

GENERAL NOTES

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENT EDITION OF THE FOLLOWING CODES/STANDARDS: MECHANICAL, NATIONAL ELECTRIC CODE, NFPA AND ALL LOCAL ORDINANCES.
- ALL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS.
- REFER TO ARCHITECTURAL PLANS FOR EXACT CEILING GRID AND DIFFUSER LOCATIONS.
- ALL DUCTS SIZES SHOWN IN THE PLANS ARE IN NOMINAL CLEAR DIMENSIONS.
- LOCATE ALL THERMOSTATS AT 44 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. EXACT LOCATION OF ALL THERMOSTATS SHALL BE APPROVED BY THE ARCHITECT AND THE ENGINEER.
- CONTRACTOR SHALL CLEAN ALL COILS AND REPLACE FILTERS AT SUBSTANTIAL COMPLETION.
- AIR CONDITIONING EQUIPMENT SHALL BE AS SPECIFIED. ARCHITECT AND ENGINEER WILL REVIEW SUBSTITUTIONS FOR COMPATIBILITY.
- SLEEVE AND SEAL ALL PIPING PASSING THROUGH WALLS, FLOORS AND ROOF UNLESS NOTED OTHERWISE.
- ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE THE RESPONSIBILITY OF THE TRADE INVOLVED.
- THE MAXIMUM ALLOWABLE LEAKAGE FOR THE DUCT WORK IS 2%.
- AIR HANDLER UNIT FILTER RACKS SHALL BE READILY ACCESSIBLE FOR MAINTENANCE.
- CONTRACTOR SHALL INSTALL HVAC SYSTEMS AS REQUIRED BY THE MANUFACTURER TO INSURE QUIET OPERATION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ELIMINATION OF ANY UNDESIRABLE VIBRATION OR SOUND. VIBRATION OR SOUND SHALL NOT BE TRANSMITTED TO BUILDING STRUCTURE AND OCCUPIED AREAS.
- THESE DRAWINGS ARE DIAGNOSTIC AND SHOW GENERAL MECHANICAL LAYOUTS AND PIPE ROUTING AND ARE FOR HIRING PURPOSES ONLY.
- NOT ALL SYMBOLS, NOTES AND DETAILS MENTIONED HERE ARE USED IN THIS PROJECT.
- CONDENSATE DRAIN PIPING TO BE AS SPECIFIED PER PLUMBING PLANS. IF NOT SPECIFIED TO BE TYPE "L" COPPER OR PVC WHERE ALLOWED BY CODE WITH 1/2" AIRMAST EX INSULATION. PROVIDE APPROVED WATER LEVEL DETECTOR OR FLOAT SWITCH TO AUTOMATICALLY SHUT DOWN THE AIR COND. UNIT AS A SECONDARY DRAIN SYSTEM TO COMPLY WITH IMC 502. SUPPLY CONDENSATE PUMP WHERE NECESSARY AS IMPOSED BY FIELD CONDITIONS OR INSTALLATION CHANGES AND PUMP TO CONDENSATE DRAIN PER PLUMBING PLANS.

