

DUCT/PIPING SYMBOLS	
	SHUT-OFF VALVE
	MOTORIZED 2-WAY OR 3-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	SAFETY VALVE
	EXISTING WORK (TO REMAIN)
	EXISTING DUCTWORK TO BE REMOVED AS NOTED
	EXISTING PIPING TO BE REMOVED AS NOTED
	EXISTING DUCTWORK TO BE REMOVED
	HOT WATER HEATING SUPPLY
	HOT WATER HEATING RETURN
	LOW PRESSURE STEAM
	CONDENSATE DRAIN
	NEW WORK
	AUTOMATIC MOTORIZED DAMPER
	PROGRAMMABLE THERMOSTAT
	CARBON MONOXIDE DETECTOR

IDENTIFICATION SYMBOLS	
	DETAIL NUMBER
	DRAWING ON WHICH DETAIL IS LOCATED
	POINT OF NEW CONNECTION BETWEEN EXISTING AND NEW WORK
	AIR FLOW QUANTITY (CFM)
	AIR TYPE (SUPPLY, RETURN, EXHAUST, & TRANSFER)
	DIFFUSER NECK SIZE

ABBREVIATIONS	
BD	BACKDRAFT DAMPER
CFM	CUBIC FEET PER MINUTE
CONV	CONVECTOR
CD	CONDENSATE DRAIN
DA	DAMPER
DIFF	DIFFUSER
DG	DOOR TRANSFER GRILLE
ED	EXISTING EQUIPMENT OR WORK
EQR	ELECTRICAL EQUIPMENT
EDR	EQUALIZER DIRECT RADIATION
EIR	EXISTING TO REMAIN
FA	FIRE AREA
FD	FIRE DAMPER
FI	FINNED HEAT EXCHANGER
FW	FINS PER INCH
FN	FINNED W/OUT
G	GAS
GC	GENERAL CONTRACTOR
GR	GRILLE
GH	GAS WATER HEATER
H	HIGH-RISE/IFT
LPS	LOW PRESSURE STEAM
M	MOTORIZED DAMPER/ELECTRONIC
MC	MECHANICAL CONTRACTOR
MB	1000 BTU/HOUR
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
OAI	OUTDOOR AIR INTAKE
PAU	PNEUMATIC
RA	RADIATOR
RAU	RADIANT RETURN AIR
RSB	REGISTER
RO	ROOM OPENING
SA	SUPPLY AIR
T	TEMPERATURE
TEMP	THERMOSTAT OR TEMP. SENSOR
LD	UNDOOR/DOOR
LH	LINT HEATER
UNP	UNLESS NOTED OTHERWISE
V	VERY IN FIELD
W	WIDE WIDTH
BAS	BUILDING AUTOMATION SYSTEM (TEMPERATURE CONTROL)

PROJECT NOTES

PROJECT NOTES TO BE WITHIN KEY NOTES ON PLANS.

NOTE:

MELVIN COHEN AND ASSOCIATES (MCA) SHALL NOT HAVE CONTROL OVER OR CHANGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, SINCE THESE ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY UNDER THE CONTRACT FOR CONSTRUCTION. MCA SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S SCHEDULES OR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. MCA SHALL NOT HAVE CONTROL OVER OR CHANGE OF ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR THEIR AGENTS OR EMPLOYEES OR ANY OTHER PERSONS PERFORMING PORTIONS OF THE WORK.

GENERAL NOTES

- SUBMITTALS:**
- SUBMIT ELECTRONIC COPIES IN PDF FORMAT. SUBMIT DRAWINGS TO SCALE WHERE APPLICABLE.
 - SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT AND MATERIALS. SUBMIT MANUFACTURER'S CERTIFIED EQUIPMENT DRAWINGS FOR ALL EQUIPMENT; THESE NEED NOT BE SCALE DRAWINGS, BUT MUST SHOW ALL DIMENSIONS, CLEARANCES, INSTALLATION REQUIREMENTS, ETC.
 - INSTALL EQUIPMENT / DUCTWORK / PIPING IN ACCORDANCE WITH THESE DESIGN DRAWINGS. IF DEVIATIONS ARE REQUIRED THEN SUBMIT SCALE DRAWINGS FOR REVIEW PRIOR TO FABRICATION / INSTALLATION.
 - SUBMIT ALL COORDINATION DRAWINGS AND/OR SHOP DRAWINGS PRIOR TO FABRICATION OR INSTALLATION OF ANY EQUIPMENT. ANY WORK STARTED OR EQUIPMENT RELEASED FOR FABRICATION PRIOR TO THE REVIEW OF SUBMITTED DRAWINGS BY THE DESIGN ENGINEER IS DONE AT THE CONTRACTOR'S RISK. THE OFFERING CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE FOR ALL CHANGES, MODIFICATIONS, AND/OR EXTRA SERVICES REQUIRED RESULTING FROM THE IMPROPER COORDINATION AND/OR IMPROPER SUBMITTAL PROCEDURES.

- MISCELLANEOUS:**
- PROVIDE SELF ADHESIVE PIPE IDENTIFICATION TAGGING ON ALL NEW PIPING. LOCATE IDENTIFICATION NEAR CONNECTIONS TO EACH PIECE OF EQUIPMENT VALVES AND AT SPACING NO GREATER THAN 25 FEET.
 - PROVIDE PLASTIC EQUIPMENT LABELS AT EACH NEW PIECE OF EQUIPMENT WITH ALPHA-NUMERIC IDENTIFICATION, COORDINATE FINAL IDENTIFICATION WITH OWNER. IF OWNER HAS NO PREFERENCE, FOLLOW IDENTIFICATION UTILIZED ON DESIGN DRAWINGS.
 - PROJECT DESIGN IS BASED ON PARTICULAR EQUIPMENT MANUFACTURERS AS INDICATED IN THE SCHEDULES, AND ESTABLISHES THE QUALITY REQUIRED USE OF EQUIPMENT BY ONE OF THE OTHER ACCEPTABLE MANUFACTURERS MAY REQUIRE ADDITIONAL WORK BE PERFORMED FOR PROPER INTEGRATION WITH THE BUILDING DESIGN. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL BE ENTIRELY RESPONSIBLE FOR COORDINATION, AND EXTRA LABOR AND MATERIAL REQUIRED AS A RESULT OF THE USE OF EQUIPMENT OTHER THAN THAT SCHEDULED, AND THE CONTRACTOR SHALL VERIFY THAT THIS EQUIPMENT FITS IN THE ALLOCATED SPACE. THIS RESPONSIBILITY SHALL INCLUDE ANY AND ALL EXTRA EXPENSE INCURRED BY AFFECTED CONTRACTORS INCLUDING BUT NOT LIMITED TO THE GENERAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL CONTRACTORS. THE CONTRACTOR PROVIDING THE EQUIPMENT SHALL ALSO BE RESPONSIBLE FOR ANY EXTRA EXPENSE INCURRED DUE TO CONSTRUCTION DELAYS AS A RESULT OF ANY ADDITIONAL COORDINATION AND/OR REVISION REQUIRED BY THE ALTERNATE EQUIPMENT MANUFACTURER SELECTION. ALL REVISIONS MUST BE REVIEWED BY THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION.

