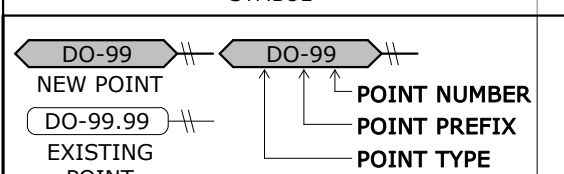
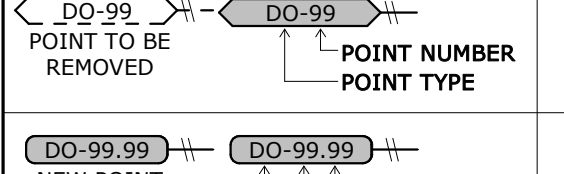
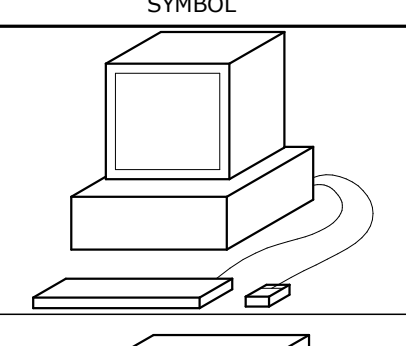
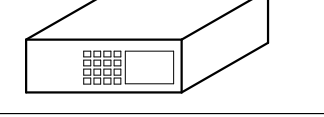
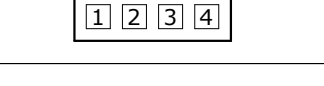
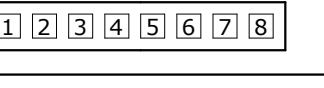


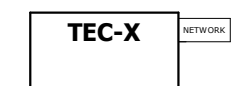
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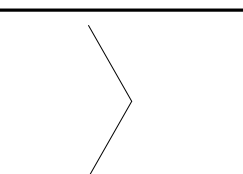
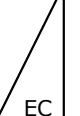
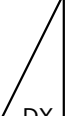
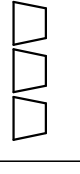
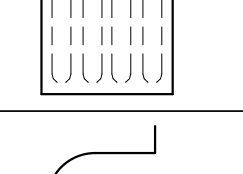
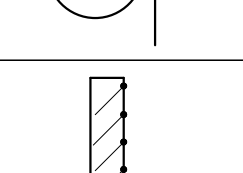
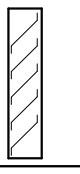
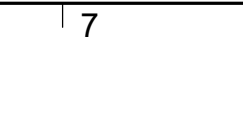
CONTROL VALVES	
SYMBOL	DESCRIPTION
	ELECTRIC VALVE ACTUATOR, NO=FAIL OPEN, NC = FAIL CLOSED ES INDICATES END SWITCH
	THREE WAY CONTROL VALVE
	TWO WAY CONTROL VALVE
	PICCV VALVE
	SOLENOID VALVE

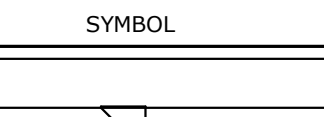
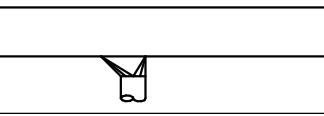
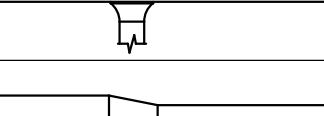
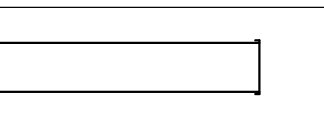
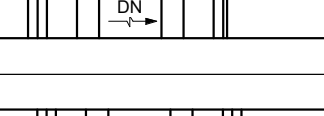
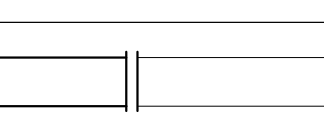
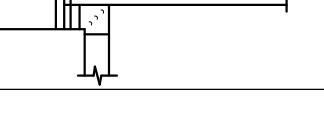
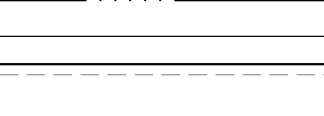
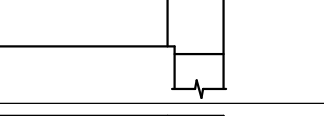
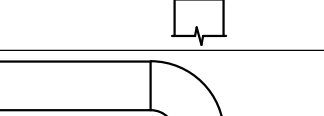
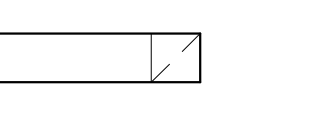
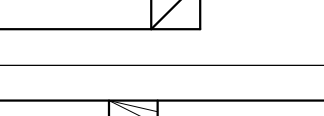
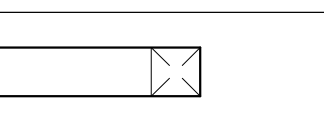
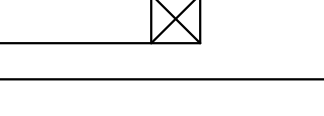
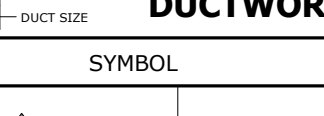
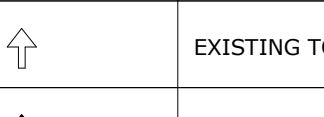
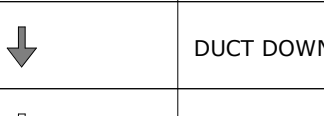
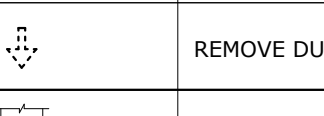
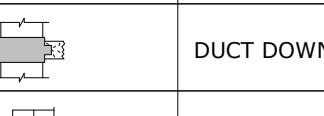
CONTROL DAMPERS	
SYMBOL	DESCRIPTION
	ELECTRIC DAMPER ACTUATOR, NO=FAIL OPEN, NC = FAIL CLOSED ES INDICATES END SWITCH
	SMOKE DAMPER ACTUATOR
	CONTROL DAMPER OB = OPPOSED BLADE PD = PARALLEL BLADE

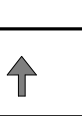
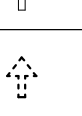
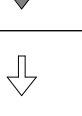
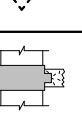
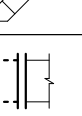
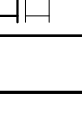
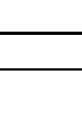
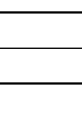
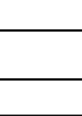
CONTROL POINT SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	EQUIPMENT MANUFACTURER BUILDING AUTOMATION CONTROL POINT. REFER TO CONTROL POINTS SCHEDULE FOR POINT DESCRIPTION, POINT TYPE, AT = ANALOG INPUT AO = ANALOG OUTPUT DI = DIGITAL INPUT DO = DIGITAL OUTPUT INT = INTEGRATION
	BUILDING AUTOMATION CONTROL POINT. REFER TO CONTROL POINTS SCHEDULE FOR POINT DESCRIPTION, POINT TYPE, AT = ANALOG INPUT AO = ANALOG OUTPUT DI = DIGITAL INPUT DO = DIGITAL OUTPUT INT = INTEGRATION

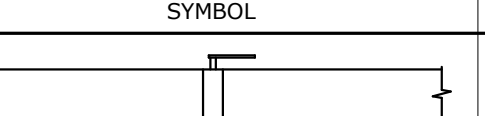
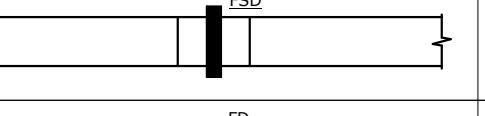
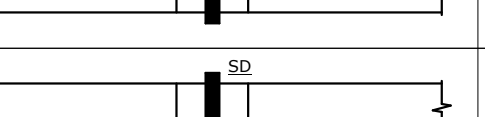
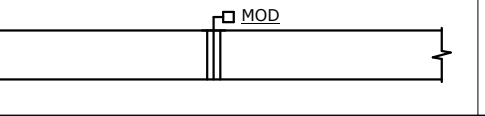
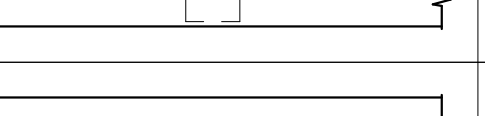
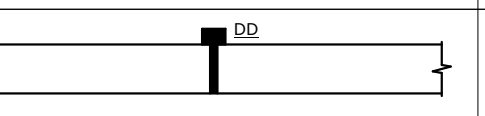
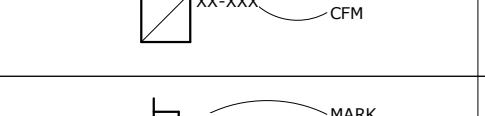
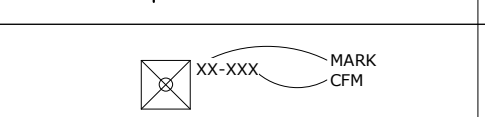
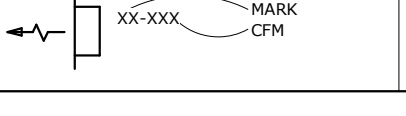
BAS NETWORK ARCHITECTURE LEGEND	
SYMBOL	DESCRIPTION
	OPERATOR'S WORKSTATION
	SERVER
	NETWORK SWITCH • 4-PORT
	NETWORK SWITCH • 8-PORT

23 90 10 CONTROLLERS LEGEND	
SYMBOL	DESCRIPTION
	TERMINAL EQUIPMENT CONTROLLER (TEC) CONFIGURABLE CONTROLLER (CC) APPLICATION SPECIFIC CONTROLLER (ASC)
	CONTROLLER WITH I/O
	CONTROLLER WITH COMM
	CONTROLLER WITH COMM AND I/O ADVANCED APPLICATION CONTROLLER (AAC) PROGRAMMABLE LOGIC CONTROLLER (PLC)

HVAC EQUIPMENT AND COMPONENT LEGEND	
SYMBOL	DESCRIPTION
	AHU OUTLINE (ARROW POINTS IN DIRECTION OF AIRFLOW)
	HOT GAS REHEAT COIL
	ELECTRIC HEATING COIL
	DIRECT EXPANSION COOLING COIL
	FILTER BANK
	SOUND ATTENUATOR
	CENTRIFUGAL FAN
	BACKDRAFT DAMPER
	LOUVER
	ELECTRIC MOTOR

