIGHT.

FLEXIBLE DUCT RUNOUTS TO CEILING DIFFUSERS SHALL BE AS STRAIGHT AS POSSIBLE AND FREE OF SAGS AND KINKS. FLEX DUCT SHALL BE THE SAME SIZE AS THE DIFFUSER NECK IT SERVES AND A MAXIMUM OF FIVE FEET IN LENGTH.

FLEXIBLE DUCTWORK, CONNECTING TO UNINSULATED OR UNLINED DUCT SHALL BE VINYL COATED FIBERGLASS CLOTH 0.0057" MINIMUM THICKNESS 25 STRANDS PER INCH MINIMUM THREAD COUNT WITH CORROSION-RESISTANT HELICAL WIRE REINFORCEMENT. FLEX DUCT SHALL BE UL RATED FOR 1/2" W.C. POSITIVE PRESSURE, 2" W.C. NEGATIVE PRESSURE WITH A VELOCITY OF 4000 FPM. FLEXDUCT MUST BE LISTED AS A CLASS 1 CONNECTOR ACCORDING TO UL 181 AND SHALL MEET THE REQUIREMENTS OF NFPA 90A – MAXIMUM ASTM-B4 AND SHALL MEET THE FLAME SPREAD, 50 FUEL CONTRIBUTED AND 50 SMOKE DEVELOPED. UNINSULATED FLEXIBLE DUCT SHALL BE EQUIVALENT TO FLEXMASTER TYPE 4.

2.2 INSULATION

A. SUPPLY AIR DUCTWORK SHALL BE INSULATED WITH 1-1/2 INCH FLEXIBLE FIBERGLASS INSULATION CONFORMING LOCATED IN CEILING PLENUMS TO ASTM C 553, TYPE I, CLASS B4, 1.5 LB. PER CUBIC FOOT, 'K' VALUE OF A 0.3 AT 75 F, FSK JACKET, 25 FLAME / 50 SMOKE PLENUM RATED.

2.3 DIFFUSERS AND GRILLES

A. PROVIDE DIFFUSERS, REGISTERS AND GRILLES MATCHING BUILDING STANDARD FOR SUPPLY, RETURN AND EXHAUST APPLICATIONS. REFER TO SCHEDULE AND DRAWINGS FOR TYPE, NECK SIZE, AIR PATTERNS AND QUANTITIES.

B. MANUFACTURER SHALL SUBMIT AIR AND SOUND PERFORMANCE DATA FOR ALL TYPES OF DIFFUSERS. APPROVED MANUFACTURERS ARE: NAILOR, TITUS, METAL-AIRE, TUTTLE & BAILEY, OR APPROVED EQUAL.

PART 3 – HVAC GENERAL NOTES

INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. INSTALL UNITS PLUMB AND LEVEL, FIRMLY ANCHORED IN LOCATIONS INDICATED, AND MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES.

ALL MATERIAL SHALL BE SUBMITTED TO THE A/E VERIFYING IT IS ADEQUATE FOR INSTALLATION PER THE SPECIFICATIONS AND DRAWING. VERIFY DIMENSIONS AND CLEARANCES AT BUILDING BEFORE COMMENCING WORK.

MECHANICAL CONTRACTOR SHALL PROVIDE TWO FILTER CHANGES PRIOR TO GRAND OPENING.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EXISTING STRUCTURAL MEMBERS AND COORDINATE INSTALLATION OF THE EQUIPMENTS ACCORDINGLY.

THE CONTRACTOR SHALL FULFILL ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS AND SHALL COMPLETE THE IMPROVEMENTS SHOWN ON THE DRAWINGS. ALL SYSTEMS SHALL BE FINISHED, TESTED, AND BALANCED, ADJUSTED, AND PROVEN FULLY OPERATIONAL AND USEABLE.

TRANSITION RECTANGULAR DUCTWORK ON BOTTOM AND SIDES. MAINTAIN TOP OF DUCTWORK LEVEL AND AS HIGH AS POSSIBLE. PROVIDE VOLUME DAMPER AT EACH BRANCH DUCTWORK.

CONTRACTOR SHALL COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING.

MOUNT THERMOSTATS AND FAN SWITCHES WHERE INDICATED ON PLANS WITH CENTERLINE AT 3'-8" AFF UNLESS NOTED OTHERWISE.

COORDINATE DUCTWORK AND PIPING WITH PLUMBING, FIRE PROTECTION AND ELECTRICAL.

MAKE OFFSETS AND TRANSITIONS TO COORDINATE WITH OTHER TRADES WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

PROVIDE FIRE DAMPERS IN DUCT PENETRATIONS THROUGH RATED WALLS.

EXACT LOCATIONS OF ALL CEILING AIR DEVICES SHALL BE COORDINATED WITH LIGHT FIXTURES. SPRINKLER HEADS AND OTHER CEILING MOUNTED FIXTURES AT JOB SITE. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.

2.4 TESTING, ADJUSTING AND BALANCING

AN INDEPENDENT BALANCING CONTRACTOR WHICH HAS EXPERIENCE IN AND REGULARLY PRACTICES BALANCING AND WHICH HAS ALL EQUIPMENT REQUIRED FOR TESTS, ADJUSTMENTS AND RECORDING, SHALL DO BALANCING OF AIR HANDLING SYSTEM. THE BALANCING CONTRACTOR SHALL COORDINATE ITS WORK WITH THAT OF ALL OTHER TRADES PRIOR TO AND DURING THE CONSTRUCTION PERIOD. THE BALANCING CONTRACTOR SHALL RETURN AFTER THE SYSTEMS HAVE BEEN IN OPERATION TO READJUST AIR DEVICES AND ALL OTHER COMPONENTS AS REQUIRED.

TEST AND BALANCE CONTRACTOR SHALL BE CERTIFIED BY EITHER THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR THE ASSOCIATED AIR BALANCING COUNCIL (AABC) IN THOSE TESTING AND BALANCING DISCIPLINES REQUIRED FOR THIS PROJECT, AND HAVING AT LEAST ONE PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE SERVICES ARE TO BE PERFORMED, CERTIFIED BY NEBB AS A TEST AND BALANCE ENGINEER.

DURING THE FINAL BALANCING PERIOD, THE CONTRACTOR SHALL MAKE PERSONNEL AVAILABLE (SHEET METAL AND CONTROL TRADES) TO WORK WITH THE BALANCING CONTRACTOR.


THE BALANCING CONTRACTOR SHALL ACQUIRE A COMPLETE SET OF DRAWINGS (LATEST REVISIONS) BEFORE START OF FINAL BALANCING.