- DUCTWORK:**
- IN GENERAL ALL DUCTWORK SHALL BE INSTALLED CONCEALED ABOVE FINISHED CEILING EXCEPT AS INDICATED IN BACK OF HOUSE TYPE SPACES.
 - ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEETMETAL OF LOCK-FORMING QUALITY, ASTM A 572, COATING DESIGNATION G 90. INSTALLATION SHALL COMPLY TO SMACNA STANDARDS FOR DUCTWORK OF PRESSURE CLASSIFICATIONS AS INDICATED. PROVIDE CROSS BRACING OR BRACING ON ALL RECTANGULAR DUCT SIDES GREATER THAN 12" TO PREVENT "O" BENDING. SEAL ALL JOINTS AND SEAMS. APPLY SEALANT TO MALE END CONNECTORS BEFORE INSERTION, AND AFTERWARD TO COVER ENTIRE JOINT AND SHEET METAL SCREWS. DUCT SEALANTS SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B.
 - ALL EXPOSED ROUND DUCTWORK SHALL BE OF SPIRAL SEAM CONSTRUCTION. TAKE ADDITIONAL CARE WITH THE FABRICATION AND INSTALLATION OF ALL EXPOSED DUCTWORK. PROVIDE DUCTWORK WITHOUT DEBRIS, LABELS, STICKERS, ETC. INSTALL DUCT SEALANT IN A NEAT MANNER TO FORM A SMOOTH, UNIFORM JOINT. GASKET THE PERIMETER OF ALL DUCTWORK WHERE AN EXPOSED PENETRATION THROUGH A WALL OCCURS. UTILIZE PAINTABLE GASKET APPLIED IN A NEAT MANNER TO FORM A SMOOTH, UNIFORM JOINT.
 - LOW PRESSURE SUPPLY DUCTWORK SHALL BE RATED AT +1.0" STATIC PRESSURE. LOW PRESSURE RETURN/EXHAUST DUCTWORK SHALL BE RATED AT -1.0" STATIC PRESSURE.
 - PROVIDE ALL GRILLE AND REGISTER BRANCHES WITH MANUAL BALANCING DAMPERS WHERE CONNECTED TO DUCTWORK SERVING MULTIPLE OUTLETS / INLETS, WHETHER SPECIFICALLY INDICATED OR NOT. MANUAL VOLUME DAMPERS SHALL GENERALLY BE LOCATED AT CONNECTION FROM MAIN, AS FAR AS POSSIBLE FROM AIR INLET/OUTLET, TO MINIMIZE NOISE TO INLET/OUTLET, FOR GRILLES AND REGISTERS CONNECTED TO DUCTWORK ABOVE HARD INACCESSIBLE CEILINGS. PROVIDE CABLE ACTUATED VOLUME CONTROL DAMPERS BASED ON METROPOLITAN AIR TECHNOLOGY RT SERIES W/ ACTUATOR AND CABLE CONCEALED WITHIN DUCTWORK.
 - DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE ABOVE CEILING. ON THE LIVING UNIT FLOORS DUCTWORK SHALL BE ROUTED BETWEEN AND THROUGH THE JOISTS EXCEPT WHERE NOTED OTHERWISE. IN GENERAL, LOCATE DUCTS VERTICALLY AND HORIZONTALLY, PARALLEL AND PERPENDICULAR TO BUILDING LINES. AVOID DIAGONAL RUNS EXCEPT AS SPECIFICALLY INDICATED. COORDINATE FINAL DUCT LOCATIONS WITH GAS PIPING (MECHANICAL, ELECTRICAL & PLUMBING) AND ASSOCIATED SERVICE SPACE REQUIREMENTS. SUBMIT PROPOSED TYPICAL DUCT ELEVATION ABOVE FLOOR PRIOR TO INSTALLATION.
 - INTERIALLY LINE THE FOLLOWING DUCTWORK: DUCT LINING SHALL BE 1" THICK, 1-1/2 LB DENSITY COMPLY WITH NFPA STANDARD 90A. MATERIALS SHALL COMPLY WITH ASTM C 1071, TYPE II, WITH COATED SURFACE EXPOSED TO AIRSTREAM TO PREVENT EROSION OF GLASS FIBERS. FLAME SPREAD RATING SHALL NOT BE MORE THAN 25 WITHOUT EVIDENCE OF CONTINUED PROGRESSIVE COMBUSTION AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50, WHEN TESTED IN ACCORDANCE WITH ASTM C 411. LINER ADHESIVE SHALL COMPLY WITH NFPA STANDARD 90A AND ASTM C 916. PROVIDE MINIMUM GASK COVERAGE OF LINER ADHESIVE TO SHEETMETAL. DUCT SIZES SHOWN ARE AIRWAY DIMENSION. INCREASE SHEETMETAL SIZES ACCORDINGLY.
 - 1" LINING FOR ALL RETAIL SPACE SUPPLY & RETURN DUCTWORK & PLENUMS.
 - 1/2" LINING FOR ALL RESIDENTIAL, RECTANGULAR RETURN DUCTWORK & PLENUMS AND THE 1ST 15 FEET OF ALL RESIDENTIAL RECTANGULAR SUPPLY DUCTWORK & PLENUMS.
 - ALL RECTANGULAR SUPPLY DUCTWORK.
 - 1" LINING FOR ALL RECTANGULAR MAKE-UP AIR SYSTEM DUCTWORK.
 - 1-1/2" (R-6) LINING FOR SUPPLY AND RETURN DUCTWORK LOCATED WITHIN UNCONDITIONED SPACES.
 - ALL RECTANGULAR RETURN DUCTWORK.
 - ALL DUCTWORK SERVING THE GENERATOR ROOM.
 - ALL DUCTWORK SERVING THE MAIN ELECTRIC SWITCHBOARD ROOM.
 - GARAGE EXHAUST DUCTWORK & PLENUMS LOCATED IN THE TRASH ROOM.
 - WHERE DUCTWORK IS IDENTIFIED TO INCLUDE ACOUSTICAL LINING, INCLUDE LINING IN ALL ASSOCIATED PLENUMS, FITTINGS, ETC.

- BALANCING**
- PROVIDE COMPLETE SYSTEM AIR BALANCING FOR ALL WORK COVERED UNDER THIS CONTRACT, INCLUDING MINIMUM OUTSIDE AIR QUANTITIES, AIR HANDLING UNITS, EXHAUST FANS AND GRILLES, REGISTERS, AND DIFFUSERS. SYSTEMS TO BE BALANCED INCLUDE THE FOLLOWING:
 - ROOFTOP UNITS - COMPLETE AIR BALANCING INCLUDING FAN AIRFLOWS, FAN PRESSURE READINGS, FAN MOTOR ACTUAL & RATED VOLTAGE AND AMPERAGE, AND AIRFLOWS AT ALL OUTLETS & INLETS. WHERE THE EXISTING EQUIPMENT UTILIZES A DIRECT DRIVE SUPPLY FAN, PRORATE THE INDICATED ROOM AIRFLOWS TO MATCH AS MUCH AS POSSIBLE WITHIN THE LIMITS OF THE EXISTING FAN. WHERE THE EXISTING EQUIPMENT UTILIZES A BELT DRIVE SUPPLY FAN, ADJUST THE BELTS AS REQUIRED TO ACHIEVE THE INDICATED ROOM AIRFLOWS WITHIN THE LIMITS OF THE EXISTING FAN MOTOR. DO NOT OVERLOAD THE FAN MOTOR.
 - ROOFTOP UNITS - MINIMUM OUTSIDE AIR DAMPER SETTINGS ADJUSTED TO PROVIDE SPECIFIED AIRFLOW.
 - EXHAUST FANS (EXCLUDING RESIDENTIAL TOILET EXHAUST FANS) - FAN AIRFLOWS, FAN PRESSURE READINGS, FAN MOTOR ACTUAL & RATED VOLTAGE AND AMPERAGE, AND AIRFLOWS AT ALL ASSOCIATED INLETS.
 - LIVING UNIT FURNACE / AIR CONDITIONING UNITS - ADJUST FAN SPEEDS TO PROVIDE FURNACE AIRFLOW WITHIN THE LIMITS OF THE MANUFACTURER'S RECOMMENDATIONS FOR THE ASSOCIATED AIR CONDITIONING UNIT.
 - For other systems with airflow fan/balance (DIER EXHAUST SYSTEMS) TO SCHEDULED CAPACITY WITH ALL ASSOCIATED DRIERS OPERATING. COUNTERBALANCE ALL DIER BACK DRAFT DAMPERS TO OPEN ONLY WHEN ASSOCIATED DRIER IS OPERATING AND TO REMAIN CLOSED WHEN DRIER IS OFF.
 - PROVIDE BALANCE REPORTS IN PDF FORMAT FOR ALL WORK, PREPARED BY A BALANCING FIRM CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL (AIB), NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB), OR TESTING, ADJUSTING AND BALANCING BUREAU (TABB).
 - ALL INDIVIDUAL INLETS/OUTLETS SHALL BE BALANCED TO WITHIN 0 TO +10% OF THE SPECIFIED AIR QUANTITIES. EACH SYSTEM SHALL BE BALANCED TO 0 TO +5% OF THE SPECIFIED AIR QUANTITIES.
 - AFTER ALL SYSTEMS HAVE BEEN BALANCED, AND REPORTS HAVE BEEN PREPARED, THE CONTRACTOR SHALL DEMONSTRATE THE EFFECTIVENESS OF THE BALANCING IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. UP TO 5% OF THE DEVICES WILL BE RANDOMLY SELECTED BY THE OWNER, AND THE AIR FLOWS WILL BE REPEATED BY THE CONTRACTOR IN THEIR PRESENCE. IF MORE THAN 10% OF THESE ITEMS TESTED ARE BEYOND +/- 5% OF THE DESIGN OR STATED BALANCED QUANTITIES, THEY SHALL BE REBALANCED. IN THE EVENT OF THIS OCCURRENCE, AN ADDITIONAL 5% OF THE DEVICES SHALL AGAIN BE RANDOMLY SELECTED. SHOULD MORE THAN 10% OF THESE DEVICES BE BEYOND +/- 5% OF THE DESIGN OR STATED BALANCED QUANTITIES, THE ENTIRE SYSTEM SHALL BE REBALANCED.