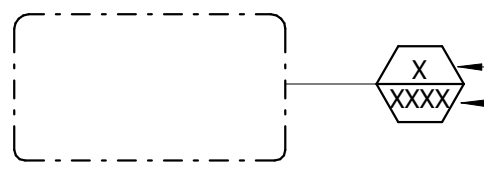
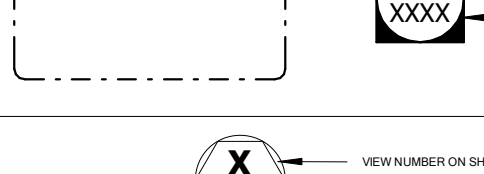
DUCTWORK FITTINGS LEGEND	
SYMBOL	DESCRIPTION
	45° ENTRY BOOT TAKE-OFF (RECTANGULAR TO RECTANGULAR)
	45° ENTRY BOOT TAKE-OFF (RECTANGULAR TO ROUND)
	90° BRANCH TAKE-OFF (CONICAL/BELLMOUTH FITTING)
	CONVERGING/DIVERGING TRANSITION
	DUCT CAP
	DUCT DROP (IN THE DIRECTION OF AIR FLOW)
	DUCT RISE (IN THE DIRECTION OF AIR FLOW)
	DUCTWORK TIE-IN POINT
	EQUAL VELOCITY SPLIT
	FLEXIBLE DUCT CONNECTION
	LINED DUCT
	MITERED DUCT ELBOW (NO VANES)
	MITERED DUCT ELBOW WITH TURNING VANES
	RADIUS DUCT ELBOW
	RETURN, EXHAUST OR RELIEF AIR DUCT DOWN
	RETURN, EXHAUST OR RELIEF AIR DUCT UP
	SQUARE TO ROUND TRANSITION
	SUPPLY OR OUTDOOR AIR DUCT DOWN
	SUPPLY OR OUTDOOR AIR DUCT UP

DUCT SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	DUCT UP THROUGH FLOOR
	EXISTING TO REMAIN DUCT UP THROUGH FLOOR
	REMOVE DUCT UP THROUGH FLOOR
	DUCT DOWN THROUGH FLOOR
	REMOVE DUCT DOWN THROUGH FLOOR
	DUCT UP THROUGH FLOOR WITH FD, SD, OR FSD
	DUCT DOWN THROUGH FLOOR WITH FD, SD, OR FSD
	DUCT VERTICAL OFFSET (90°)
	DUCT VERTICAL OFFSET (ANGLED)
	REMOVE DUCTWORK BACK TO TIE-IN POINT
	TIE INTO EXISTING DUCTWORK

DUCTWORK ACCESSORIES LEGEND	
SYMBOL	DESCRIPTION
	DAMPER (BALANCING/VOLUME)
	DAMPER (COMBINATION FIRE/SMOKE)
	DAMPER (FIRE)
	DAMPER (SMOKE)
	DAMPER - MOTOR OPERATED
	DUCT ACCESS DOOR ON BOTTOM
	DUCT ACCESS DOOR ON SIDE
	DUCT MOUNTED SMOKE DETECTOR
	RETURN AIR / EXHAUST AIR GRILLE - CEILING MOUNTED
	RETURN AIR / EXHAUST AIR GRILLE - SIDEWALL MOUNTED
	SUPPLY AIR DIFFUSER - CEILING MOUNTED
	SUPPLY AIR DIFFUSER - SIDEWALL MOUNTED

LEGEND - MECHANICAL ABBREVIATION SCHEDULE		
ABBREVIATION	DESCRIPTION	
ACC	AIR CONDITIONING	
AEU	AIR COOLED CONDENSER	
ACD	AIR COMPRESSOR DRYER	
ACU	AIR CURTAIN UNIT	
AF	ABOVE FINISHED FLOOR	
AFG	ABOVE FINISHED GRADE	
ETC	ET CETERA	
AFMS	AIRFLOW MEASURING STATION	
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	
AHU	AIR HANDLING UNIT	
AP	ACCESS PANEL	
APD	AIR PRESSURE DROP (INCHES OF WATER COLUMN)	
APPROX	APPROXIMATELY	
ARCH	ARCHITECT, ARCHITECTURAL	
B	BOILER	
BD	BACKDRAFT DAMPER	
BFG	BELOW FINISHED GRADE	
BHP	BRAKE HORSEPOWER	
BOD	BOTTOM OF DUCT	
BOP	BOTTOM OF PIPE	
BTUH	BRITISH THERMAL UNIT PER HOUR	
C	COMMON	
CAV	CONSTANT AIR VOLUME	
CC	COOLING COIL	
CFH	CUBIC FEET PER HOUR	
CFM	CUBIC FEET PER MINUTE	
CH	CHILLER	
CO	CARBON MONOXIDE	
CO	CLEANOUT	
CO2	CARBON DIOXIDE	
COMP	COMPRESSOR	
CONV	CONVECTOR	
COP	COEFFICIENT OF PERFORMANCE	
CP	CONDENSATE PUMP	
CT	COOLING TOWER	
CU	CONDENSING UNIT	
CUH	CABINET UNIT HEATER	
D	DEEP	
DA	DEARATOR	
DACU	DUCTLESS AIR CONDITIONING UNIT	
DB	DRY BULB	
DCVA	DOUBLE CHECK VALVE ASSEMBLY	
DN	DOWN	
DP	DIFFERENTIAL PRESSURE	
DTF	DOWN THROUGH FLOOR	
DTR	DOWN THROUGH ROOF	
DWG	DRAWING	
DX	DIRECT EXPANSION	
E	EAST	
EA	EXHAUST AIR	
EAT	ENTERING AIR TEMPERATURE (DEG F)	
EBB	ELECTRIC BASE BOARD	
EC	ELECTRICAL CONTRACTOR	
ECH	ELECTRICAL CABINET UNIT HEATER	
ECU	ENVIRONMENTAL CONTROL UNIT	
EDB	ENTERING DRY BULB	
EDH	ELECTRIC DUCT HEATER	
EER	ENERGY EFFICIENCY RATIO	
EF	EXHAUST FAN	

DUCT LINETYPE SCHEDULE		
ABBREVIATION	DESCRIPTION	MATERIAL
EA	EXHAUST AIR	GALVANIZED
OA	OUTDOOR AIR	GALVANIZED
RA	RETURN AIR	GALVANIZED
REA	RELIEF AIR	GALVANIZED
SA	SUPPLY AIR	GALVANIZED
TA	TRANSFER AIR	GALVANIZED

REFERENCE SYMBOL LEGEND		
	DETAIL CALLOUT	
	SECTION AND ELEVATION CALLOUT	
	ENLARGED PLAN CALLOUT	
	CONTINUATION CALLOUT	

LEGEND - MECHANICAL ABBREVIATION SCHEDULE	
ABBREVIATION	DESCRIPTION
EH	ELECTRIC HEATER
ERU	ENERGY RECOVERY UNIT
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
EWB	ENTERING WET BULB
EWM	ENTERING WALL HEATER
EWT	ENTERING WATER TEMPERATURE (DEG F)
F	FURNACE
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FD	FLOOR DRAIN
FLT	FILTER
FLA	FULL LOAD AMPS
FP	FIRE PROTECTION
FPC	FIRE PROTECTION CONTRACTOR
FFM	FEET PER MINUTE
FPTB	FAN POWERED TERMINAL BOX
FSD	COMBINATION FIRE/SMOKE DAMPER
FT	FEET
FTK	FLASH TANK
FTR	FINNED TUBE RADIATION
GAL	GALLON
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GV	GRAVITY VENTILATOR
H	HUMIDIFIER
HC	HEATING COIL
HD	HOOD
HEAD	FEET OF WATER COLUMN PRESSURE
HEPA	HIGH EFFICIENCY PARTICULATE AIR
HOA	HAND-OFF-AUTOMATIC
HP	HEAT PUMP
HP	HORSEPOWER
HUM	HUMIDIFIER
HX	HEAT EXCHANGER
HZ	HERTZ (CYCLES PER SECOND)
IFB	INTEGRAL FACE AND BYPASS
IN	INCH
INV	INVERT ELEVATION
KW	KILOWATT
L	LENGTH
L	LOUVER
LAT	LEAVING AIR TEMPERATURE (DEG F)
LBS	POUNDS
LF	LINEAR FOOT
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE (DEG F)
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCA	MECHANICAL CONTRACTOR
MCC	MECHANICAL CIRCUIT AMPS
MFR	MANUFACTURER
MFS	MINIMUM FUSE SIZE
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MOP	MAXIMUM OVERCURRENT PROTECTION
MZU	MULTIZONE UNIT
N	NORTH
NA, N/A	NOT APPLICABLE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NELC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO	NORMALLY OPEN
NO	NUMBER
NPT	NOMINAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OAT	OUTDOOR AIR TEMPERATURE
P	PUMP
PRD	PARALLEL BLADE DAMPER
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	PHASE
PHC	PREHEAT COIL
PRV	HYDRONIC PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RA	RETURN AIR
RCP	RADIANT CEILING PANEL
RD	ROOF DRAIN
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
RV	RELIEF VALVE
S	SOUTH
SA	SOUND ATTENUATOR
SA	SUPPLY AIR
SD	SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SF	SQUARE FEET
SF	SUPPLY FAN
SMACNA	SHEET METAL AND AIRCONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SPRCS	SPECIFICATIONS
SPRS	STEAM PRESSURE REDUCING STATION
SPRV	STEAM PRESSURE REDUCING VALVE
SQ	SQUARE
SS	STAINLESS STEEL
SST	SATURATED SUCTION TEMPERATURE
T&P	TEMPERATURE AND PRESSURE
T-STAT	THERMOSTAT
TA	TRANSFER AIR
TB	TERMINAL BOX
TC	TEMPERATURE CONTROL
TCC	(TEMPERATURE) CONTROL CONTRACTOR
TCF	(TEMPERATURE) CONTROL PANEL
TEMP	TEMPERATURE (DEG F)
TOP	TOP OF DUCT
TOP	TOP OF PIPE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UTF	UP THROUGH FLOOR
UTR	UP THROUGH ROOF
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VCT	VITREOUS CLAY TILE
VFD	VARIABLE FREQUENCY DRIVE
VTFB	VERTICAL INTEGRAL FACE AND BYPASS
VTR	VENT THROUGH ROOF
VVT	VARIABLE VOLUME AND TEMPERATURE
W	WATTS
W	WEST
W	WIDE
WB	WET BULB
WC	INCHES WATER COLUMN (PRESSURE)
WG	WATER GAUGE (PRESSURE)
WPD	WATER PRESSURE DROP (FEET OF WATER COLUMN)
WSA	WIRE SIZE AMPS