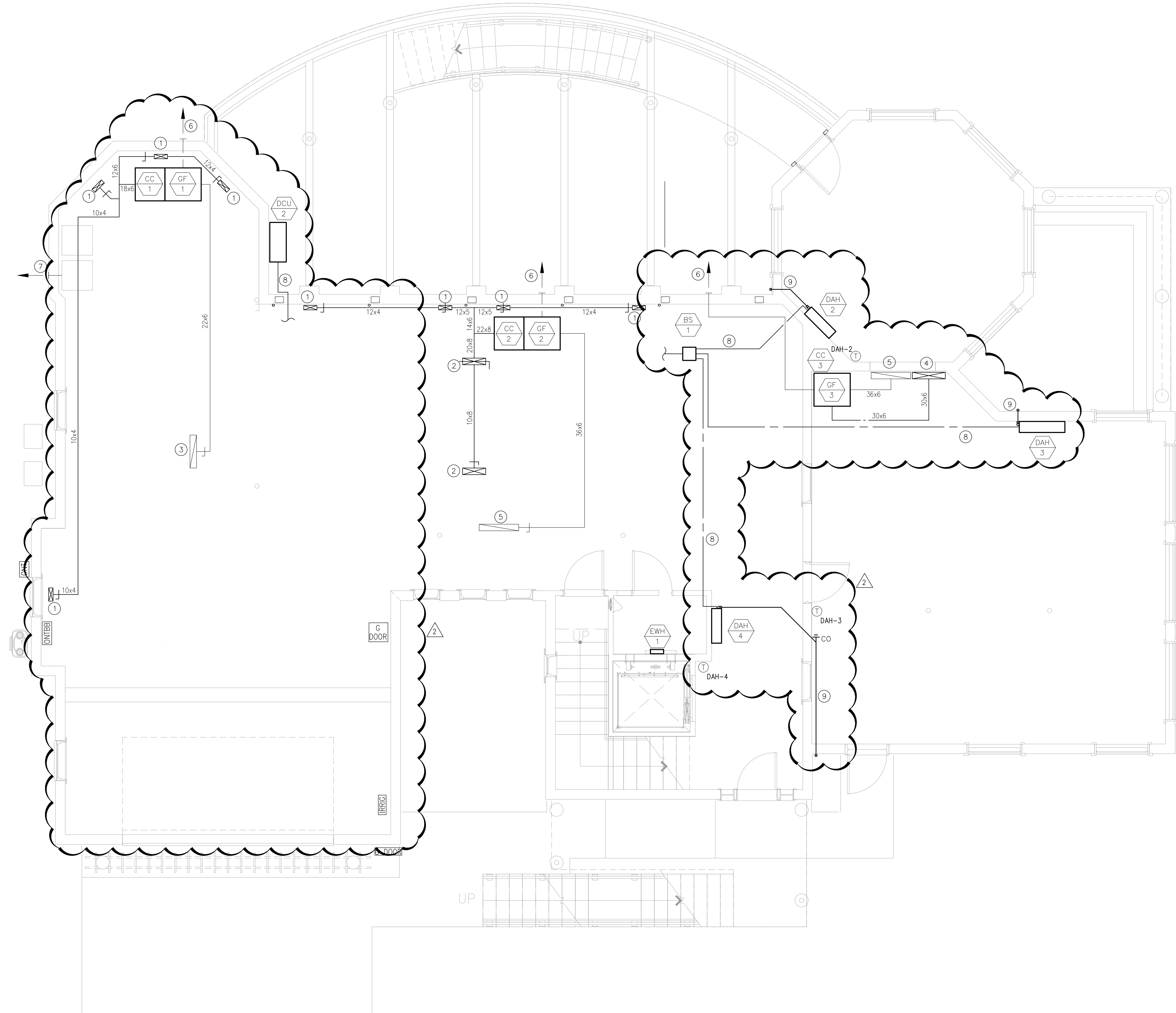
AIR SYSTEMS AND COMPONENTS SHALL BE BALANCED TO WITHIN 10% OF THE INDICATED AIR FLOWS. THE SHEET METAL CONTRACTOR SHALL REPAIR LEAKS IN DUCT SYSTEMS.

THE BALANCING CONTRACTOR SHALL RECOGNIZE THAT THE DRAWINGS ARE SCHEMATIC AND THAT ALL BALANCING DEVICES REQUIRED (DAMPERS, ETC.) MAY NOT BE SHOWN. COORDINATION BETWEEN THE MECHANICAL CONTRACTOR AND THE BALANCING CONTRACTOR SHALL INCLUDE PROVIDING LABOR AND MATERIAL TO SUPPLY AND INSTALL BALANCING DEVICES WHERE REQUIRED TO COMPLETE THE WORK SATISFACTORILY WHETHER OR NOT SUCH DEVICES ARE SHOWN ON THE DRAWINGS.

THE BALANCING CONTRACTOR SHALL PREPARE A LIST OF INFORMATION IN BOOKLET FORM (4 COPIES REQUIRED) INCLUDING PERTINENT ITEMS SUCH AS:

1. NAME, NUMBER, SYSTEM SERVICE AND/OR LOCATION, ETC.
2. DESIGN AND ACTUAL CFM
3. DESIGN AND ACTUAL STATIC PRESSURES.
4. MOTOR HP, AMPS PER PHASE, VOLTS, PHASE, HZ AND RPM
6. BELTS AND SHEAVES, NAMES AND NUMBERS

DESIGN ARCHITECT	
MICHAEL GRAVES ARCHITECTURE & DESIGN 341 NASSAU STREET PRINCETON, NJ 08540 T: 609.924.6409 F: 609.924.1795	
STRUCTURAL ENGINEER	
KSI PROFESSIONAL ENGINEERS, LLC 149 YELLOWBROOK ROAD FARMINGDALE, NJ 07727 T: 732.938.2661 F: 732.938.2661	
MECHANICAL/ELECTRICAL/PLUMBING ENGINEER	
 1800 ROUTE 34, SUITE 209 WALL, NJ 07719 FOR ALL QUESTIONS, PLEASE CONTACT STEVE FOX – PROJECT MANAGER T: 732.280.5623 F: 732.280.3980	
CIVIL ENGINEER	
INSITE ENGINEERING, LLC 1913 ATLANTIC AVE. SUITE F4 WALL, NJ 08736 T: 732.531.7100 F: 732.531.7344	
REVISIONS:	
DATE:	NO. DESCRIPTION:
09.25.17	1 CANOPY LIGHTING REVISION
02.27.19	2 MECHANICAL CHANGES
PROJECT NUMBER 21507--00	
PROJECT NAME MEYER RESIDENCE	
1 LORI ROAD MONMOUTH BEACH, NJ 07750	
PHASE BUILDING PERMIT & CONSTRUCTION	
NJ CERTIFICATE OF AUTHORIZATION: 24642810800 SEAL	
Stephen A. Bray PROFESSIONAL ENGINEER NJ LICENSE: GE44144 207719	
DRAWING TITLE MECHANICAL SPECIFICATIONS	
DATE 10/10/2016	SCALE AS NOTED
SHEET NUMBER M2.00	