- GAS PIPING**
- PROVIDE GAS SYSTEM IN COMPLIANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND THE INTERNATIONAL FUEL GAS CODE.
 - ALL ABOVE GRADE PIPING SHALL BE STEEL PIPE, ASTM A 130, SCHEDULE 40, BLACK WITH BEVELLED ENDS. INSTALL PIPING WITH THREADED JOINTS FOR SIZES 2 INCH AND SMALLER, WELDED JOINTS FOR 2-1/2 INCH AND LARGER.
 - FITTINGS SHALL BE MALLEABLE-IRON THREADED FITTINGS COMPLYING WITH ANSI B16.1, CLASS 150, STANDARD PATTERN, FOR THREADED JOINTS. THREADS SHALL CONFORM TO ANSI B1.20.11. STEEL FITTINGS SHALL COMPLY WITH ASTM A 234, SEAMLESS OR WELDED, FOR WELDED JOINTS.
 - JOINT COMPOUND SHALL BE SUITABLE FOR NATURAL GAS.
 - UNIONS: ANSI B16.39, CLASS 150, BLACK MALLEABLE IRON; FEMALE PATTERN; BRASS TO IRON SEAT; GROUND JOINT.

GENERAL NOTES

- GAS COCKS 2 INCH AND SMALLER: 150 PSI WOG, BRONZE BODY, STRAIGHTWAY PATTERN, SQUARE HEAD, THREADED ENDS.
- GAS COCKS 2-1/2 INCH AND LARGER: MSS SP-78, 175 PSI, LUBRICATED PLUG TYPE, SEMI-STEEL BODY, SINGLE GLAND, WRENCH OPERATED, FLANGED ENDS.
- DRIP LEES (SAME AS DIRT LEES AND SEDIMENT TRAPS): PROVIDE A DRIP LEED AT POINTS WHERE CONDENSATE MAY COLLECT AT THE OUTLET OF THE GAS METER, AND AT CONNECTIONS TO INDICATED APPLIANCES. LOCATE ALL DRIP LEES WHERE THEY WILL BE READILY ACCESSIBLE TO PERMIT CLEANING AND EMPTYING. DO NOT INSTALL DRIP LEES WHERE CONDENSATE IS LIKELY TO ACCUMULATE. DRIP LEES LONG A FEW FEET WITH A CAPPED APPLE AT THE BOTTOM OUTLET. USE A MINIMUM OF 3 PIPE DIAMETERS IN LENGTH FOR THE DRIP LEED. USE SAME SIZE PIPE FOR DRIP LEED AS CONNECTED PIPE.
- LOCATE GROUPS OF PIPES PARALLEL TO EACH OTHER, EVENLY SPACED. PROVIDE TRAPEZOID HANGERS WHERE MULTIPLE PIPES RUN DOWN CORRIDORS. PAY PARTICULAR CARE TO THE NEATNESS OF PIPING THAT IS TO REMAIN EXPOSED.
- INSTALL UNIONS IN PIPES 2 INCH AND SMALLER, ADJACENT TO EACH VALVE. AT FINAL CONNECTIONS EACH PIECE OF EQUIPMENT AND ELEMENTS AS INDICATED. UNIONS ARE NOT REQUIRED ON FLANGED DEVICES. DO NOT LOCATE ANY VALVES, UNIONS, ETC. WITHIN WALLS OR ABOVE NON-ACCESSIBLE CEILING.
- ALL BELOW GRADE PIPING SHALL BE POLYETHYLENE (PE) PIPE, ASTM D2513, SDR 11.
 - FITTINGS: ASTM D2513, SOCKET-FUSION TYPE OR ASSEMBLED, BUTT-FUSION TYPE WITH DIMENSIONS MATCHING PE PIPE.
 - PE TRANSITION FITTINGS: FACTORY-FABRICATED FITTINGS WITH PE PIPE COMPLYING WITH ASTM D2513, SDR 11; AND STEEL PIPE COMPLYING WITH ASTM A53/ASTM, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B. OUTLET SHALL BE THREADED OR FLANGED OR SUITABLE FOR WELDED CONNECTION.
 - PROTECTIVE COATING FOR UNDERGROUND PIPING: FACTORY-APPLIED, THREE-LAYER COATING OF EPOXY, ADHESIVE AND POLYETHYLENE.
- LABELING AND IDENTIFYING: PROVIDE DETECTABLE WARNING TAPE 1/2" BELOW GRADE, DIRECTLY ABOVE THE ENTIRE LENGTH OF THE UNDERGROUND PIPING, AND ALPHANUMERIC IDENTIFICATION. PE FLOW MARKING TAPE MANUFACTURED FOR MARKING AND IDENTIFYING UNDERGROUND UTILITIES, A MINIMUM OF 6-INCHES WIDE AND 4-MILS THICK, CONTINUOUSLY RESSURED WITH A DESCRIPTION OF UTILITY AND THE WORD "CAUTION", AND COLORED YELLOW. SAFETY TRACER WIRE: METALLIC CORE (COPPER MINIMUM AWG 14) ENCASED IN A PROTECTIVE INSULATED JACKET FOR CORROSION PROTECTION, DETECTABLE BY METAL DETECTOR WHEN TAPE IS BURIED UP TO 36-INCHES DEEP, COLORED YELLOW.
- LOCATE NATURAL-GAS PIPING BETWEEN 18-AND 30-INCHES BELOW FINISHED GRADE, EXCEPT IN AREAS SUBJECT TO VEHICULAR TRAFFIC, WHERE NATURAL-GAS PIPING SHALL BE LOCATED BETWEEN 24- AND 30-INCHES BELOW FINISHED GRADE. IN ALL CASES, WHERE THE BACKFILLED TRENCH IS TO BE COMPACTED, THE NATURAL-GAS PIPING SHALL BE PLACED AT A DEPTH SUFFICIENT TO ENSURE THE PIPING WILL BE COVERED BY NOT LESS THAN 18-INCHES OF BACKFILL MATERIAL. LINE THE TRENCH BOTTOM WITH A 3-INCHES THICK BEDDING LAYER OF CLEAN SAND, TAKING CARE TO ENSURE THE PIPE WILL BE UNIFORM AND CONTINUOUSLY SUPPORTED OVER ITS ENTIRE LENGTH. PLACE A COVER OVER THE CLEAN SAND, NOT LESS THAN 6-INCHES ABOVE TOP OF PIPE, PRIOR TO BACKFILLING THE TRENCH, COVER THE SAND WITH NOT LESS THAN 12-INCHES OF BENTONITE SOIL FLOCS, OR DEBRIS GRADE WITH 3-INCHES DIAMETER, PRIOR TO COMPACTING THE BACKFILLED TRENCH.
- CONNECT BRANCH OUTLET PIPES FROM THE TOP OR SIDES OF HORIZONTAL LINES, NOT FROM THE BOTTOM. GAS PIPE SIZE SHALL BE AS INDICATED IN PLANS FOR THE ENTIRE LENGTH OF THE PIPE, WITH ANY REDUCTION TO THE ACTUAL GAS FIRE EQUIPMENT CONNECTION SIZE OCCURRING WITHIN 6" OF THE EQUIPMENT.
- GAS LINE PRESSURE REGULATORS: SINGLE STAGE, GAS PRESSURE REGULATORS, WITH THREADED ENDS FOR 2 INCH AND SMALLER, FLANGED ENDS FOR 2-1/2 INCH AND LARGER, SELECTED FOR OPERATION AT 1 PSIG INLET PRESSURE AND 14" W.C. OUTLET GAS PRESSURE, AND SPECIFIC GRAVITY AND VOLUME FLOW INDICATED ON THE DRAWINGS. REGULATORS SHALL BE RATED FOR USE WITH INLET PRESSURES OF NO LESS THAN 2 PSIG. INSTALL A GAS COOK IMMEDIATELY UPSTREAM OF EACH GAS PRESSURE REGULATOR STATION. PIPE EACH REGULATOR VENT FULL SIZE TO OUTDOORS.
- PROVIDE VENTING OF ALL INDOOR PRESSURE REGULATOR DEVICES TO OUTDOORS.
- PIPING TESTS: INSPECT, TEST, AND PURGE NATURAL GAS SYSTEMS IN ACCORDANCE WITH NFPA 54, CHICAGO CODE AND LOCAL UTILITY REQUIREMENTS.
- PROVIDE A READILY ACCESSIBLE SHUT-OFF VALVE & UNION (UNION NOT REQUIRED WHERE FLEXIBLE CONNECTIONS OR OTHER FITTINGS ARE PROVIDED THAT WILL ACHIEVE SAME FUNCTION) WITHIN 6 FEET OF ALL EQUIPMENT AND APPLIANCE CONNECTIONS. SHUT-OFF VALVE SHALL BE INSTALLED UPSTREAM OF ANY FLEXIBLE CONNECTION.
- MAKE FINAL CONNECTION TO DEVICES, RANGES, FIRE PLACES AND DRAWS WITH AN APPROVED FLEXIBLE CONNECTION SERVICE. EXTEND THE UNTHREADED PORTION OF ROOF GAS PIPING THROUGH THE WALL A MINIMUM OF 1" (2" MINIMUM WHEN PENETRATING THRU FLOOR OR CEILING CONSTRUCTION).
- SUPPORT INDIVIDUAL PIPING AT THE FOLLOWING MAXIMUM SPACING: DO NOT USE EQUIPMENT CONNECTION TO SUPPORT PIPING.
 - SIZE (NPS) --- SPACING IN FEET --- MIN. ROOF SIZE-IN.
 - 1/2" --- 6' --- 3/8"
 - 3/4" TO 1-1/4" --- 6' --- 3/8"
 - 1-1/2" TO 3" (HORIZONTAL) --- 12' --- 1/2"
 - ALL SIZES VERTICALLY EVERY FLOOR LEVEL.
- PROVIDE SUPPORTS ON ROOF TO ADEQUATELY SUPPORT GAS PIPING ON ROOF BASED ON MFAB C-PORT SELECTED TO ACCOMMODATE THE PIPING SIZE BEING INSTALLED. CLAMP PIPE TO BLOCKING.
- ALL EXPOSED EXTERIOR GAS PIPING SHALL BE PRIMED AND PAINTED WITH EXTERIOR ENAMEL OF COLOR APPROVED BY ARCHITECT. PROVIDE PROTECTIVE COATING WHEN PIPING IS INSTALLED UNDERGROUND. PIPE AND FITTINGS SHALL BE FACTORY-COATED WITH POLYETHYLENE TAPE. JOINTS SHALL HAVE TAPE FIELD INSTALLED.
- DO NOT INSTALL ANY VALVES OR UNIONS WITHIN CONCEALED CONSTRUCTION.