DRAWING LIST - MECHANICAL		
SHEET NUMBER		SHEET NAME
MO.1		MECHANICAL LEGENDS
MO.2		MECHANICAL LEGENDS
M1.1		FOURTH FLOOR MECHANICAL DEMOLITION PLAN - WEST
M1.2		FOURTH FLOOR MECHANICAL DEMOLITION PLAN - EAST
M2.1		FOURTH FLOOR REVISED DUCTWORK PLAN - WEST
M2.2		FOURTH FLOOR REVISED DUCTWORK PLAN - EAST
M2.3		FOURTH FLOOR REVISED MECHANICAL PIPING PLAN - WEST
M2.4		FOURTH FLOOR REVISED MECHANICAL PIPING PLAN - EAST
M3.1		VRF #4-1 SYSTEM DIAGRAM & SCHEDULES
M3.2		VRF #4-2 SYSTEM DIAGRAM & SCHEDULES
M3.3		VRF #4-3 SYSTEM DIAGRAM & SCHEDULES
M3.4		VRF #4-4 SYSTEM DIAGRAM & SCHEDULES
M3.5		VRF #4-5 SYSTEM DIAGRAM & SCHEDULES
M3.6		VRF #4-6 SYSTEM DIAGRAM & SCHEDULES
M3.7		MECHANICAL SCHEDULES & DETAILS - DUCTWORK
M3.8		VENTILATION CALCULATIONS & DESIGN DATA
M4.1		MECHANICAL SPECIFICATIONS
M4.2		MECHANICAL SPECIFICATIONS
M4.3		MECHANICAL SPECIFICATIONS

- DRAWING INTERPRETATION NOTES:**
- EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
 - DEMOLITION LINETYPE: THICK (DARK) DASHED LINES REPRESENT EXISTING ITEMS TO BE REMOVED.
 - NEW LINETYPE: THICK (DARK) SOLID LINES REPRESENT ITEMS THAT ARE NEW OR RELOCATED.
 - RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD OBSERVATIONS. NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE A CONDITION IS OBSERVED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
 - EQUIPMENT SHOWN GRAY-SHADOWED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
 - EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULE(S).

- EXTERIOR WALL PENETRATION NOTES:**
- PENETRATE EXTERIOR BUILDING WALLS AS REQUIRED TO FACILITATE INSTALLATION OF ITEMS INDICATED.

- COORDINATION NOTES:**
- CERTAIN AREAS OF THE BUILDING UTILIZE RETURN AIR CEILING PLENUMS. ALL MATERIALS INSTALLED WITHIN THE CEILING PLENUMS SHALL COMPLY WITH NFPA 90A REQUIREMENTS.
 - UNLESS DETAILED OTHERWISE, SYSTEMS SHALL BE ORGANIZED SUCH THAT DUCTWORK MAINS ARE THE HIGHEST LEVEL AND ARE TIGHT TO BUILDING STRUCTURE. HVAC PIPING AND PLUMBING PIPING SHALL BE ROUTED BELOW THE DUCTWORK MAINS, AND FIRE PROTECTION PIPING SHALL BE BELOW ALL.
 - THE BOTTOM ELEVATION OF ALL SYSTEMS SHALL BE AT LEAST 6" ABOVE LAY-IN CEILINGS OR 2" ABOVE LIGHTS TO FACILITATE CEILING TILE REMOVAL AND MAINTENANCE ACCESS.
 - SYSTEMS SHALL BE ARRANGED SUCH THAT THEY ARE NOT TOUCHING EACH OTHER OR ANY PART OF THE BUILDING STRUCTURE TO AVOID VIBRATION TRANSFERENCE AND EXPANSION INTERFERENCE, AND TO FACILITATE SYSTEM INSULATION INSTALLATION (WHERE REQUIRED).
 - ALL WORK SHALL COMPLY WITH THE BUILDING TENANT CONSTRUCTION GUIDE. COORDINATE WITH BUILDING MANAGEMENT/OWNER FOR ACCESS TO ANY TENANT LEASE SPACES THAT MIGHT BE REQUIRED FOR THE INSTALLATION. UNLESS DIRECTED BY LANDLORD, ALL EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED FOR 1 YEAR.

- CONTROLS/BUILDING AUTOMATION NOTES:**
- REPAIR INSULATION TO MAINTAIN THERMAL AND VAPOR BARRIER INTEGRITY IF INSTALLATION OF SENSORS AND DEVICES REQUIRES DISTURBING DUCT AND PIPE INSULATION.
 - CUT AND PATCH EXISTING WALLS FOR INSTALLATION OF WALL MOUNTED SENSORS AND DEVICES. SEE "PENETRATIONS" NOTES.
 - WALL MOUNTED SENSORS AND DEVICES SHALL BE RECESSED INTO WALL WITH NO EXPOSED WIRING OR CONDUIT, UNLESS SPECIFICALLY NOTED OTHERWISE.
 - THE QUANTITY OF DDC PANELS IS DIAGRAMMATIC ONLY. THE CONTROLS CONTRACTOR SHALL DETERMINE THE QUANTITY OF DDC PANELS REQUIRED TO PROVIDE THE INPUT/OUTPUT POINTS SHOWN AND PERFORM THE SEQUENCES OF OPERATION SPECIFIED.
 - IF THE BAS UTILIZES GLOBAL SHARING OF OUTDOOR TEMPERATURE AND HUMIDITY, A MINIMUM OF TWO (2) IF THESE SENSORS SHALL BE UTILIZED. EACH OF THESE SENSORS SHALL PROVIDE INPUT TO A DISJUNCT DDC PANEL. PANELS SHALL BE ON DIFFERENT ELECTRICAL CIRCUITS.

- CEILING WORK NOTES:**
- REMOVE AND RE-INSTALL LAY-IN CEILING IN AREAS WHERE EXISTING CEILING ARE TO REMAIN AS REQUIRED TO COMPLETE THE INSTALLATION OF ITEMS SHOWN. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF AREAS WHERE EXISTING CEILING ARE TO REMAIN. REPLACE DAMAGED CEILING MATERIALS TO MATCH EXISTING CEILING.
 - CEILING TILES MAY BE LEFT OUT OF THE CEILING IN AREAS UNDER CONSTRUCTION ONLY IF STORED IN AREAS AS DIRECTED BY THE OWNER SO AS NOT TO HINDER THE DAILY OPERATIONS OF THE BUILDING'S OCCUPANTS.
 - REMOVE EXISTING DRYWALL OR PLASTER CEILINGS TO ACCOMMODATE INSTALLATION OF ITEMS INDICATED. PATCH AND PAINT DRYWALL OR PLASTER CEILINGS TO MATCH EXISTING ADJACENT UNDISTURBED SURFACES.
 - PROVIDE ESCUTCHEONS FOR ALL PIPING PENETRATIONS OF CEILING IN OCCUPIED AREAS.
 - FIRESTOP ALL PENETRATIONS OF RATED CEILING WITH THE APPROPRIATE FIRESTOPPING MATERIAL REQUIRED MATERIALS ARE INDICATED IN THE SPECIFICATIONS

- WORK SCHEDULE NOTES:**
- WORK IN AREAS OUTSIDE THE PROJECT SCOPE AREA SHALL BE PERFORMED AFTER NORMAL BUSINESS HOURS (NIGHT SHIFT) OR ON WEEKENDS.

- STRUCTURAL FLOOR PENETRATION NOTES:**
- PENETRATE STRUCTURAL FLOOR SLABS AS REQUIRED TO FACILITATE INSTALLATION OF ITEMS INDICATED.
 - PENETRATIONS SHALL BE MADE IN ACCORDANCE WITH ARCHITECT/STRUCTURAL ENGINEER'S DESIGN REQUIREMENTS.
 - OBTAIN APPROVAL OF LOCATION AND PENETRATION METHOD PRIOR TO CREATING PENETRATIONS.
 - MECHANICAL CONTRACTOR SHALL X-RAY SLAB PRIOR TO ANY CORE-DRILLING. COORDINATE WITH BUILDING MANAGEMENT FOR AFTER-HOURS ACCESS TO THIRD FLOOR SPACE BELOW.

- ROOF PENETRATION NOTES:**
- CUT AND PATCH THE EXISTING ROOF AS REQUIRED TO FACILITATE INSTALLATION OF ROOF MOUNTED EQUIPMENT, SUPPORTS, AND PENETRATIONS INDICATED.
 - THE EXISTING ROOF IS UNDER WARRANTY. ALL ROOF WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE VALIDITY OF THE CURRENT WARRANTY.
 - CUTTING AND PATCHING OF EXISTING ROOF SHALL BE PROVIDED BY THE CONTRACTOR REQUIRING THE WORK. COORDINATE LOCATIONS AND AREAS OF ROOFING SYSTEM REMOVAL WITH OTHERS TO FACILITATE INSTALLATION OF ROOF MOUNTED ITEMS INDICATED.
 - ROOF PENETRATIONS SHALL BE MADE IN ACCORDANCE WITH ARCHITECT/STRUCTURAL ENGINEER'S DESIGN REQUIREMENTS.
 - OBTAIN APPROVAL OF LOCATION AND PENETRATION METHOD PRIOR TO CREATING ROOF PENETRATIONS.

