GENERAL MECHANICAL NOTES

GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR ORPERATION.
3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATION BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.
4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL SUBCONTRACTORS TO INCLUDE THE PROVISIONS AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.
6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND WITH THE PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.
7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS, SPECIFIED HEREIN AND AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE
9. COORDINATE ALL HVAC WORK AND EQUIPMENT WITH STRUCTURAL STEEL, FIRE PROTECTION PIPING, PLUMBING PIPING, LIGHT FIXTURES, ELECTRICAL EQUIPMENT AND OWNER'S EQUIPMENT.
10. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING GRILLES, REGISTERS AND DIFFUSERS.
11. PROVIDE VOLUME DAMPERS IN EACH BRANCH DUCTWORK SERVING REGISTERS, GRILLES AND DIFFUSERS WHETHER INDICATED OR NOT.
12. PROVIDE CABLE OPERATED DAMPERS IN BRANCH DUCTWORK SERVING REGISTERS, GRILLES, AND DIFFUSERS IN INACCESSIBLE CEILING LOCATIONS WHETHER INDICATED OR NOT.
13. LOCATE ALL BALANCING DAMPERS AT CLEAN DUCTWORK ABOVE ACCESSIBLE CEILINGS, OR PROVIDE ACCESS DOORS.
14. PROVIDE FIRE DAMPERS, SMOKE DAMPERS AND A COMBINATION OF FIRE/SMOKE DAMPERS AS REQUIRED TO MAINTAIN WALL & FLOOR RATINGS AS DEFINED IN ARCHITECTURAL DRAWINGS.
15. DO NOT RUN ANY MECHANICAL OR CONTROL SERVICES THROUGH RATED STAIR ENCLOSURES UNLESS SYSTEMS ARE DESIGNED AND DESIGNATED TO SERVICE STAIRS.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED FOR DUCTWORK LAYOUT, PIPING LAYOUT, SHEET METAL SHOP STANDARDS AND ALL EQUIPMENT FURNISHED.
2. ELECTRONIC DRAWING FILES SHALL BE GENERATED BY THE CONTRACTOR DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC VERSION (AUTOCAD VERSION AS REQUIRED BY THE OWNER) OR AUTOCAD VERSION 2017 IF NOT SPECIFIED.
3. PRIOR TO THE SUBMISSION AND REVIEW OF SHEET METAL SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHEET METAL SHOP STANDARDS. ANY SHEET METAL SHOP DRAWINGS SUBMITTED PRIOR TO THE SUBMISSION OF THE SHOP STANDARDS SHALL BE RETURNED NOT REVIEWED.

AS BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC VERSION (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) OR LATEST AUTOCAD VERSION IF NOT SPECIFIED. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
   - INCLUDE ALL CHANGES AND AN ACCURATE RECORD IN AUTOCAD DRAWING OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.
   - 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.). VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.
     - EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
     - APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
     - CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.
4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

GENERAL MECHANICAL SYMBOLS

H / H / RAD / RAD	SUPPLY DUCT UP / DOWN RETURN AIR DUCT UP / DOWN	S-1 S-3 S-2	CEILING DIFFUSER, SIDE WALL AND FLOOR DIFFUSER REFER TO SCHEDULE FOR SIZE & TYPE
24 X 12	DOUBLE DUCTWORK WITH INDICATION OF INSIDE DIMENSIONS		RETURN / EXHAUST GRILLE REFER TO SCHEDULE FOR SIZE & TYPE
24 X 12	DOUBLE DUCTWORK WITH INTERNAL ACOUSTICAL INSULATION AND INDICATION OF INSIDE DIMENSIONS		RETURN / EXHAUST GRILLE REFER TO SCHEDULE FOR SIZE & TYPE
24 X 12	DOUBLE LINE DUCTWORK WITH DUCT LAGGING AND INDICATION OF INSIDE DIMENSIONS	T	THERMOSTAT
	ACCESS DOOR IN DUCT	VD	MANUAL VOLUME DAMPER / CABLE OPERATED DAMPER (COD)
12" Ø	ROUND DUCT DIAMETER SIZE	XXX	UNDERLINED TEXT DENOTES EQUIPMENT REFER TO SCHEDULES
	FLEXIBLE DUCT CONNECTION	X1 - CFM / SIZE	X → S - SUPPLY DIFFUSER R - RETURN DIFFUSER E - EXHAUST DIFFUSER CFM = VELOCITY AT WHICH AIR FLOWS INTO OR OUT OF SPACE. SIZE = SIZE OF DIFFUSER
	UNDERCUT DOOR		
	SUPPLY AIR FLOW		
	EXHAUST / RETURN AIR FLOW		
	MITERED ELBOW WITH TURNING VANES		
	DUCT TAKE-OFF		

GRILLE AND DIFFUSER SCHEDULE (AIR FLOW)

CEILING SUPPLY DIFFUSER			DUCTED CEILING RETURN/EXHAUST GRILLE		NON-DUCTED CEILING RETURN/EXHAUST GRILLE		FLEXIBLE DUCT SIZES TO SUPPLY DIFFUSERS	
CFM	SQUARE NECK SIZE	ROUND NECK SIZE	CFM	NECK SIZE	CFM	NECK SIZE	CFM	SIZE
0-100	6x6	6"∅	0-150	6x6	0-350	12x12	0-100	6"∅
101-250	9x9	8"∅	151-350	12x12	351-1200	22x22	101-250	8"∅
251-400	12x12	10"∅	351-650	16x16	-	-	251-400	10"∅
401-600	15x15	12"∅	651-1000	22x22	-	-	401-600	12"∅
601-800	18x18	14"∅	-	-	-	-	601-800	14"∅

GENERAL MECHANICAL ABBREVIATIONS

ABV	ABOVE	FD	FIRE DAMPER WITH ACCESS DOOR	OAT	OUTDOOR AIR TEMPERATURE
AD	ACCESS DOOR	FIN FL	FINISH FLOOR	OAI	OUTDOOR AIR INTAKE
AFF	ABOVE FINISHED FLOOR	FL	FLOOR	OD	OUTSIDE DIMENSION
AHU#	AIR HANDLING UNIT	FLEX	FLEXIBLE	O.E.T.D.	OPEN END TRANSFER DUCT
AL	ACOUSTIC LINING	FT	FEET	OEO	OPEN END DUCT
ALP	ACOUSTICALLY LINED PLENUM	FV	FACE VELOCITY	PD	PRESSURE DROP
APD	AIR PRESSURE DROP	GC	GENERAL CONTRACTOR	RA	RETURN AIR
BTU	BRITISH THERMAL UNIT	H/C	HEATING/COOLING	RAT	RETURN AIR TEMPERATURE
CAP	CAPACITY	HC-#	HEATING COIL	RH	RELATIVE HUMIDITY
CD	CEILING DIFFUSER	HTG	HEATING	RM	ROOM
CFM	CUBIC FEET PER MINUTE	HVAC	HEATING, VENTILATING 6	RPM	REVOLUTIONS PER MINUTE
CG	CEILING GRILLE		AIR CONDITIONING	SA	SUPPLY AIR
CLG	CEILING	ID	INSIDE DIMENSION	SAT	SUPPLY AIR TEMPERATURE
C-#	CONNECTOR	IN	INCHES	SP	STATIC PRESSURE
C.O.D.	CABLE OPERATED DAMPER	LAT	LEAVING AIR TEMPERATURE	SQ FT	SQUARE FOOT (AREA)
CTD	CEILING TRANSFER DUCT	LD	LINEAR DIFFUSER	T'STAT	THERMOSTAT
DB	DRY BULB	LVG	LEAVING	TD	TEMPERATURE DIFFERENCE
DIFF	DIFFUSER	MAN	MANUAL	TEMP	TEMPERATURE
DN	DOWN	MAT	MIXED AIR TEMPERATURE	TG	AIR TRANSFER GRILLE
DP	DEWPOINT TEMPRATURE	MAX	MAXIMUM	TRD	TRANSFER DUCT
DR	DROP	MBH	1000 BTU'S	TYP	TYPICAL
EAT	ENTERING AIR TEMPERATURE	MER	MECHANICAL EQUIPMENT ROOM	UC	UNDERCUT DOOR
ENT	ENTERING	MIN	MINUMIM	VD	VOLUME DAMPER
ESP	EXTERNAL STATIC PRESSURE	NC	NOISE CRITERIA	W/	WITH
ETR	EXISTING TO REMAIN	NFA	NET FREE AREA	WB	WET BULB
EX	EXISTING	NIC	NOT IN THIS CONTRACT	WMS	WIRE MESH SCREEN
EXT	EXTERNAL	NTS	NOT TO SCALE	WT	WEIGHT(LBS)
°F	DEGREES FAHRENHEIT	OA	OUTSIDE AIR		

*ALL ABBREVIATIONS MAY NOT BE USED IN THESE DOCUMENTS.

HVAC DUCT/ PLENUM INSULATION

SYSTEM	INSULATION TYPE	MINIMUM INSTALLED INSULATION VALUED	NORMAL DENSITY	REMARKS
INDOOR DUCT/ PLENUM CONCEALED SA, RA, OA: OTHER THAN PRE-MANUFACTURED LINEAR SUPPLY AND RETURN GRILLE PLENUMS.	MINERAL FIBER BLANKET	2" R-8.0	3/4 LB/FT"	
	MINERAL FIBER BOARD WITH REFLECTIVE VAPOR BARRIER,	2" R-8.0	3/4 LB/FT"	

1. ALL DUCTWORK INSTALLED OUTDOOR : PROVIDE A PRE- MANUFACTURED SELF ADHERING PRODUCT WITH AN UV RESISTANT, STUCCO ENBOSSED FACING, WATER VAPOR TRANSMISSION OF THE INSTALLED PRODUCT SHALL BE SIMILER TO FLEX-CLAD 400,MFM BUILDING PRODUCTS CORP, ALUMAGUARD 60, POLYGAURD PRODUCTS, INC.
2. DUCT LINING SHALL NOT BE INSTALED WITHIN 10 FT UPSTREAM OR DOWNSTREAM OF A DUCT MOUNTED HUMIDIFIER DISPERSION TUBE OR DISPERSION GRID.
3. INSULATION TYPE INDICATED IN THE SCHEDULE SHALL BE USED UNLESS OTHERWISE INDICATED ON THE PLAN OR SPECIFICATIONS.
4. CLOSED CELL, FIBER FREE, ANTI-MICROBIAL COATED, LOW VOC CERTIFIED, MOISTURE AND MOLD RESISTENT DUCT LINING SHALL BE PROVIDED IN DUCTWORK AND EQUIPMENT WITHIN HOSPITAL AND HEALTHCARE FACILITIES AND ROOMS CLASSIFIED AS MOIST OR WET ENVIROMENTS WHERE THIS SCHEDULE DRAWINGS AND SPECIFICATION INDICATE DUCT LINING.
5. DUCTWORK SHALL BE FIRE WRAPPED FROM THE APPLIANCE CONNECTION TO THE TERMINATION POINT.

OA= OUTDOOR AIR DUCTWORK TO BE INSULATED
SA= SUPPLY AIR DUCTWORK TO BE INSULATED
RA= RETURN AIR DUCTWORK TO BE INSULATED
EA= EXHAUST AIR DUCTWORK OT BE INSULATION WITHIN 10'-0" OF EXTERIOR WALL TO AVOID CONDENSATION.

ALL DUCTWORK WITHIN 10'-0" OF OUTSIDE BUILDING NEED TO BE INSULATED.
HEAT RECOVERY DUCTWORK SUPPLY / RETURN / EXHAUST SHALL BE INSULATED

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SHEET NUMBER:
M-001

PERFORMANCE SPECIFICATION-MECHANICAL

PERFORMANCE SPECIFICATION
SECTION 15800-HEATING, VENTILATING, AIR CONDITIONING

PART 1 - GENERAL REQUIREMENTS

1.01 SCOPE OF WORK

WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS, SERVICES, EQUIPMENT, TRANSPORTATION AND OTHER INCIDENTALS NECESSARY TO FURNISH, INSTALL AND TO CONSTRUCT ALL HVAC SYSTEMS INCLUDING:

- COOLING UNITS
- HEATING UNITS
- PIPING
- SHEET METAL WORK
- DUCT INSULATION
- AUTOMATIC TEMPERATURE CONTROLS
- VIBRATION CONTROL
- TESTING, BALANCING AND ADJUSTING

1.02 SUBMITTALS

ISSUE 4 COPIES OF MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS AND SHOP DRAWINGS FOR ALL ITEMS OF THE HVAC EQUIPMENT FOR APPROVAL.

1.03 CODES

THE FOLLOWING CODES AND STANDARDS SHALL APPLY TO THIS WORK:

ASTM A120, STEEL PIPE
ASTM B 88, COPPER TUBING
ANSI H23.1 STANDARDS FOR COPPER TUBING
ANSI B31.1 CODE FOR PRESSURE PIPING
NEMA NC1 MOTOR GENERATOR STANDARDS
NEMA DC1 STANDARDS FOR TEMPERATURE CONTROLS
NFPA-90A AIR CONDITIONING AND VENTILATING SYSTEM
NFPA-91 BLOWER AND EXHAUST SYSTEMS
APPLICABLE BOCA MECHANICAL CODE

1.04 ELECTRICAL REQUIREMENTS

THE HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL MOTORS FOR EQUIPMENT SPECIFIED HEREIN IF NOT SUPPLIED AS PART OF EQUIPMENT. MOTORS UP TO 1/2 HP SHALL BE 115 VOLT, SINGLE PHASE. MOTORS 1/2 HP AND OVER SHALL BE 208 VOLT, 3 PHASE.

MOTORS SHALL BE GENERAL ELECTRIC, WESTINGHOUSE, OR ALLIS CHALMERS. ALL MOTORS SHALL BE 40 DEGREE C RISE, BUILT IN ACCORDANCE WITH A.I.E.E. STANDARDS.

ALL CIRCUIT BREAKERS AND FUSED DISCONNECT SWITCHES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. STARTERS WITH AUXILIARY CONTACTS SHALL BE FURNISHED FOR ALL 3 PHASE MOTORS SUPPLIED UNDER THIS CONTRACT.

ALL AIR EQUIPMENT OF 2000 CFM AND LARGER SHALL BE SUPPLIED WITH SMOKE DETECTORS INSTALLED IN THE DUCTWORK AS REQUIRED BY NFPA 90A PAR. 4-3. WIRING OF THESE DETECTORS SHALL BE A PART OF THIS MECHANICAL CONTRACT.

2.01 SHEET METAL WORK

DUCTWORK:
DUCTS SHALL CONFORM WITH THE FOLLOWING TABLE:

GAUGE	SIZE	TRANSVERSE JOINTS	BRACING
26	0 THRU 12"	S OR DRIVE @ 7'-10"	NONE
24	13" THRU 30"	STANDING S @ 7'-10"	1"X1"X1/8" @ 4'-0"
22	31" THRU 42"	REINFORCED STANDING OR POCKET @ 7'-10" O.C.	
20	OVER 42"	DRIVE OR POCKET	1"X1"X1/8" @ 2'-0"

MINIMUM DUCT GAUGES FOR DUCTWORK ABOVE SUSPENDED CEILINGS SHALL BE AS FOLLOWS:

CONDITION A: FLOOR ASSEMBLY WITH SUSPENDED ACOUSTICAL CEILING PANEL
MINIMUM GAUGE - 22
CONDITION B: ROOF ASSEMBLY WITH SUSPENDED ACOUSTICAL CEILING PANEL
MINIMUM GAUGE - 24
CONDITION C: FLOOR ASSEMBLY WITH SHEETROCK CEILING
MINIMUM GAUGE - 24
CONDITION D: ROOF ASSEMBLY WITH SHEETROCK CEILING
MINIMUM GAUGE - 20

FLEXIBLE DUCTWORK, WHEN SHOWN, SHALL BE WIRE REINFORCED FIBERGLASS WITH GRAY VINYL OUTER JACKET AND POLYETHYLENE INNER LINER MAXIMUM LENGTH OF 14'-0" PER RUN. ALL SUPPLY AIR AND RETURN AIR DUCTWORK SEAMS AND SLIPS SHALL BE SEALED AIRTIGHT WITH 3M TYPE EC800 SEALER, HARDCAST, DUCTCAULK, OR EQUAL SEALER, AS APPROVED BY THE ENGINEER.