HVAC SPECIFICATIONS

- GENERAL
- PROVIDE LABOR, MATERIALS, AND EQUIPMENT REQUIRED FOR A COMPLETE SYSTEM AS OUTLINED IN THESE SPECIFICATIONS AND AS SHOWN ON DRAWINGS.
- VERIFY ALL EQUIPMENT VOLTAGE CHARACTERISTICS WITH A VENDOR. VOLTAGE USED AT THE SITE PRIOR TO PURCHASING EQUIPMENT.
- PRODUCTS
 - PRODUCTS: PROVIDE ALL EQUIPMENT AND MATERIALS NEW UNLESS NOTED OTHERWISE. SUBMIT FOR APPROVAL BY ARCHITECT/ENGINEER CATALOG SHEETS AND/OR SHOP DRAWINGS OF ALL MATERIAL AND EQUIPMENT TO BE USED.
 - A. PIPING - PIPE FITTINGS SHALL BE COMPATIBLE WITH THE APPLICABLE PIPE MATERIALS. PROVIDE DIELECTRIC UNIONS FOR CONNECTIONS BETWEEN DISSIMILAR MATERIALS.
 - B. VALVES - VALVES SHALL BE PROVIDED ON SUPPLIES TO EQUIPMENT AND COILS. VALVES 2-1/2" AND SMALLER SHALL BE BRONZE WITH HUBBED BOLDS FOR PIPE AND SOLDER-TYPE CONNECTIONS FOR TUBING. VALVES 3" AND LARGER SHALL HAVE FLANGED IRON BODIES AND BRONZE TRIM.
 - C. DUCTWORK - FABRICATE DUCTWORK AS INDICATED AND IN ACCORDANCE WITH SMACNA. CURVED ELBOWS SHALL HAVE A CENTERLINE RADIUS NOT LESS THAN 1/2" HUBS DUCT SIZE. PROVIDE TURNING VANES WHERE NOT POSSIBLE. PROVIDE MANUAL VOLUME DAMPERS ON ALL BRANCHES. INSULATE DUCT, MIN. THICKNESS 1-1/2" POLYISOCYANURATE INSULATION.
 - D. EQUIPMENT - PROVIDE ALL EQUIPMENT WITH HIGH EFFICIENCY MOTORS. EQUIPMENT TO BE AS SPECIFIED ON DRAWINGS. INSTALL WITH ENERGY SAVING VALVES OR DEVICES TO PREVENT ACCIDENTAL START-UP. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- EXHAUST FANS
 - A. CENTRIFUGAL ROOF MOUNTED EXHAUST FANS SHALL BE OF ALUMINUM CONSTRUCTION, CENTRIFUGAL WHEEL AND FACTORY MOUNTED DISCONNECT WITH FAN HOOD. PROVIDE INSULATED ROOF CURB, MINIMUM 14-INCHES IN HEIGHT. FANS SHALL BEAR A C.I. LABEL AND AN AMCA LABEL CERTIFYING SCHEDULE LP AIRFLOW PERFORMANCE AND SOUND RATINGS WHICH DO NOT EXCEED SCHEDULED VALUES. ACCEPTABLE MANUFACTURERS ARE GREENHECK, COOK, PENN OR APPROVED EQUAL.
 - B. GRAVITY RELIEF VENTS: SPRAY ALUMINUM CONSTRUCTION WITH PVC COATED MESH BIRDCRENS AND 14-INCH HIGH PRE-FABRICATED ROOF CURB. ACCEPTABLE MANUFACTURERS ARE GREE CHECK, COOK, PENN OR APPROVED EQUAL.
 - C. AIR DISTRIBUTION DEVICES: GRILLES REGISTER AND DIFFUSERS SHALL BE BY ONE MANUFACTURER WITH CONSTRUCTION MATERIAL, FINISH AND ACCESSORIES AS SCHEDULED ON THE DRAWINGS. ACCEPTABLE MANUFACTURERS ARE TITUS, METAL-AIR, PRICE OR APPROVED EQUAL.
- DUCTWORK: SMACNA "FIBROK" GLASS DUCT CONSTRUCTION STANDARDS, "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE" AND THE FLORIDA ENERGY CODE SHALL BE CONSIDERED PART OF THESE SPECIFICATIONS. THE MECHANICAL CONTRACTOR SHALL INCLUDE A COPY OF THE APPLICABLE REFERENCED STANDARDS IN THE SHOP DRAWING SUBMITTAL. IF THE MECHANICAL CONTRACTOR IS NOT FAMILIAR WITH THESE STANDARDS, THEY WILL NOT BE CONSIDERED COMPETENT TO BID THIS JOB. ANY WORK WHICH DOES NOT COMPLY WITH THESE STANDARDS MAY BE REJECTED AT ANY STAGE IN THE PROJECT.
 - A. EXHAUST, DRYER VENTS, RANGE HOOD VENTS AND OUTSIDE AIR INTAKE DUCTS SHALL BE CONSTRUCTED OF GALVANNEZED SHEET METAL. ALL SHEET METAL DUCTWORK SHALL BE SEALED WITH A NON-BLEEDING, NON-MIGRATING MASTIC SEALANT. PROVIDE HOT-DIPPED GALVANNEZED STEEL FASTENERS, ANCHORS, RODS, STRAPS AND ANGLES FOR SUPPORT OF DUCTWORK.
 - B. SUPPLY AND RETURN AIR DUCTWORK SHALL BE CONSTRUCTED OF RIGID FIBERBOARD WITH FOL SCIM (GAF VAPOR BARRIER, MINIMUM 60 R-VALUE).