1 MECHANICAL GROUND FLOOR PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

- A. COORDINATE ALL ROOFTOP MECHANICAL EQUIPMENT LOCATIONS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS.
- B. ALL ENVIRONMENTAL EXHAUST AIR OUTLETS ARE TO BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ALL MECHANICAL OUTDOOR AIR INLETS & A MINIMUM OF 3'-0" FROM OPERABLE WINDOWS AND DOORS.
- C. THE ENTIRE MECHANICAL INSTALLATION AND OPERATION SHALL COMPLY WITH ALL OWNERSHIP REQUIREMENTS.
- D. CONTRACTOR SHALL VISIT THE SITE AND BECOME TOTALLY FAMILIAR WITH THE SCOPE OF WORK PRIOR TO SUBMISSION OF BID. ANY LATER CLAIMS FOR EXTRAS SHALL BE DENIED.
- E. ALL NEW MECHANICAL SYSTEMS LOCATED ABOVE CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE, INCLUDING BEING LOCATED BETWEEN STRUCTURAL MEMBERS WHERE POSSIBLE.
- F. FULLY INSULATED LIQUID/SUCTION REFRIGERANT PIPING SHALL BE RUN FROM ALL ROOFTOP CONDENSING UNITS TO THEIR CORRESPONDING AIR HANDLING UNITS. PIPING SHALL BE RUN CONCEALED WITHIN WALL CAVITIES TO THE GREATEST EXTENT POSSIBLE. PIPING SHALL BE SIZED AND INSTALLED PER ALL MANUFACTURERS REQUIREMENTS.

KEY NOTES:

- 1 12"x4" SUPPLY UP TO FLOOR MOUNTED SUPPLY REGISTER ON MAIN FLOOR
- 2 20"x6" SUPPLY WITHIN FIREPLACE ENCLOSURE ON MAIN FLOOR.
- 3 22"x6" RETURN UP TO MAIN FLOOR
- 4 30"x6" SUPPLY UP TO MAIN FLOOR
- 5 36"x6" RETURN UP TO MAIN FLOOR
- 6 4"Ø SIDEWALL TERMINATION FOR CONCENTRIC COMBUSTION AIR INTAKE AND OUTLET
- 7 4"Ø SIDEWALL TERMINATION FROM DRYER EXHAUST
- 8 PROVIDE FULLY INSULATED LIQUID/SUCTION REFRIGERANT LINES PER ALL MANUFACTURER'S REQUIREMENTS.
- 9 3/4" CONDENSATE PIPING SPILLING INDIRECTLY TO THE EXTERIOR

DESIGN ARCHITECT

MICHAEL GRAVES
ARCHITECTURE &
DESIGN
341 NASSAU STREET
PRINCETON, NJ 08540
T: 609.924.6409 F: 609.924.1795

STRUCTURAL
ENGINEER

KSI PROFESSIONAL
ENGINEERS, LLC
149 YELLOWBROOK ROAD
FARMINGDALE, NJ 07727
T: 732.938.2661 F: 732.938.2661

MECHANICAL/ELECTRICAL/PLUMBING
ENGINEER

KMB
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
FOR ALL QUESTIONS, PLEASE CONTACT
STEVE FOX - PROJECT MANAGER
T: 732.280.5623 F: 732.280.3980
CIVIL ENGINEER

INSITE ENGINEERING, LLC
1913 ATLANTIC AVE.,
SUITE F4
WALL, NJ 08736
T: 732.531.7100 F: 732.531.7344

REVISIONS:		
DATE:	NO.	DESCRIPTION:
09.25.17	1	CANOPY LIGHTING REVISION
02.27.19	2	MECHANICAL CHANGES

PROJECT NUMBER
21507-00

PROJECT NAME
MEYER RESIDENCE

1 LORI ROAD
MONMOUTH BEACH, NJ 07750

PHASE
BUILDING PERMIT &
CONSTRUCTION

N.J. CERTIFICATE OF AUTHORIZATION: 246028150800
SEAL

Stephen A. Bray
PROFESSIONAL ENGINEER
NJ LICENSE: GE44144 207719

DRAWING TITLE
MECHANICAL
GROUND FLOOR
PLAN

DATE
10/10/2016 SCALE
AS NOTED

SHEET NUMBER

M3-0.00

GENERAL NOTES:

- A. COORDINATE ALL ROOFTOP MECHANICAL EQUIPMENT LOCATIONS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS.
- B. ALL ENVIRONMENTAL EXHAUST AIR OUTLETS ARE TO BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ALL MECHANICAL OUTDOOR AIR INLETS & A MINIMUM OF 3'-0" FROM OPERABLE WINDOWS AND DOORS.
- C. THE ENTIRE MECHANICAL INSTALLATION AND OPERATION SHALL COMPLY WITH ALL OWNERSHIP REQUIREMENTS.
- D. CONTRACTOR SHALL VISIT THE SITE AND BECOME TOTALLY FAMILIAR WITH THE SCOPE OF WORK PRIOR TO SUBMISSION OF BID. ANY LATER CLAIMS FOR EXTRAS SHALL BE DENIED.
- E. ALL NEW MECHANICAL SYSTEMS LOCATED ABOVE CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE, INCLUDING BEING LOCATED BETWEEN STRUCTURAL MEMBERS WHERE POSSIBLE.
- F. FULLY INSULATED LIQUID/SUCTION REFRIGERANT PIPING SHALL BE RUN FROM ALL ROOFTOP CONDENSING UNITS TO THEIR CORRESPONDING AIR HANDLING UNITS. PIPING SHALL BE RUN CONCEALED WITHIN WALL CAVITIES TO THE GREATEST EXTENT POSSIBLE. PIPING SHALL BE SIZED AND INSTALLED PER ALL MANUFACTURERS REQUIREMENTS.

KEY NOTES:

- 1 22"x6" RETURN AIR INTAKE DOWN TO LOWER LEVEL
- 2 20"x10" RETURN GRILLE WITH 36"x6" RETURN AIR INTAKE DOWN TO LOWER LEVEL
- 3 FLOOR MOUNTED 12"x4" SUPPLY REGISTER
- 4 18"x6" SUPPLY MAIN DOWN TO LOWER LEVEL
- 5 4"Ø TOILET EXHAUST VENT UP TO 2ND FLOOR.
- 6 4"Ø DRYER EXHAUST VENT UP TO 2ND FLOOR.
- 7 10"x8" SUPPLY RISER WITHIN FIREPLACE ENCLOSURE
- 8 4"x12" SIDEWALL SUPPLY REGISTER MOUNTED INSIDE OF FIREPLACE ENCLOSURE AT 6'-0" AFF.
- 9 8"Ø 'VENT-A-HOOD' EXHAUST DUCT FROM 'VENT-A-HOOD' UP TO SECOND FLOOR.
- 10 PROVIDE AND INSTALL MANUFACTURER PROVIDED BLOWER AND DUCTING FOR FULL DOWNDRAFT/RECIRCULATION OPERATION FOR INDUCTION COOKING EQUIPMENT.
- 11 10"x8" SUPPLY MAIN AND 12"x8" RETURN UP TO 2ND FLOOR