2.02 FIRE DAMPERS AND SMOKE (IF SPECIFICALLY SHOWN)

FURNISH AND INSTALL UNDERWRITER'S LABORATORIES APPROVED AND LABELED FIRE DAMPERS AT EACH PENETRATION OF FIRE ENCLOSURES. INSTALL FIRE DAMPERS AT ALL CEILING SUPPLY AND RETURN GRILLES, REGISTERS AND DIFFUSERS IF REQUIRED. FIRE DAMPERS SHALL BE OF A TYPE WHERE FULL DUCT OPENING IS OBTAINED WITH THE BLADES NOT STORED WITHIN THE NORMAL DUCT DIMENSIONS.

DAMPERS SHALL BE RATED FOR AT LEAST THE SAME FIRE RESISTANCE AS THE OPENING THROUGH WHICH THEY PASS.

ALL DAMPERS SHALL CONFORM TO NFPA BULLETIN NO. 90A.

2.03 AIR OUTLETS

ALL RATED REGISTERS, GRILLES AND DIFFUSERS SHALL BE WHITE FINISH WITH OPPOSED BLADE DAMPERS TYPE AS NOTED ON THE DRAWINGS. NON-RATED TYPE SHALL BE EQUAL TO THE FOLLOWING:

DIFFUSERS CARNES SKSA, ANEMOSTAT OR METALAIRE
TRANSFER GRILLES CARNES RSLAH, ANEMOSTAT OR METALAIRE
RETURN REGISTERS CARNES RTLAH, ANEMOSTAT OR METALAIRE
EXHAUST REGISTERS CARNES RTLAH, ANEMOSTAT OR METALAIRE
SUPPLY REGISTERS CARNES RTDHA, ANEMOSTAT OR METALAIRE

2.04 SOUND LINING (IF SPECIFICALLY SHOWN)

FURNISH AND INSTALL LINING ON ALL SUPPLY AND RETURN DUCTWORK WITHIN 10'-0" OF EACH AIR HANDLING MACHINE. LINING SHALL BE 1" THICK FLEXIBLE NEOPRENE COATED ACOUSTICAL DUCT LINER. FASTEN TO INSIDE OF DUCTS WITH WELDED PINS AND CLIP WASHERS. DUCT SIZES SHOWN ON DRAWINGS REPRESENT FREE OPENINGS. THE SIZE OF LINED DUCTWORK SHALL BE INCREASED ACCORDINGLY TO COMPENSATE FOR THICKNESS OF THE LINING.

2.05 AUTOMATIC SMOKE DAMPERS (IF SPECIFICALLY SHOWN)

EACH DUCT PENETRATING A SMOKE PARTITION SHALL HAVE AN AUTOMATIC MOTOR OPERATED SMOKE DAMPER. DAMPER MOTOR SHALL BE NORMALLY OPEN TYPE, ARRANGED TO CLOSE WHEN ENERGIZED FROM A SMOKE DETECTOR, FURNISHED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. DAMPER SHALL BE PREFCO MODEL 5020, OR APPROVED EQUAL.

2.06 INSULATION

ALL SUPPLY AND RETURN ERV DUCTWORK OUTDOORS, EXPOSED TO WEATHER WITHIN 10'-0" OF OUTSIDE WALL SHALL BE INSULATED WITH 1" THICK 6 LB DENSITY RIGID FIBERGLASS BOARD ATTACHED TO DUCT.
APPLY 2-1/8 INCH THICK COATS OF BREATHER MASTIC AND, WHILE STILL WET, IMBED A LAYER OF GLASS FABRIC WITH ALL JOINTS LAPPED 2" MINIMUM AND OVER WITH THIRD COAT OF BREATHER MASTIC 1/8" THICK.
SUPPLY AIR DUCTWORK, RETURN AIR, ERV(ENERGY RECOVERY DUCTWORK) AND OUTDOOR INTAKE DUCTWORK SHALL BE INSULATED WITH 1-1/2 INCH THICK FLEXIBLE DUCT WRAP WITH STABLE STITCHED GRAY VINYL JACKET.
PROVIDE INDOOR AIR HANDLING UNITS WITH FOIL-FACED FIBERGLASS INSULATION OR CLOSED-CELL ELASTOMERIC INSULATION

2.07 HEATING/COOLING UNITS

FURNISH AND INSTALL HEATING/COOLING UNITS OF THE SIZE AND CAPACITY SCHEDULED ON THE PLANS.

EACH UNIT SHALL BE FULLY PREWIRED, INCLUDING STARTERS AND DISCONNECT SWITCHES, REQUIRING ONLY A POWER AND THERMOSTAT CONNECTION.

HVAC UNITS SHALL BE PACKAGED UNITS WITH CENTRIFUGAL FAN, DX COIL, HEATING SECTION AND FILTERS. UNIT SHALL BE COMPLETE IN ALL RESPECTS WITH DRAIN PAN, MOTOR, SUSPENSION ARRANGEMENTS, THERMAL EXPANSION VALVES AND FAN INTERLOCKS WITH SMOKE DETECTORS IF REQUIRED.

CONDENSING UNITS SHALL BE WEATHERPROOF GROUND MOUNTED UNITS WITH SEER OF AT LEAST 10.0 UNITS SHALL BE PROVIDED WITH EXTERNAL SERVICE VALVES FOR REFRIGERANT TUBING CONNECTIONS AND SHALL BE MATCHED TO THE SELECTED FAN/COIL UNIT. UNITS SHALL HAVE STANDARD 1 YEAR WARRANTY ON PARTS WITH AN ADDITIONAL 4 YEARS FOR THE COMPRESSOR.

EACH UNIT SHALL HAVE ITS FILTERS REPLACED WITH A SET OF CLEAN FILTERS AT THE TIME OF FINAL ACCEPTANCE OF THE WORK. IN ADDITION, PROVIDE A SET OF SPARE FILTERS FOR EACH UNIT.

PROVIDE INDOOR UNIT AIR HANDLING UNITS WITH FOIL BASED FIBREGLASS INSULATION ON CLOSED CELL ELASTOMERIC INSULATION.

3.01 SHEET METAL WORK

DUCTWORK SHALL BE FABRICATED AND ERECTED AS REQUIRED TO COMPLETE THE WORK. IF IT IS DEEMED ADVISABLE BY THE CONTRACTOR TO CHANGE THE LOCATION OF ANY DUCT OR DIMENSION THEREOF FROM THAT SHOWN ON THE DRAWINGS, THE CHANGE SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT, AND HIS APPROVAL RECEIVED. SHEET METAL WORK SHALL BE FABRICATED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS AS SET FORTH BY ASHRAE AND SMACNA.

FLEXIBLE CONNECTIONS: ALL DUCT CONNECTIONS TO FAN DRIVEN UNITS SHALL BE MADE WITH A FIREPROOF FLEXIBLE DUCT CONNECTOR, 6" MAXIMUM LENGTH. OUTDOOR DUCT WORK SHALL BE ALUMINIUM.

3.02 INSTALLATION

DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF WORK TO BE INSTALLED. RUN AND ARRANGEMENT SHALL BE APPROXIMATELY AS INDICATED, ACCESSIBLE LOCATION.

SUBJECT TO MODIFICATIONS AS REQUIRED TO SUIT CONDITIONS AT BUILDING, TO AVOID INTERFERENCE WITH WORK OF OTHER TRADES, OR FOR PROPER CONVENIENT AND RUN DUCTS CONCEALED IN WALL CHASES, RECESSES, PIPE SHAFTS, AND ABOVE CEILINGS. DO NOT PERMANENTLY CLOSE UP, FURR IN, OR COVER WORK BEFORE EXAMINATION AND TEST.

3.03 EQUIPMENT SUPPORT

THIS CONTRACTOR SHALL PROVIDE METAL AND OTHER BASES AND SUPPORTS NOT PART OF THE BUILDING FOR ALL EQUIPMENT AND ERECT ALL STRUCTURAL SUPPORTS OF PROPER SIZE, TYPE AND STRENGTH THROUGHOUT WHEREVER NECESSARY. THE MATERIAL SHALL BE COMPLETE AND MUST BE APPROVED BY THE ARCHITECT.

3.04 PROTECTION

THIS CONTRACTOR SHALL TAKE PARTICULAR CARE TO PROTECT ANY FINISHED WORK FROM INJURY OR DEFACEMENT AND MUST REMEDY AT HIS OWN EXPENSE ANY INJURY CAUSED THERETO BY HIS OPERATIONS OR THE OPERATIONS OF ANY OTHER CONTRACTORS.

THIS CONTRACTOR SHALL PROVIDE SUITABLE PROTECTION OF ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT WHILE STORED AT THE JOB SITE AND AFTER INSTALLATION. THIS PROTECTION SHALL BE SUITABLE TO GUARD EQUIPMENT ITEMS AGAINST DAMAGE FROM THE WEATHER OR FROM CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL NOT BE REMOVED UNTIL DIRECTED BY THE ARCHITECT. THE INTERIOR AND EXTERIOR OF ALL DUCTS, PIPING AND EQUIPMENT, SHALL BE KEPT IN A CLEAN CONDITION, FREE FROM DIRT AND DEBRIS. ALL PIPING, DUCT, AND EQUIPMENT ITEMS SHALL BE THOROUGHLY CLEANED BEFORE THE START-UP OF ANY EQUIPMENT OR SYSTEMS.

3.05 GUARANTEES

ALL PARTS OF THE INSTALLATION ARE TO BE GUARANTEED IN WRITING BY THIS SUBCONTRACTOR TO BE FREE FROM DEFECTS, MANUFACTURE AND INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF WRITTEN ACCEPTANCE OF THE ENTIRE BUILDING BY THE ARCHITECT. THIS CONTRACTOR SHALL REPLACE, WITHOUT CHARGE TO THE OWNER, ANY PART OR PARTS OF PIPING AND EQUIPMENT, AND ALL LABOR AND MATERIALS REQUIRED, WHICH FAILS DUE TO SUCH CAUSE OR CAUSES DURING THE GUARANTEE PERIOD.

THIS CONTRACTOR AND THE MANUFACTURER SUPPLYING EACH UNIT OF EQUIPMENT SHALL GUARANTEE SAME TO BE OF A CAPACITY AND CAPABLE OF PERFORMANCE AS REPRESENTED BY THE MANUFACTURER.

THE MANUFACTURER'S WRITTEN GUARANTEES, WHERE SUCH GUARANTEES EXTEND BEYOND THE ONE YEAR LIMIT STATED HEREIN SHALL BE DELIVERED TO THE ARCHITECT FOR TRANSMITTAL TO THE OWNER.

3.06 SLEEVES AND OPENINGS

THIS CONTRACTOR SHALL KEEP HIMSELF FULLY INFORMED AS TO THE SHAPE, SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR HIS EQUIPMENT AND SHALL GIVE FULL INFORMATION TO THE GENERAL CONTRACTOR AND ALL OTHER SUBCONTRACTORS SUFFICIENTLY IN ADVANCE. HE SHALL FURNISH ALL SLEEVES, SUPPORTS, ETC., SO THAT THE GENERAL CONTRACTOR MAY BUILD THE SAME IN PLACE. IN THE CASE OF FAILURE OF THIS CONTRACTOR TO NOTIFY THE GENERAL CONTRACTOR ALL REQUIRED CUTTING AND PATCHING WILL BE DONE BY THE GENERAL CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR.

3.07 ACCESS PANELS

FURNISH ACCESS PANELS OF SUFFICIENT SIZE TO FACILITATE SERVICING WHERE DAMPERS, OR SHUT-OFF VALVES ARE CONCEALED IN NON-ACCESSIBLE SPACE.

PANEL SHALL BE MILCOR STYLE "AT" FOR PANELS IN ACOUSTICAL TILE AREAS, STYLE "AP" FOR PANELS IN PLASTER WALLS AND CEILINGS, AND STYLE "M" FOR PANELS IN MASONRY OR TILE WALLS AS MANUFACTURED BY INLAND STEEL PRODUCTS CO., L.N. WALSH CO., MIAMI CAREY, OR EQUAL. ALL PANELS SHALL BE FURNISHED WITH A SHOP PRIME COAT OF PAINT.

LOCATIONS OF ALL ACCESS PANELS SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION.

PANELS SHALL BE INSTALLED BY THE CONTRACTOR IN THOSE SURFACE THE PANELS OCCUR.

3.08 RECORD DRAWINGS

THE CONTRACTOR SHALL MAINTAIN AND SUBMIT RECORD DRAWINGS, ON WHICH SHALL AT ALL TIMES, CLEARLY AND COMPLETELY SHOW THE ACTUAL INSTALLATION IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.

WHEREVER THE WORK WAS INSTALLED OTHER THAN AS SHOWN ON THE CONTRACT DRAWINGS, SAID CHANGES SHALL BE INDICATED ON THE "AS-BUILT" PRINTS. ANY ADDENDA SKETCHES AND SUPPLEMENTARY DRAWINGS ISSUED DURING THE COURSE OF CONSTRUCTION SHALL ALSO BE INCORPORATED ON THE "AS-BUILT" PRINTS.

THE "AS-BUILT" DRAWINGS SHALL BE KEPT UP TO DATE AND BE AVAILABLE TO THE ARCHITECT FOR INSPECTION AT ALL TIMES.

UPON RECEIPT OF APPROVAL OF THE "AS-BUILT" DRAWINGS, PHOTO REPRODUCTIONS OF THE ORIGINAL TRACINGS ON MYLAR TRANSPARENCIES SHALL BE REVISED TO INCORPORATE ALL THE CHANGES ON THE "AS-BUILT" DRAWINGS. THESE REPRODUCIBLE TRANSPARENCIES SHALL BE CERTIFIED AS CORRECT AND DELIVERED TO THE ARCHITECT ALONG WITH TWO (2) SETS OF BLACK LINE PRINTS AS "RECORD DRAWINGS".

ALL COSTS RELATIVE TO THESE RECORD DRAWINGS SHALL BE PAID BY THIS CONTRACTOR.

3.09 RUBBISH REMOVAL

AT THE COMPLETION OF EACH DAYS WORK, THIS CONTRACTOR SHALL REMOVE FROM THE PREMISES, ALL RUBBISH OR WASTE MATERIAL BELONGING TO HIM.

3.10 TESTING AND ADJUSTING

ALL EQUIPMENT AND APPARATUS NECESSARY FOR TESTS, ADJUSTMENTS, AND RECORDINGS SHALL BE FURNISHED BY THIS CONTRACTOR. ALL DEFECTS DISCLOSED BY TESTS SHALL BE RECTIFIED, WITHOUT ADDITIONAL COST TO THE OWNER.

IN THE CASE OF THE EXHAUST AND AIR SUPPLY SYSTEMS, ALL EQUIPMENT, DUCT SECTIONS, AND ACCESSORY APPARATUS SHALL BE TESTED AND BALANCED TO DELIVER AIR WITHIN 5 % OF THE QUANTITIES SPECIFIED ON THE PLANS BY AN APPROVED, EXPERIENCED BALANCING ENGINEER WHOSE BUSINESS IS THE BALANCING OF AIR SYSTEMS. ALL TESTS SHALL BE APPROVED BY THE ENGINEER AND SHALL REVEAL THE RECORD INFORMATION IN ACCORDANCE WITH THE FOLLOWING TABLE OF REQUIREMENTS.

- FAN OR UNIT NAME OR NUMBER
- DESIGN STATIC PRESSURE
- ACTUAL STATIC PRESSURE
- DESIGN CFM
- ACTUAL CFM
- SIZE OF GRILLE IN INCHES AND SQUARE FEET
- GRILLE VELOCITY IN RPM
- DESIGN CFM PER GRILLE
- ACTUAL CFM PER GRILLE

CONTRACTOR SHALL SUBMIT FOUR (4) COPIES OF TEST REPORTS TO THE ENGINEER FOR APPROVAL.