 - C. FLEXIBLE DUCTS SHALL CONSIST OF SPIRAL WOUND HELIX COIL WITH REINFORCED INNER LINER COVERED WITH FIBERGLASS INSULATION AND METALLIZED OUTER JACKET. NFPA 99A, CLASS A DUCT WITH FLAME SPREAD LESS THAN 25 AND SMOKE DEVELOPED LESS THAN 50.
- INSULATION: INSULATE OUTSIDE AIR DUCTS IN CONCEALED LOCATIONS WITH MINIMUM R-6 FIBER GLASS BLENKET INSULATION WITH FACTORY APPLIED FLAME RETARDANT REINFORCED FOL SCIM (GAF VAPOR BARRIER EQUAL TO FIBERGLASS FRK-25 AND APPLIED IN ACCORDANCE WITH THE INSULATION MANUFACTURER'S RECOMMENDATIONS).
- REFRIGERANT LINES SHALL BE TYPE "L" COPPER TUBE WITH WROUGHT COPPER FITTINGS AND SILVER SOLDER JOINTS. CONDENSATE PIPE AND FITTING SHALL BE PVC SCHEDULE 40 WITH SOLVENT WELDS.
- EXECUTION
 - A. THE MECHANICAL CONTRACTOR SHALL PROVIDE WIRING DIAGRAMS AND SHALL BE RESPONSIBLE FOR THE PROPER OPERATION OF THE MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL FURNISH THE WIRING DIAGRAMS TO THE ELECTRICAL CONTRACTOR FOR COORDINATION PRIOR TO COMMENCING WORK.
 - B. TEST & BALANCE: THE MECHANICAL CONTRACTOR SHALL TEST, BALANCE AND RECORD DATA FOR THE PERFORMANCE OF THE AIR CONDITIONING SYSTEM INCLUDING SUPPLY, RETURN AND MAKEUP AIRFLOWS. THE TEST AND BALANCE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ASHRAE OR ASHRAE STANDARDS. UPON COMPLETION OF TEST AND BALANCE WORK AND PRIOR TO REQUESTING FINAL INSPECTION AND ACCEPTANCE OF THE PROJECT, SUBMIT THREE (3) COMPLETE COPIES OF THE TEST AND BALANCE REPORT TO THE ENGINEER FOR REVIEW.
 - C. GUARANTEE: THE CONTRACTOR SHALL GUARANTEE BY THE ACCEPTANCE OF THE CONTRACT THAT ALL WORK INSTALLED WILL BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS. IF DURING THE PERIOD OF ONE YEAR, OR AS OTHERWISE SPECIFIED, FROM DATE OF CERTIFICATION OF COMPLETION AND ACCEPTANCE OF WORK, ANY SUCH DEFECTS IN WORKMANSHIP, MATERIALS OR PERFORMANCE APPEAR, THE CONTRACTOR SHALL, WITHOUT COST TO THE OWNER, REPAIR SUCH DEFECTS WITHIN A REASONABLE TIME TO BE SPECIFIED IN NOTICE FROM THE ARCHITECT/ENGINEER. IN DEFAULT, THE OWNER MAY HAVE SUCH WORK DONE AND CHARGE COST TO CONTRACTOR.
 - D. PROPERTY DAMAGE: PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE PROPER INSTALLATION OF MATERIALS AND EQUIPMENT SPECIFIED IN THE SECTION. DO NOT CUT OR DRILL STRUCTURAL MEMBERS WITHOUT THE CONSENT OF THE ARCHITECT/ENGINEER. CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGE CAUSED BY HIS WORK UNDER THIS CONTRACT.
 - E. COMPLIANCE: ALL WORK AND MATERIAL SHALL BE SUBJECT TO INSPECTION AT ANY AND ALL TIMES BY REPRESENTATIVES OF THE ARCHITECT/ENGINEER. IF ARCHITECT OR ENGINEER OR OWNER'S INSPECTOR FINDS THAT ANY MATERIAL DOES NOT CONFORM WITH THESE DRAWINGS, THE CONTRACTOR SHALL, WITHIN THREE WORKING DAYS AFTER BEING NOTIFIED BY THE ARCHITECT/ENGINEER, REMOVE SAID MATERIAL FROM PREMISES. IF SAID MATERIAL HAS BEEN INSTALLED, ENRINKS EXPENSE OF REMOVING AND REPLACING SAME, INCLUDING CUTTING AND PATCHING THAT MAY BE NECESSARY, SHALL BE BORNE BY THIS CONTRACTOR. WORK SHALL NOT BE CLOSED OR COVERED BEFORE INSPECTION AND APPROVAL BY THE ARCHITECT/ENGINEER OR REPRESENTATIVE. COST OF COVERING AND MAKING REPAIRS WHERE UNINSPECTED WORK HAS BEEN CLOSED IN SHALL BE BORNE BY THIS CONTRACTOR.
 - F. CLEAN-UP: AT COMPLETION OF WORK, THIS CONTRACTOR SHALL CLEAN UP AND REMOVE ALL DEBRIS AND MATERIALS NOT INSTALLED IN WORK, LEAVING PREMISES CLEAN.