DESIGN ARCHITECT

MICHAEL GRAVES
ARCHITECTURE &
DESIGN
341 NASSAU STREET
PRINCETON, NJ 08540
T: 609.924.6409 F: 609.924.1795

STRUCTURAL
ENGINEER

KSI PROFESSIONAL
ENGINEERS, LLC
149 YELLOWBROOK ROAD
FARMINGDALE, NJ 07727
T: 732.938.2661 F: 732.938.2661

MECHANICAL/ELECTRICAL/PLUMBING
ENGINEER


1800 ROUTE 34, SUITE 209
WALL, NJ 07719
FOR ALL QUESTIONS, PLEASE CONTACT
STEVE FOX - PROJECT MANAGER
T: 732.280.5623 F: 732.280.3980
CIVIL ENGINEER

INSITE ENGINEERING,
LLC

1913 ATLANTIC AVE.
SUITE F4
WALL, NJ 08736
T: 732.531.7100 F: 732.531.7344

REVISIONS:	
DATE:	NO. DESCRIPTION:
09.25.17	1 CANOPY LIGHTING REVISION
02.27.19	2 MECHANICAL CHANGES

PROJECT NUMBER
21507-00

PROJECT NAME
MEYER RESIDENCE
1 LORI ROAD
MONMOUTH BEACH, NJ 07750

PHASE
BUILDING PERMIT &
CONSTRUCTION

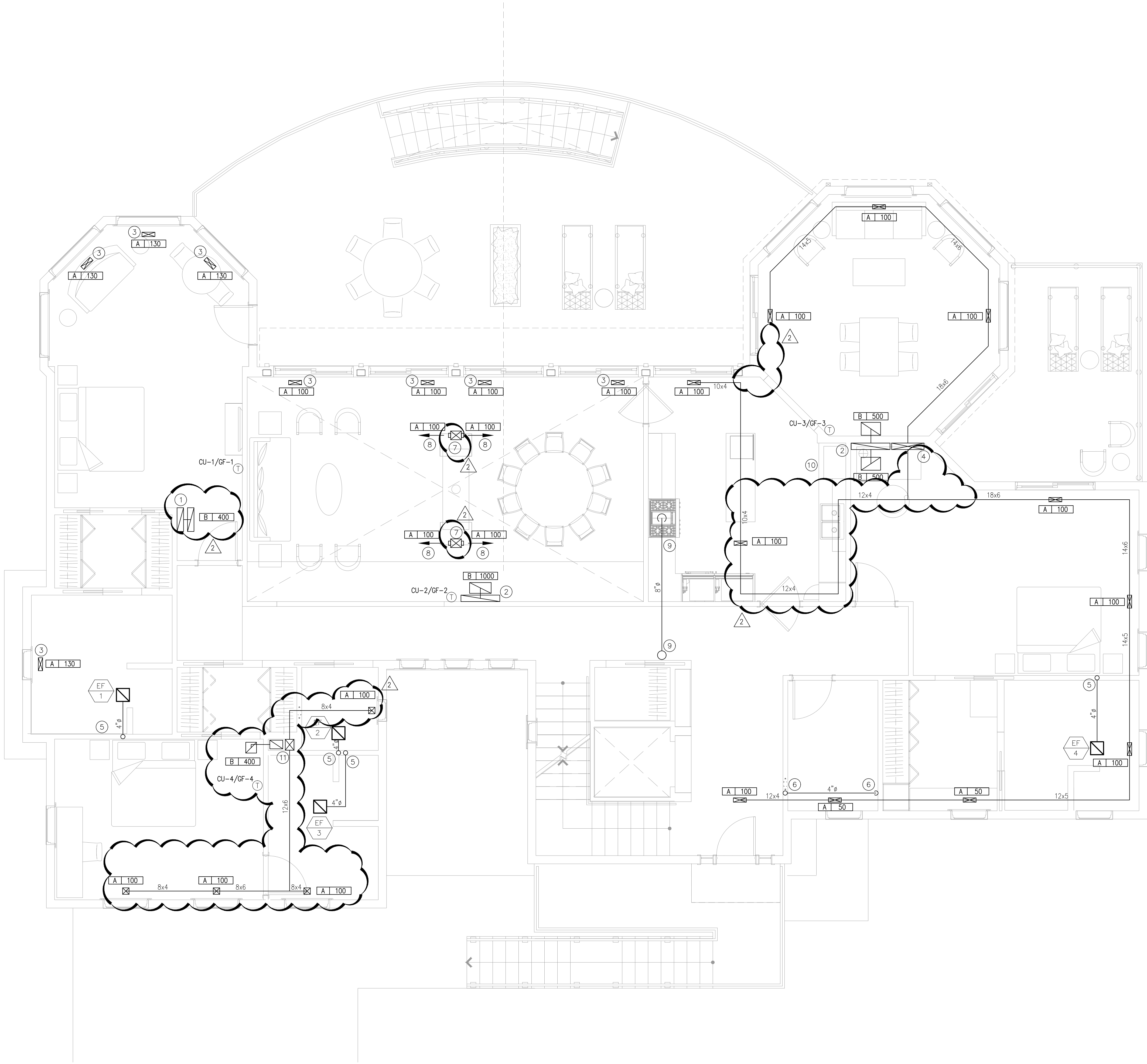
N.J. CERTIFICATE OF AUTHORIZATION: 24602810800
SEAL

Stephen A. Bray
PROFESSIONAL ENGINEER
NJ LICENSE: GE44144 207719
DRAWING TITLE
MECHANICAL
MAIN FLOOR PLAN

DATE
10/10/2016
SCALE
AS NOTED

SHEET NUMBER

M3-1.00



1 MECHANICAL MAIN FLOOR PLAN

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

- A. COORDINATE ALL ROOFTOP MECHANICAL EQUIPMENT LOCATIONS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS.
- B. ALL ENVIRONMENTAL EXHAUST AIR OUTLETS ARE TO BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ALL MECHANICAL OUTDOOR AIR INLETS & A MINIMUM OF 3'-0" FROM OPERABLE WINDOWS AND DOORS.
- C. THE ENTIRE MECHANICAL INSTALLATION AND OPERATION SHALL COMPLY WITH ALL OWNERSHIP REQUIREMENTS.
- D. CONTRACTOR SHALL VISIT THE SITE AND BECOME TOTALLY FAMILIAR WITH THE SCOPE OF WORK PRIOR TO SUBMISSION OF BID. ANY LATER CLAIMS FOR EXTRAS SHALL BE DENIED.
- E. ALL NEW MECHANICAL SYSTEMS LOCATED ABOVE CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE, INCLUDING BEING LOCATED BETWEEN STRUCTURAL MEMBERS WHERE POSSIBLE.
- F. FULLY INSULATED LIQUID/SUCTION REFRIGERANT PIPING SHALL BE RUN FROM ALL ROOFTOP CONDENSING UNITS TO THEIR CORRESPONDING AIR HANDLING UNITS. PIPING SHALL BE RUN CONCEALED WITHIN WALL CAVITIES TO THE GREATEST EXTENT POSSIBLE. PIPING SHALL BE SIZED AND INSTALLED PER ALL MANUFACTURERS REQUIREMENTS.