3.11 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

THIS CONTRACTOR SHALL GIVE DETAILED INSTRUCTIONS PRIOR TO THE COMPLETION OF THE WORK, TO THE RESPONSIBLE PERSONNEL DESIGNATED BY THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL WORK INSTALLED UNDER THIS CONTRACT. A LETTER WITH TWO COPIES CONTAINING THE NAME OF THE PERSON OR PERSONS TO WHOM THE INSTRUCTIONS WERE GIVEN AND THE DATES OF THE INSTRUCTION PERIOD SHALL BE SUBMITTED TO THE OWNER NO LATER THAN THE COMPLETION OF THE PROJECT.

IN ADDITION, THIS CONTRACTOR SHALL PREPARE AND SUBMIT TWO SETS OF MANUFACTURER'S CATALOGS, INSTRUCTIONS AND OTHER SIMILAR DATA, INCLUDING THE NECESSARY PHOTOGRAPHIC CUTS, DIAGRAMS, VALVE CHARTS AND THE LIKE, COVERING ALL MECHANICAL AND MANUALLY OPERATED EQUIPMENT AND DEVICES FURNISHED AND/OR INSTALLED UNDER THE HVAC SUBCONTRACT. THIS MANUAL SHALL CONTAIN ONLY THAT INFORMATION WHICH SPECIFICALLY APPLIED TO THIS PROJECT, AND ALL UNRELATED MATERIALS SHALL BE DELETED. DURING THE INSTRUCTION PERIOD, SPECIFIED ABOVE, THE MANUAL SHALL BE USED AND EXPLAINED. THE MATERIALS SHALL BE BOUND IN BOOK FORM AND INDEXED.

3.12 START UP

CONTRACTOR SHALL START UNITS UNDER
THE PRESENCE OF MANUFACTURER'S REPRESENTATIVE.

PROVIDE A LETTER FROM MANUFACTURER
THAT UNITS HAVE BEEN INSTALLED IN ACCORDANCE
WITH MANUFACTURER'S GUIDE LINES.

3.13. UNITS SHALL BE APPROVED DURING COOLING AND HEATING SEASONS

3.14. PROVIDE COORDINATED DRAWING WITH OTHER TRADES.

3.15. ANY CHANGES TO CONTRACT DOCUMENT MUST BE APPROVED BY THE ARCHITECT.

3.16. HOUSEKEEPING PADS

PROVIDE CONCRETE HOUSEKEEPING PADS FOR FLOOR-MOUNTED EQUIPMENT. COODINATE EXACT LOCATIONS, DIMENSIONS, PIPING LOCATIONS, AND ANCHOR BOLT REQUIREMENTS. PROVIDE CONCRETE HOUSEKEEPING PADS UNDER ALL FLOOR MOUNTED EQUIPMENT. PADS SHALL BE CONSTRUCTED OF 3,000 PSI CONCRETE. PADS SHALL BE 4 INCHES HIGH, AND 4 INCHES WIDER THAN THE EQUIPMENT IN BOTH DIRECTIONS.

COORDINATE FLOOR DRAIN LOCATIONS WITH RESPECT TO EQUIPMENT HOUSEKEEPING PADS. PLACE DRAINS SUCH THAT EDGE OF THE FLOOR GRATE EXTENDS NO FURTHER THAN 2 INCHES FROM THE SIDE OF THE PAD.

HVAC PIPING/TUBING INSULATION

SYSTEM	LOCATION	PIPE SIZE	CELLULAR GLASS		FLEXIBLE ELASTOMERIC		MINERAL-FIBER TYPE I	
			THICKNESS IN.	CONDUCTIVITY K.	THICKNESS IN.	CONDUCTIVITY K.	THICKNESS IN.	CONDUCTIVITY K.
REFRIGERANT PIPING	INDOOR	1-1/2" & SMALLER	2"	0.33	-	-	1-1/2"	0.25
		2" & LARGER	2-1/2"	0.33	-	-	2"	0.25
	OUTDOOR ABOVE GRADE	ALL	2-1/2"	0.33	-	-	-	-

1. ALL EXPOSED INDOOR PIPING/TUBING AND FITTINGS WITHIN OCCUPIED SPACES, CORRIDORS, MECHANICAL ROOMS AND OTHER NON-COCEALED LOCATIONS SHALL BE FITTED WITH PVC FITTING COVERS AND PVC PIPE COVERS FROM THE FLOOR LEVEL. PVC FITTING AND PIPE COVERS SHALL BE 25/50 FLAME AND SMOKE RATED, COVERS AND JACKETING COLOR TO BE SELECTED BY ARCHITECT, PROVIDE TEMPLATE OF JACKET COLORS FOR THE ARCHITECT'S REVIEW.

2. DIAPER AND LOOSE FILL STYLE INSULATION ON PIPE FITTING IS NOT ACCEPTABLE, ELBOWS WITHOUT PVC COVERS ARE NOT ACCEPTABLE.

3. ALL OUTDOOR PIPING TUBING SHALL BE FITTED WITH A PRE-MANUFACTURED ALUMINUM, JACKET PRODUCT. 0.024" ALUMINUM JACKET LOCK-ON OR SLP-ON TYPE JACKETING TO BE COVERED WITH ACRYLIC COATING ON THE OUTER SURFACE AND A BAKED EPOXY MOISTURE BARRIER ON THE INNER SURFACE, MANUFACTURER SHALL BE SIMILAR TO CHILDERS PRODUCTS, DIVISION OF ITW, METAL JACKETING SYSTEMS, ALL EXPOSED JOINTS IN THE JACKET PRODUCT SHALL BE INSTALLED IN SUCH A WAY AS TO PREVENT THE INFILTRATION OF MOISTURE AND WATER.

4. ALL BURIED PIPING TUBING SHALL A PRE-MANUFACTURED PIPE INSULATION SYSTEM, REFER TO SPECIFICATIONS FOR REQUIREMENTS.

DUCT PRESSURE CLASS

APPLICATION	PRESSURE CLASS	REMARKS
SUPPLY AIR DUCTWORK FROM MAIN AND/OR TERMINAL UNIT TO AIR OUTLET.	2" W.G.	
RETURN AIR DUCTWORK.	2" W.G.	
GENERAL EXHAUST DUCTWORK	2" W.G.	
TOILET EXHAUST DUCTWORK	2" W.G.	

NOTE:
1. LEAKAGE CLASS SHALL BE DETERMINED PER ASHRAE 90. 1-2010 REQUIREMENTS.
2. PRESSURE CLASS SHALL BE DEFINED PER SMACNA THIRD EDITION-2015.
3. DUCTWORK JOINTS, SEALING AND FITTINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMSCNA THIRD EDITION-2015.

HVAC PIPING/TUBING MATERIAL, JOINTS & FITTINGS

SYSTEM	PIPE SIZE	CONSTRUCTION	PIPING	FITTINGS	UNIONS	FLANGES
REFRIGERANT SUCTION, HOT GAS AND LIQUID PIPING AND TUBING	2" & SMALLER	BRAZED JOINT CONSTRUCTION. AWS A5,8 FILLER METAL.	COPPER ACR TUBING STRAIGHT LENGTHS, DRAWN H58, ASTM B 280	WROUGHT COPPER BRAZE ENDS, ANSI B16.22	WROUGHT COPPER BRAZE ENDS, ANSI B16.22	USE UNIONS
	2-1/2" AND LARGER	BRAZED JOINT CONSTRUCTION. AWS A5,8 FILLER METAL.	COPPER ACR TUBING STRAIGHT LENGTHS, DRAWN H58, ASTM B 280	WROUGHT COPPER BRAZE ENDS, ANSI B16.22	WROUGHT COPPER BRAZE ENDS, ANSI B16.22	USE UNIONS

HVAC VIBRATION-CONTROL

EQUIPMENT	BASE	ISOLATOR	DEFLECTION	REMARKS
CONDENSING UNITS ROOF TOP UNITS	24" HIGH EQUIPMENT RAILS	NP	0.2"	
CEILING HUNG UNIT	24" HIGH EQUIPMENT RAILS	NP	0.2"	

HORIZONTAL STEEL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH ANSI/MSS SP-69 & SP-58 TABLES 3 AND 4, EXCERPTS OF WHICH FOLLOW BELOW:

PIPE SIZE	ROD DIA	HANGER SPACING
>= 1 -1 / 4"	3/8"	7'-0"
1-1/2"	3/8"	9'-0"
2"	3/8"	10'-0"
2-1/2"	1/2"	11'-0"
3"	1/2"	12'-0"
3-1/2"	1/2"	13'-0"
4"	5/8"	14'-0"
5"	5/8"	16'-0"
6"	3/4"	17'-0"
8"	3/4"	19'-0"
10"	7/8"	22'-0"
12"	7/8"	23'-0"
14"	1"	25'0"
16"	1"	27'-0"

HORIZONTAL COPPER TUBING SHALL BE SUPPORTED IN ACCORDANCE WITH ANSI/MSS SP-69 & SP-58 TABLES 3 AND 4, EXCERPTS OF WHICH FOLLOW BELOW:

PIPE SIZE	ROD DIA	HANGER SPACING
>= 3/ 4"	3/8"	5'-0"
1"	3/8"	6'-0"
11/4"	3/8"	7'-0"
11/2"	3/8"	8'-0"
2"	3/8"	8'-0"
2 1/2"	1/2"	9'-0"
3"	1/2"	10'-0"
31/2"	1/2"	11'-0"
4"	1/2"	12'-0"
5"	1/2"	13'-0"
6"	5/8"	14'-0"
8"	3/4"	16'-0"

MINIMUM PIPE INSULATION THICKNESS

FLUID OPERATING \ TEMP RANGE (° F)	CONDUCTIVITY BTU-IN/(HR FT2	MEAN TEMP	PIPE SIZE				
			<01"	01 "<01 .5"	01 .5"<04"	04" < 08"	<08"
350	0.32 - 0.34	250	5.0"	5.0"	5.0"	5.0"	5.0"
251 - 350	0.32-0.34	200	4.5"	4.5"	4.5"	4.5"	4.5"
201 - 250	0.29 - 0.32	150	2.5"	2.5"	2.5"	3.0"	3.0"
141 - 200	0.27 - 0.30	125	1.5"	2.0"	2.0"	2.0"	2.0"
105 - 140	0.21 - 0.29	100	1.0"	1.5"	1.5"	1.5"	1.5"
40 - 60	0.21 - 0.28	75	0.5"	1.0"	1.0"	1.0"	1.0"
<40	0.21 - 0.27 0.20 - 0.26	75	0.5"	1.0"	1.0"	1.0"	1.0"

HVAC DUCT MATERIAL

APPLICATION	SUPPLY	RETURN	EXHAUST
TYPICAL UNLESS OTHERWISE SPECIFIED	G90 GALVANIZED STEEL	G90 GALVANIZED STEEL	G90 GALVANIZED STEEL ALUMINIUM FOR SHOWER AND WET LOCATION
OUTDOOR AIR/ POOL	3003H-14 ALUMINIUM		
KITCHEN HOOD			16 GAUGE ALL WELDED EXPOSED 304 STAINLESS STEEL NO. 4 FINISH CONCEALED CARBON STEEL
DISHWASHER			18 GAUGE STAINLESS STEEL EXPOSED NO. 4 FINISH CONCEALED NO. 2D FINISH
DRYER VENT WATER HEATER			CPVC OR APPROVED BY MANUFACTURER
DUCT CONSTRUCTION SHALL MEET SMACNA METAL & FLEXIBLE 2005-3RD EDITION STANDARD.			

LOUVER SCHEDULE

SYMBOL	MANUFACTURER MODEL NUMBER	DUTY	TYPE	BORDER TYPE	COSTRUCTION			NOTES
					OBD	FRAME	BLADES	
L1	GREENHECK ESJ-401	FRESH AIR	-	"		ALUM.	ALUM.	8
L2	GREENHECK ESJ-401	FRESH AIR	-	"		STEEL	STEEL	8
L3	GREENHECK ESJ-401	FRESH AIR	-	"		STEEL	STEEL	8
L4	GREENHECK ESJ-401	FRESH AIR	-	"		STEEL	STEEL	8

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REVISIONS

NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT: HOLIDAY INN EXPRESS
764 RIVERDALE STREET, WEST SPRINGFIELD, MA 01089

FILE NO: 21028.01
SCALE: AS NOTED
DATE: 07/20/2023
DRAWN BY: MF
CHECKED BY: HH

SHEET TITLE: MECHANICAL SPECIFICATIONS AND SCHEDULES

SHEET NUMBER: M-002

EXHAUST FAN SCHEDULE

NOTES: PROVIDE STARTER & DISCONNECT SWITCH. PROVIDE MOUNTING RAILS, PADS, OR SPRING ISOLATORS. ALL EXHAUST FANS INSIDE THE GUESTROOMS TO BE BELOW 1.1 SONES. PROVIDE ROOF CURBS FOR ALL ROOF MOUNTED EXHAUST FANS.

MARK	AREA SERVED	LEVEL	TYPE	MANUFACTURER	MODEL NO.	CFM	S.P.	RPM	H.P.	PH	VOLTS	SONES (DBA)	REMARKS
EF-1	STAIR 1	ROOF	INLINE	LOREN COOK	GC 188	200	0.25	1227	1/4	1	120	4.5	
EF-2	POOL	ROOF	INLINE	LOREN COOK	GC 188	200	0.25	1227	1/4	1	120	4.5	
EF-3	PANTRY	ROOF	INLINE	LOREN COOK	GC 188	200	0.25	1227	1/4	1	120	4.5	
EF-4	UNISEX R3	ROOF	INLINE	LOREN COOK	100C17DEC	300	0.75	1410	1/4	1	120	6.7	
EF-5	TOILET	ROOF	INLINE	LOREN COOK	GC 188	200	0.25	1227	1/4	1	120	4.5	
EF-6	CORRIDOR	ROOF	UTILITY	LOREN COOK	135CPS	1750	1.00	1669	3/4	1	120	66	
EF-7	GUEST ROOM BATHROOM	ROOF	INLINE	LOREN COOK	GC 188	200	0.25	1227	1/4	1	120	4.5	

TOILET EXHAUST FAN SCHEDULE

NOTE: PROVIDE STARTER DISC. SWITCH CURB, THESE FANS ARE LOCATED ON THE ROOF

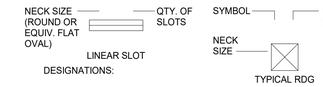
MARK	AREA SERVED	MANUFACTURER	TYPE	MODEL NO.	CFM	S.P.	RPM	BHP/HP	PH	VOLTS	SONES	COMMENTS	REMARKS
REF-01	TOILET	LOREN COOK	DOWN BLAST	100C17DEC	250	0.75	1725	1/4	1	120V	7.5	ROOF	NEW
REF-02	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-03	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-04	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-05	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-06	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-07	TOILET	LOREN COOK	DOWN BLAST	100C17DEC	250	0.75	1725	1/4	1	120V	7.5	ROOF	NEW
REF-08	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-09	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-10	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-11	TOILET	LOREN COOK	DOWN BLAST	100C17DEC	250	0.75	1725	1/4	1	120V	7.5	ROOF	NEW
REF-12	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-13	TOILET	LOREN COOK	UTILITY	70CPS	250	0.75	1701	1/2	1	120V	59	ROOF	NEW
REF-14	TOILET	LOREN COOK	DOWN BLAST	100C17DEC	250	0.75	1725	1/4	1	120V	7.5	ROOF	NEW

LOUVER, DIFFUSER AND REGISTER SCHEDULE

SYMBOL	MANUFACTURER MODEL NUMBER	DUTY	TYPE	BORDER TYPE	CONSTRUCTION			NOTES
					OBD	FRAME	BLADES	
S1	PRICE SMD	SUPPLY	C.G.	"	STEEL	STEEL	STEEL	2,3
S2	PRICE 520	SUPPLY	S.W.	"	STEEL	STEEL	STEEL	2
S3	PRICE RPD	SUPPLY	RD. DIFFUSER	"	STEEL	STEEL	STEEL	2
R1	PRICE 530 D	RETURN	C.G.	"	STEEL	STEEL	STEEL	2,6,7
L1	GREENHECK ESJ-401	FRESH AIR	-	-	-	ALUM.	ALUM.	8
R2	PRICE 530 D	RETURN	S.W.	"	STEEL	STEEL	STEEL	2,6,7
E1	AMERICAN ALDES CER	EXHAUST	C.G.	"	STEEL	STEEL	STEEL	2,6,7
E3	PRICE 530 D	RETURN	C.G.	"	STEEL	STEEL	STEEL	2

TYPES:
L.S. - LINEAR SLOT
L.B. - LINEAR BAR
D.D. - DIRECTIONAL DIFFUSER
P.F. - PERFORATED FACE
L.F. - LOUVERED FACE
C.C. - CUBE CORE
S.W. - SIDE WALL
S.W./ C.G. - SIDE WALL OR CEILING

NOTES:
1. SQUARE TO ROUND TRANSITION.
2. OPPOSED BLADE DAMPER.
3. DOUBLE DEFLECTION.
4. FACE VELOCITY 600 FPM MAX.
5. 35° DEFLECTION (FIXED).
6. 45° DEFLECTION (FULLY ADJUSTABLE).
7. NC LEVEL NOT TO EXCEED 25.
8. ALUMINUM BIRDSCREEN(3/4"x.051")
9. MODULATING DAMPING
10. W/ RFV-BC BOOT



PTAC UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO.	CAPACITY (BTUH)	EER	COOLING BTU	HEATING BTU	COP	DR.PTAC COMPRESSOR (WATT)	SUPPLEMENTAL HEAT KW @ 277V	REMARKS
PTAC-1	GE	AZ6SH09DBM	9000	11.2	9200 / 900	8000 / 7900	3.3	-	-	

NOTE:
1 - PROVIDE WALL SLEEVE WITH THIS UNIT.
2 - PROVIDE UNIT WITH SPECIAL CORROSION PROTECTION TREATMENT.
3 - GUESTROOM T'STAT SHALL BE 2 SPEED FAN CONTROL CAPABILITY (WIRELESS MOUNT AT 54" AFF FOR ALL NOW-ADA UNITS).
4 - CONDENSATE REMOVAL KIT.
5 - ELECTRICAL SU-BASE KIT WITH INSULATED ENCLOSURE COVER.
6 - MOTORIZED FRESH AIR DAMPER.