FLUES

- DOUBLE-WALL GAS VENTS, CONFORMING TO NFPA 211, TYPE B SHALL BE USED FOR DOMESTIC WATER HEATERS AND FURNACES. INNER PIPE SHALL BE OF 0.014-INCH (0.36-MM) SHEET ALUMINUM, OUTER PIPE OF 0.0187-INCH (0.47-MM) GALVANIZED-STEEL. SHEET DOMESTIC WATER HEATERS SHALL BE VENTED USING PVC PIPING INSTALLED IN COMPLIANCE WITH THE HEATER MANUFACTURERS INSTALLATION REQUIREMENTS.
- DIRECT VENT UNIT HEATERS SHALL UTILIZE GENERAL VENT PIPING ARRANGEMENT ON THE DRAWINGS. REGULATORS SHALL BE INSTALLED IN ACCORDANCE WITH THE HEATER MANUFACTURERS INSTALLATION INSTRUCTIONS. UTILIZE DOUBLE WALL TYPE B VENT BETWEEN THE VENT DISCHARGE CONNECTION AT THE UNIT HEATER TO THE MANUFACTURER'S SUPPLIED CORONA ADAPTOR.
- ACCESSORIES SHALL INCLUDE FEELS, ELBOWS, INCREASERS, DRAFT HOOD CONNECTORS, METAL CAP WITH BRD BARRIER, ADJUSTABLE ROOF FLASHING, STORM COLLAR, SUPPORT ASSEMBLY, THIMBLES, PRESTOP SPACERS, AND FASTENERS FABRICATED OF SIMILAR MATERIALS AND DESIGNS AS VENT PIPE STRAIGHT SECTIONS.
- TERMINATE VENT STACKS WITH RAIN CAP AT 3' ABOVE ROOF AND 2' ABOVE ANY BUILDING COMPONENT WITHIN 10' UNLESS SPECIFICALLY INDICATED OTHERWISE.

- ROOF CURBS AND PIPE PORTALS**
- PROVIDE PRE-MANUFACTURED FOUR SIDED ROOF CURBS FOR ALL ROOF TOP AIR CONDITIONING UNITS, CONDENSING UNIT, ROOF MOUNTED EQUIPMENT SUPPORT AND PIPING PENETRATIONS. PREFABRICATED CURBS SHALL BE HEAVY-GAUGE, GALVANIZED STEEL WITH INTERED, WELDED CORNERS AND THERMAL INSULATION; SLOPE TO MATCH ROOF PITCH, MOUNTING FLANGE, AND 2-INCH WOOD NAILERS.
 - ROOF CURBS SHALL BE 18" HIGH MINIMUM. AT ROOFTOP AIR CONDITIONING UNITS SEAL AROUND THE PERIMETER OF DUCT PENETRATIONS THROUGH THE ROOF STRUCTURE AND PROVIDE DOUBLE LAYER OF 5/8" OPTIMUM BOARD INSIDE CURBS FOR COMPRESSED EQUIPMENT TO ASSIST IN ATTENUATING COMPRESSOR NOISE TO OCCUPIED SPACE BELOW. NOTE THAT FINISHED EQUIPMENT SHALL ALLOWING RE-ROOFING OF BUILDING WITHOUT AFFECTING CONDENSING UNITS OR PIPING.
 - REFRIGERANT PIPING CURBS SHALL BE SIZED TO ACCOMMODATE PIPING AND ALL ASSOCIATED CONDENSING UNIT CONDENSATE AND CONTROL WIRING. PROVIDE PIRAL TYPE CAP WITH EPDM RUBBER, APPLIED CAP SELECTED FOR THE QUANTITY AND SIZE PENETRATIONS REQUIRED. PROVIDE STAINLESS STEEL CLAMP AT EACH PENETRATION AND SEAL ALL PENETRATIONS WEATHER TIGHT. COSE THROUGH ROOF TO ACCOMMODATE ALL W/PIPE POSITIONS WHETHER CURRENTLY USED OR NOT. STUFF CURBS FULL OF FIBERGLASS BATT INSULATION.
 - PROVIDE FOUR SIDED ROOF CURBS FOR SUPPORT OF ALL CONDENSING UNITS WITH HEAVY GAUGE GALVANIZED ROOF CAP WITH MINIMUM 3" DRIP EDGE. PROVIDE 3/4" EXTERIOR PLYWOOD SUPPORT BELOW CURBS AT CONDENSING UNIT CURBS. SECURE CONDENSING UNITS TO CAP/CURBS ASSEMBLY.
 - ROOF MOUNTED DUCT SUPPORTS: PROVIDE NON ROOF PENETRATING TYPE DUCT SUPPORT SYSTEMS UTILIZING DUAL BASES AND SUPPORTING 1/4" FRAME STRUT ASSEMBLY. SIZE TO ACCOMMODATE DUCT SIZE AND WEIGHT. PROVIDE SPACING ACCORDING TO SMACNA STANDARDS. PROVIDE UNISTRUT TYPE ASSEMBLY MANUFACTURED OF HOT-DIP GALVANIZED STEEL AND ALL ASSOCIATED HARDWARE. PROVIDE BASES OF 1/4" RESISTANT POLYCARBONATE RESIN WITH PADS BELOW BASES AS RECOMMENDED FOR USE WITH THE SPECIFIC ROOFING MATERIAL USED ON THIS PROJECT. EXTEND 1/4" FRAME FLUSH WITH TOP OF SUPPORTED DUCTWORK AND SECURE TO SIDES OF DUCT. SUPPORT DUCT WITH BOTTOM AT 24" ABOVE THE ROOF SURFACE. PROVIDE TRANSITIONS AT ROOFTOP UNIT CONNECTIONS AS REQUIRED TO ADJUST SIZE AND ELEVATIONS. BASED ON MRO 6-SERIES OR BIGFOOT H SERIES OR SIMILAR.



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CURRENT PLAN DATE
90% REVIEW 11.16.2018