DESIGN DATA	DRAWING INDEX
<p>OUTDOOR DESIGN TEMPERATURES</p> <p>CITY, STATE: CHARLOTTE, NC</p> <p>WINTER: 22 F</p> <p>SUMMER DRY WET BULB: 91 F</p> <p>SUMMER WET BULB: 74 F</p> <p>INDOOR DESIGN TEMPERATURES</p> <p>WINTER: 68 F</p> <p>SUMMER: 72 F</p>	<p>M001 GENERAL NOTES AND LEGENDS</p> <p>M004 DETAILS</p> <p>M201 FIRST FLOOR MECHANICAL PLAN</p> <p>M202 MEZZ MECHANICAL PLAN</p> <p>M301 SCHEDULES</p>
SYMBOLS & LEGEND	
<p>□ SUPPLY DUCT (UP & DOWNS)</p> <p>□ EXHAUST DUCT (UP & DOWNS)</p> <p>□ RETURN AIR DUCT (UP & DOWNS)</p> <p>□ CEILING DIFFUSERS</p> <p>□ CEILING RETURN AIR GRILLE</p> <p>□ SIDE WALL REGISTER OR GRILLE</p> <p>W x D NEW DUCT - WIDTH x DEPTH</p> <p>W x D EXISTING DUCT TO REMAIN</p> <p>--- FLEXIBLE DUCTWORK</p> <p>--- SPIRAL DUCT</p> <p>↑ PIPE RISE UP</p> <p>↓ PIPE DOWN OR DROP</p>	<p>DUCT TRANSITION - CONCENTRIC</p> <p>DUCT TRANSITION - ECCENTRIC</p> <p>DUCT TRANSITION - RECT TO END</p> <p>REFRIGERANT LINE</p> <p>CONDENSATE WATER</p> <p>MANUAL VOLUME DAMPER</p> <p>THERMOSTAT/SENSOR</p> <p>EXHAUST & VENT</p> <p>GRAVITY LOUVER</p> <p>FIRE DAMPER</p> <p>EXHAUST FAN</p> <p>SMOKE DETECTOR</p> <p>TRANSFER GRILLE</p> <p>CEILING-MOUNTED SQUARE SUPPLY DIFFUSER</p> <p>DAMPER</p> <p>□ SUPPLY DIFFUSER</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p> <p>SIDEWALL-MOUNTED SQUARE SUPPLY DIFFUSER</p> <p>DAMPER</p> <p>□ SUPPLY DIFFUSER</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p> <p>CEILING-MOUNTED GRILLE SUPPLY DIFFUSER</p> <p>DAMPER</p> <p>□ SUPPLY DIFFUSER</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p> <p>CEILING-MOUNTED RETURN AIR GRILLE</p> <p>□ RETURN AIR GRILLE</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p> <p>SIDEWALL-MOUNTED RETURN AIR GRILLE</p> <p>□ RETURN AIR GRILLE</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p> <p>SIDEWALL-MOUNTED TRANSFER GRILLE</p> <p>□ TRANSFER GRILLE</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p> <p>SIDEWALL-MOUNTED EXHAUST GRILLE</p> <p>□ EXHAUST GRILLE</p> <p>□ NUMBER OF THE SAME SIZE GRILLE</p> <p>□ FACE SIZE</p> <p>□ AIR FLOW RATE</p>
ABBREVIATIONS	
<p>AABC ASSOCIATED AIR BALANCE COUNCIL</p> <p>ADVA ABOVE</p> <p>ADA AMERICAN DISABILITY ACT</p> <p>AFB ABOVE FINISHED FLOOR</p> <p>ARG ABOVE GRADE</p> <p>AJAP AS HIGH AS POSSIBLE</p> <p>ARU AIR HANDLING UNIT</p> <p>ARCH ARCHITECT</p> <p>BUDG BUDGETING</p> <p>BMSH BMSH</p> <p>BTWN BETWEEN</p> <p>BTWN JOISTS BETWEEN JOISTS</p> <p>CAB CABINET</p> <p>CB CATCH BASIN</p> <p>CO CLEAN OUT</p> <p>CONC CONCRETE</p> <p>COND CONDENSATE</p> <p>CONN CONNECTION</p> <p>CONT CONTINUATION</p> <p>CONTR CONTRACTOR</p> <p>CJ CONDENSATE UNIT</p> <p>CW COLD WATER</p> <p>DBI DUCT BETWEEN JOISTS</p> <p>DIA DIAMETER</p> <p>DAMP DAMPER</p>	<p>DN DOWN</p> <p>DRWNG DRAWING</p> <p>DS DOWN SPOUT</p> <p>DSN DOWN SPOUT NOZZLE</p> <p>EA EACH</p> <p>EC ELECTRICAL CONTRACTOR</p> <p>EF EXHAUST FAN</p> <p>EL ELECTRICAL</p> <p>FLEC ENERGY MANAGEMENT SYSTEM</p> <p>ENS ENERGY</p> <p>ENT ENTENDING</p> <p>ER EXHAUST REGISTER</p> <p>EXIST EXISTING</p> <p>FBI FIRE BRIGADE</p> <p>FD FLOOR DRAIN</p> <p>FLEX FLEXIBLE</p> <p>FV FIRE VOLUME DAMPER</p> <p>FLR FLOOR</p> <p>FRM FRAM</p> <p>GA GALLONS PER MINUTE</p> <p>GEN GENERAL</p> <p>GM GENERAL CONTRACTOR</p> <p>GV GRAVITY VENTILATOR</p> <p>HORIZ HORIZONTAL</p> <p>HVAC HEATING, VENTILATION, AND AIR CONDITIONING</p> <p>IN INCH</p> <p>INSUL INSULATION</p> <p>INSTR INSTRUMENT</p> <p>INVERT INVERT</p> <p>JTS JOISTS</p> <p>MAX MAXIMUM</p> <p>MFC MECHANICAL CONTRACTOR</p> <p>MED MEDIUM</p> <p>MECH MECHANICAL</p> <p>MEZZ MEZZANINE</p> <p>MANU MANUFACTURER</p> <p>MIN MINIMUM</p> <p>MKT MKT</p> <p>NATL NATIONAL ENVIRONMENTAL</p> <p>NBS BALANCING BUREAU</p> <p>NOT TO SCALE</p> <p>NYS NEW YORK STATE</p> <p>OA OUTSIDE AIR</p> <p>OPND OPENING</p> <p>PLUMB PLUMBING CONTRACTOR</p> <p>PD PRESSURE DROP</p> <p>PLNG PLUMBING</p> <p>PC PLUMBING CONTRACTOR</p> <p>PRV PRESSURE</p> <p>PT POINT</p> <p>PU PACKAGED UNIT</p> <p>REF REFRIGERATION</p> <p>REG REGISTER</p> <p>REQ REQUIRED</p> <p>RIGD RIGID</p> <p>RET RETURN</p> <p>RIC RETURN IN COVER</p> <p>RWL RAIN WATER LEADER</p> <p>SAN SANITARY</p> <p>SD SMOKE DETECTOR</p> <p>SF SUPPLY</p> <p>SHI SHEET</p> <p>SP STATIC PRESSURE</p> <p>SUP SUPPLY</p> <p>TEMP TEMPERATURE CONTROL</p> <p>TRGT TIGHT TO JOISTS</p> <p>TOP OF FOOTING</p> <p>TRU THROUGH JOISTS</p> <p>VENT VENT</p> <p>VD VOLUME DAMPER</p> <p>VOL VOLUME DAMPER</p> <p>VEH VEHICLE</p> <p>VEST VESTIBULE</p> <p>VIB VIBRATION</p> <p>VTR VENT THROUGH ROOF WITH</p>