TRANSFER DUCT SIZES	
AIR FLOW RANGE CFM	TRANSFER DUCT SIZE WIDTH X HEIGHT (IN.)
0 - 220	12 X 10 20 X 6
221-340	20 X 10 24 X 8
341-460	22 X 12 26 X 10 32 X 8
461-600	24 X 14 26 X 12 34 X 10
601-750	26 X 14 30 X 12 36 X 16
751-950	28 X 16 32 X 14 36 X 12
951-1200	36 X 16 42 X 14 48 X 12
1201-1600	38 X 20 48 X 16 54 X 14
1601-2000	48 X 20 54 X 18 60 X 16

TAKE-OFF BRANCH, AND FLEX DUCT SCHEDULE (USE INSULATED FLEX DUCT)	
CFM	DIAMETER
100	4"
120	5"
130	5"
140	6"
150	6"
200	8"
250	8"
300	8"
400	8"

HANGER SCHEDULE		
PIPE SIZE	ROD SIZE	MAX. SPACING
UP TO 1 1/4"	3/8" DIA.	8' STEEL
UP TO 1 1/4"	3/8" DIA.	6' COPPER & BRASS
1 1/2" & 2"	3/8" DIA.	10'
2 1/2" & 3"	1/2" DIA.	10'
4" & 5"	5/8" DIA.	10'
6"	3/4" DIA.	10'
8", 10", 12"	7/8" DIA.	10'
14" & 16"	1" DIA.	10'
18"	1 1/8" DIA.	10'

ELECTRICAL CABINET UNIT HEATER SCHEDULE

NOTES:
1. REFER ELECTRICAL DRAWINGS FOR CIRCUIT INFORMATION. DISCONNECT SW. AND STARTER.

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	MBH	KW	AMP	PH	VOLT.	REMARK
ECUH-1	STAIR #2 (ST2-3)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-2	STAIR #2 (ST2-5)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-3	CORRIDOR (3RD FLOOR)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-4	STAIR #2 (ST2.1)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-5	STAIR #1 (ST1-3)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-6	STAIR #1 (ST1-5)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-7	STAIR #1 (ST1.1)	MARLEY	CUH935	10.23	3	15	1	208	
ECUH-8	CORRIDOR	MARLEY	CUH935	10.23	3	15	1	208	

ELECTRICAL WALL HEATER SCHEDULE

NOTES:
1. REFER ELECTRICAL DRAWINGS FOR CIRCUIT INFORMATION. DISCONNECT SW. AND STARTER.

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	MBH	KW	AMP	PH	VOLT.	REMARK
EWH-1	POOL-VEST (033)	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	
EWH-2	CORR.-FIT. (032)	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	
EWH-3	STORAGE (S2)	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	
EWH-4	STORAGE (S3)	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	
EWH-5	STORAGE (S4)	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	
EWH-6	STORAGE (S5)	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	
EWH-7	LAUNDRY CHUTE	BERKO	MCSSARWH4808	13.648	4	19.2	1	208	

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REVISIONS

NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT:
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764 RIVERDALE STREET, WEST SPRINGFIELD, MA 01089

FILE NO:	21028.01		
SCALE:	AS NOTED		
DATE:	07/20/2023		
DRAWN BY:	MF	CHECKED BY:	HH

SHEET TITLE:
MECHANICAL UNITS SCHEDULES

SHEET NUMBER:
M-003

DUCTLESS AIR CONDITIONING UNIT SCHEDULE

NOTES: 1. PROVIDE DISC. SWITCH AND STARTER BY ELECTRICAL CONTRACTOR. 2. PROVIDE PROGRAMMABLE CONDENSATE PUMP FOR ALL UNITS. MOTORIZED DAMPER TO BE PROVIDED FOR EACH UNIT. 3.MECHANICAL CONTRACTOR TO PROVIDE PROGRAMMABLE T'STAT AND ELEC. CONTRACTOR TO WIRE . 4. PROVIDE NON-COMBUSTIBLE MATERIAL PLATFORM BELOW ALL THE CEILING MOUNTED UNITS.

SYMBOL	MANUFACTURER	MODEL NO.	AREA SERVED	CFM	E.S.P	TONS	PH	VOLTS	COOLING CAPACITY(MBH)		REMARKS
									TOTAL (MBH)	SENSIBLE (MBH)	
DACU-1	MITSUBISHI	PKA-A24KA7	PBX	800	0.5	2	1	120/1	24	18.6	DUCTLESS SPLIT AC
DACU-2	MITSUBISHI	PKA-A24KA7	SERVER_020	800	0.5	2	1	120/1	24	18.6	DUCTLESS SPLIT AC

CONDENSING UNIT SCHEDULE FOR DUCTLESS DACU

NOTE: PROVIDE DISC. SWITCH & STARTER BY ELECTRICAL CONTRACTOR. PROVIDE CONC. PAD FOR ALL FLOOR MOUNTED UNITS.

SYMBOL	MANUFACTURER	MODEL NO.	TONS	REF	PH	VOLTS	MCA	LOCATION	SERVES	REMARKS
DCU-1	MITSUBISHI	PUY-A24NHA7	2	410	1	208/1	19	EXTERNAL	DACU-1	
DCU-2	MITSUBISHI	PUY-A24NHA7	2	410	1	208/1	19	EXTERNAL	DACU-2	

ELECTRICAL UNIT HEATER SCHEDULE

NOTES:
1. PROVIDE STARTER AND DISCONNECT SWITCH. COLOR TO BE SELECTED BY ARCHITECT.
2. PROVIDE ELECTRIC HEATER WITH INTEGRAL THERMOSTAT. MAINTAIN MINIMUM 50°F TEMPERATURE.

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	MBH	KW	AMP	PHASE	VOLTAGE	REMARKS
EUH-1	POOL MECHANICAL (111)	QMARK	MUH05-21	17	3.7	18	1	208/1	
EUH-2	ELECTRICAL-027	QMARK	MUH05-21	17	3.7	18	1	208/1	

RTU SCHEDULE

NOTES: PROVIDE STARTER & DISCONNECT SWITCH. PROGRAMMABLE THERMOSTAT MODEL. PROVIDE WITH MODULATING GAS VALVE, CURB, ECONOMISER, POWER EXHAUST, HOT GAS REHEAT, VFD. PROVIDE SMOKE DETECTOR.

MARK	LOCATION	AREA SERVED	MANUFACTURER	MODEL NO.	OUTDOOR AIR CFM	SUPPLY CFM	E.S.P. (IN.)	COOLING CAPACITY				HEATING			SUPPLY FAN HP	VOLT/ PHASE	MCA	MOCP	REMARKS
								SENSIBLE (MBH)	TOTAL (MBH)	ENTERING AIR DB/WB	LEAVING AIR DB/WB	INPUT CAPACITY (MBH)	HEAT OUT PUT	EA/LAT °F					
RTU-1	ROOF	CORRIDOR	VALENT	VX-112-12.S1-G-A1	2000	2000	1.5	149	89.3	79.5/66.1	57.3/56.1	200	160	95/76-54.5/54.5 LAT.	1	208/3/60	55.9	60	
RTU-2	ROOF	ELEVATOR LOBBY	CARRIER	48FCEB06A3A5-6F4F0	200	2000	1.0	44.70	59.30	80/67	59.3/57.7	110	88	65/105.7	2	208/3/60	28	40	

NOTE:
1. FACTORY ASSEMBLED, PIPED, WIRED AND TESTED AS A SINGLE PACKAGE
2. UNIT SHALL INCLUDE A 100% OUTSIDE AIR HOOD WITH 2 POSITION MOTORIZED DAMPER
3. UNIT SHALL INCLUDE 2 STAGE COOLING, 2 COMPRESSOR CIRCUITS WITH INTERLACED-CIRCUIT DX COILS
4. UNIT SHALL INCLUDE MINIMUM 10:1 TURNDOWN MODULATING NATURAL GAS HEATING WITH 304 SERIES STAINLESS STEEL HEAT EXCHANGER WITH A 25 YEAR WARRANTY (PARTS ONLY)
5. UNIT SHALL INCLUDE HOT GAS BYPASS ON ALL CIRCUITS (FROST-STAT COMPRESSOR CYCLING NOT ACCEPTABLE)
6. UNIT SHALL INCLUDE MODULATING HOT GAS REHEAT COIL FOR DEHUMIDIFICATION (2-POSITION OR DEDICATED HEAT PUMP CIRCUIT NOT ACCEPTABLE)
7. UNIT SHALL INCLUDE STAINLESS STEEL DRAIN PAN
8. UNIT SHALL INCLUDE MANUAL RESET HIGH PRESSURE SWITCHES & AUTO RESET LOW PRESSURE SWITCHES
9. UNIT SHALL INCLUDE EC CONDENSER FAN MOTORS FOR CONDENSER HEAD PRESSURE CONTROL
10. UNIT SHALL INCLUDE 4" MERV 13 FILTERS WITH 2" MERV 8 PRE-FILTERS. PROVIDE METAL MESH SCREEN ON LEAVING SIDE OF FILTER RACK TO PREVENT DIRTY FILTER COLLAPSE ONTO COIL.
11. CONTROLS: WATTMASTER/ORION VCCX CONTROLLER WITH AMBIENT DEWPOINT SENSOR; ELECTRONIC SEQUENCING OF COMPRESSORS AND HEATING AND MODULATING HOT GAS RE-HEATING. FIELD MOUNTED CONTROLS SHALL INCLUDE A DUCT MOUNTED LEAVING AIR STAT AND A WALL MOUNTED STAT (SEE PLANS FOR LOC. ATILOL UNN) IT MOUNTED CONTROLS FOR COMPLETE OPERATION SHALL BE INSTALLED BY THE EQUIPMENT MANUFACTURER
12. 2" FOAM INJECTED INSULATED (MINIMUM R13 VALUE) DOUBLEWALL CABINET CONSTRUCTION
13. UNIT SHALL INCLUDE INTEGRAL NON-FUSED DISCONNECT
14. R410A
15. DUCT MOUNTED SMOKE DETECTOR PROVIDED BY ELECTRICAL, INSTALLED BY MECHANICAL
16. UNIT SHALL INCLUDE A FACTORY ASSEMBLED AND INSULATED ROOF CURB/PLENUM WITH SPRING VIBRATION ISOLATION RAILS. HEIGHT TBD
17. ENTIRE UNIT SHALL BE AHRI LISTED AND CERTIFIED (COIL ONLY CERTIFICATION IS NOT ACCEPTABLE)
18. COMPRESSORS SHALL HAVE 5 YEAR WARRANTY (PARTS ONLY)
19. ECONOMISER, HUMIDI-MIZER, HOT GAS BYPASS, HOT GAS REHEAT
20. AAON UNIT IS APPROVED EQUIPMENT.

AIR CONDITIONING UNIT SCHEDULE

NOTES:1.PROVIDE DISC. STARTER 2.PROVIDE CONDENSATE PUMP FOR ALL UNITS LITTLE GIANT. MOTORIZED DAMPER TO BE PROVIDED FOR EACH UNIT. PROVIDE CONDENSATE PUMP FOR ALL THE AC UNITS. PROVIDE WITH HIGH STATIC PRESSURE

SYMBOL	MANUFACTURER	MODEL NO.	AREA SERVED	CFM	E.S.P.	TONS	PH	VOLTS	HEATING TYPE	HEATING CAPACITY		COOLING CAPACITY(MBH)		SEER	LOCATION	FURNACE MODEL NO.	FURNACE EFFICIENCY	EDB/EWB	LDB/LWB	REMARKS
										HEATING INPUT	HEATING OUTPUT	TOTAL	SENSIBLE							
AC-1	CARRIER	59TP6B100V21-20	BREAKFAST AREA	800	0.60	2	1	120	GAS	60000	58000	23.59	17.62	15	REFER TO DWG.	59TP6B060V14-12	95%	78/66	57.61/56.55	
AC-2	CARRIER	59TP6B100V21-20	LOBBY	1600	0.60	4	1	120	GAS	100000	97000	46.3	34.16	14.5	REFER TO DWG.	59TP6B100V21-20	95%	78/66	58.23/56.75	
AC-3	CARRIER	59TP6B100V21-20	LOBBY	1600	0.60	4	1	120	GAS	100000	97000	46.3	34.16	14.5	REFER TO DWG.	59TP6B100V21-20	95%	78/66	58.23/56.75	
AC-4	CARRIER	59TP6B100V21-20	FITNESS AREA	1000	0.60	2-1/2	1	120	GAS	80000	78000	27.35	19.76	15.2	REFER TO DWG.	59TPB080V17-16	95%	78/66	59.70/57.31	HORIZONTAL MOUNT
AC-5	CARRIER	59TP6B100V21-20	MEETING ROOM	800	0.60	2	1	120	GAS	60000	58000	23.59	17.62	15	REFER TO DWG.	59TP6B060V14-12	95%	78/66	57.61/56.55	
AC-6	CARRIER	59TP6B100V21-20	GENERAL MANAGER	1000	0.60	2-1/2	1	120	GAS	80000	78000	27.35	19.76	15.2	REFER TO DWG.	59TP6B080V17-16	95%	78/66	59.70/57.31	
GRAND TOTAL: 6																				

OUTDOOR CONDENSING UNIT SCHEDULE

NOTE: PROVIDE DISC. SWITCH & STARTER

SYMBOL	MANUFACTURER	MODEL NO.	TONS	REF	PH	VOLTS/PH/HZ	MCA	RLA (AMPS)	LRA (AMPS)	SERVES	COUNT	REMARKS
CU-1	CARRIER	24SPA	2	PURON	1	208V/1	12.2	10.9	59.5	AC-1	1	INDOOR COIL CAPM
CU-2	CARRIER	24SPA	4	PURON	1	208V/1	32.8	25.0	120	AC-2	1	INDOOR COIL CAPM
CU-3	CARRIER	24SPA	4	PURON	1	208V/1	32.8	25.0	120	AC-3	1	INDOOR COIL CAPM
CU-4	CARRIER	24SPA	2-1/2	PURON	1	208V/1	15.2	11.7	71.3	AC-4	1	INDOOR COIL CAPM
CU-5	CARRIER	24SPA	2	PURON	1	208V/1	12.2	10.9	59.5	AC-5	1	INDOOR COIL CAPM
CU-6	CARRIER	24SPA	2-1/2	PURON	1	208V/1	15.2	11.7	71.3	AC-6	1	INDOOR COIL CAPM
GRAND TOTAL: 6												

95ºF EDB AMBIENT

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REVISIONS

NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT:
HOLIDAY INN EXPRESS
764 RIVERDALE STREET, WEST SPRINGFIELD, MA 01089

FILE NO: 21028.01
SCALE: AS NOTED
DATE: 07/20/2023
DRAWN BY: MF
CHECKED BY: HH

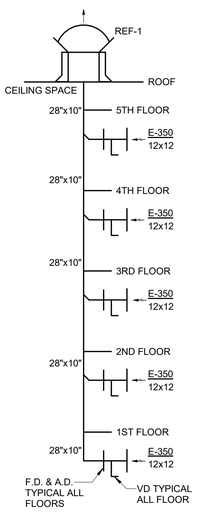
SHEET TITLE:
MECHANICAL UNITS SCHEDULES

SHEET NUMBER:
M-004

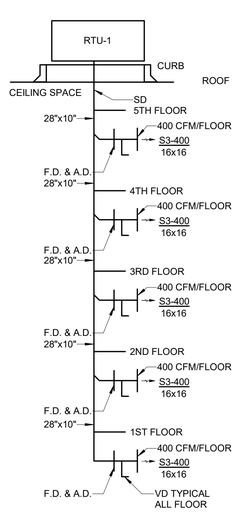
NOTES:
ALL AC UNITS SHALL HAVE HIGH STATIC PRESSURE.