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10.08.2018

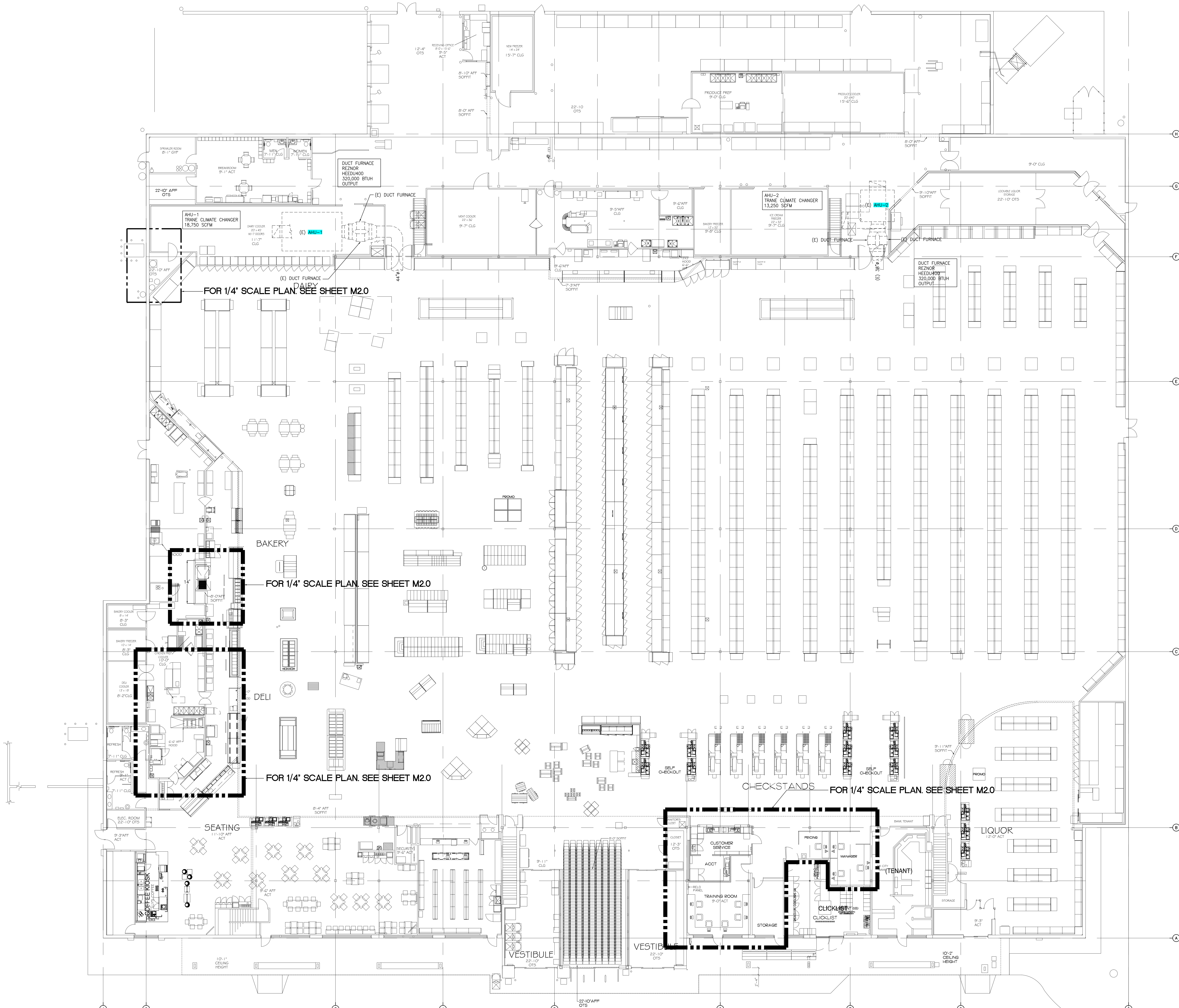
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REVISIONS

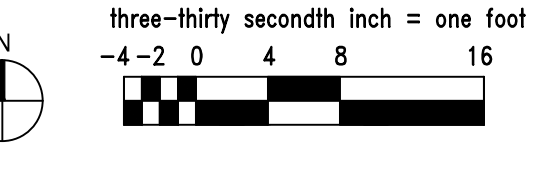
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17034

SHEET TITLE
GENERAL NOTES AND ABBREVIATIONS

M0.0
MCA4761



1 MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"



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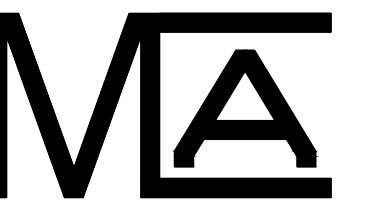


INTERIOR REMODEL
METRO MARKET MM-853
12735 W CAPITOL DR.
BROOKFIELD, WI 53005

CURRENT PLAN DATE	9/27 REVIEW 11.16.2018
ORIGINAL PLAN DATE	10.08.2018
DRAWN	CHECKED
REVISIONS	
ARCH PROJ. NO.	17034
SHEET TITLE	MECHANICAL FLOOR PLAN
SHEET	M1.0

MCA4761

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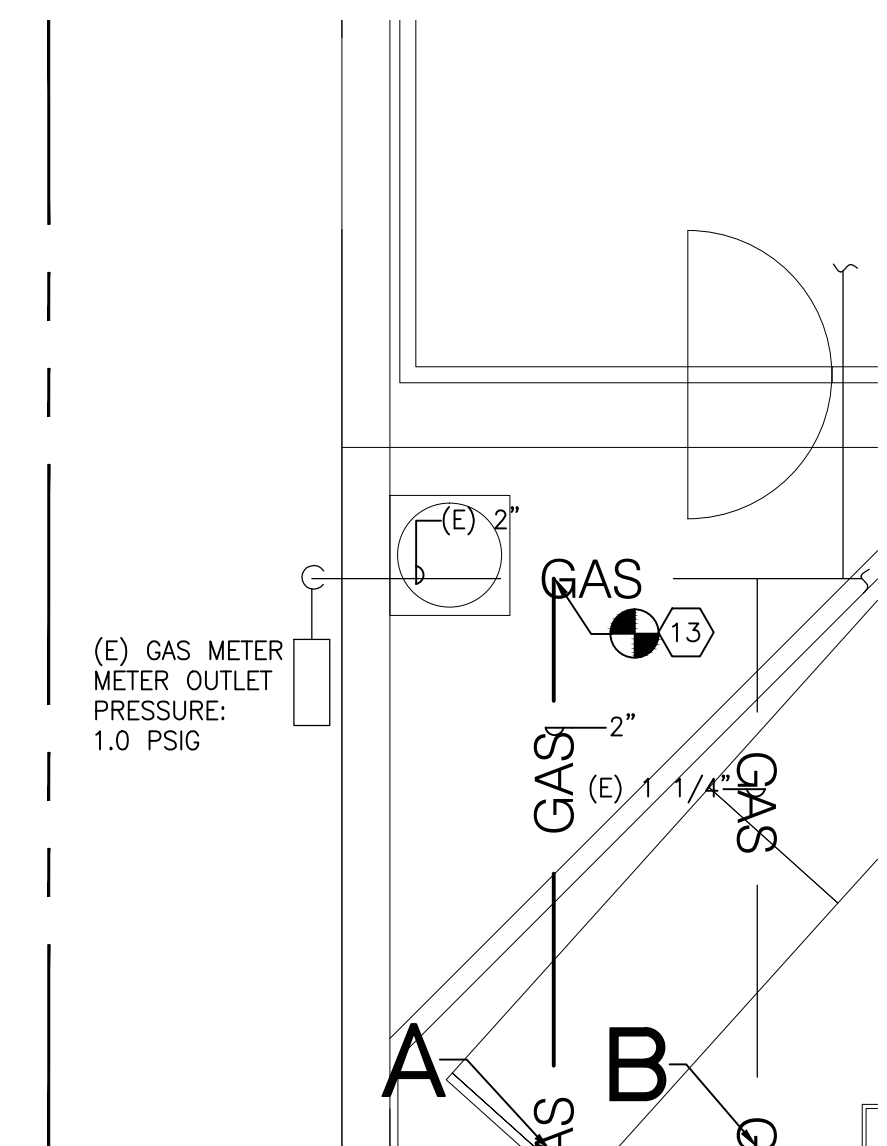
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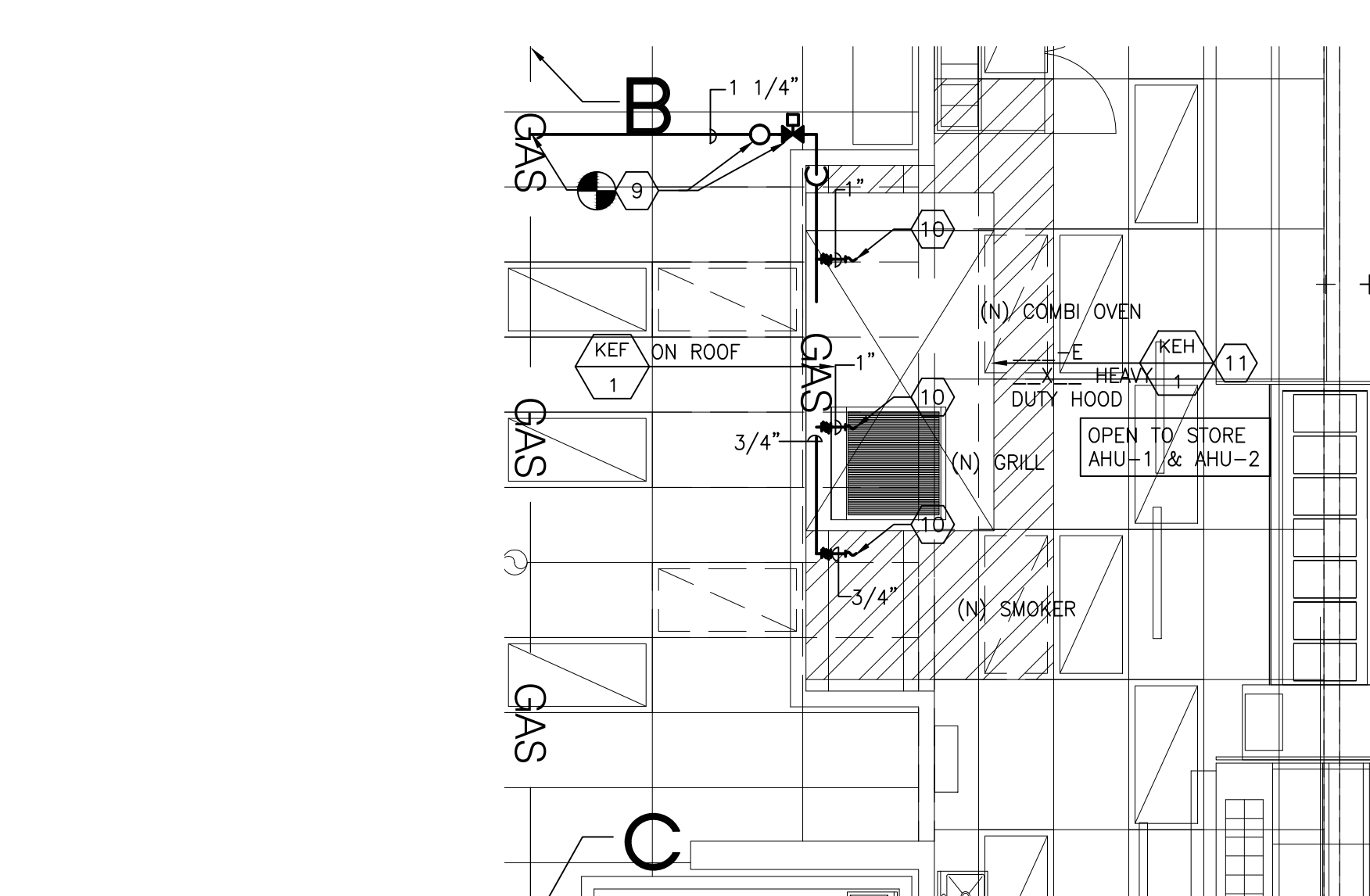
ARCH PROJ. NO.
17034
SHEET TITLE
ENLARGED MECHANICAL PLANS