- INTERIOR WALL PENETRATION NOTES:**
- PENETRATE INTERIOR BUILDING WALLS AS REQUIRED TO FACILITATE INSTALLATION OF ITEMS INDICATED.
 - PATCH AND PAINT EXISTING WALLS TO MATCH ADJACENT UNDISTURBED SURFACES.
 - FIRESTOP PENETRATIONS OF RATED WALLS WITH APPROPRIATE SPECIFIED FIREPROOF

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REFRIGERANT SYSTEM NEW WORK NOTES:

- CONSULT WITH EQUIPMENT MANUFACTURER FOR FINAL REQUIRED PIPE SIZES. ANY SIZES SHOWN ON THESE DOCUMENTS SHALL BE CONSIDERED APPROXIMATE, FOR PRICING PURPOSES ONLY.
- THE SYSTEM PRESSURE DROP IN THE LIQUID LINE SHOULD NOT BE GREATER THAN ONE TO TWO DEGREES CHANGE IN SATURATION TEMPERATURE.
- THE SYSTEM PRESSURE DROP IN THE SUCTION LINE SHOULD BE APPROXIMATELY TWO DEGREES CHANGE IN SATURATION TEMPERATURE.
- WHERE A REDUCTION IN PIPE SIZE IS NEEDED TO ENTRAIN OIL IN VERTICAL RISERS, TOTAL PRESSURE DROP SHOULD BE KEPT IN DESIRED LIMIT BY PROPERLY SIZING HORIZONTAL AND "DOWN" LINES.
- THE SYSTEM PRESSURE DROP IN THE HOT GAS LINE SHOULD NOT BE GREATER THAN ONE TO TWO DEGREES CHANGE IN SATURATION TEMPERATURE.
- HORIZONTAL SUCTION LINES SHOULD BE RUN "DEAD" LEVEL.
- VERTICAL SUCTION RISERS SHOULD BE GIVEN SPECIAL ANALYSIS AND SHOULD BE SIZED FOR VELOCITIES THAT ASSURE OIL RETURN AT MINIMUM LOAD. PIPING AND SPECIALTIES SHALL BE ARRANGED TO RETURN OIL AT ALL LOADS AND PREVENT LIQUID FROM "SLUGGING" THE COMPRESSOR OR SIPHONING TO THE EVAPORATOR. PROVIDE DOUBLE SUCTION RISERS AND TRAPS AS REQUIRED.
- IF A CORRECTLY SIZED SUCTION RISER IMPOSES TOO GREAT A PRESSURE DROP AT FULL LOAD, A DOUBLE SUCTION RISER SHOULD BE USED.
- EVAPORATOR SUCTION LINES SHOULD BE LAID OUT TO PREVENT LIQUID REFRIGERANT FROM DRAINING INTO THE COMPRESSOR DURING SHUTDOWN AND PREVENT OIL IN AN ACTIVE EVAPORATOR FROM DRAINING INTO AN IDLE EVAPORATOR.
- A SMALL TRAP IN THE SUCTION LINE(S) IMMEDIATELY AFTER THE EVAPORATOR COIL SUCTION OUTLET IS RECOMMENDED TO PREVENT ERRATIC OPERATION OF THE THERMAL EXPANSION VALVE. THE EXPANSION VALVE BULB IS LOCATED IN THE SUCTION LINE BETWEEN THE COIL AND THE TRAP.
- AN INTERCONNECTING OIL EQUALIZATION LINE IS NEEDED BETWEEN ALL CRANKSHAFTS OF PARALLEL COMPRESSORS. THE LINE IS TO MAINTAIN UNIFORM OIL LEVELS AND ADEQUATE LUBRICATION IN ALL COMPRESSORS. THE LINE MAY NOT BE RUN AT A LEVEL HIGHER THAN THE COMPRESSOR TAPPINGS.
- WHEN MULTIPLE CONDENSING UNITS ARE INTERCONNECTED, IT IS NECESSARY TO EQUALIZE THE PRESSURE IN THE CONDENSERS TO PREVENT HOT GAS FROM BLOWING THRU ONE OF THE CONDENSERS AND INTO THE LIQUID LINE. THE HOT GAS EQUALIZER LINE IS TO BE THE SAME SIZE AS THE LARGEST HOT GAS LINE, INSTALLED ABOVE THE COMPRESSOR CRANKSHAFT OIL LINE, AND PIPED LEVEL WITH SUPPORTS TO PREVENT THE FORMATION OF TRAPS.
- THE BRANCH CONNECTION FROM THE HOT GAS HEADER INTO EACH CONDENSER SHOULD BE THE SAME SIZE AS THE CONDENSER COIL CONNECTION SO THE PRESSURE IN EACH CONDENSER IS SUBSTANTIALLY THE SAME.
- RUN THE SUCTION AND DISCHARGE LINES AT LEAST 6 PIPE DIAMETERS IN EACH OF THREE DIRECTIONS BEFORE REACHING THE FIRST POINT OF SUPPORT TO ALLOW VIBRATION ABSORPTION.
- THE HOT GAS LOOP FROM THE COMPRESSOR CAN BE ATTACHED TO THE COMPRESSOR BASE BY MEANS OF A BRACKET (OR TWO IF SPACE PERMITS) IF THE BASE IS ISOLATED.
- REFRIGERANT PIPING SHALL BE CUT WITH A TUBE CUTTER ONLY AND SHALL BE REAMED AFTER CUTTING. HACK SAWS ARE PROHIBITED.
- ALL REFRIGERANT PIPING SHALL BE ASSEMBLED WITH BRAZED JOINTS.
- INSTALL STRAINERS IMMEDIATELY AHEAD OF EACH THERMOSTATIC EXPANSION VALVE, SOLENOID VALVE AND AS REQUIRED TO PROTECT REFRIGERATION PIPING SYSTEM COMPONENTS.
- INSTALL UNIONS TO ALLOW REMOVAL OF THERMOSTATIC EXPANSION VALVES AND SOLENOID VALVES AND AT CONNECTIONS TO COMPRESSORS AND EVAPORATORS.
- INSTALL FLEXIBLE CONNECTORS AT THE INLET AND DISCHARGE CONNECTIONS OF COMPRESSORS.
- INSTALL PRESSURE REGULATING AND RELIEF VALVES AS REQUIRED BY ASHRAE STANDARD 15 AND THE SAFETY CODE FOR MECHANICAL REFRIGERATION (ANSI B9.1).

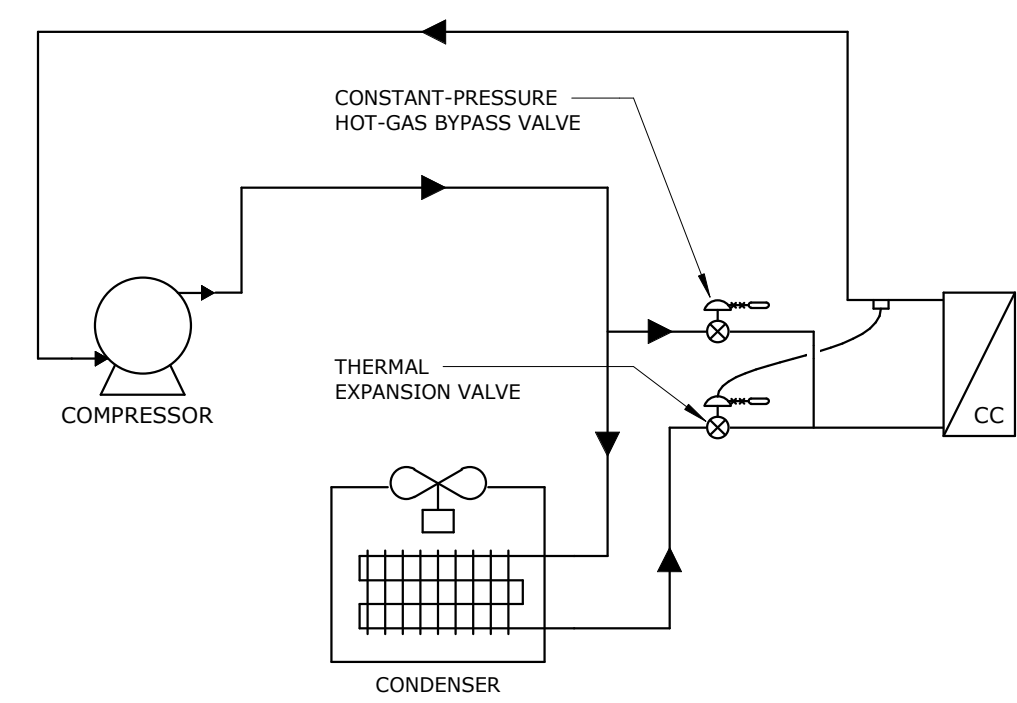
COORDINATION WITH BUILDING SHELL INSTALLATION:

- TENANT FIT-OUT CONTRACTOR SHALL RELEASE THE 250-PSI NITROGEN HOLDING PRESSURE.
- TENANT FIT-OUT CONTRACTOR SHALL TEST ALL PIPING PER MANUFACTURER'S RECOMMENDATIONS AND PER CODE.
- TENANT FIT-OUT CONTRACTOR SHALL VACUUM AFFECTED SYSTEMS DOWN TO LESS THAN 500 MICRONS ON THE CENTRAL SYSTEM.
- TENANT FIT-OUT CONTRACTOR SHALL PROVIDE REFRIGERANT AS REQUIRED FOR A COMPLETE SYSTEM.
- TENANT FIT-OUT CONTRACTOR SHALL PROVIDE WARRANTY FROM OUTDOOR VRF UNITS TO INDOOR BC UNITS TO INDOOR FCUs.
- FINAL LINE LENGTHS SHALL BE REPORTED BACK TO TRANE/MITSUBISHI ELECTRIC FOR FINAL REFRIGERANT CHARGES.
- REFRIGERANT PIPES SIZES INDICATED ARE APPROXIMATE. THE VRF SYSTEM MANUFACTURER SHALL DETERMINE FINAL SIZES.