16"x12" LOUVER WITH BIRD SCREEN
PROVIDE 4" CONCRETE PAD
CU-1
CU-2
REF. LINE TO AC 2
STAIR 1 ST1.1
EUH-2
ELECTRICAL 027
PANTRY 028
BREAKFAST 029
STORAGE 026
AC-1
AC-2
ECUH-7
EF-1
ECUH-8
12"x12" LOUVER WITH BIRD SCREEN
28"x10" DUCT UP WITH FD & SMOKE DAMPER TYPICAL ALL FLOORS
S3-400 16"x16"
EF-3
CORRIDOR C101
12"x12" LOUVER WITH BIRD SCREEN
WALL CAP OR HOOD
MD EF-4
EWH-7
LAUNDRY CHUTE 025
UNISEX R3
EMPLOYEE BREAK 022
LAUNDRY 023
SALES 018
SERVER 020
LUGGAGE STORAGE 017
WORK AREA 019
GENERAL MANAGER 021
CHECK-IN 002
LOBBY/ GREAT ROOM 005
MEETING 006
ELEV. LOBBY 009
ELEV 2 TOILET WOMENS R1
ELEV 1 ELEV CONTROL 031
AC-5
TOILET MENS R2
GUEST LAUNDRY 011
BUSINESS CENTER 004
DACU-1
DACU-2
PBX 010
AC-3
AC-4
AC-6
EWH-1
EWH-2
CORR-FIT C103
REF. LINE TO AC 5
REF. LINE TO AC 4
PROVIDE 4" CONCRETE PAD
CU-4
CU-5
DRYER VENT WITH CAP & HOOD
12"x12" LOUVER WITH BIRD SCREEN
R-1600 24"x24"
R-1800 24"x24"
R1-350 12"x12"
S1-400 12"x12"
R1-600 16"x16"
48"X48" LOUVER WITH MOTORIZED DAMPER INTERLOCK WITH INTAKE AND DRYER
16" DRYER VENT FINAL SIZE PER MANUFACTURER OF DRYER
16"x12" LOUVER WITH BIRD SCREEN
48"X48" LOUVER WITH MOTORIZED DAMPER INTERLOCK WITH EXHAUST
24"x24" LOUVER WITH BIRD SCREEN FRESH AIR INTAKE
REF.LINE TO AC-6
CU-6
DCU-2
PROVIDE CONC. PAD TYP.
DCU-1
CU-3
4" CONCRETE PAD
16"x12" LOUVER WITH BIRD SCREEN
ACCE. KING X WIDE 101
HEARING IMPAIRED KING 103
HEARING IMPAIRED KING 105
HEARING IMPAIRED KING 107
KING 109
KING 111
PTAC-1
DUCTWORK TO BE INSULATED
STAIR 2 ST2.1
ECUH-4
E-350 12"x12" F.D & S.D 28"x10" UP
EF-7
ECUH-3
MECHANICAL 016
EUH-1
16"x12" LOUVER WITH BIRD SCREEN
M.D
PROVIDE 4" CONC. PAD
DCCU-1
24"x18" LOUVER WITH BIRD SCREEN
POOL-VEST. 013
R-750 16"x16"
POOL 014
POOL EQ. 015
R2-1500 48"x48"
DHU-1
E-500 12"x12"
EF-2
1 M-201

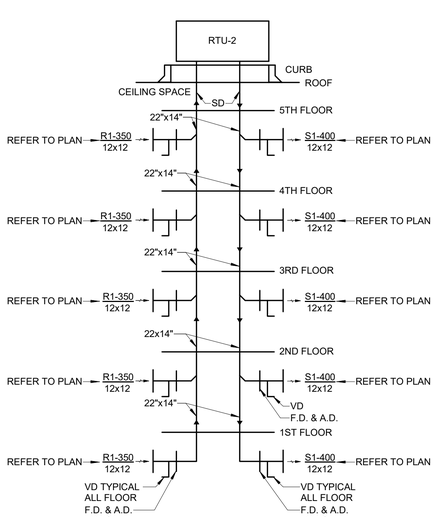
01 FIRST FLOOR
M-101 1/8" = 1'-0"



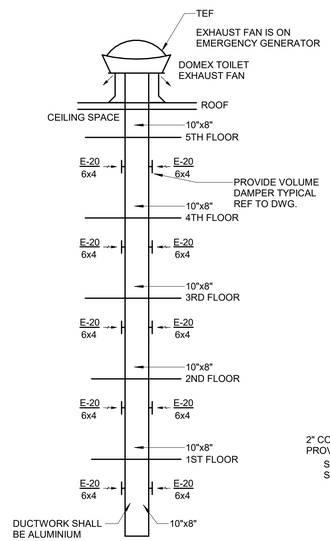
2 CORRIDOR EXHAUST
M-101 N.T.S.



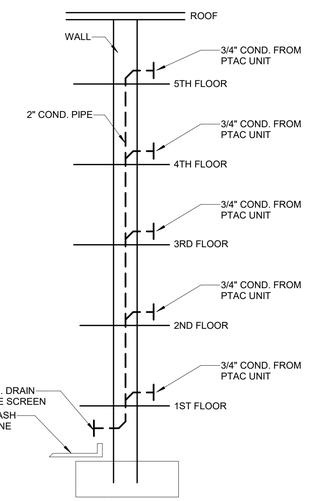
3 ROOF TOP UNITS#1 CORRIDOR
M-101 N.T.S.



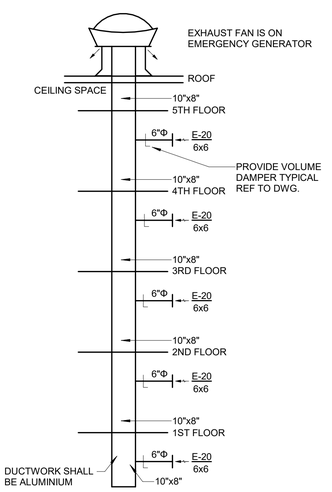
4 ROOF TOP UNIT #2 LOBBY
M-101 N.T.S.



5 SUITE TOILET EXHAUST
M-101 N.T.S.



6 CONDENSATE DRAIN
M-101 N.T.S.



7 SUITE TOILET EXHAUST FAN
M-101 N.T.S.

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FILE NO:	21028.01
SCALE:	AS NOTED
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DRAWN BY:	MF
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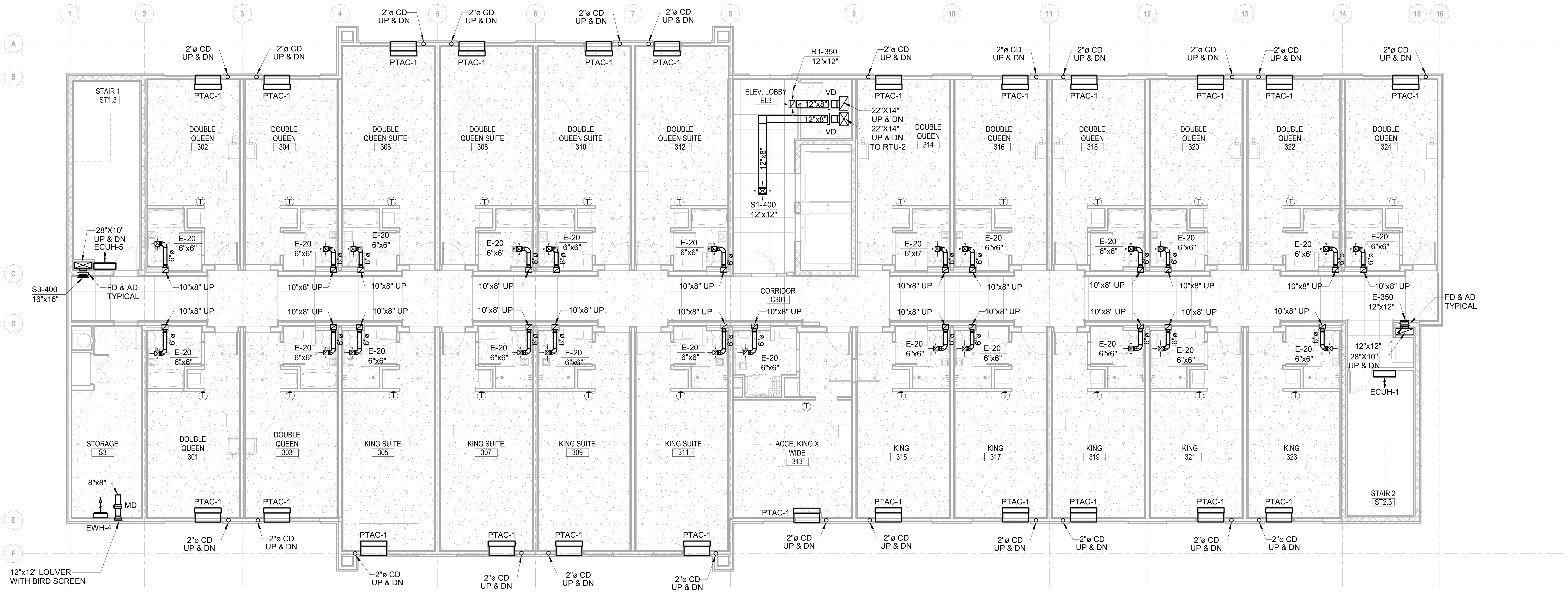
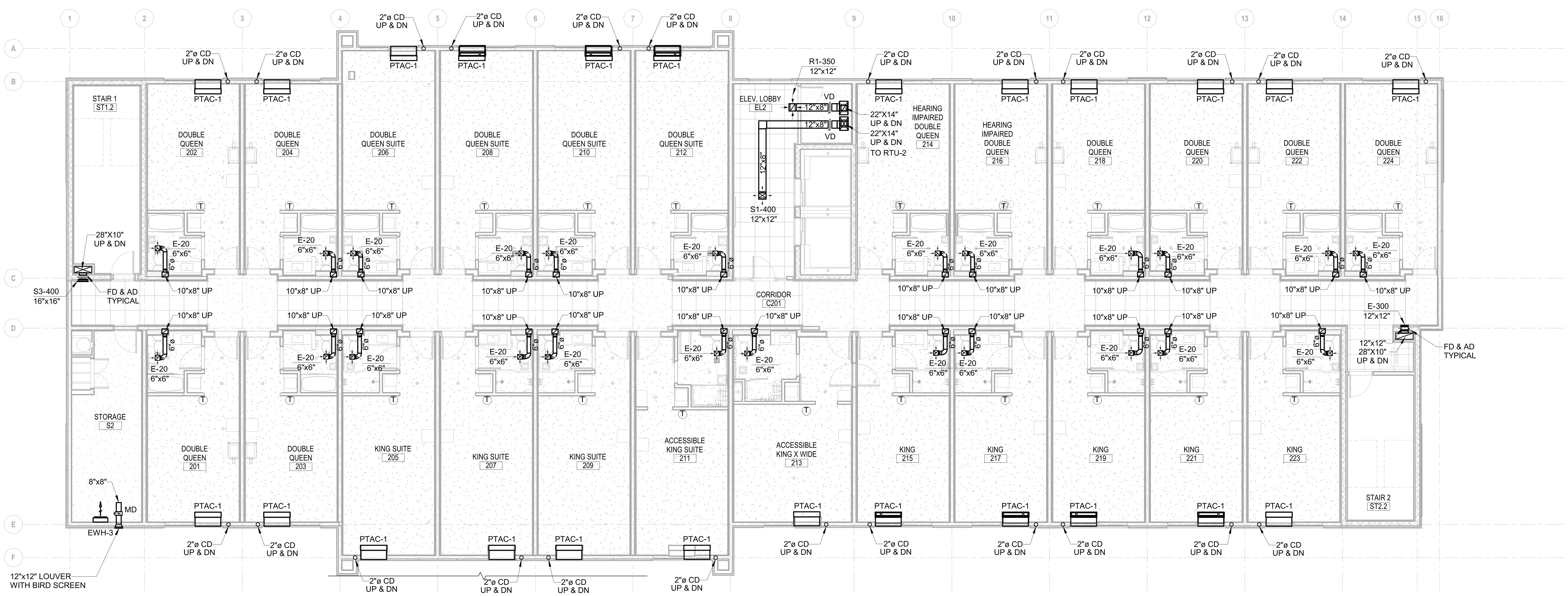
SHEET TITLE:
FIRST FLOOR MECHANICAL PLAN