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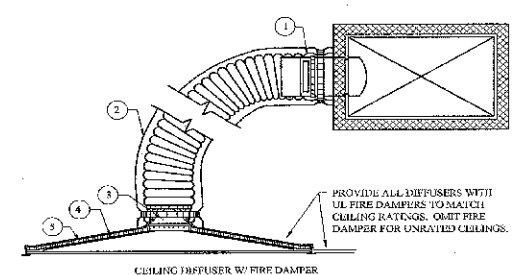
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Northlake Pavilion Building #3
Metromont Park & Stoneville Rd
Charlotte, NC

PROJECT NO. 05271-3
DATE: 06/21/07
DRAWN BY:
CHKD. BY:
GENERAL NOTES AND LEGENDS

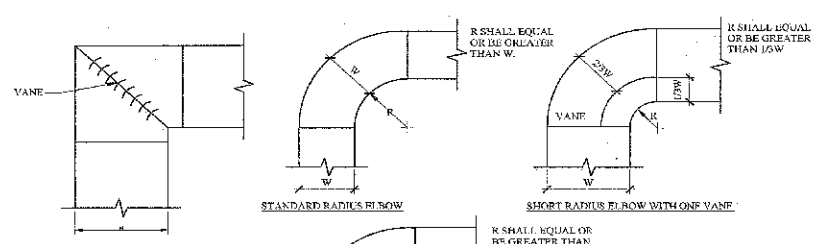
SHEET M001



CEILING DIFFUSER W/ FIRE DAMPER

NOTES:

- ① SPIN COLLAR TYPE CONNECTOR, EXTERNALLY INSULATED, WITH VOLUME DAMPER AND DAMPER LOCK.
- ② PRE-INSULATED FLEX DUCT AS REQUIRED, INSULATED PERMANENTLY SEALED AND SUPPORTED TO PREVENT KINKING AND SHARP TURNS. 1-90° TURN ALLOWED. MAXIMUM FLEX LENGTH NOT TO EXCEED 10'-0".
- ③ ROUND TO SQUARE ADAPTER AS REQUIRED.
- ④ USE NO DIFFUSER WITH VOLUME DAMPER, FIRE DAMPER OR COMBINATION VOLUME/FIRE DAMPER AS NECESSARY FOR ASSEMBLIES SHOWN ON ARCHITECTURAL DRAWINGS. ALL FIRE DAMPERS WHERE REQUIRED SHALL BE 1 HR OR 2 HR UL RATED FOR TYPE OF CEILING SHOWN AND SHALL BE INSTALLED IN ACCORDANCE WITH A.I.A. LISTING REQUIREMENTS.
- ⑤ PROVIDE 1-1/2" THICK FIRE RATED FOIL BACKED MINERAL WOOL JACKET TO COMPLETELY COVER DIFFUSER CONE SEAL FOIL TO CONE WITH FIBER REINFORCED FOIL BACKED TAPE.

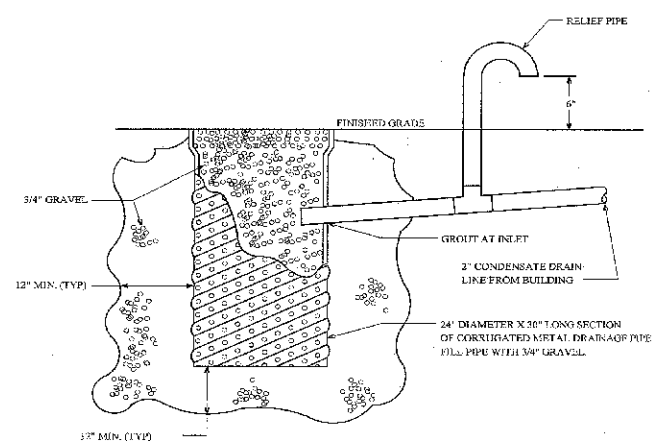


NOTES:

1. THE INTERIOR SURFACE OF ALL ELBOWS SHALL BE MADE SQUARE.
2. ALL SQUARE ELBOWS SHALL HAVE VANES. VANES SHALL BE CORNERS MATCHED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

NOTES:

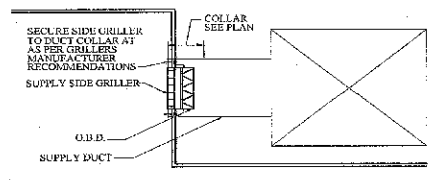
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. AT ALL STANDARD RADIUS ELBOWS SHOWN ON FLOOR PLANS MAY BE MADE SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.



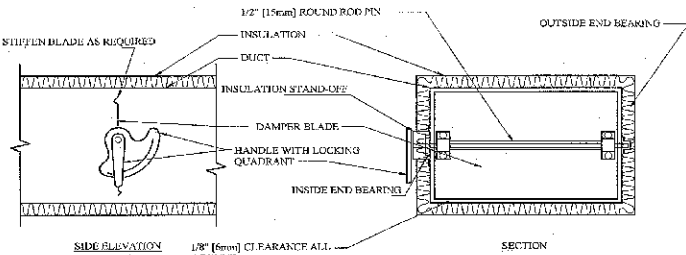
3 CONDENSATE DRYWELL DETAIL
NOT TO SCALE

1 DUCTWORK WITH FLEXIBLE DUCTS
NOT TO SCALE

2 DUCTWORK SQUARE ELBOWS & DUCTWORK RADIUS ELBOWS
NOT TO SCALE



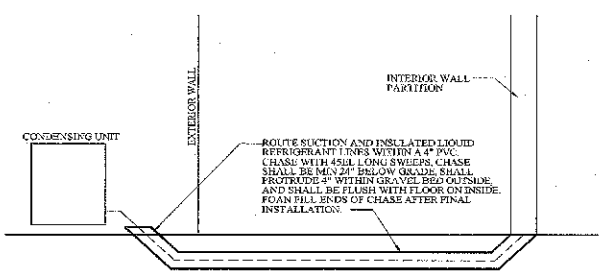
4 SIDE GRILLE MOUNTING DETAIL
NOT TO SCALE



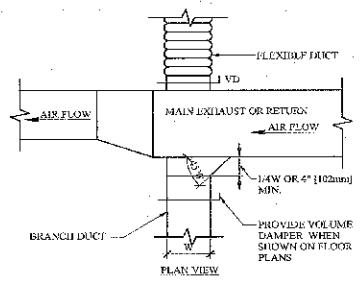
NOTES:

1. INCLUDE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER DAMPER. INSTALLATION SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

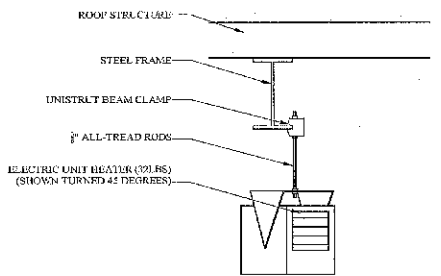
5 VOLUME DAMPER DETAIL
NOT TO SCALE



6 TYPICAL REFRIGERANT CHASE DETAIL
NOT TO SCALE



7 EXHAUST OR RETURN BRANCH DUCTWORK
NOT TO SCALE



8 ELECTRICAL UNIT HEATER DETAIL
NOT TO SCALE

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GROUND FLOOR
ENGINEERING

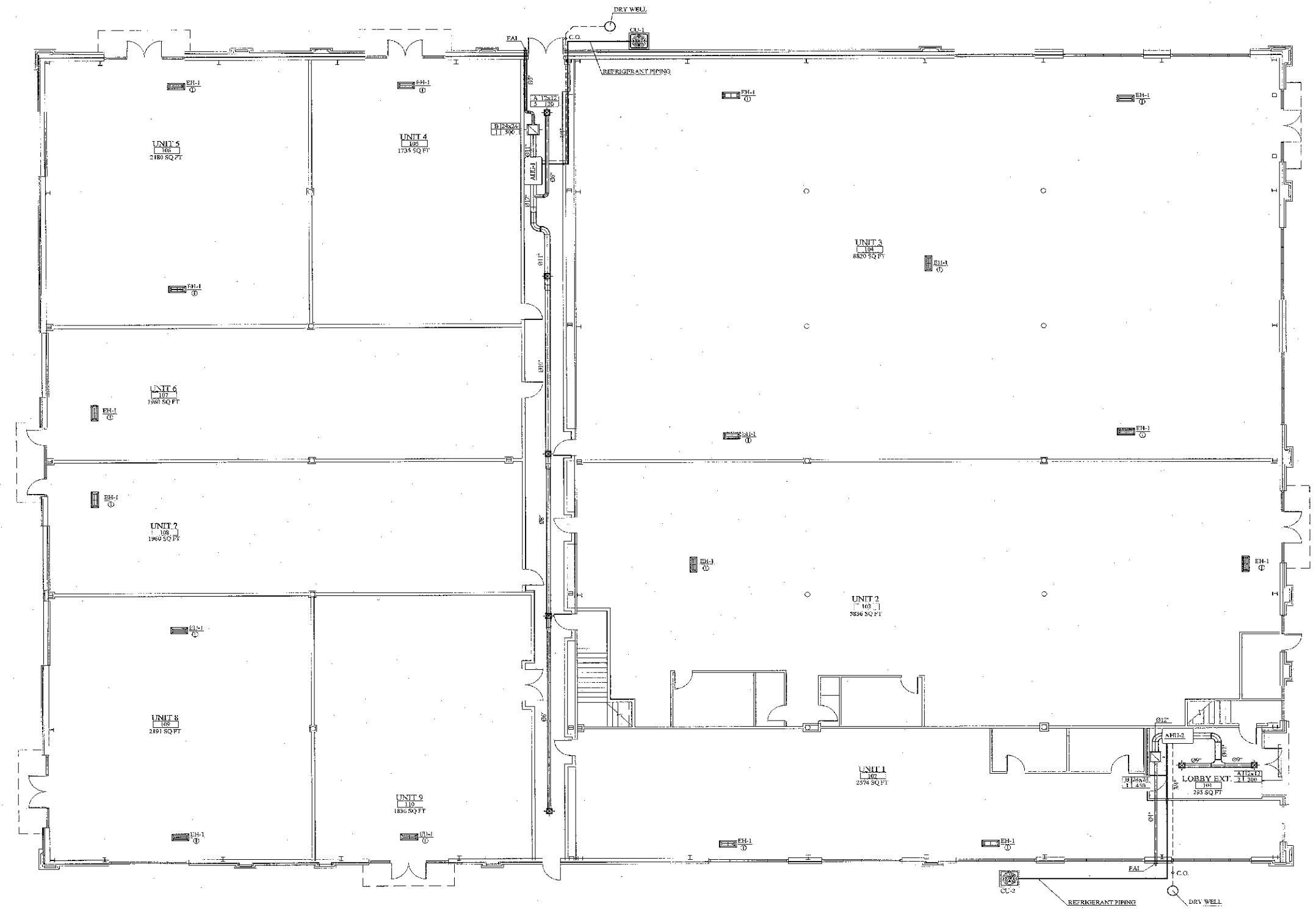
MOHAMMED CHERRY
EIT/ASQA PE
NC LIC. NO. 056208

JOB NO.: RWYK-03-37-MEP

Northlake Pavilion Building #3
Metromor Perry & Stateville Rd
Charlotte, NC

PROJECT NO.: 05271-3
DATE: 08/21/07
DRAWN BY:
CHKD. BY:

DETAILS
SHEET M101



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

KEY NOTES:
EH-1 ELECTRIC UNIT HEATER IN THE NON-CONDITIONED SPACES TO MAINTAIN MINIMUM TEMPERATURE 40°F

GROUND FLOOR

MWT ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
STATE OF NORTH CAROLINA
NO. 14221