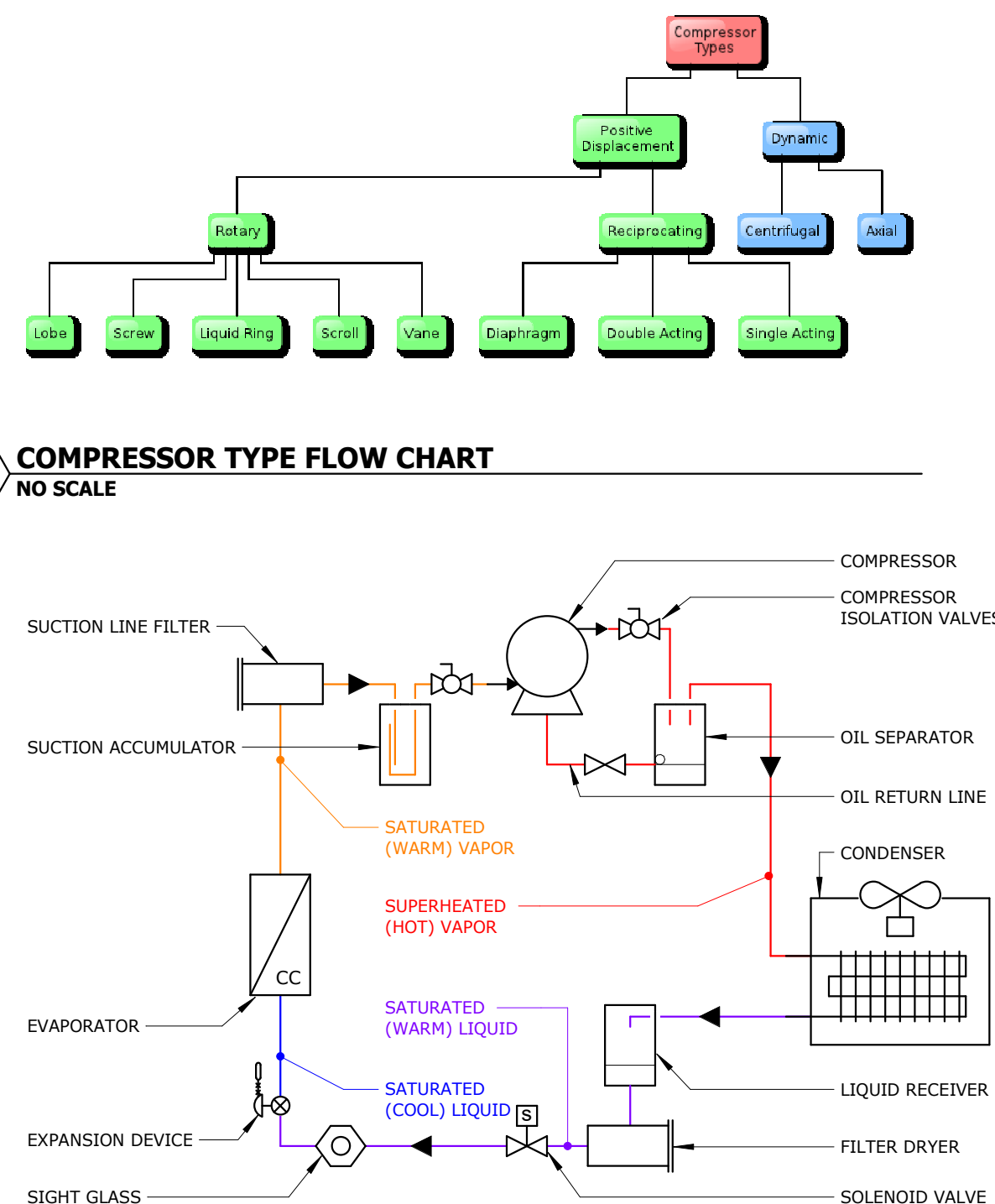
NOTES:

DOUBLE SUCTION RISERS SHOULD BE USED WHEN A CORRECTLY SIZED SINGLE RISER IMPOSES TOO GREAT OF A PRESSURE DROP AT FULL LOAD. SIZE RISERS TO ENSURE OIL REMAINS ENTRAINED IN REFRIGERANT AS IT MOVES UPWARD.

5 DOUBLE SUCTION RISER CONSTRUCTION NO SCALE



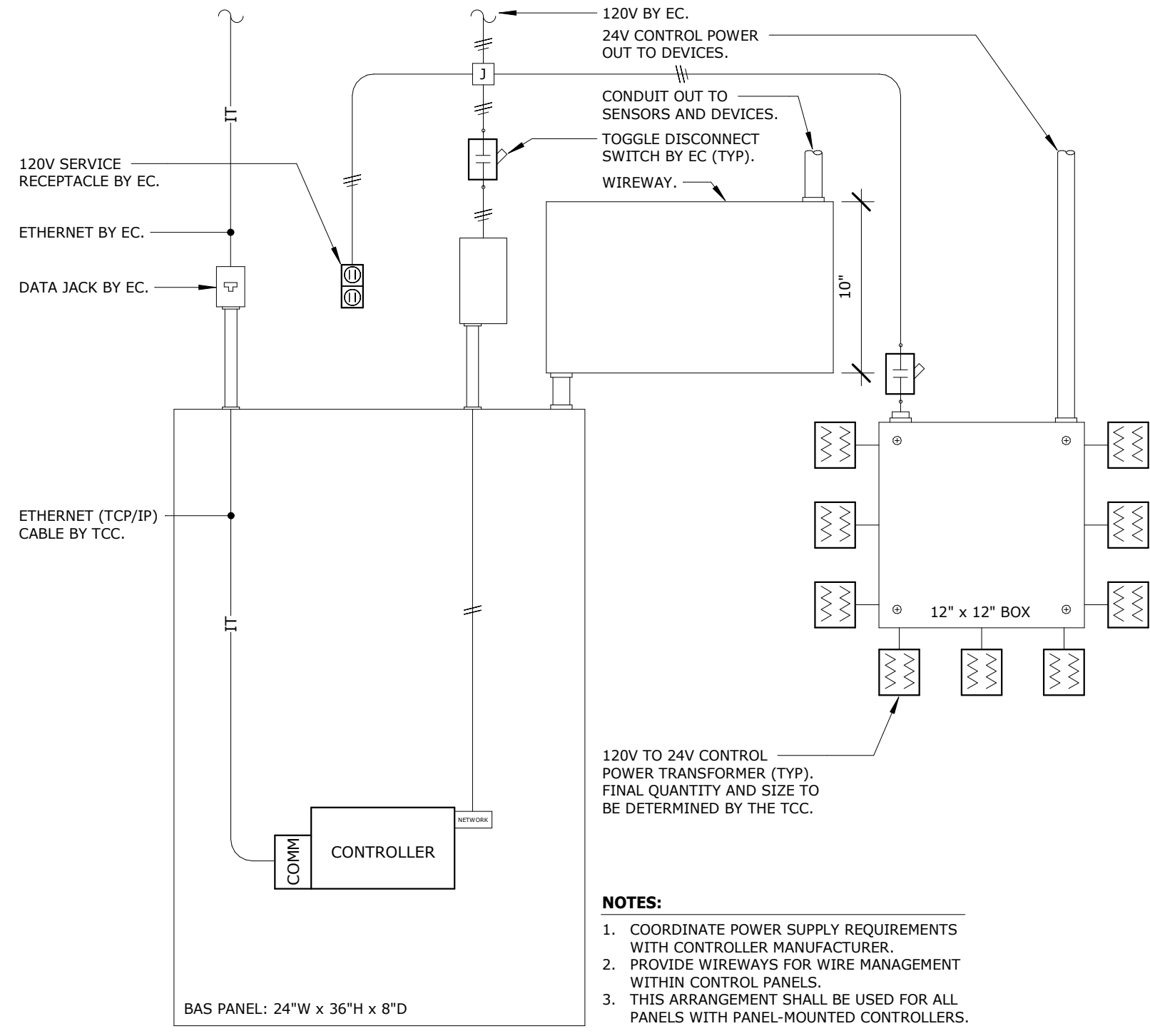
4 COMPRESSOR TYPE FLOW CHART NO SCALE



6 HOT-GAS BYPASS SCHEMATIC NO SCALE

9 VAPOR/COMPRESSION REFRIGERATION SYSTEM NO SCALE

3 BAS TRANSFORMER PANEL WIRING DETAIL NO SCALE



REFRIGERANT LINETYPE LEGEND

ABBREVIATION	DESCRIPTION
CD	CONDENSATE DRAIN
PC	PUMPED CONDENSATE DRAIN
RHG	REFRIGERANT HOT GAS
RHGB	REFRIGERANT HOT GAS BYPASS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION

REFRIGERATION PIPE ACCESSORIES LEGEND

SYMBOL	DESCRIPTION
	APR VALVE
	REFRIGERANT BALL VALVE
	CHECK VALVE
	EXPANSION VALVE - THERMOSTATIC
	EXPANSION VALVE - AUTOMATIC
	EXPANSION VALVE - HAND
	PRESSURE RELIEF VALVE
	SIGHT GLASS
	SOLENOID VALVE

REFRIGERATION EQUIPMENT AND COMPONENT LEGEND

SYMBOL	DESCRIPTION
	FILTER AND DRIER
	REFRIGERANT CONDENSER - AIR COOLED
	CENTRIFUGAL COMPRESSOR
	RECIPROCATING COMPRESSOR
	ROTARY SCREW COMPRESSOR
	ROTARY SCROLL COMPRESSOR
	REFRIGERANT OIL SEPARATOR
	REFRIGERANT LIQUID RECEIVER
	REFRIGERANT SUCTION ACCUMULATOR

SENSORS/DEVICES - FLOW (23 93 10)

SYMBOL	DESCRIPTION
	AIRFLOW MEASURING STATION - DUCT MOUNTED
	AIRFLOW MEASURING STATION - FAN INLET

SENSORS/DEVICES - OCCUPANCY (23 93 10)

SYMBOL	DIAGRAM	DESCRIPTION
		OCCUPANCY SENSOR - CEILING MOUNTED
		OCCUPANCY SENSOR - WALL MOUNTED • CONDUIT ROUGH-IN BY TC
		OCCUPANCY SENSOR - WALL MOUNTED • CONDUIT ROUGH-IN BY EC

SENSORS/DEVICES - OCCUPANT NOTIFICATION

SYMBOL	DESCRIPTION
	AUDIBLE INDICATOR
	VISUAL (ILLUMINATED) INDICATOR
	AUDIO/VISUAL INDICATOR

SENSORS/DEVICES - CURRENT (23 93 10)

SYMBOL	DESCRIPTION
	CURRENT SWITCH
	CURRENT TRANSDUCER

SENSORS/DEVICES - HUMIDITY (23 93 10)

SYMBOL	DIAGRAM	DESCRIPTION
		HUMIDISTAT - WALL MOUNTED
		HUMIDITY SENSOR - WALL MOUNTED
		HUMIDITY SENSOR - WALL MOUNTED WITH DISPLAY
		HUMIDITY SENSOR - WALL MOUNTED WITH DISPLAY AND ADJUSTMENT
		HUMIDITY SENSOR - DUCT MOUNTED
		HUMIDITY SWITCH - HIGH LIMIT - DUCT MOUNTED
		HUMIDITY SENSOR - OUTSIDE AIR