SHEET NUMBER:
M-101



2 THIRD FLOOR
M-102 1/8" = 1'-0"



1 SECOND FLOOR
M-102 1/8" = 1'-0"

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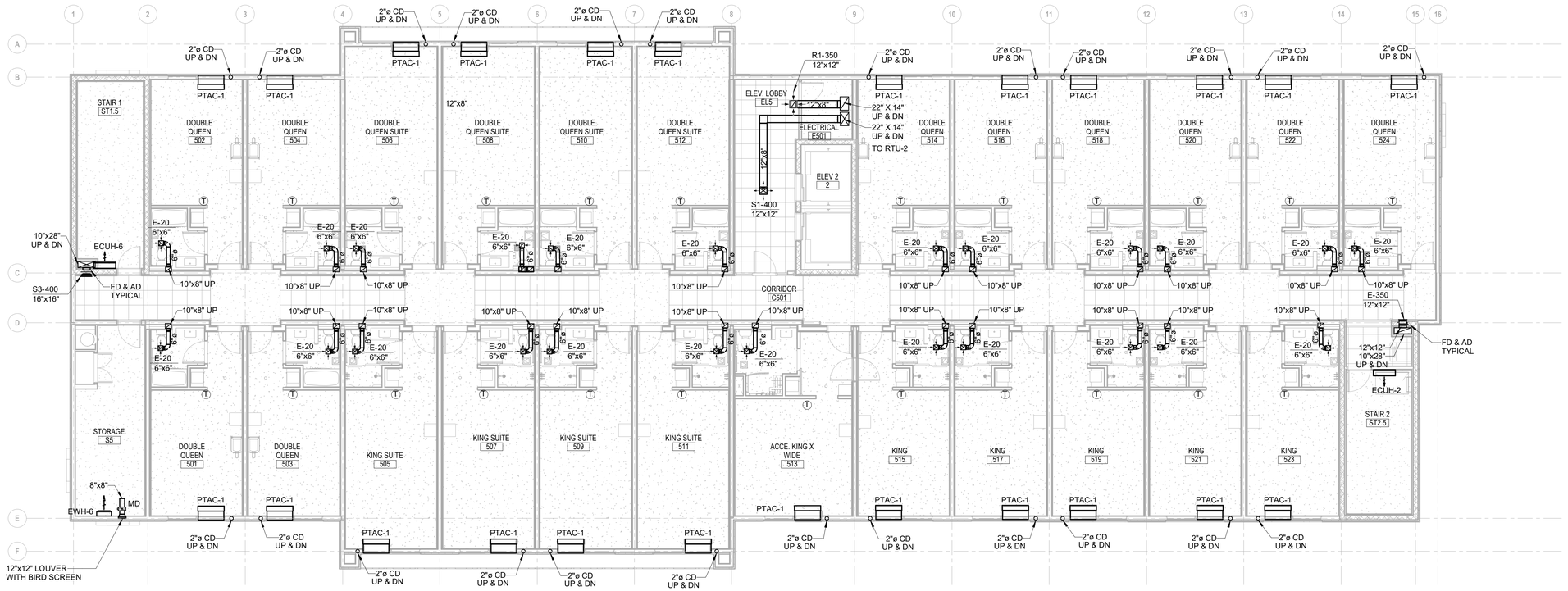
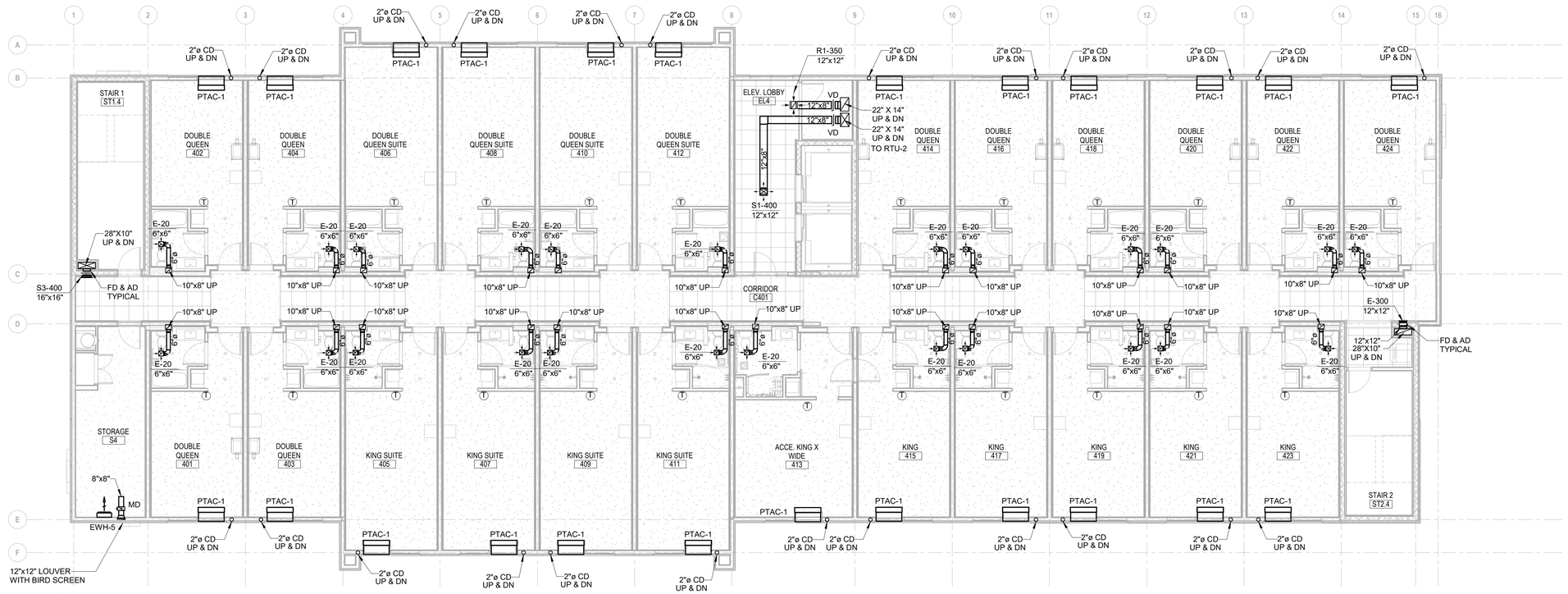
SHEET TITLE:
SECOND & THIRD FLOOR MECHANICAL PLAN

SHEET NUMBER:
M-102



2 FIFTH FLOOR
M-103 1/8" = 1'-0"



1 FOURTH FLOOR
M-103 1/8" = 1'-0"

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DRAWN BY:		MF	
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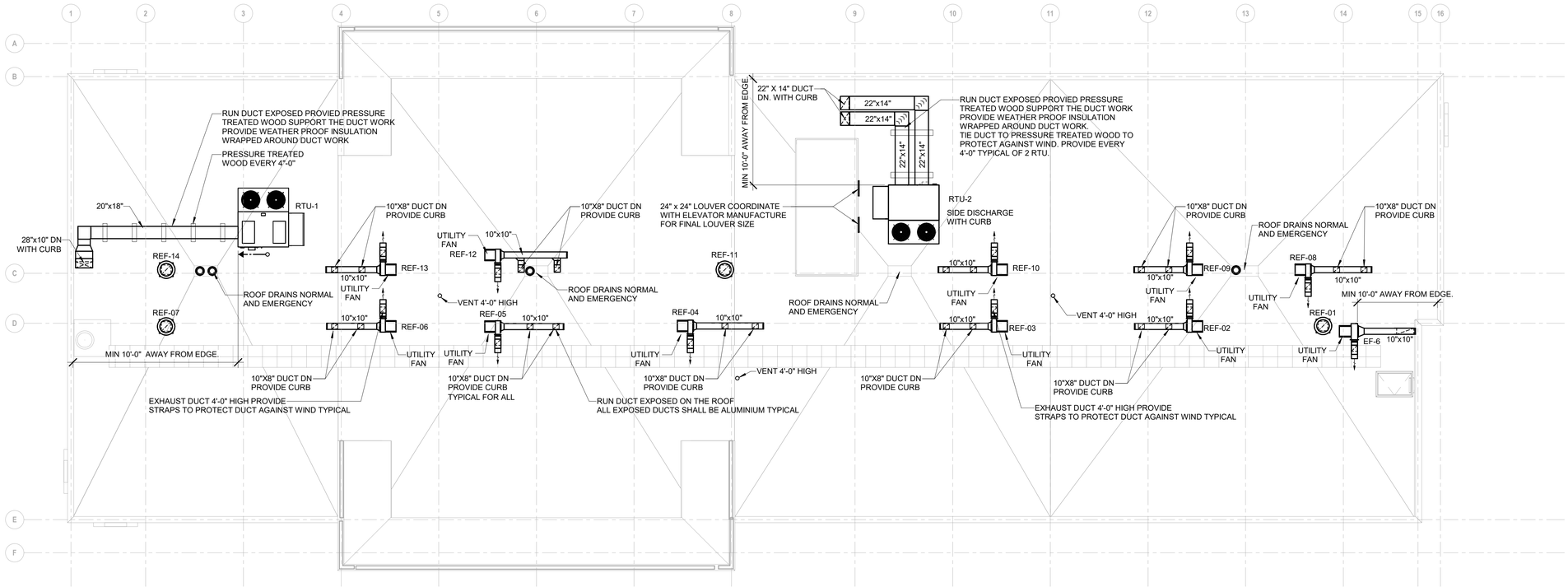
SHEET TITLE: FOURTH & FIFTH FLOOR MECHANICAL PLAN

SHEET NUMBER: M-103



1 M-104 ROOF MECHANICAL PLAN

1/8" = 1'-0"

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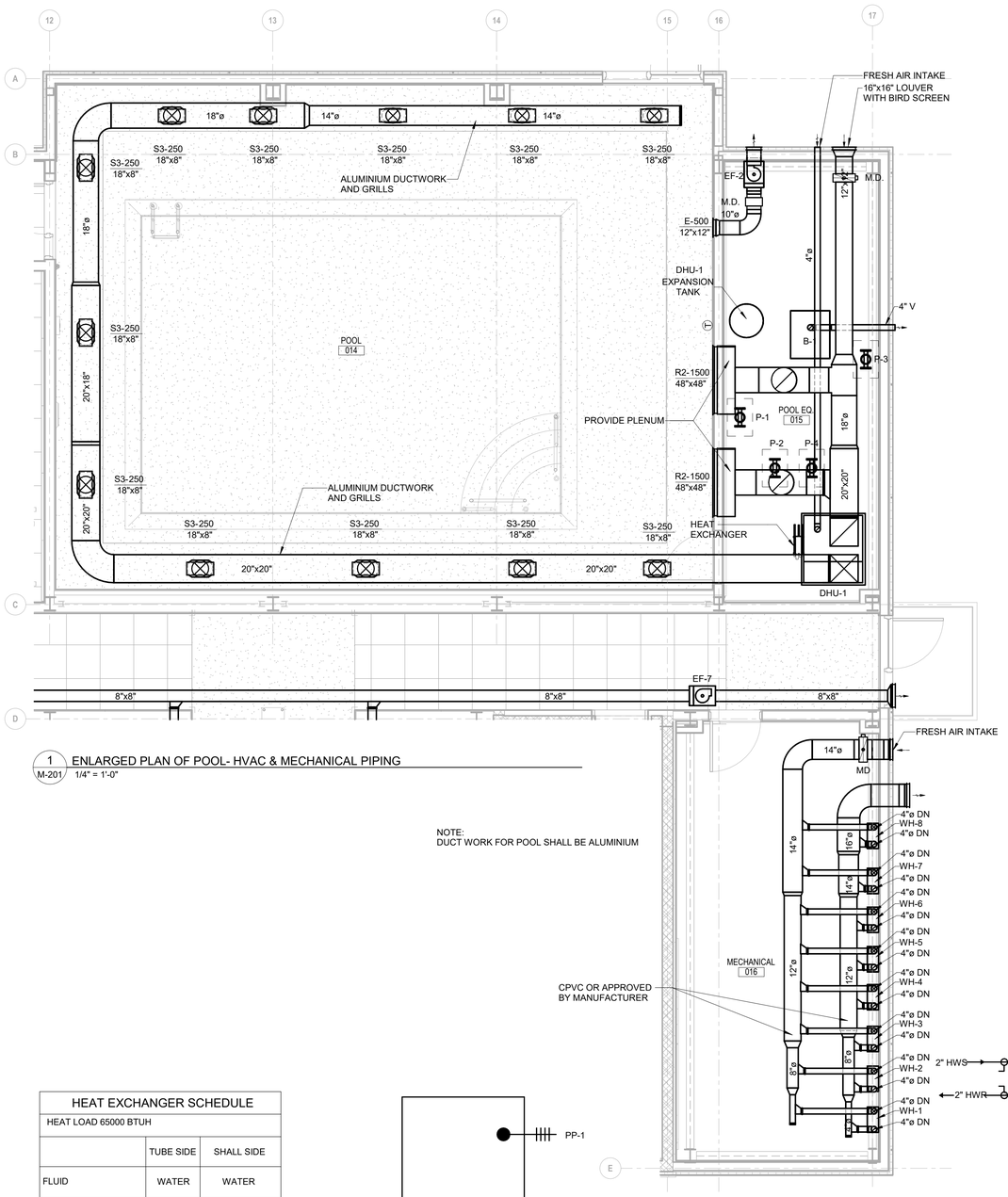
SHEET TITLE:
ROOF PLAN - MECHANICAL

SHEET NUMBER:
M-104



1 M-201 ENLARGED PLAN OF POOL- HVAC & MECHANICAL PIPING
1/4" = 1'-0"

NOTE:
DUCT WORK FOR POOL SHALL BE ALUMINIUM

DEHUMIDIFIIER UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO. (BLOWER MODEL FAN TYPE)	O.A (CFM)	S.A (CFM)	HP	ESP			REF	RH	MOISTURE REMOVAL CAPACITY	EVAP. COIL SENSIBLE CAPACITY	NET SENSIBLE CAPACITY	NET SENSIBLE WITHOUT O.A.
						SA	RA	TOTAL						
DHU-1	DECTRON	DVS-030 ATL112- 9TZ FCDWDI	500	3000	2	0.5	0.5	1	R-134a	50	28.33	46310	29956	35977

1 - RETURN AIR FILTER 2" MERV 8 EXTEND SURFACE PLEATED FILTER WITH ANTI MICROBIAL.
2 - OUTSIDE AIR FILTER 2" MERV 2.
3 - POOL HEATER CUNS VENTED COAX BTU/HR 8.5 GPM.
4 - LEAVING AIR TEMP. DEHUMIDIFICATION.
5 - POOL WATER MODE 84°F.
6 - AIR CONDITIONING MODE 73°F.
7 - RECIRC MODE 85.6°F.
8 - MCA(AMPS) 42.
9 - MCA(AMPS) 60.
10 - EER 12.87.
11 - VOLT 208V, 3Ø, 60HZ.
12 - PROVIDE STARTER.
13 - PROVIDE MERV-7 PRE FILTER & MERV-12 FINAL FILTER.

AIR COOLED CONDENSER SCHEDULE

NOTE: PROVIDE STARTER AND DISCONNECT SWITCH. TOTAL HEAT REJECTION 95920 REF. R-134A

MARK	MANUFACTURER	MODEL NO.	AMBIENT AIR	CONDENSING TEMP	DELTA T	CONDENSER CAPACITY	WT	VOLT	PHASE	MCA
DCCU-1	DECTRON	CAY1012	95	120	25	63,700	500#	208	3Ø	

PUMP SCHEDULE

NOTE: PROVIDE STARTER.

MARK	MANUFACTURER	MODEL NO.	GPM	HEAD.	RPM	HP	VOLT.	PHASE	REMARKS
P-1	B & G	PL-36	48	20	1750	1.5	120V	1	
P-2	B & G	PL-36	35	40	1750	1.5	120V	1	
P-3	B & G	PL-36	9	25	3350	0.17	120V	1	
P-4	B & G	PL-36	5	20	3350	0.17	120V	1	

BOILER SCHEDULE

NOTE: PROVIDE STARTER AND DISCONNECT SWITCH.

MARK	MANUFACTURER	INPUT MBH	OUTPUT NET	TEMP IN	TEMP OUT	DESCRIPTION	PH	VOLT	REMARKS
B-1	TRIANGLE TUBE PRESTIGE SOLO 250	250	240	160	180	GAS FIRED CONDENSING BOILER 95% EFF. DIRECT VENT	1	120	

ELECTRICAL UNIT HEATER (EUH) SCHEDULE

NOTES:
1. PROVIDE STARTER AND DISCONNECT SWITCH. COLOR TO BE SELECTED BY ARCHITECT.
2. PROVIDE ELECTRIC HEATER WITH INTEGRAL THERMOSTAT. MAINTAIN MINIMUM 50°F TEMPERATURE.