KEY NOTES:

- 1 12"x10" SUPPLY DUCT WITHIN FIREPLACE ENCLOSURE
- 2 8"x6" SIDEWALL SUPPLY REGISTER MOUNTED INSIDE OF FIREPLACE ENCLOSURE AT HIGHEST POINT.
- 3 4"ø TOILET EXHAUST VENT UP THROUGH ROOF
- 4 4"ø TERMINATION FOR CONCENTRIC COMBUSTION AIR INTAKE AND OUTLET UP THROUGH ROOF.
- 5 4"ø VENT FROM GAS FIRED HOT WATER HEATERS UP THROUGH ROOF.
- 6 8"ø 'VENT-A-HOOD' EXHAUST DUCT DOWN TO FIRST FLOOR AND UP THROUGH ROOF.
- 7 10"x8" SUPPLY MAIN AND 12"x8" RETURN DN TO MAIN FLOOR

DESIGN ARCHITECT

MICHAEL GRAVES
ARCHITECTURE &
DESIGN
341 NASSAU STREET
PRINCETON, NJ 08540
T: 609.924.6409 F: 609.924.1795

STRUCTURAL
ENGINEER

KSI PROFESSIONAL
ENGINEERS, LLC
149 YELLOWBROOK ROAD
FARMINGDALE, NJ 07727
T: 732.938.2661 F: 732.938.2661

MECHANICAL/ELECTRICAL/PLUMBING
ENGINEER


1800 ROUTE 34, SUITE 209
WALL, NJ 07719
FOR ALL QUESTIONS, PLEASE CONTACT
STEVE FOX - PROJECT MANAGER
T: 732.280.5623 F: 732.280.3980
CIVIL ENGINEER

INSITE ENGINEERING, LLC

1913 ATLANTIC AVE,
SUITE F4
WALL, NJ 08736
T: 732.531.7100 F: 732.531.7344

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DATE:	NO.	DESCRIPTION:
09.25.17	1	CANOPY LIGHTING REVISION
02.27.19	2	MECHANICAL CHANGES

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MEYER RESIDENCE
1 LORI ROAD
MONMOUTH BEACH, NJ 07750

PHASE
BUILDING PERMIT &
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N.J. CERTIFICATE OF AUTHORIZATION: 24602810800
SEAL