SHEET
M2.0

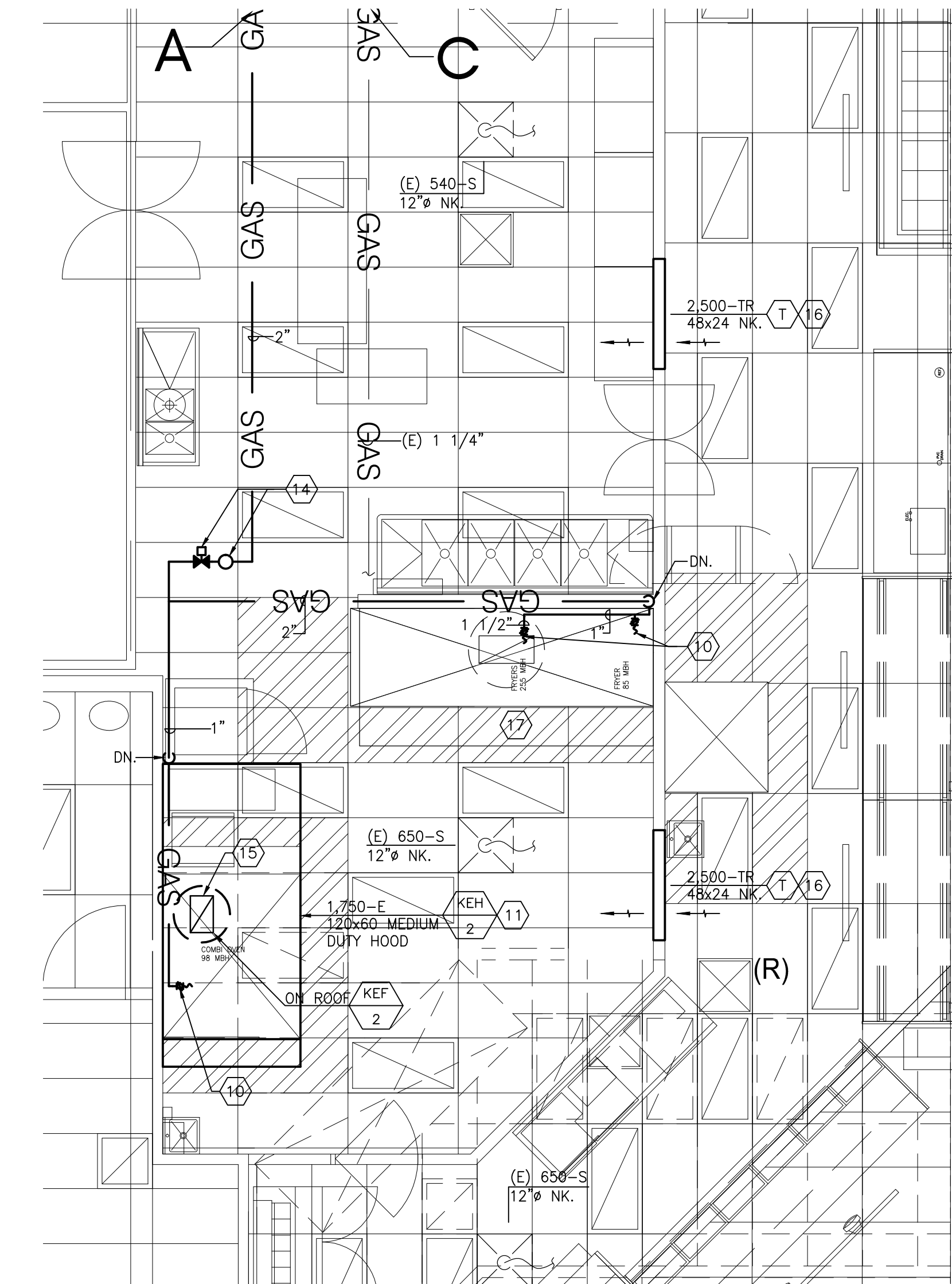
MCA4761



1 ENLARGED MECHANICAL PLAN
SCALE: 1/4"=1'-0"



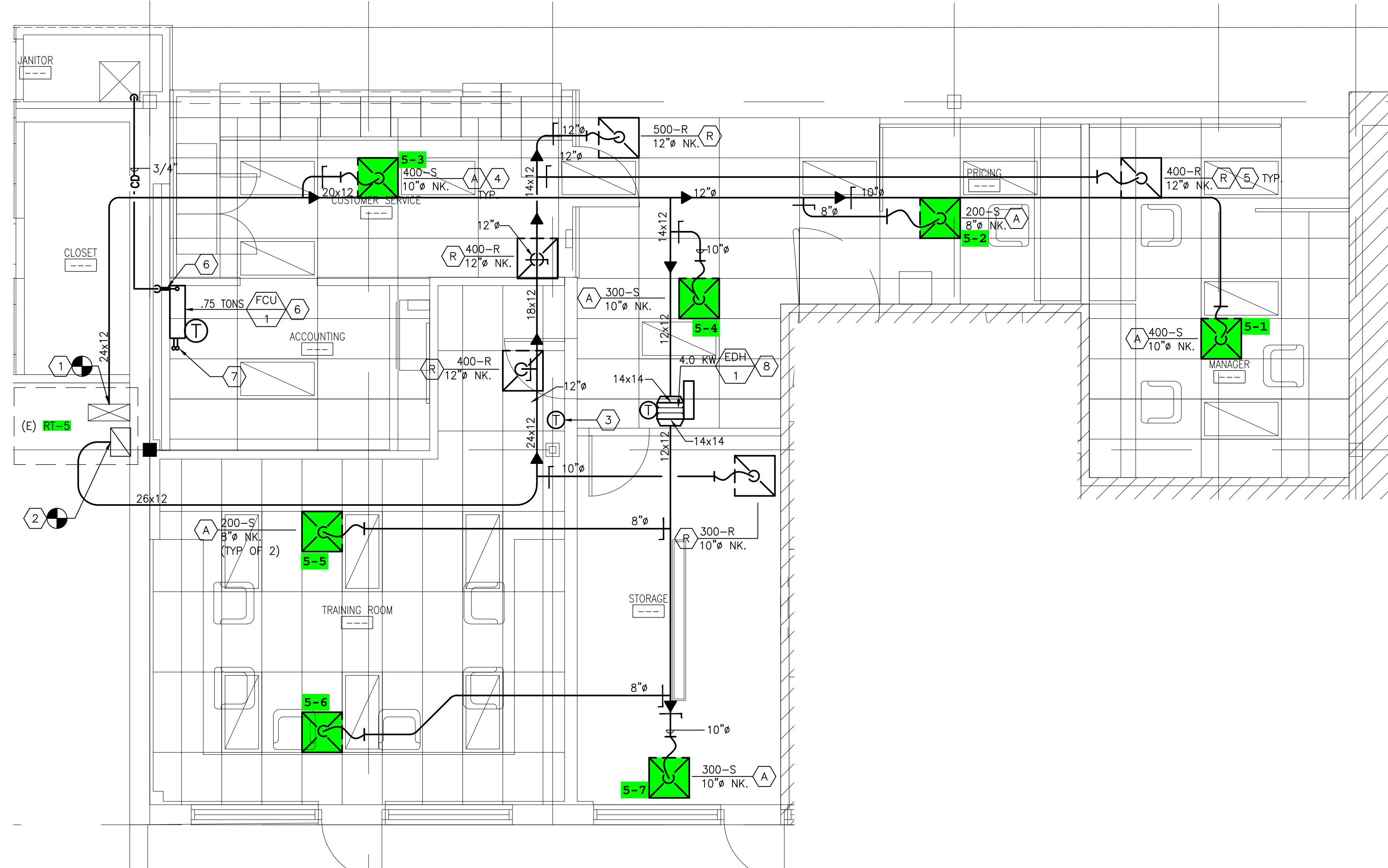
2 ENLARGED MECHANICAL PLAN
SCALE: 1/4"=1'-0"