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	MBH	KW	FLA	VOLTAGE	PHASE	Comments
EUH-1	POOL MECHANICAL (111)	QMARK	MUH05-21	17	3.7	18	208/1	1	
EUH-2	ELECTRICAL-027	QMARK	MUH05-21	17	3.7		208/1	1	

HEATING COIL SCHEDULE

SYMBOL	MANUFACTURER	MODEL	CFM	EDB	EWT	GPM	HEATING BTU/HR	LWT	APD	WPD	FACE AREA	ROWS-FPI	CASE MATERIAL
HC-1	TEMTROL	4WC-8-25x30x210AL	3000	64	180	16.5	161627	160	0.21	9.52 FT	5.21 SQ. FT	2-10	16 GA. GALV

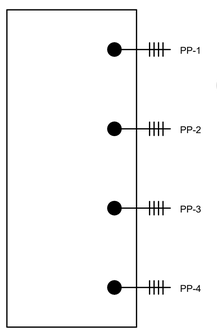
UNIT HEATERS SCHEDULE

UNIT NO	LOCATION	CFM	MBH	AIR DATA		WATER DATA				ELECTRICAL				MAKE/MODEL	REMARKS
				EAT	LAT	GPM	EWT	LWT	PD	HP	VOLTS	PH	RPM		
UH-1	POOL ROOM	543	14.3	65	90	1.43	180	160	0.04	1/20	120	1	1750	TRANE # 38 S	

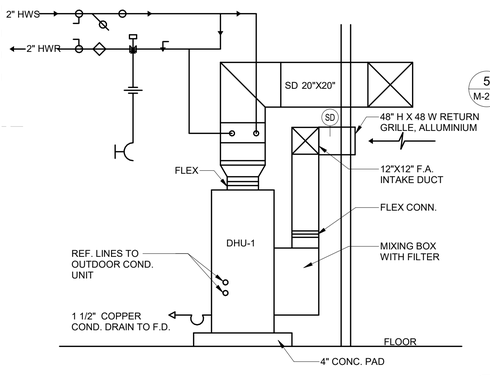
NOTE: 1-DIVISION 15000 SHALL PROVIDE STARTER AND FACTORY MTD.DISC.SW.

HEAT EXCHANGER SCHEDULE

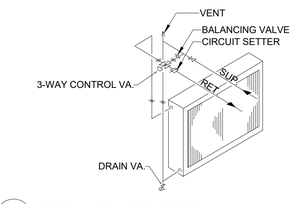
HEAT LOAD 65000 BTUH		
	TUBE SIDE	SHALL SIDE
FLUID	WATER	WATER
TOTAL FLOW	6.5 GPM	27 GPM
INLET WATER TEMP.	80 F	180
OUTLET WATER TEMP.	100 F	160
MAX. P.D.	0.05	0.5
MATERIAL: FRONT HEAD COST IRON BAFFLES STEEL TUBE 3/4 OD COPPER		
MANUF. & MODEL B & G QWU 4-3.2-2		



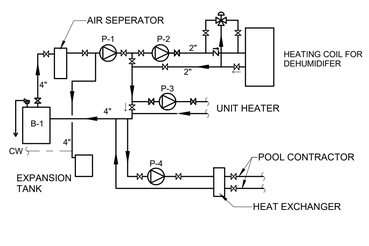
6 M-201 TEKMAR CONTROLLER CONNECTIONS
N.T.S.



2 M-201 DEHUMIDIFIER UNIT DETAIL
N.T.S.



5 M-201 TYPICAL COIL PIPING DETAIL
N.T.S.



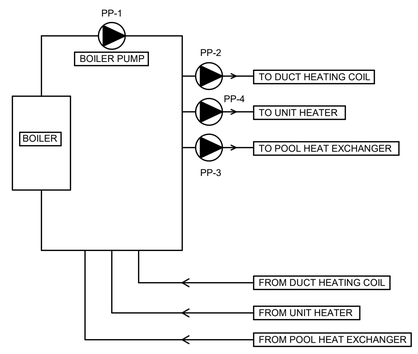
3 M-201 SCHEMATIC DIAGRAM OF POOL BOILER
N.T.S.

HEATING SEASON, BOILER STARTS WITH ON/OFF SWITCH AND PRIMARY PUMP RUNS TO MAINTAIN WATER TEMPERATURE THROUGH THE LOOP.

WHEN POOL ROOM THERMOSTAT CALLS FOR HEATING, 2-WAY VALVE OPENS AND ACTIVATES THE PUMP TO MAINTAIN SPACE TEMPERATURE.

WHEN MECHANICAL ROOM THERMOSTAT CALL FOR HEATING, 2-WAY VALVE OPENS AND ACTIVATES THE DEDICATED PUMP TO MAINTAIN SPACE TEMPERATURE.

HEAT EXCHANGER PUMP CAN EITHER TURN ON MANUALLY OR INTERLOCK WITH THE POOL PUMP SO BOTH CAN WORK TO MAINTAIN POOL TEMPERATURE. REFER THE SCHEMATIC BELOW.



4 M-201 POOL PUMP SEQUENCE OF OPERATION
N.T.S.

RUSSELL AND DAWSON INC.
ARCHITECTURE & ENGINEERING
1111 Main Street, East Hartford CT 06108
TEL: (860) 289-1100 FAX: (860) 289-3272 E-MAIL: info@rdinet.com

REVISIONS

NO.	DESCRIPTION	DATE	BY

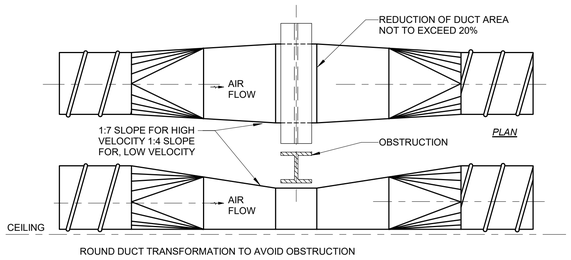
STAMP:

PROJECT:
HOLIDAY INN EXPRESS
764 RIVERDALE STREET, WEST SPRINGFIELD, MA 01089

FILE NO:	21028.01
SCALE:	AS NOTED
DATE:	07/20/2023
DRAWN BY:	MF
CHECKED BY:	HH

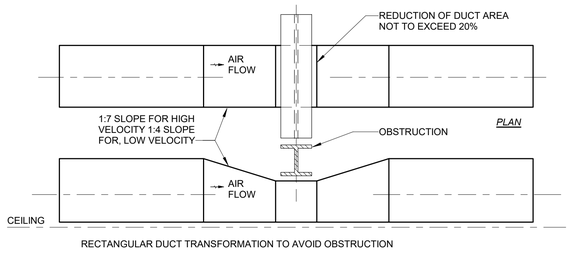
SHEET TITLE:
ENLARGED PLAN OF POOL- HVAC & MECHANICAL PIPING AND SCHEDULES

SHEET NUMBER:
M-201



ROUND DUCT TRANSFORMATION TO AVOID OBSTRUCTION

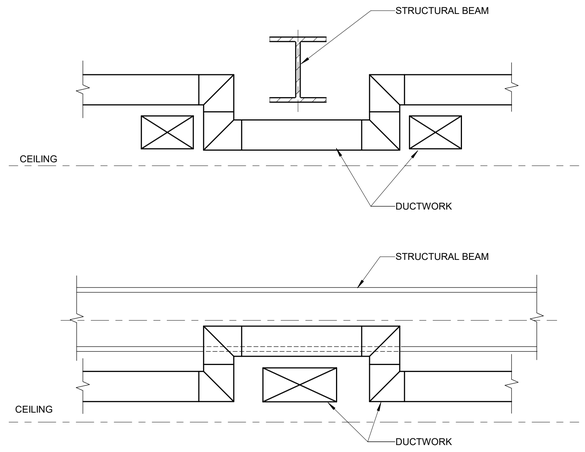
ELEVATION



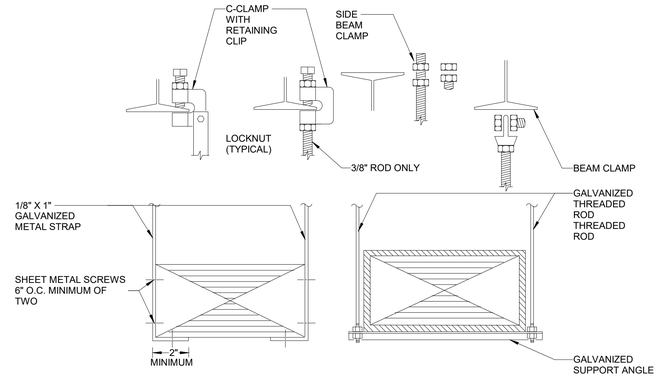
RECTANGULAR DUCT TRANSFORMATION TO AVOID OBSTRUCTION

ELEVATION

1 M-300 DUCT CONSTRUCTION TRANSFORMATION DETAIL
N.T.S.



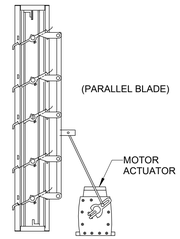
2 M-300 DUCT CROSS OVER AT LOCATIONS
N.T.S.



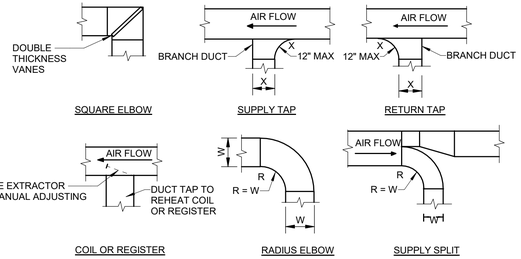
DUCT WIDTH	ROD DIA.	SUPPORT ANGLE OR EQUIV. CHANNEL	MAXIMUM SPACING	MAXIMU M AREA
25" TO 30"	3/8"	1 1/2" X 1 1/2" X 1/8"	8'-0" O.C.	4 SQ. FT.
31" TO 42"	3/8"	1 1/2" X 1 1/2" X 1/8"	6'-0" O.C.	10 SQ. FT.
43" TO 60"	1/2"	1 1/2" X 1 1/2" X 1/8"	6'-0" O.C.	10 SQ. FT.
61" TO 84"	1/2"	2" X 2" X 1/4"	4'-0" O.C.	-------
85" AND UP	1/2"	2" X 2" X 1/4"	4'-0" O.C.	-------

* REDUCE SPACING TO NEXT SMALLER INTERVAL IF DUCT AREA EXCEEDS MAXIMUM

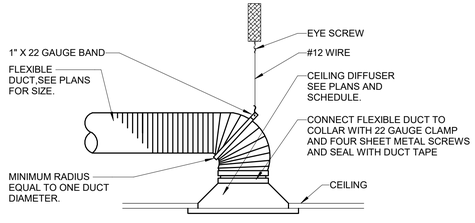
3 M-300 DUCT SUPPORT
N.T.S.



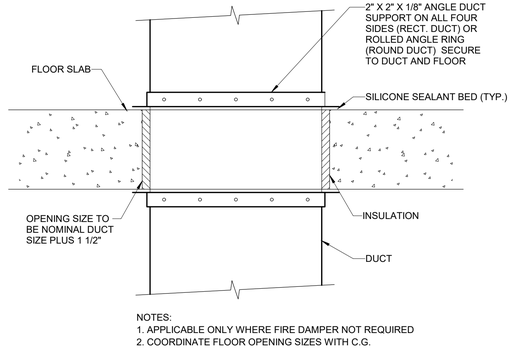
4 M-300 MOTORIZED DAMPER
N.T.S.



5 M-300 DUCT CONSTRUCTION
N.T.S.

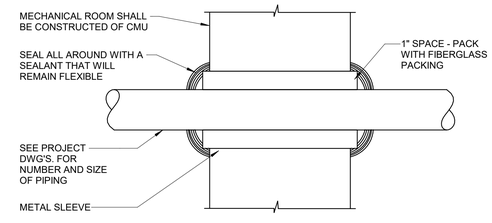


6 M-300 CEILING DIFFUSER INSTALLATION
N.T.S.

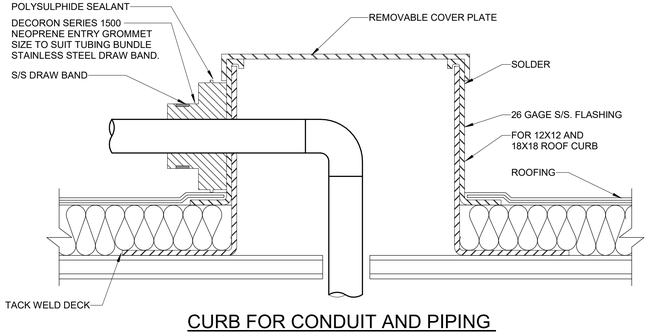


NOTES:
1. APPLICABLE ONLY WHERE FIRE DAMPER NOT REQUIRED
2. COORDINATE FLOOR OPENING SIZES WITH C.G.

7 M-300 DUCT FLOOR PENETRATION DETAIL
N.T.S.

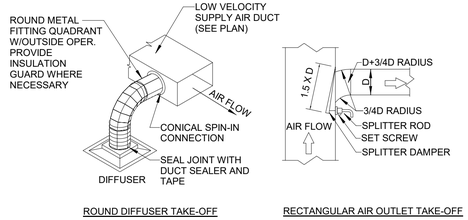


8 M-300 DETAIL OF PIPES AND CONDUITS PASSING THRU WALLS
N.T.S.



CURB FOR CONDUIT AND PIPING PENETRATIONS THROUGH ROOF

9 M-300 PITCH POCKET DETAILS
N.T.S.



ROUND DIFFUSER TAKE-OFF

RECTANGULAR AIR OUTLET TAKE-OFF

10 M-300 LOW PRESSURE AIR OUTLET TAKE OFF DETAIL
N.T.S.

RUSSELL AND DAWSON INC.
ARCHITECTURE & ENGINEERING
1111 Main Street, East Hartford CT 06108
TEL: (860) 289-1100 FAX: (860) 289-3272 E-MAIL: info@rdinet.com

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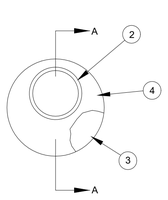
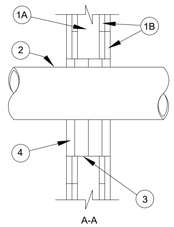
SHEET TITLE: MECHANICAL DETAILS

SHEET NUMBER: M-300





SYSTEM N0. WL1027

T RATING - 0HR.
F RATING - 2HR.

1. WALL ASSEMBLY-THE FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS-WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 BY 4 IN. LUMBER SPACED 16" O.C. STEEL STUDS TO BE MIN. 2-1/2" WIDE AND SPACED MAX. 24" O.C.

   B. WALLBOARD, GYPSUM*-ONE OR MORE LAYERS OF GYPSUM WALLBOARD PROVIDING A MIN. TOTAL THICKNESS OF 1 IN. PER SIDE OF WALL. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS AND ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX. DIA. OF OPENING IS 9IN.

2. THROUGH PENETRANTS- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED WITHIN OPENING. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUIT OR TUBING MAY BE USED:

   A. STEEL PIPE- NOM. 4" DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. THE ANNULAR SPACE SHALL BE MIN. 1/4 IN. TO MAX. 2-1/4 IN.

   B. CONDUIT-NOM. 4" DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT. THE ANNULAR SPACE SHALL BE MIN. 1/4 IN. TO MAX. 2-1/4 IN.

   C. COPPER TUBING-NOM. 6" DIA. (OR SMALLER) TYPE L COPPER TUBING. THE ANNULAR SPACE SHALL BE MIN. 1 IN. TO MAX. 1-5/8 IN.

   AS A PERMANENT FORM. FORMING MATERIAL TO BE RECESSED FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

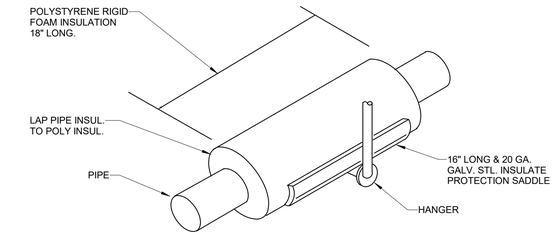
   USG INTERIORS INC.-TYPE SAF

3. FORMING MATERIAL - MIN. 2-1/2" THICKNESS OF MIN. 3.5 PCF MINERAL FIBER INSULATION FIRMLY PACKED INTO OPENING WITH BOTH SURFACES OF WALL. DRY MIX MATERIAL MIXED WITH WATER AT A RATE OF 2.1 PARTS DRY MIX T0 1 PART WATER BY WEIGHT IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS.