Stephen A. Bray
PROFESSIONAL ENGINEER
NJ LICENSE: GE44144 207719

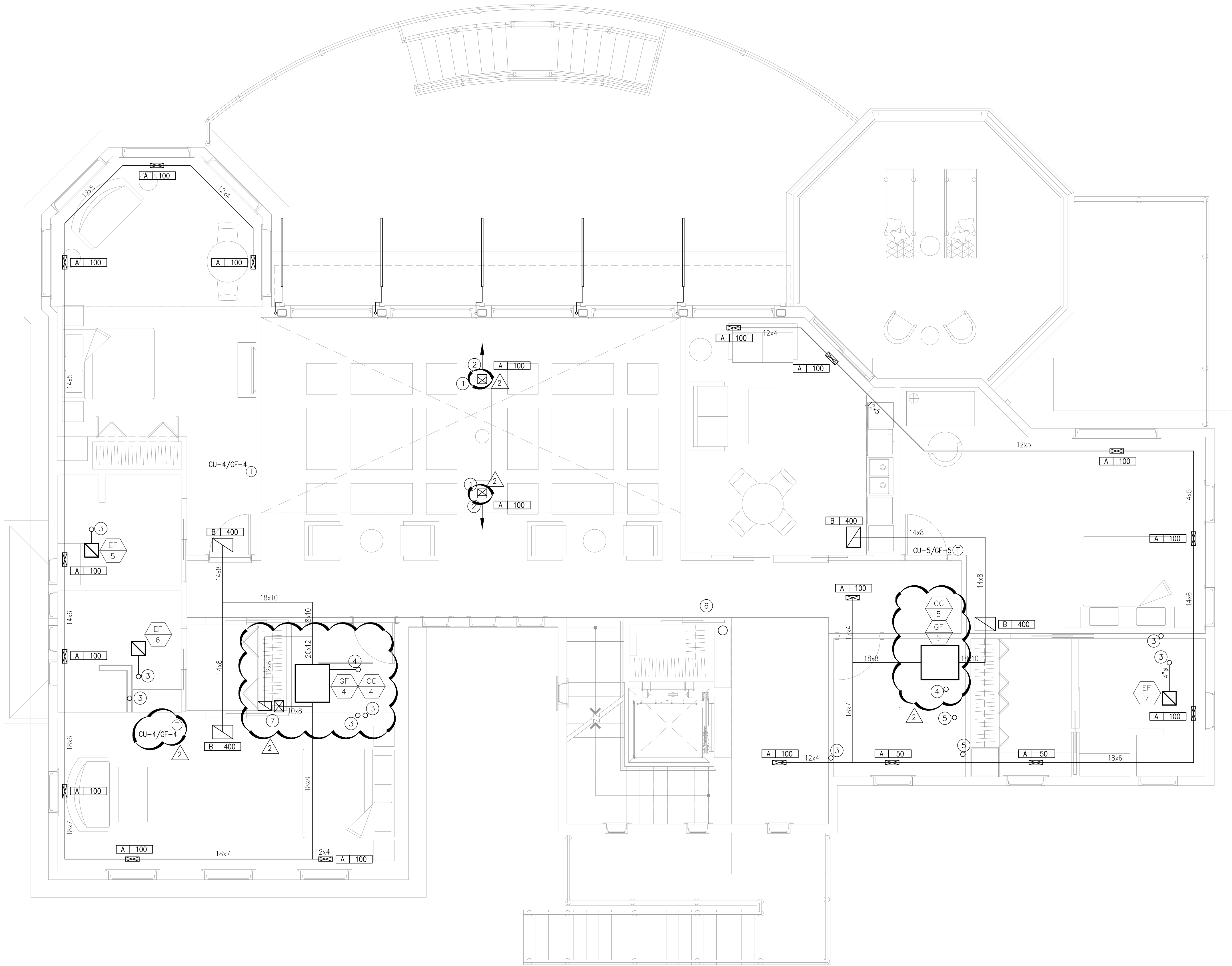
DRAWING TITLE
MECHANICAL
SECOND FLOOR
PLAN

DATE
10/10/2016

SCALE
AS NOTED

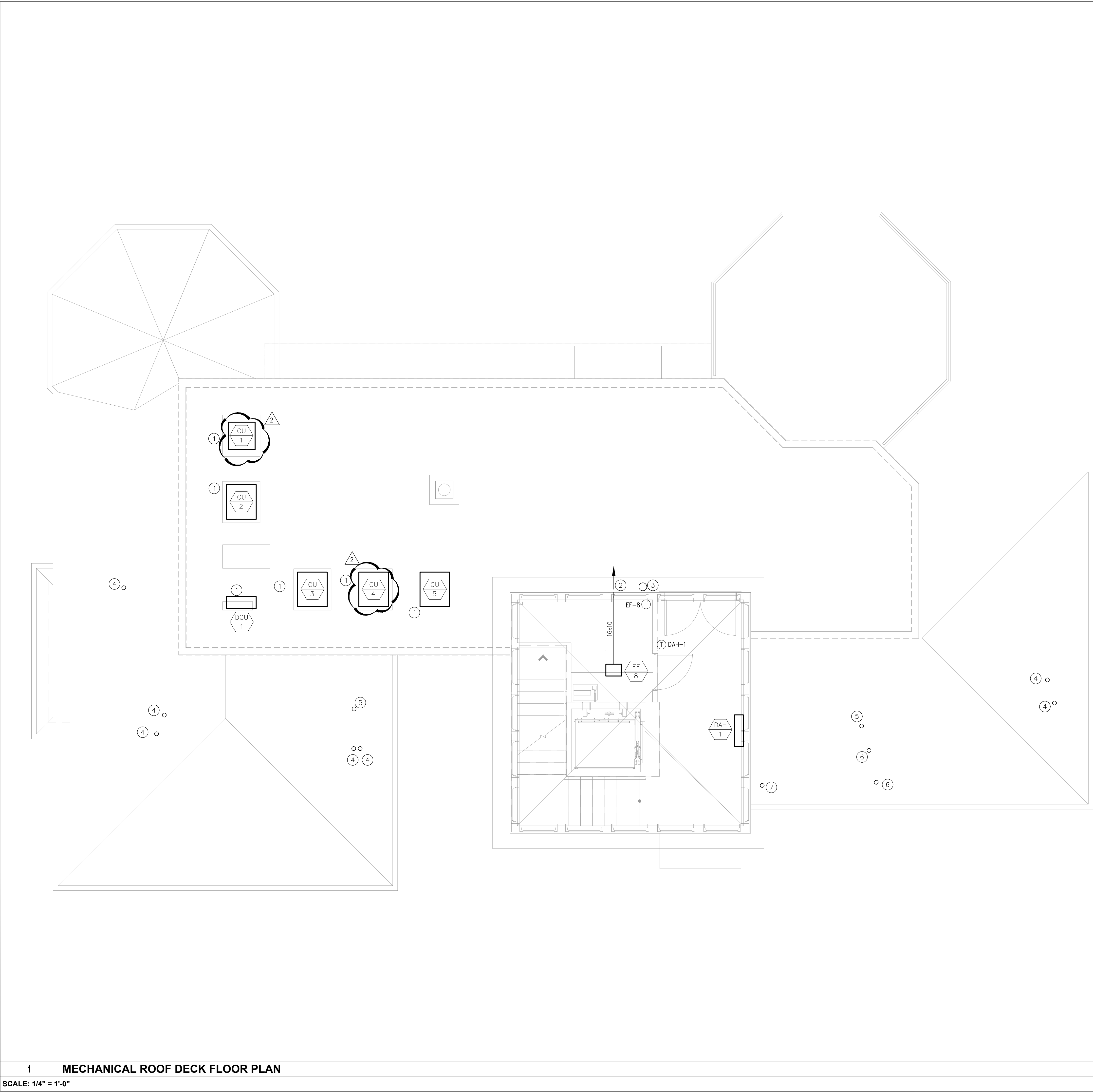
SHEET NUMBER

M3-2.00



1 MECHANICAL SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"



GENERAL NOTES:

- A. COORDINATE ALL ROOFTOP MECHANICAL EQUIPMENT LOCATIONS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS.
- B. ALL ENVIRONMENTAL EXHAUST AIR OUTLETS ARE TO BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ALL MECHANICAL OUTDOOR AIR INLETS & A MINIMUM OF 3'-0" FROM OPERABLE WINDOWS AND DOORS.
- C. THE ENTIRE MECHANICAL INSTALLATION AND OPERATION SHALL COMPLY WITH ALL OWNERSHIP REQUIREMENTS.
- D. CONTRACTOR SHALL VISIT THE SITE AND BECOME TOTALLY FAMILIAR WITH THE SCOPE OF WORK PRIOR TO SUBMISSION OF BID. ANY LATER CLAIMS FOR EXTRAS SHALL BE DENIED.
- E. ALL NEW MECHANICAL SYSTEMS LOCATED ABOVE CEILINGS SHALL BE INSTALLED AS HIGH AS POSSIBLE, INCLUDING BEING LOCATED BETWEEN STRUCTURAL MEMBERS WHERE POSSIBLE.
- F. FULLY INSULATED LIQUID/SUCTION REFRIGERANT PIPING SHALL BE RUN FROM ALL ROOFTOP CONDENSING UNITS TO THEIR CORRESPONDING AIR HANDLING UNITS. PIPING SHALL BE RUN CONCEALED WITHIN WALL CAVITIES TO THE GREATEST EXTENT POSSIBLE. PIPING SHALL BE SIZED AND INSTALLED PER ALL MANUFACTURERS REQUIREMENTS.

KEY NOTES:

- ① MOUNT ALL ROOFTOP CONDENSING UNITS ON EQUIPMENT RAILS WITH VIBRATION ISOLATION.
- ② PROVIDE 24"x24" SIDEWALL EXHAUST LOUVER.
- ③ PROVIDE ROOF CAP TERMINATION FOR 8"Ø 'VENT-A-HOOD' EXHAUST DUCT.
- ④ PROVIDE ROOF CAP TERMINATION FOR 4"Ø TOILET EXHAUST VENT
- ⑤ PROVIDE ROOF CAP TERMINATION FOR 4"Ø CONCENTRIC COMBUSTION AIR INTAKE AND EXHAUST.
- ⑥ PROVIDE ROOF CAP TERMINATION FROM 4"Ø VENT FROM GAS FIRED HOT WATER HEATERS
- ⑦ PROVIDE ROOF CAP TERMINATION FROM 4"Ø DRYER VENT.