SENSORS/DEVICES - MISCELLANEOUS

SYMBOL	DESCRIPTION
	LEAK DETECTION - LEVEL SWITCH
	LEAK DETECTION CABLE

METERS

SYMBOL	DESCRIPTION
	ELECTRIC METER • FURNISHED BY EC UNLESS OTHERWISE NOTED.
	ENERGY (BTU) METER

EQUIPMENT LEGEND - STARTERS

SYMBOL	DESCRIPTION
	VARIABLE FREQUENCY DRIVE
	MANUAL MOTOR STARTER - SINGLE PHASE • SINGLE PHASE POWER • MOTOR OVERLOADS
	MANUAL MOTOR STARTER WITH HOK SWITCH - SINGLE PHASE • SINGLE PHASE POWER • HAND-OFF-AUTO SELECTOR SWITCH • MOTOR OVERLOADS
	COMBINATION STARTER/DISCONNECT - CIRCUIT BREAKER, SINGLE PHASE • CIRCUIT BREAKER • SINGLER PHASE POWER • HAND-OFF-AUTO SELECTOR SWITCH
	COMBINATION STARTER/DISCONNECT • CIRCUIT BREAKER DISCONNECT • 3-PHASE POWER • INTEGRAL CONTROL POWER TRANSFORMER • MOTOR OVERLOADS *REMOTE CONTROL POWER REQUIRED
	COMBINATION STARTER/DISCONNECT • FUSED DISCONNECT • 3-PHASE POWER • HAND-OFF-AUTO SELECTOR SWITCH • MOTOR OVERLOADS *REMOTE CONTROL POWER REQUIRED
	COMBINATION STARTER/DISCONNECT • CIRCUIT BREAKER DISCONNECT • 3-PHASE POWER • AUXILIARY CONTACT • HAND-OFF-AUTO SELECTOR SWITCH • MOTOR OVERLOADS *REMOTE CONTROL POWER REQUIRED
	MAGNETIC MOTOR STARTER • 3 PHASE POWER • MOTOR OVERLOADS • REMOTE CONTROL POWER REQUIRED

SAFETY CIRCUIT SYMBOLS

SYMBOL	DESCRIPTION
	SAFETY CIRCUIT REFERENCE SYMBOL. SEE SAFETY CIRCUIT DIAGRAM.
	STATIC PRESSURE HIGH LIMIT SWITCH • SINGLE POLE/SINGLE THROW, OPENS ON RISE, REQUIRES MANUAL RESET
	STATIC PRESSURE LOW LIMIT SWITCH • SINGLE POLE/SINGLE THROW, OPENS ON FALL, REQUIRES MANUAL RESET

SENSORS/DEVICES - TEMPERATURE (23 93 10)

SYMBOL	DESCRIPTION
	THERMOSTAT - WALL MOUNTED, MECHANICAL, LINE VOLTAGE - BIMETAL
	THERMOSTAT - WALL MOUNTED, DIGITAL, PROGRAMMABLE
	THERMOSTAT - WALL MOUNTED WITH ADJUSTMENT AND DISPLAY, DIGITAL
	TEMPERATURE SENSOR - WALL MOUNTED WITH ADJUSTMENT, DISPLAY AND LOCAL PUSH BUTTON OCCUPANCY OVERRIDE
	TEMPERATURE SENSOR - BULB

SENSORS/DEVICES - CARBON DIOXIDE (23 93 10)

SYMBOL	DESCRIPTION
	CARBON DIOXIDE SENSOR - WALL MOUNTED
	CARBON DIOXIDE SENSOR - DUCT MOUNTED

SENSORS/DEVICES - PRESSURE (23 93 10)

SYMBOL	DESCRIPTION
	STATIC PRESSURE TRANSDUCER - DUCT MOUNTED
	DIFFERENTIAL PRESSURE SWITCH
	DIFFERENTIAL PRESSURE TRANSDUCER

WIRING LEGEND (23 92 10)

SYMBOL	DESCRIPTION
	WIRING HATCH
	WIRE TERMINATION
	WIRE SPLICE
	JUNCTION BOX
	PULL BOX
	TERMINAL BLOCK
	SIGNAL WIRING • PLENUM RATED CABLE NOT IN CONDUIT WHEN CONCEALED • BY TC UNLESS NOTED OTHERWISE • NUMBER OF SIGNAL INDICATES CONDUCTOR QUANTITY.
	SIGNAL WIRING • INSTALL IN CONDUIT • CONDUIT SIZING PER NEC, MINIMUM 3/4" • BY TC UNLESS NOTED OTHERWISE • BY TC UNLESS NOTED OTHERWISE • NUMBER OF SIGNALS INDICATES CONDUCTOR QUANTITY.
	LOCAL AREA NETWORK WIRING • BY TC UNLESS NOTED OTHERWISE
	LINE VOLTAGE POWER WIRING • BY EC UNLESS OTHERWISE NOTED • WIRING BY EC IS DEPICTED IN THIN (LIGHT) LINETYPE
	FIRE ALARM WIRING • BY EC UNLESS OTHERWISE NOTED • WIRING BY EC IS DEPICTED IN THIN, LIGHT LINETYPE
	ETHERNET CABLING • CAT-5E, CAT-6, CAT-6E • BY EC OR CONVEN UNLESS OTHERWISE NOTED.
	FUSE
	HAND-OFF-AUTO (HOA) SWITCH
	THERMAL OVERLOAD
	TOGGLE SWITCH
	CIRCUIT BREAKER
	CONTACT - NORMALLY OPEN
	CONTACT - NORMALLY CLOSED
	TOGGLE SWITCH
	WIRE CROSS

ELECTRICAL EQUIPMENT LEGEND - DISCONNECTS

SYMBOL	DESCRIPTION
	DISCONNECT SWITCH - FUSED • 1-POLE • 2-POLE • 3-POLE
	DISCONNECT SWITCH - NON-FUSED • 1-POLE • 2-POLE • 3-POLE

EQUIPMENT LEGEND - FIRE ALARM

SYMBOL	DESCRIPTION
	DUCT MOUNTED SMOKE DETECTOR AND CONTACTS FURNISHED BY DIVISION 26 INSTALLED BY DIVISION 23
	ZONE ADDRESSABLE MODULE FURNISHED BY DIVISION 26 WIRED BY DIVISION 23
	REMOTE PUSH-BUTTON TEST STATION

CONTROLS EQUIPMENT LEGEND - POWER SUPPLY (23 93 10)

SYMBOL	DESCRIPTION
	POWER TRANSFORMER
	POWER SUPPLY MODULE
	UNINTERRUPTIBLE POWER SUPPLY
	DUPLEX RECEPTACLE

CONTROLS EQUIP LEGEND - SWITCHES, CONTACTS, RELAYS

SYMBOL	DESCRIPTION
	RELAY - SINGLE POLE
	RELAY WITH MANUAL OVER-RIDE SWITCH AND POSITION INDICATOR LIGHT
	RELAY WITH POSITION INDICATOR LIGHT
	KEY SWITCH (1 POLE, 2 POLE, FORM C)
	PUSH BUTTON SWITCH
	TOGGLE SWITCH
	DRY CONTACT (1 OR 2 POLE)

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Mechanical / Electrical / Plumbing / Voice / Data



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Allstate DFW
Connection Pod

Tenant Improvement

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TDLR# TABS2025004935

Allstate P/N: TX-5189-2024-4

ISSUED FOR:

75% Review Permit 13 November 2024
22 November 2024



Drawn By: PTA, INC.
Checked By: MUS

MECHANICAL LEGENDS

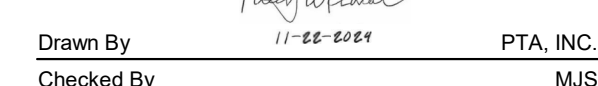
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Tenant Improvement
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Allstate PN: TX-5189-2024-4

75% Review	13 November 2024
Permit	22 November 2024



M1.1



1. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ALL SALVAGED ITEMS. OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM THE SITE.
2. REMOVE ALL DUCTWORK, AS INDICATED BY THE DEMOLITION LINE/PETEY. REMOVE ALL ASSOCIATED ANCILLARY ITEMS, SUCH AS HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. - NOT UTILIZED FOR NEW WORK.
3. REMOVE DUCTWORK BACK TO TIE-IN POINTS WHERE INDICATED.
4. REMOVE DUCTWORK BACK TO CAPPED LOCATIONS WHERE INDICATED. INSULATE CAPPED PUCTS THE SAME AS NEW.

HVAC PIPING DEMOLITION NOTES:

1. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ANY DEMOLISHED ITEMS. OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM THE SITE.
2. REMOVE ALL PIPING, AS INDICATED BY THE DEMOLITION LINE/TYPE. REMOVE ALL ASSOCIATED ANCILLARY ITEMS, SUCH AS PIPE HANGERS, SUPPORTS, INSULATION, VALVES, CONTROLS, ETC. - NOT UTILIZED FOR NEW WORK.
3. REMOVE PIPING BACK TO TIE-IN POINTS WHERE INDICATED.
4. REMOVE PIPING BACK TO CAPPED LOCATIONS WHERE INDICATED. INSULATE CAPPED PIPES SAME AS NEW.

1. EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
2. DEMOLITION LINETYPE: THICK (DARK) DASHED LINES REPRESENT EXISTING ITEMS TO BE REMOVED.
3. RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY. NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS OBTUSCURED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
4. EQUIPMENT SHOWN GRAY/SHADER OR TAGGED HAVE AN ASSOCIATED EQUIPMENT TAG (SEE SCHEDULE SHEETS).
5. EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULES.
6. PROVIDE TEMPORARY HIGH EFFICIENCY FILTER MEDIA ON MAIN RELIEF AIR AND EXHAUST FROM FLOOR AT THE BEGINNING OF THE PROJECT AND REPLACE AT TWO (2) WEEK INTERVALS UNTIL PROJECT COMPLETION AT WHICH TIME THE FILTER MEDIA SHALL BE REMOVED.