JOB NO.: NWWK-03-37-MEP

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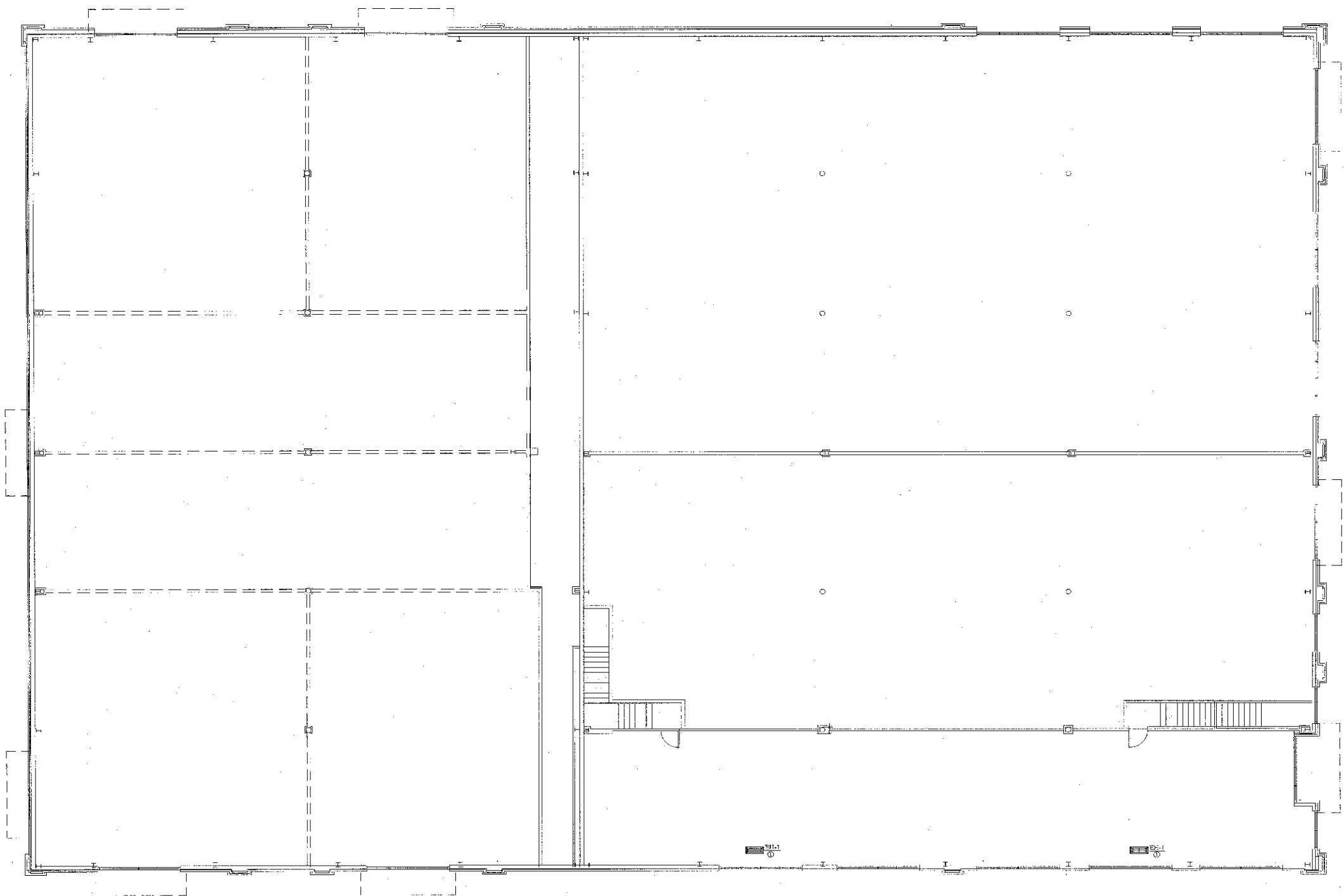
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Northlake Pavilion Building #3
Metromex Elevy & Statesville Rd
Charlotte, NC

PROJECT NO.: 05271-3
DATE: 08/21/07
DRAWN BY:
CHKD. BY:

FIRST FLOOR MECHANICAL PLAN

SHEET M201

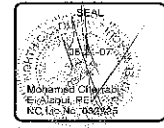


MEZZ MECHANICAL PLAN
SCALE: 1/8"=1'-0"

KEY NOTES:
 ① ELECTRIC UNIT HEATER IN THE NON-CONDITIONED SPACES TO MAINTAIN MINIMUM TEMPERATURE 40°F



JOB NO.: NWYK-03-37-MEP



REVISIONS:

WARNING:
 IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF THE ARCHITECT, TO ALTER OR REPRODUCE THESE DRAWINGS IN ANY WAY.



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Northlake Pavilion Building #3
 Metromont Drive & Stateville Rd
 Charlotte, NC

PROJECT NO.: 05271-3
 DATE: 08/21/07
 DRAWN BY:
 CHECKED BY:
 MEZZ MECHANICAL PLAN
 SHEET M202

ENERGY REQUIREMENTS:

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT
METHOD OF COMPLIANCE
PRESCRIPTIVE ENERGY COST BUDGET

THERMAL ZONE 7A
 EXTERIOR DESIGN CONDITIONS
 WINTER DRY RULR 22
 SUMMER DRY RULR 97
 INTERIOR DESIGN CONDITIONS
 WINTER DRY RULR 68
 SUMMER DRY RULR 72
 RELATIVE HUMIDITY 50
 BUILDING HEATING LOAD 11 MBH
 BUILDING COOLING LOAD 38.3 MBH
 MECHANICAL SPACE CONDITIONING SYSTEM
 UNITARY
 DESCRIPTION OF UNIT SEE SCHEDULES
 HEATING EFFICIENCY SEE SCHEDULES
 COOLING EFFICIENCY SEE SCHEDULES
 HEAT OUTPUT OF UNIT SEE SCHEDULES
 COOLING OUTPUT OF UNIT SEE SCHEDULES
 BOILER
 TOTAL BOILER OUTPUT NA
 CHILLER
 TOTAL CHILLER OUTPUT NA
 LIST EQUIPMENT EFFICIENCIES SEE SCHEDULES
 EQUIPMENT SCHEDULES WITH MOTORS MECHANICAL SYSTEMS
 MOTOR HORSEPOWER SEE SCHEDULES
 NUMBER OF PHASES SEE SCHEDULES
 MINIMUM EFFICIENCY SEE SCHEDULES
 MOTOR TYPE SEE SCHEDULES
 NUMBER OF POLES SEE SCHEDULES

AIR CONDITIONING SPLIT SYSTEM EQUIPMENT SCHEDULE

CONDENSING UNIT

CU TAG	MANUFACTURER & MODEL	NOMINAL TONNAGE	COOLING CAPACITY (MBH)	SEER	MOTOR (HP)	MCA	MOCP	VOLTAGE (V)	WEIGHT (LBS)	L x W x H (IN)	NOTES
CU-1,2	CARRIER 24AB3HRA603	1.5	17,900	13.0	1/2	11.7	15	208-230/1	125	25 5/8 x 25 5/8 x 25 1/8	CONDENSING UNIT

AIR HANDLING UNIT

AHU TAG	MANUFACTURER & MODEL	NOMINAL TONNAGE	TOTAL CFM	ELECTRIC HEAT		MOTOR (HP)	MCA	MOCP	VOLTAGE (V)	WEIGHT (LBS)	L x W x H (IN)	NOTES
				INPUT (KW)	OUTPUT (BTU/H)							
AHU-1,2	CARRIER 14ANW9300	1.5	600	3	9,400	1/8	17.5	20	208-230/1	172	22 1/8 x 35 7/16 x 62 11/16	HORIZONTAL INSTALLATION WITH ELECTRIC HEAT

NOTES:

- PROVIDE WITH THERMAL EXPANSION VALVES, LIQUID LINE FILTER DRYER AND MULTI-USE SERVICE VALVES.
- PROVIDE COMPRESSOR WITH CRANKCASE HEATER AND MIN. 5-YEAR WARRANTY.
- PROVIDE HIGH AND LOW PRESSURE CONTROL AND OVER TEMPERATURE PROTECTION.
- PROVIDE WEATHER-PROOF ELECTRICAL CONTROLS AND SINGLE SIDE SERVICE ACCESS.
- PROVIDE 1" TIE-IN AWAY, MIN. 30% LEV. 1/2" DIA. AND VIBRATION ISOLATION FOR AHU.
- PROVIDE DISCONNECT SWITCH FOR A.H.U. CU.1 POWER TO FEED FROM CU. DOWN TO AHU. COORDINATE WITH ELECTRICAL CONTRACTOR PRIOR TO PURCHASE.
- PROVIDE FACTORY PROGRAMMABLE THERMOSTAT TO MATCH CAPACITY STAGES.
- COORDINATE WITH MANUFACTURER FOR THE ALLOWED MAXIMUM LENGTH OF REFRIGERANT SUCTION AND LIQUID LINES PRIOR TO PURCHASE.

REFRIGERANT PIPE INSULATION THICKNESS

A. 1/2 INCH (13 MM) INSULATION FOR 1/2 INCH (13 MM) PIPE OUTSIDE DIAMETER AND SMALLER PIPE.
B. 3/4 INCH (19 MM) INSULATION FOR 1/2 INCH THROUGH 1 INCH (25.4 MM) PIPE OUTSIDE DIAMETER PIPE.
C. 1 INCH (25.4 MM) INSULATION FOR 1 1/8 INCH (31.75 MM) PIPE OUTSIDE DIAMETER AND LARGER PIPE (TWO LAYERS OF 1/2 INCH (13 MM)).
D. ONE INCH (25.4 MM) INSULATION SUIT FOR FITTINGS AS RECOMMENDED BY MANUFACTURER.

VENTILATION SCHEDULE

UNIT NUMBER	NUMBER OF PEOPLE	PEOPLE OUTDOOR INTAKE (CFM)	TOTAL AREA (SF)	AREA OUTDOOR INTAKE (CFM)	UNCORRECTED OUTDOOR INTAKE (CFM)	VENTILATION EFFICIENCY	CORRECTED OUTDOOR INTAKE (CFM)
AIR-1	2	19	929	86	66	1.06	66
AIR-2	4	20	295	18	38	1.00	28

NOTE: CALCULATIONS BASED ON ASHRAE STANDARD 62.1-2004 AND TABLES 6-1, 6-2, 6-3, 6-4 THEREIN.

MULTI-WATT FAN FORCED UNIT HEATER SCHEDULE

MARK	SERIES	MODEL	EQUIVALENT (BTU/H)	KW	FLRC	AMP	TEMP RISE	CFM	WEIGHT (LBS.)	W x H x D (IN)
UH-1	FUTURE OFFICE	HFS60ST	6,370	1.88	208/1	9	21°F	275	32	14x15.5x12.5

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 DRAWN BY:
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 SCHEDULES
 SHEET M301

GROUND FLOOR

ENGINEERING



 Michael J. Gerns
 Professional Engineer
 No. 15162

JOB NO.: NWYK-03-07-MEP