3 ENLARGED MECHANICAL PLAN
SCALE: 1/4"=1'-0"

NEW WORK KEY NOTES	
TAG	DESCRIPTION
1	PROVIDE NEW SUPPLY DUCTWORK. CONNECT TO EXISTING SUPPLY DROP FROM EXISTING RT-5. SEE DETAIL ON M3.1.
2	PROVIDE NEW RETURN DUCTWORK. CONNECT TO EXISTING RETURN DROP FROM EXISTING RT-5. SEE DETAIL ON M3.1.
3	PROVIDE NEW 7 DAY PROGRAMMABLE THERMOSTAT. CONNECT TO EXISTING CONTROL SYSTEM OF RT-5.
4	PROVIDE NEW SUPPLY DIFFUSER. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT.
5	PROVIDE NEW RETURN GRILLE. FINAL LOCATION TO BE COORDINATED WITH ARCHITECT.
6	PROVIDE NEW SPLIT SYSTEM. LOCATE FAN COIL WALL UNIT AS SHOWN. PROVIDE CONDENSATE PUMP AND 3/4" INSULATED CONDENSATE LINE. TERMINATE TO NEAREST OPEN SITE DRAIN. PROVIDE FIRE BLOCKING IN ACCOUNTING WALL FOR CONDENSATE LINE.
7	PROVIDE REFRIGERANT LINES UP TO NEW CONDENSING UNIT ACQU-1 ON ROOF. PROVIDE FIRE BLOCKING FOR REFRIGERANT LINES IF PENETRATING A FIRE RATED WALL. REFRIGERANT LINES TO HAVE 1" ARMAFLEX INSULATION.
8	PROVIDE NEW ELECTRIC DUCT HEATER. THERMOSTAT (SET BY OWNER) TO BE ON HEATER. SEE DETAIL ON M3.0.
9	PROVIDE NEW GAS BRANCH PIPE. CONNECT TO EXISTING GAS MAIN BELOW ROOF. PROVIDE REGULATOR (1 1/4") WITH VENT LIMITING DEVICE AND EMERGENCY MOTORIZED SHUT OFF VALVE (N.C.).
10	PROVIDE DIRT LEG, GAS COCK AND FLEXIBLE PIPE CONNECTION TO EQUIPMENT.
11	PROVIDE NEW TYPE 1 EXHAUST HOOD AT LOCATION SHOWN. SEE HOOD SCHEDULE FOR COMPLETE INFORMATION.
12	PROVIDE NEW 1 1/2" BLACK IRON EXHAUST DUCT UP TO ROOF MOUNTED EXHAUST FAN KEF-1. SEE FAN SCHEDULE AND DETAIL.
13	PROVIDE NEW GAS BRANCH PIPE. CONNECT TO EXISTING GAS MAIN BELOW ROOF.
14	PROVIDE NEW REGULATOR (1 1/4") WITH VENT LIMITING DEVICE AND EMERGENCY MOTORIZED SHUT OFF VALVE (N.C.).
15	PROVIDE NEW 16x10 BLACK IRON DUCT UP TO NEW KEF-2 ON ROOF. SEE SCHEDULE AND DETAIL.
16	PROVIDE NEW TRANSFER GRILLE. INSTALL 2" BELOW CEILING LEVEL.
17	EXISTING TYPE 1 EXHAUST HOOD, DUCTWORK AND EXHAUST FAN TO REMAIN. FAN IS LISTED AT 2,700 CFM EXHAUST.

PROJECTED DELI LOAD: 438 CFH
GAS PPG DISTANCE: 150'
X 1.25 = 190 T.E.L.
Ø 3" PD (L.P.) = 2" PIPE



4 ENLARGED MECHANICAL PLAN
SCALE: 1/4"=1'-0"

HOOD KEF-1
ANF FAN KEF-1
NOT DONE.

EXHAUST FAN SCHEDULE																
TAG	LOCATION	SERVICE	CFM	E.S.P. IN WC	FAN DATA				MOTOR DATA				MANUFACTURER	MODEL	UNIT WT. LBS.	REMARKS
					FAN TYPE	CLASS	RPM	DRIVE	BHP	HP	FLA	VOLT				
REF-1 KEF-1	ROOF	KEF-1														

OPTIONS/ACCESSORIES:
 1. 30" HIGH ROOF CURB (VERIFY PITCH PRIOR TO FABRICATION)
 2. STD. DISCONNECT
 3. BACKDRAFT DAMPER
 4. HINGED BASE KIT
 5. KEYWAY GREASE TROUGH
 6. GREASE TERMINATOR
 7. BELT TENSIONER
 8. HOOD SWITCH
 9. INTERLOCK W/ FIRE SUPPRESSION SYSTEM

KITCHEN HOOD SCHEDULE														
HOOD TAG	LOCATION	DESCRIPTION	HOOD TYPE	MATERIAL	HOOD SIZE L x W	HOOD OPENING	VELOCITY	STAINLESS STEEL FILTERS	HOOD EXH. CFM	S.P.	MANUFACTURER	MODEL	REMARKS	
KEH-1														

HOOD AS PER KROGER QUICK SELECT CHART
 1. 647 W.C. S.P.
 2. PROVIDE WITH COMPLETE FIRE SUPPRESSION SYSTEM.

EXHAUST FAN SCHEDULE																		
TAG	LOCATION	SERVICE	CFM	E.S.P. IN WC	FAN DATA				MOTOR DATA				MANUFACTURER	MODEL	UNIT WT. LBS.	REMARKS		
					FAN TYPE	CLASS	RPM	DRIVE	BHP	HP	FLA	VOLT					PH	HZ
REF-2 KEF-2	ROOF	KEF-2	1,750	.623	CENT.	1	1,709	BELT	92	1	4.6	208	3	60	CAPTIVE ABE	NCA14FA	140	SEE BELOW

OPTIONS/ACCESSORIES:
 1. 30" HIGH ROOF CURB (VERIFY PITCH PRIOR TO FABRICATION)
 2. STD. DISCONNECT
 3. BACKDRAFT DAMPER
 4. HINGED BASE KIT
 5. KEYWAY GREASE TROUGH
 6. GREASE TERMINATOR
 7. BELT TENSIONER
 8. HOOD SWITCH
 9. INTERLOCK W/ FIRE SUPPRESSION SYSTEM

KITCHEN HOOD SCHEDULE														
HOOD TAG	LOCATION	DESCRIPTION	HOOD TYPE	MATERIAL	HOOD SIZE L x W	HOOD OPENING	VELOCITY	STAINLESS STEEL FILTERS	HOOD EXH. CFM	S.P.	MANUFACTURER	MODEL	REMARKS	
KEH-2	DELI PREP	GAS FIRED COMBI OVEN	1	430 S/S	120 x 60	10 x 16	1,647	6-20 x 20	1,750	.623	CAPTIVE ABE	6024 ND		

HOOD AS PER KROGER QUICK SELECT CHART
 1. 1.0" W.C. S.P.
 2. PROVIDE WITH COMPLETE FIRE SUPPRESSION SYSTEM.