DESIGN ARCHITECT

MICHAEL GRAVES
ARCHITECTURE &
DESIGN
341 NASSAU STREET
PRINCETON, NJ 08540
T: 609.924.6409 F: 609.924.1795

STRUCTURAL
ENGINEER

KSI PROFESSIONAL
ENGINEERS, LLC
149 YELLOWBROOK ROAD
FARMINGDALE, NJ 07727
T: 732.938.2661 F: 732.938.2661

MECHANICAL/ELECTRICAL/PLUMBING
ENGINEER


1800 ROUTE 34, SUITE 209
WALL, NJ 07719
FOR ALL QUESTIONS, PLEASE CONTACT
STEVE FOX - PROJECT MANAGER
T: 732.280.5623 F: 732.280.3980
CIVIL ENGINEER

INSITE ENGINEERING,
LLC
1913 ATLANTIC AVE,
SUITE F4
WALL, NJ 08736
T: 732.531.7100 F: 732.531.7344

REVISIONS:

DATE:	NO.	DESCRIPTION:
09.25.17	1	CANOPY LIGHTING REVISION
02.27.19	2	MECHANICAL CHANGES

PROJECT NUMBER
21507-00

PROJECT NAME
MEYER RESIDENCE
1 LORI ROAD
MONMOUTH BEACH, NJ 07750

PHASE
BUILDING PERMIT &
CONSTRUCTION

N.J. CERTIFICATE OF AUTHORIZATION: 246028150800
SEAL

Stephen A. Bray
PROFESSIONAL ENGINEER
NJ LICENSE: GE44144 207719

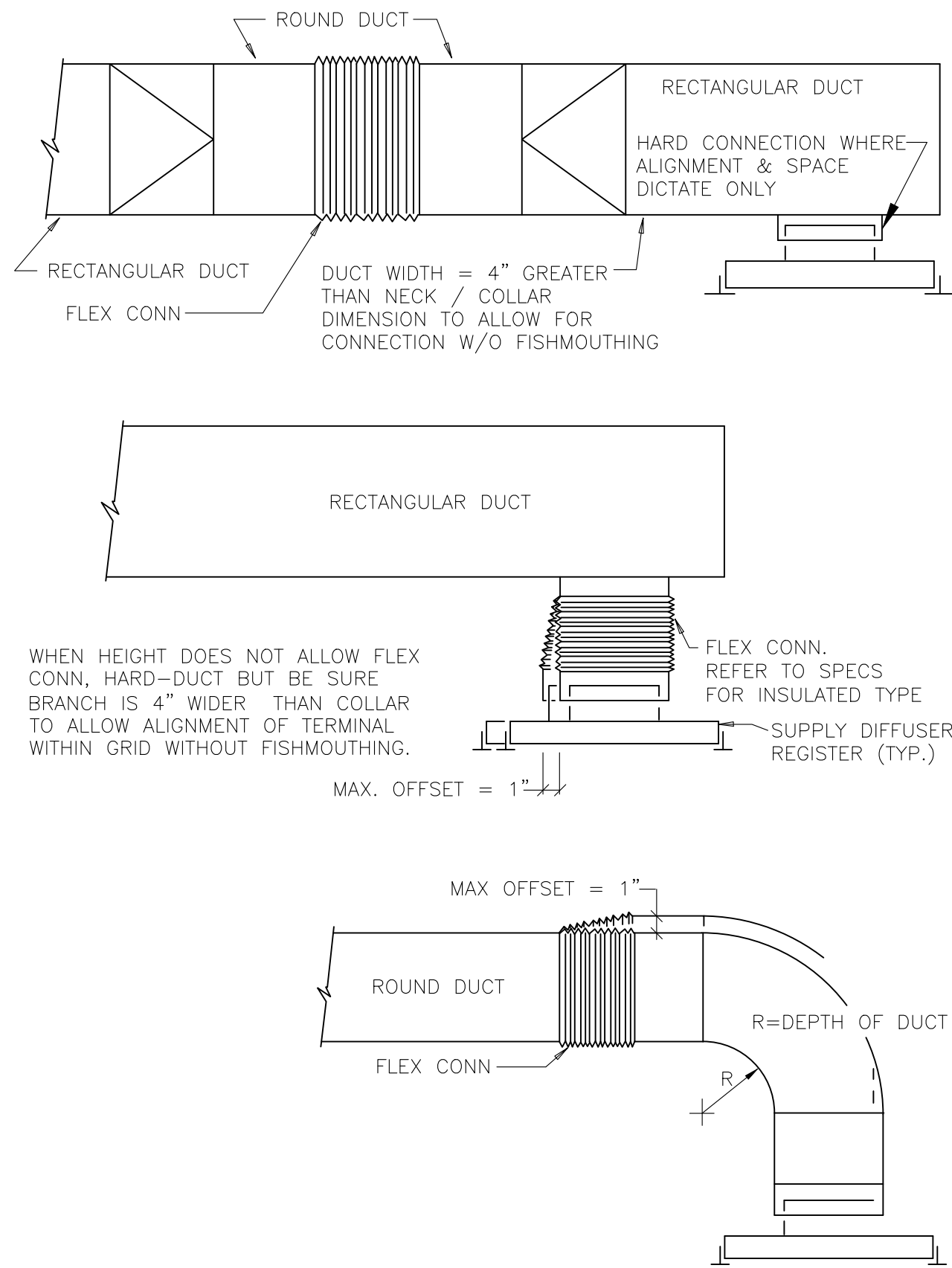
DRAWING TITLE
MECHANICAL
ROOF DECK
PLAN

DATE
10/10/2016

SCALE
AS NOTED

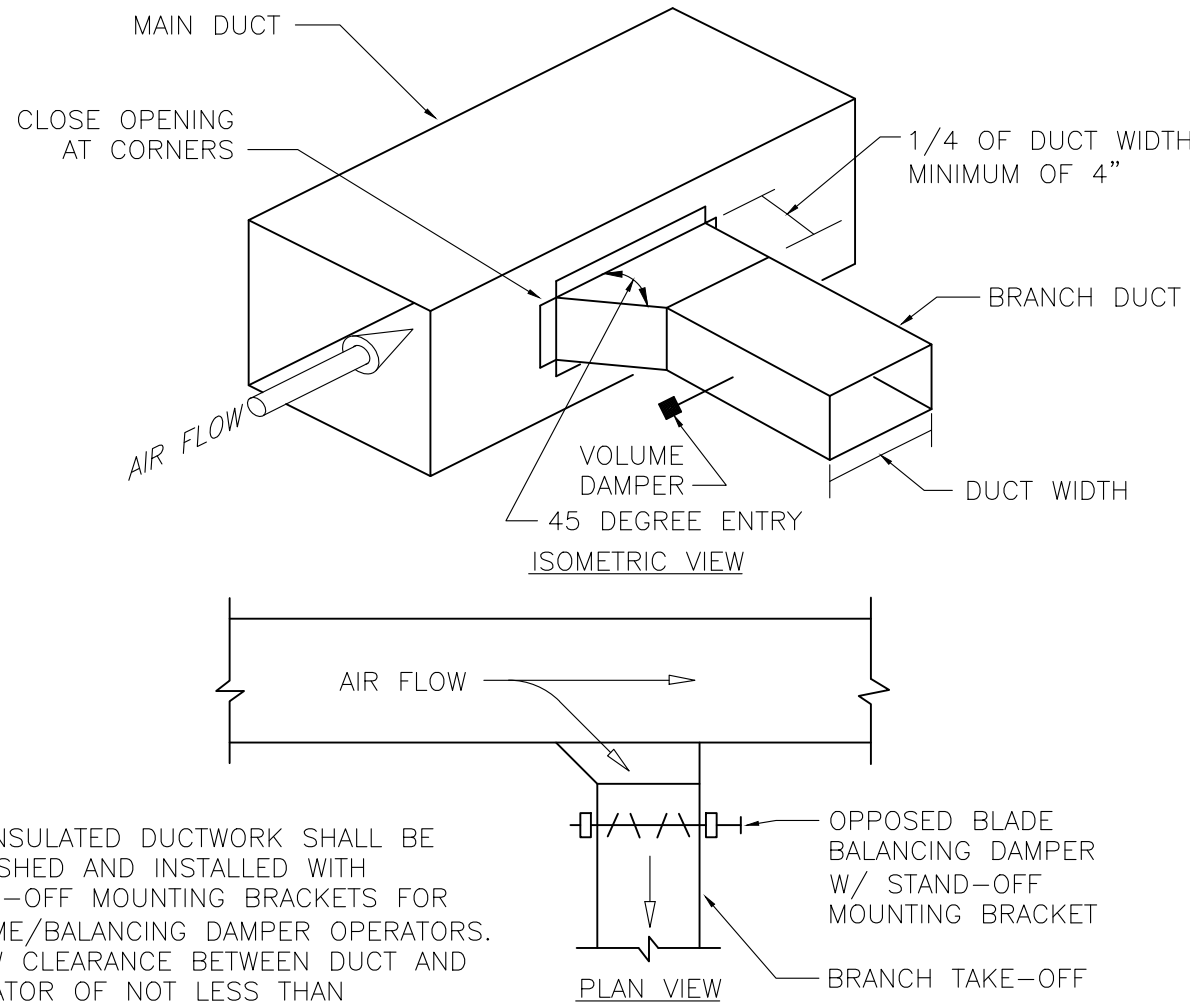
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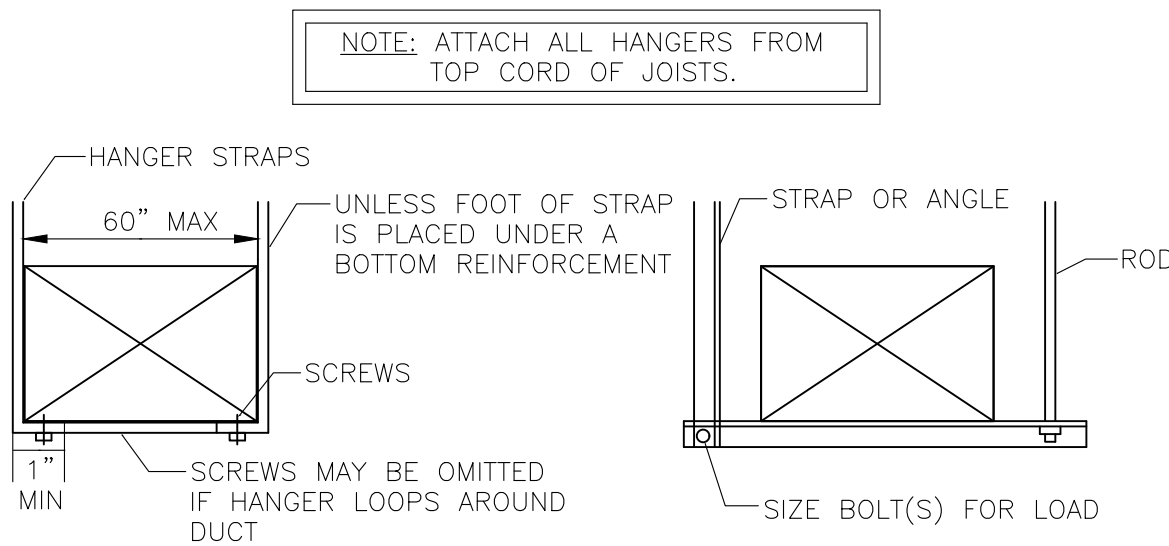
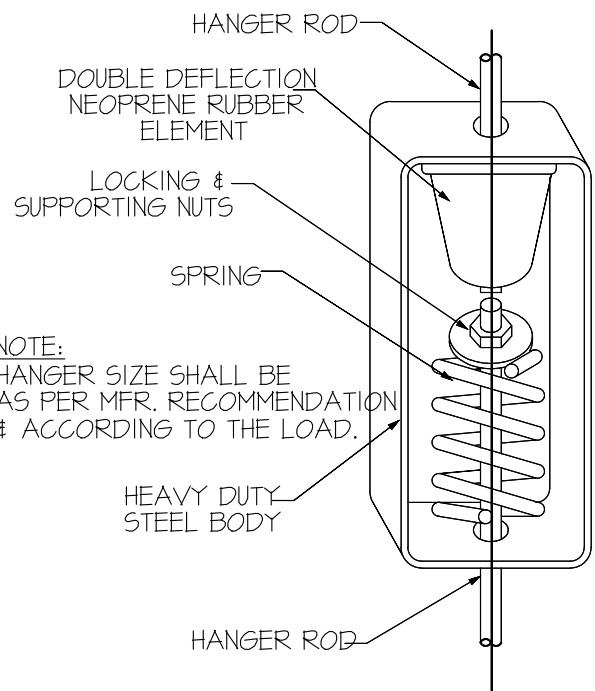


NOTES:

1. THESE DETAILS ALLOW DUCTWORK TO BE PROVIDED BEFORE CEILING GRID IS INSTALLED THEN DIFFUSER/REGISTER CAN BE POSITIONED INTO GRID.
2. PROVIDE INSULATED TRANSITION ROUND TO SQUARE IF REQUIRED AT DIFFUSER.
3. PROVIDE NYLON TY-WRAP TOOL OR REUSABLE SS DRAW BAND PER SPECS.