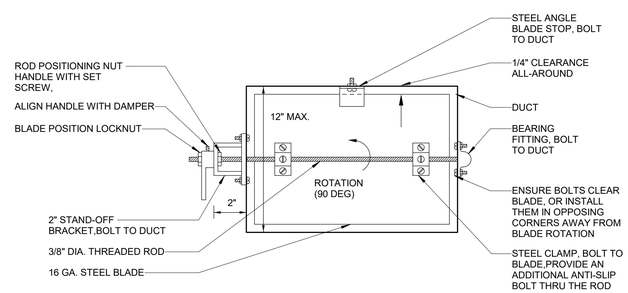
   UNITED STATES GYPSUM CO.- TYPE FC

4. FILL, VOID OR CAVITY MATERIAL*-SEALANT-MIN. 1" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH *BEARING THE UL CLASSIFICATION MARKING

1 FIRE RESISTANCE DETAIL THROUGH-PENETRATION FIRESTOP
M-301 N.T.S.



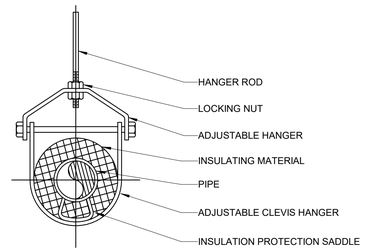
2 DETAIL PIPE INSULATION & PIPE HANGERS
M-301 N.T.S.



NOTES:

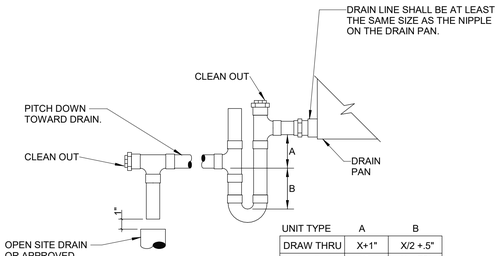
1. DAMPERS FOR ROUND DUCTS SHALL BE SIMILAR TO THE DAMPER SHOWN ABOVE.
2. ENSURE THAT FULL 90° DAMPER BLADE MOVEMENT IS UNOBSTRUCTED.
3. FOR DUCT HEIGHTS MORE THAN 12", PROVIDE FACTORY-FABRICATED OPPOSED BLADE DAMPERS

3 MANUAL DAMPER DETAIL
M-301 N.T.S.



INDOOR HANGERS ARE GALVANIZED

4 PIPE HANGER DETAIL
M-301 N.T.S.

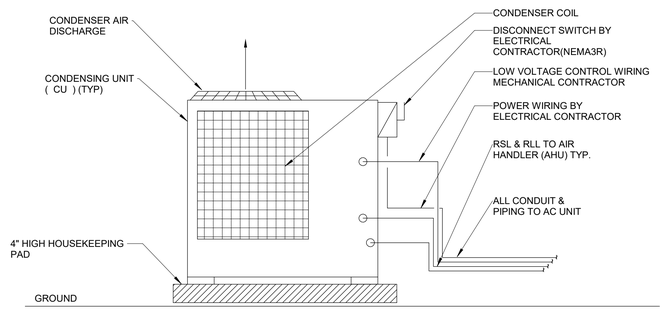


UNIT TYPE	A	B
DRAW THRU	X+1"	X/2 +.5"
BLOW THRU	.5"	X +.75"

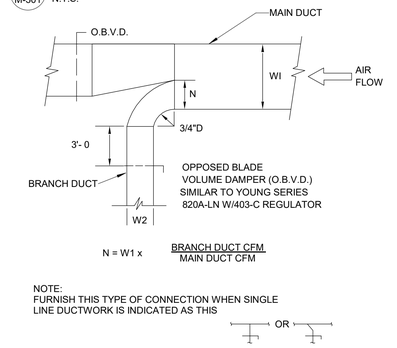
WHERE X = STATIC PRESS. IN PAN

NOTES:
1. COIL MUST BE MOUNTED HIGH ENOUGH TO PERMIT TRAP TO BE INSTALLED.
2. PROVIDE SHIMS OR STRUCTURAL PLATFORMS REQUIRED TO ELEVATE FACTORY PACKAGED AIR HANDLING UNITS TO OBTAIN REQUIRED TRAP HEIGHT.

5 AIR CONDITIONING UNIT DRAIN TRAP
M-301 N.T.S.



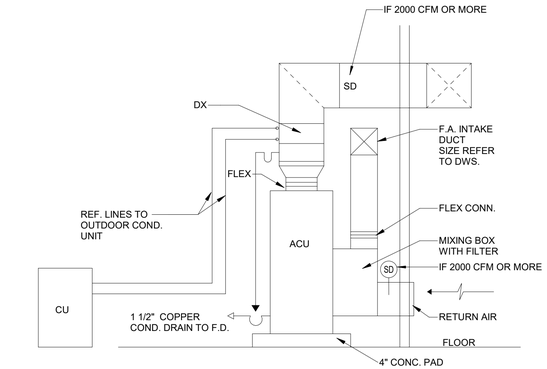
6 TYPICAL ACCU INSTALLATION DETAIL
M-301 N.T.S.



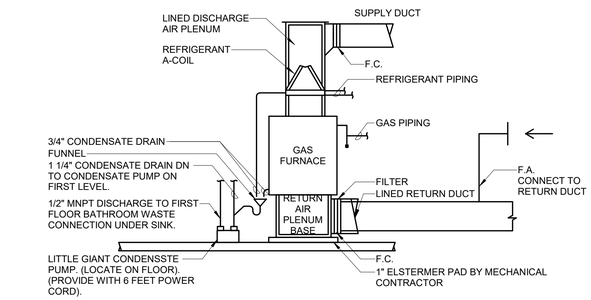
N = W1 x BRANCH DUCT CFM / MAIN DUCT CFM

NOTE:
FURNISH THIS TYPE OF CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS

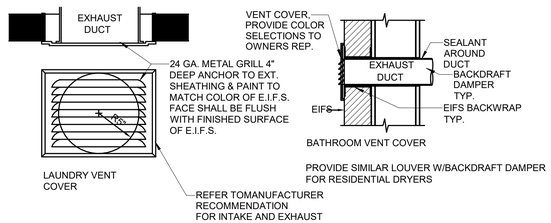
7 SUPPLY AIR DUCTWORK BRANCH DUCT CONNECTION
M-301 N.T.S.



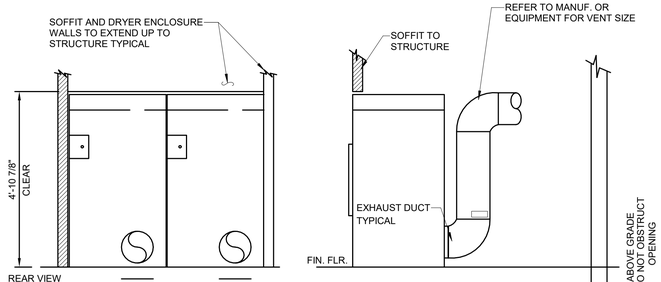
8 TYPICAL AC UNIT DETAIL
M-301 N.T.S.



9 GAS FIRED FURNACE DETAIL
M-301 N.T.S.



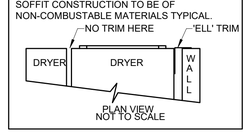
10 DRYER DETAIL
M-301 N.T.S.

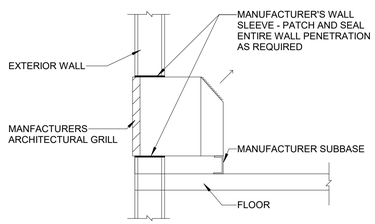


11 DRYER EXHAUST ROUTING DETAIL
M-301 N.T.S.

NOTE:
G.C. TO PROVIDE 840 MIN. SQUARE INCHES OF UNOBSTRUCTED FREE AIR (DUCTED OR LOUVER) INTO DRYER ENCLOSURE FROM OUTSIDE SOURCE. IF WALL OPENING INCORPORATES LOUVERS, THEN THIS FIGURE SHOULD BE DOUBLED AT MINIMUM.

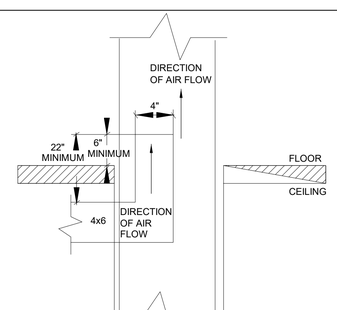
GC TO INSTALL STAINLESS STEEL "ELL" TRIM TO COVER GAPS BETWEEN DRYERS AND SURROUNDING WALLS AND SOFFIT. APPLY TO WALL WITH DOUBLE SIDED TAPE. SOFFIT CONSTRUCTION TO BE OF NON-COMBUSTABLE MATERIALS TYPICAL.





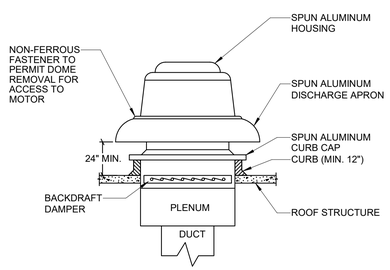
NOTE:
PACKAGE TERMINAL A/C UNIT, SUB-BASE, CONDENSATE EVAP. SYSTEM, POWER DISC, SW., CONDENSATE KIT, ARCHITECTURAL GRILLE, AND WALL SLEEVE, M.C. TO INSTALL

12 PTAC DETAIL
M-301 N.T.S.



WHERE INDICATED, PROVIDE STEEL SUB-DUCTS PER 1996 BOCA BUILDING CODE PARA. 714.1.5, EXCEPTION 1.1
EXHAUST FAN SHALL RUN CONTINUOUSLY
FAN SHALL BE ON EMERGENCY GENERATOR

13 SUB DUCT DETAIL
M-301 N.T.S.



14 ROOF EXHAUST FAN DETAIL
M-301 N.T.S.

RUSSELL AND DAWSON INC.
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1111 Main Street, East Hartford CT 06108
TEL: (860) 289-1100 FAX: (860) 289-3272 E-MAIL: info@rdinet.com

REVISIONS

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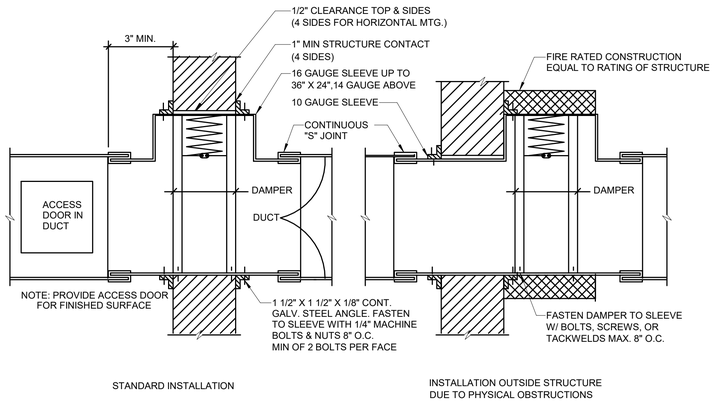
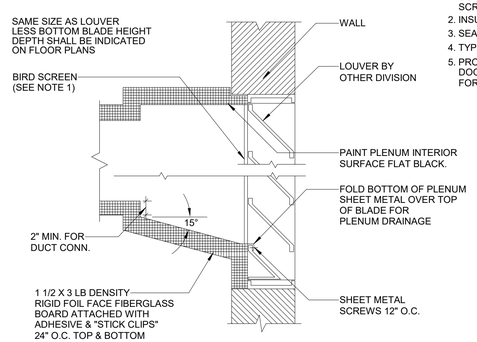
CHECKED BY:	HH

SHEET TITLE: MECHANICAL DETAILS

SHEET NUMBER: M-301

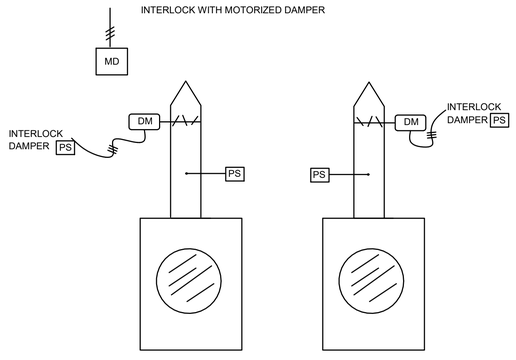


1 M-302 FIRE DAMPER DETAIL
N.T.S.

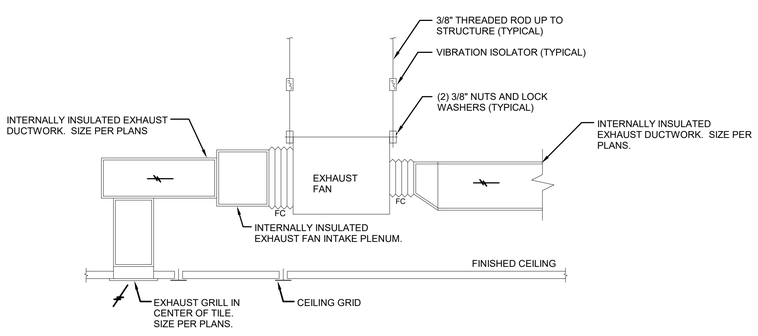


NOTES:
1. COVER INSIDE FACE OF LOUVER WITH 1/2" MESH ALUMINUM BIRD SCREEN SCREWED IN PLACE.
2. INSULATE UNUSED PORTION OF LOUVER WITH 1 1/2" GLASS FIBER INSULATING BOARD.
3. SEAL ALL PLENUM SEAMS WATERTIGHT WITH SILICONE SEALANT.
4. TYPICAL FOR SUPPLY AND EXHAUST PLENUMS.
5. PROVIDE ACCESS DOOR IN PLENUM. DOOR SHALL BE FIELD COORDINATED FOR ACCESS. DOOR SIZE SHALL BE 36" HIGH x 18" WIDE. REFER TO SPEC FOR DOOR CONSTRUCTION.

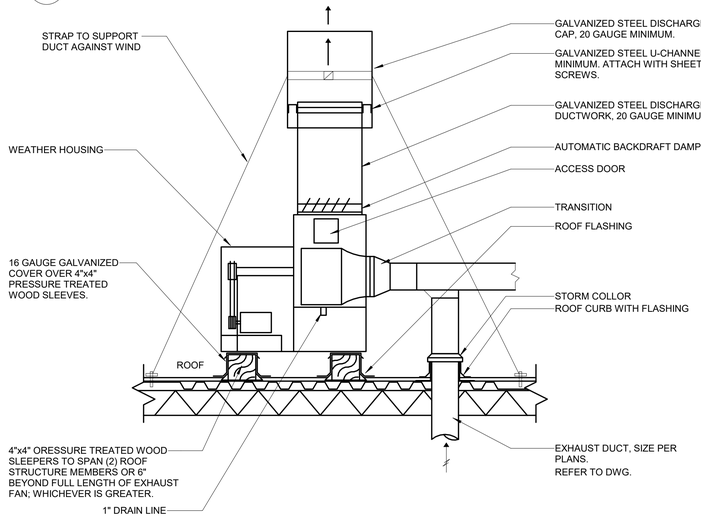
2 M-302 INTAKE & EXHAUST PLENUM INSTALLATION DETAIL
N.T.S.



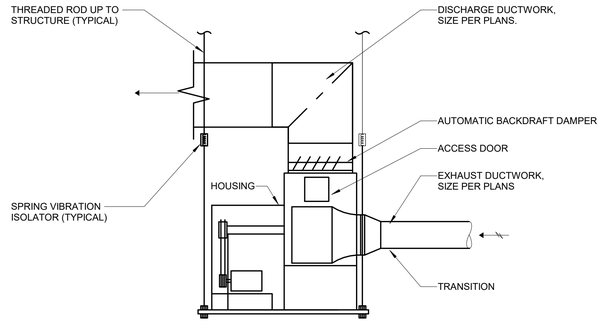
3 M-302 CLOTHES DRYER
N.T.S.



4 M-302 INLINE EXHAUST FAN
N.T.S.



5 M-302 ROOF EXHAUST FAN DETAIL
N.T.S.



6 M-302 ROOF EXHAUST FAN DETAIL
N.T.S.

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REVISIONS			
NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT: HOLIDAY INN EXPRESS
764 RIVERDALE STREET, WEST SPRINGFIELD, MA 01089

FILE NO:	21028.01		
SCALE:	AS NOTED		
DATE:	07/20/2023		
DRAWN BY:		MF	
CHECKED BY:		HH	

SHEET TITLE: MECHANICAL DETAILS

SHEET NUMBER: M-302