EXISTING ROOF TOP HVAC UNIT SCHEDULE (FOR REFERENCE)																																																
TAG	SERVICE TYPE	CAV	VAV	MULTI-ZONE (NO. OF ZONES)	LOCATION	NOM. TONS	O.A. CFM	COOLING SECTION				REFRIGERATION INFO				HEATING SECTION				EVAPORATOR FAN	RETURN/EXHAUST FAN	COMPRESSOR	CONDENS. FAN	COMB. AIR BLOWER	UNIT ELECTRICAL DATA				OPERATING WT. (LBS)	WEIGHTED SOUND	MANUFACTURER	MODEL	FILTERS DATA	TOTAL UNIT HT.	REMARKS													
								TOTAL MBH	SENSIBLE MBH	EAT/F DB/WB	LATF DB/WB	EER/SEER	TYPE	CHARGE LB.-OZ	OUTPUT MBH	STAGES	UNIT HEAT TYPE	THERMAL EFF.	A/FUE%						GAS INPUT MBH	OUTDOOR/AMBIENT MIN./MAX.	CFM	FLA								TSP IN.W.C.	ESP IN.W.C.	CFM	FLA	TSP IN.W.C.	ESP IN.W.C.	QTY	RLA	FLA	NO. OF FANS	FLA	MCA	MOCP
RT-5	X				ROOF	5	500	60	40.2	80/67	54/55	9.7/10	R-22	6-14	120	2	GAS	---	80	150	-10	3"-14"	2,000	---	1.50	75	1,500	---	---	---	1	8.3	1.4	1	6	13	13	20	460	3	60	510	---	CARRIER	48TE006	2-16x25x2	48	

UNIT DESIGNATION BASED ON 1988 HVAC PLANS

EXISTING AIR HANDLING UNIT SCHEDULE (FOR REFERENCE)																																
TAG	LOCATION	AREA SERVED	CFM	SUPPLY FAN				MOTOR DATA				COOLING COIL DATA				HEATING COIL DATA				UNIT WT. LBS.	MANUFACTURER	MODEL	REMARKS									
				OUTSIDE AIR	TOTAL S.P. "IN"	ESP "W"	FAN SPEED RPM	SOUND LEVEL	HP	TYPE	CLASS	VOLTS	PH	HZ	TYPT	ROWS	FFP	REFG.	EAT DB/WB					LAT DB/WB	SST	TOTAL CAP. (MBH)	AIR P.D. (W.C.)	FACE VEL.	BTUH AVAILABLE	EAT	COND. TEMP. (F)	
AHU-1	WEST BACK AREA	WEST HALF	18,750	180	18,750	2.25	1.00	---	---	10	F.C.	1	460	3	60	F(P)	6	110	R-22	73.5/61.5	53.0/52.4	45	483.3	57"	535	513,000	64"	96"	8,000	TRANE	CLIMATE MASTER SIZE 25	SEE BELOW
AHU-2	EAST BACK AREA	EAST HALF	13,250	130	13,250	2.00	1.00	---	---	7	F.C.	1	460	3	60	F(P)	6	101	R-22	73.5/61.5	53.0/52.3	44	347.7	56"	550	300,000	61"	95"	8,000	TRANE	CLIMATE MASTER SIZE 25	SEE BELOW

UNIT DESIGNATION BASED ON 1988 HVAC PLANS

DX FAN COIL UNIT SCHEDULE											
TAG	LOCATION	TYPE UNIT	NOM. CFM	E.S.P. IN WC	FLA	HP	V/PH	UNIT WEIGHT (LBS)	MANUFACTURER	MODEL	REMARKS

REMARKS:
 1. CONDENSATE PUMP, LITTLE QANT #EC-1 SERIES, 230/1/60, 1/6 HP., WT. 1 LBS.
 2. POWERED FROM CONDENSING UNIT AC-1.
 3. WALL MOUNTED PROGRAMMABLE THERMOSTAT.

AIR COOLED CONDENSING UNIT SCHEDULE																										
TAG	LOCATION	UNIT SERVED	SEER	FER	AMB. TEMP. °F	REJECTION CAPACITY BTUH	COMPRESSOR DATA				REFRIGERANT DATA				CONDENSER FAN				ELECTRICAL DATA				UNIT WEIGHT (LBS)	MANUFACTURER	MODEL	REMARKS
							TYPE	QTY/HP	RPM	STEPS	TYPE	CHARGE	QTY	EACH	CFM	V	PH	HZ	MCA	MOCP	STAGES	CIRCUIT VOLTAGE				
AC-1	ROOF	FCO-1	15.40	24.60	95°	9.0	CENT.	1/1	---	1	R-410A	2.9	1	1/3	1,229	208	3	60	7	15	81	MITSUBISHI	MU7-GU09A-U1	SEE BELOW		

REMARKS:
 1. R410A REFRIGERANT.
 2. BUILT IN ACCUMULATOR & METERING DEVICE.
 3. ROOF CURB FOR MOUNTING OF AC-1 AND PATE TYPE CURB FOR ROUTING OF REFRIGERANT PIPING & CONDUITS.
 4. PROVIDE "ARMAFLEX" INSULATION FOR REFRIGERANT LINES, THICKNESS AS PER ENERGY CODE.
 5. LOW AMBIENT OPERATION 6. OR APPROVED EQUAL

GRILLE, REGISTER AND DIFFUSER SCHEDULE									
EQUIPMENT TAG	MANUFACTURER	TYPE	MODEL	FACE SIZE	NECK SIZE	MATERIAL	MAX. N.C.	REMARKS	
(A)	TITUS	SUPPLY	DM1	24x24	SEE PLAN	STEEL	3/8	1 - 3	
(B)	TITUS	RETURN	350R1	24x24	SEE PLAN	STEEL	3/8	1 - 3	
(C)	TITUS	TRANSFER	350ZR1	1.3/4" LARGER	SEE PLAN	STEEL	3/8	1	

REMARKS / OPTIONS:
 1. COLOR BY ARCHITECT
 2. OPPOSED SLIDE DAMPER
 3. VERIFY CEILING CONSTRUCTION PRIOR TO INSTALLATION.

VENTILATION SCHEDULE (2012 IMC / SPS TABLE 364.0403)																						
ROOM NUMBER	ROOM NAME	ROOM PURPOSE	FLOOR AREA	OCCUPANCY LOAD REQUIREMENTS		MIN. OUTDOOR AIR REQUIREMENTS		MIN. EXHAUST AIR REQUIREMENTS		ACTUAL VENTILATION				SERVICE UNITS				REMARKS				
				PER/1000 SQ. FT.	ACTUAL NO. OF PEOPLE	CFM/PERSON	CFM/SQ.FT.	TOTAL CFM	NO. OF FIXTURES/SQ.FT.	CFM/FIXTURE	REQD. CFM	SUPPLY CFM	EXH. CFM	RET. CFM	SUPPLY SYSTEM	EXH. SYSTEM	RET. SYSTEM					
	CUSTOMER SERVICE	OFFICE	185	7	2	5	.06	21	---	---	---	---	400	21	400	RT-5	PEF-5	RT-5				
	ACCOUNTING	OFFICE	110	7	2	5	.06	17	---	---	---	---	300	17	300	RT-5	PEF-5	RT-5				
	TRAINING	CONFERENCE	350	50	6	5	.06	53	---	---	---	---	400	51	400	RT-5	PEF-5	RT-5				
	FRONT	OFFICE	65	7	1	5	.06	10	---	---	---	---	200	10	200	RT-5	PEF-5	RT-5				
	MANAGER	OFFICE	210	7	2	5	.06	23	---	---	---	---	400	23	400	RT-5	PEF-5	RT-5				
	CORRIDOR	WAREHOUSE	225	---	---	---	---	---	---	---	---	---	300	---	300	RT-5	PEF-5	RT-5				
	STORAGE	WAREHOUSE	185	---	---	---	---	---	---	---	---	---	300	---	300	RT-5	PEF-5	RT-5				
	BAKERY	SUPERMARKET	145	8	2	7.5	.06	24	---	---	---	---	1,750	1,750	---	AHU-1	AHU-2	KEF-1	AHU-1	AHU-2		
	DELI PREP	KITCHEN	340	---	---	---	---	---	---	---	---	---	240	4,450	2,700	1,750	AHU-1	AHU-2	KEF	KEF-2	AHU-1	AHU-2
													145									

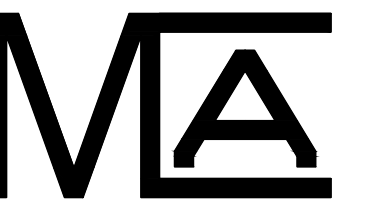
ELECTRIC HEATING COIL SCHEDULE																
TAG	LOCATION	CFM	AIR TEMP. °F			VOLT	PH	HZ	CONTROL DATA		COIL DATA			MANUFACTURER	MODEL	REMARKS
			ENT	LVG	KW				STAGES REQ'D	CIRCUIT VOLTAGE	W	H	MAX AIR PD			
EDA-1	VESTIBULE	700	70°	99°	4	208	3	60	1	24	14	14	.09	MARKEL	CHMS-3-F-14W-14H-4KW-208-3-24-1-H-D	(1)(2)(3)(5)

1. PROVIDE FLOW STRAINERS
 2. MINIMUM COIL FACE VELOCITY PER MANUFACTURER REQUIREMENTS
 3. FLANGED TYPE HEATER
 4. INTEGRAL CONTROLS SHALL BE PROVIDED
 5. HEATER TO BE PROVIDED WITH DISCONNECT SWITCH
 6. HEATER TO BE SUSPENDED FROM ROOF STRUCTURE. SEE DETAIL.



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SHEET TITLE: **MECHANICAL DETAILS**

M3.1
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