4. FLEX DUCT SHALL NOT HAVE MORE THAN 1/2" SAG PER FOOT.
5. LENGTH OF FLEX DUCT SHALL NOT EXCEED 3'-0".
6. PROVIDE DUCT MOUNTED VOLUME DAMPER WHENEVER POSSIBLE. TRY TO AVOID NECK DAMPERS.



NOTE:
ALL INSULATED DUCTWORK SHALL BE FURNISHED AND INSTALLED WITH STAND-OFF MOUNTING BRACKETS FOR VOLUME/BALANCING DAMPER OPERATORS. ALLOW CLEARANCE BETWEEN DUCT AND OPERATOR OF NOT LESS THAN INSULATION THICKNESS.



- NOTES:
1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ. FT. DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
 2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
 3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

DESIGN ARCHITECT
**MICHAEL GRAVES
ARCHITECTURE &
DESIGN**
341 NASSAU STREET
PRINCETON, NJ 08540
T: 609.924.6409 F: 609.924.1795

STRUCTURAL
ENGINEER
**KSI PROFESSIONAL
ENGINEERS, LLC**
149 YELLOWBROOK ROAD
FARMINGDALE, NJ 07727
T: 732.938.2661 F: 732.938.2661

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KMB
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CIVIL ENGINEER

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SUITE F4
WALL, NJ 08736
T: 732.531.7100 F: 732.531.7344

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1 LORI ROAD
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PHASE
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DRAWING TITLE
**MECHANICAL
DETAILS SHEET**

DATE
10/10/2016

SCALE
AS NOTED

SHEET NUMBER

M4-2.00