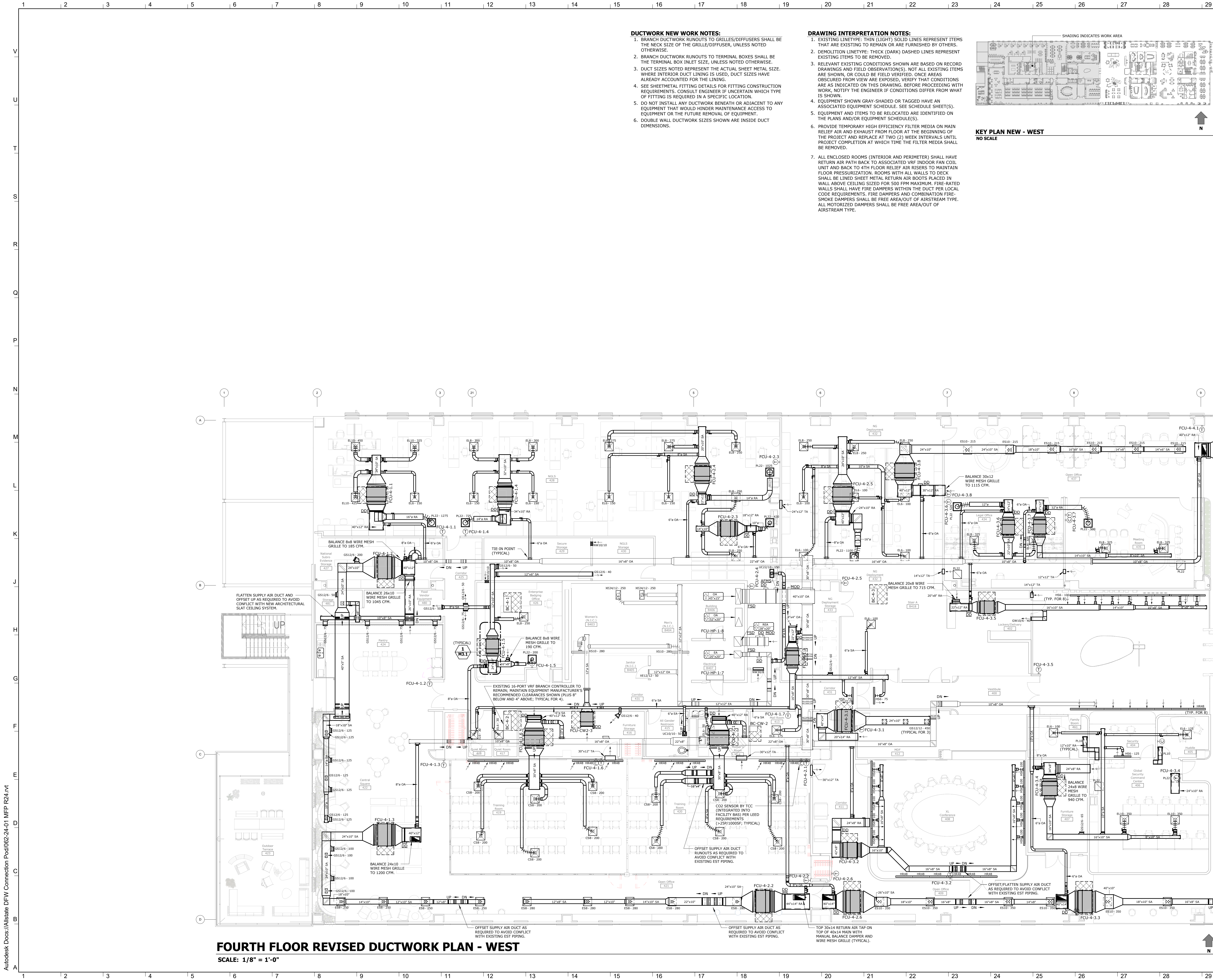
1. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ALL SALVAGED ITEMS. OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM THE SITE.
2. REMOVE ALL DUCTWORK, AS INDICATED BY THE DEMOLITION LINE/PETEY. REMOVE ALL ASSOCIATED ANCILLARY ITEMS, SUCH AS HANGERS, SUPPORTS, INSULATION, CONTROLS, ETC. - NOT UTILIZED FOR NEW WORK.
3. REMOVE DUCTWORK BACK TO TIE-IN POINTS WHERE INDICATED.
4. REMOVE DUCTWORK BACK TO CAPPED LOCATIONS WHERE INDICATED. INSULATE CAPPED PUCTS THE SAME AS NEW.

HVAC PIPING DEMOLITION NOTES:

1. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL UPON REMOVAL OF ALL DEMOLISHED ITEMS, OTHERWISE, REMOVE ALL DEMOLISHED ITEMS FROM THE SITE.
2. REMOVE ALL PIPING, AS INDICATED BY THE DEMOLITION LINE/TYPE. REMOVE ALL ASSOCIATED ANCILLARY ITEMS, SUCH AS PIPE HANGERS, SUPPORTS, INSULATION, VALVES, CONTROLS, ETC. - NOT UTILIZED FOR NEW WORK.
3. REMOVE PIPING BACK TO TIE-IN POINTS WHERE INDICATED.
4. REMOVE PIPING BACK TO CAPPED LOCATIONS WHERE INDICATED. INSULATE CAPPED PIPES SAME AS NEW.

1. EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
2. DEMOLITION LINETYPE: THICK (DARK) DASHED LINES REPRESENT EXISTING ITEMS TO BE REMOVED.
3. RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY. NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS OBTUSCURED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
4. EQUIPMENT SHOWN GRAY/SHADER OR TAGGED HAVE AN ASSOCIATED EQUIPMENT TAG (SEE SCHEDULE SHEETS).
5. EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SPECIFICATIONS.
6. PROVIDE TEMPORARY HIGH EFFICIENCY FILTER MEDIA ON MAIN RELIEF AIR AND EXHAUST FROM FLOOR AT THE BEGINNING OF THE PROJECT AND REPLACE AT TWO (2) WEEK INTERVALS UNTIL PROJECT COMPLETION AT WHICH TIME THE FILTER MEDIA SHALL BE REMOVED.





**Allstate DFW
Connection Pod**

Tenant Improvement
3300 Olympus Blvd
Floor 4
Dallas, TX 75019

TDLR# TABS2025004935

Allstate PN: TX-5189-2024-4

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13 November 2024
22 November 2024



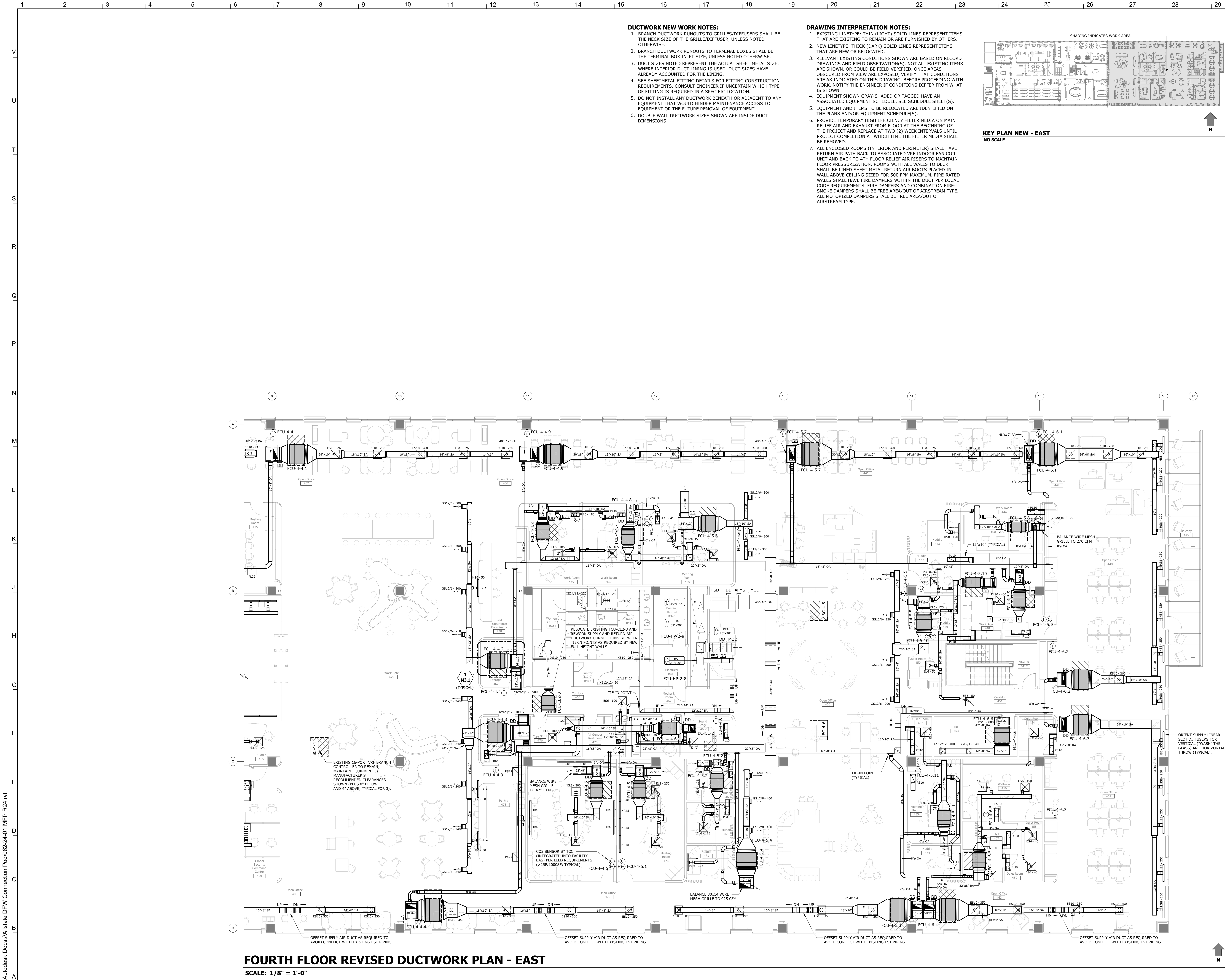
Drawn By
Checked By

PTA, INC.
MJS

**FOURTH FLOOR REVISED
DUCTWORK PLAN - WEST**

M2.1

Autodesk Docs/Allstate DFW Connection Pod/062-24-01 MFP R24.rvt



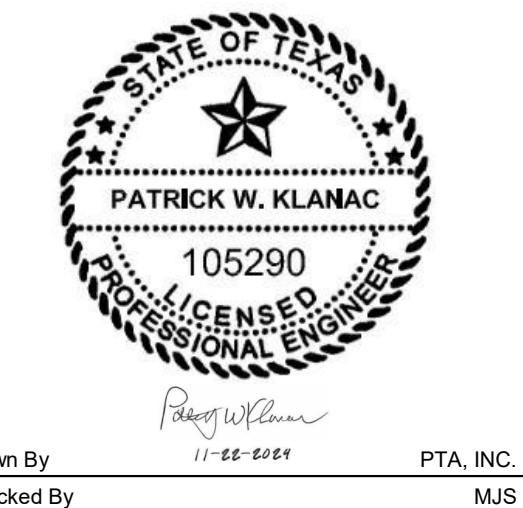
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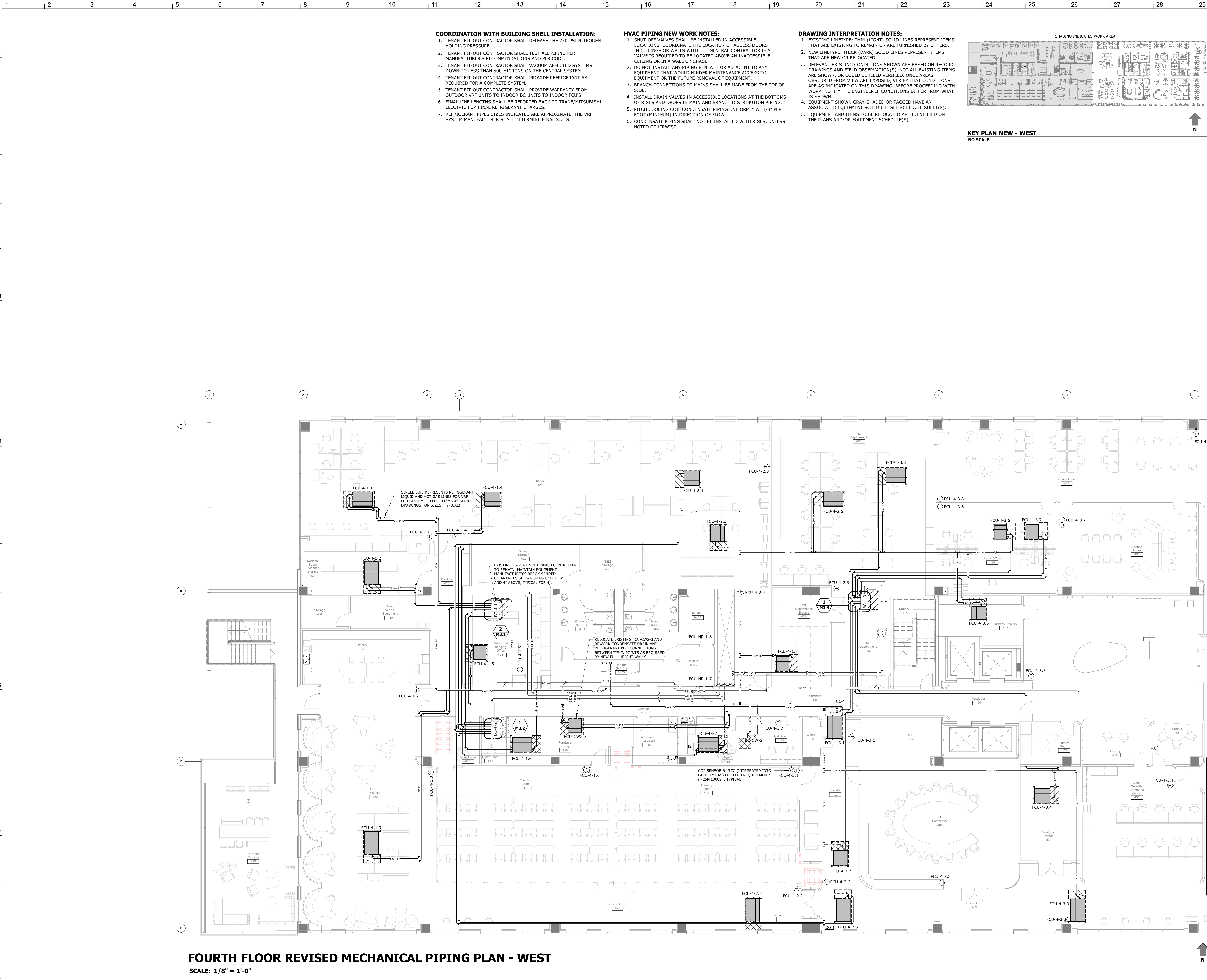
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Permit 22 November 2024



Drawn By: *Patrick W. Klamac* PTA, INC.
Checked By: *11-20-2024* MJS

FOURTH FLOOR REVISED
DUCTWORK PLAN - EAST

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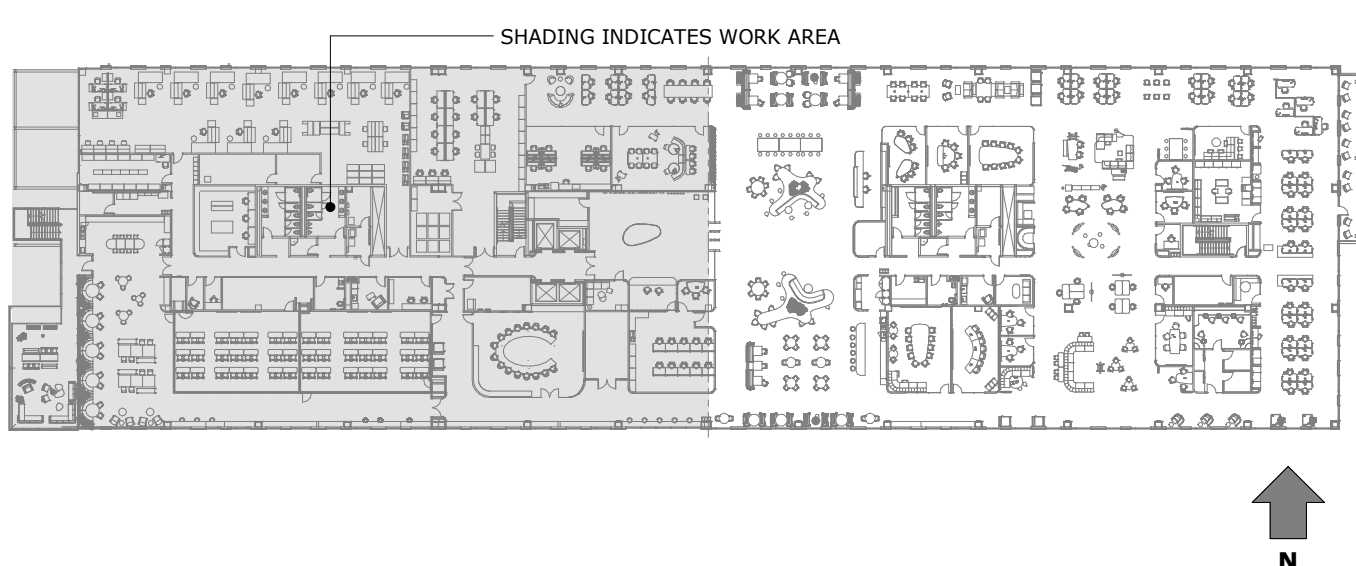


FOURTH FLOOR REVISED MECHANICAL PIPING PLAN - WEST
SCALE: 1/8" = 1'-0"

- COORDINATION WITH BUILDING SHELL INSTALLATION:**
- TENANT FIT-OUT CONTRACTOR SHALL RELEASE THE 250-PSI NITROGEN HOLDING PRESSURE.
 - TENANT FIT-OUT CONTRACTOR SHALL TEST ALL PIPING PER MANUFACTURER'S RECOMMENDATIONS AND PER CODE.
 - TENANT FIT-OUT CONTRACTOR SHALL VACUUM AFFECTED SYSTEMS DOWN TO LESS THAN 500 MICRONS ON THE CENTRAL SYSTEM.
 - TENANT FIT-OUT CONTRACTOR SHALL PROVIDE REFRIGERANT AS REQUIRED FOR A COMPLETE SYSTEM.
 - TENANT FIT-OUT CONTRACTOR SHALL PROVIDE WARRANTY FROM OUTDOOR VRF UNITS TO INDOOR BC UNITS TO INDOOR FCU'S.
 - FINAL LINE LENGTHS SHALL BE REPORTED BACK TO TRANE/MITSUBISHI ELECTRIC FOR FINAL REFRIGERANT CHARGES.
 - REFRIGERANT PIPES SIZES INDICATED ARE APPROXIMATE. THE VRF SYSTEM MANUFACTURER SHALL DETERMINE FINAL SIZES.

- HVAC PIPING NEW WORK NOTES:**
- SHUT-OFF VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. COORDINATE THE LOCATION OF ACCESS DOORS IN CEILING OR WALLS WITH THE GENERAL CONTRACTOR IF A VALVE IS REQUIRED TO BE LOCATED ABOVE AN INACCESSIBLE CEILING OR IN A WALL OR CHASE.
 - DO NOT INSTALL ANY PIPING BENEATH OR ADJACENT TO ANY EQUIPMENT THAT WOULD HINDER MAINTENANCE ACCESS TO EQUIPMENT OR THE FUTURE REMOVAL OF EQUIPMENT.
 - BRANCH CONNECTIONS TO MAINS SHALL BE MADE FROM THE TOP OR SIDE.
 - INSTALL DRAIN VALVES IN ACCESSIBLE LOCATIONS AT THE BOTTOMS OF RISES AND DROPS IN MAIN AND BRANCH DISTRIBUTION PIPING.
 - PITCH COOLING COIL CONDENSATE PIPING UNIFORMLY AT 1/8" PER FOOT (MINIMUM) IN DIRECTION OF FLOW.
 - CONDENSATE PIPING SHALL NOT BE INSTALLED WITH RISES, UNLESS NOTED OTHERWISE.

- DRAWING INTERPRETATION NOTES:**
- EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
 - NEW LINETYPE: THICK (DARK) SOLID LINES REPRESENT ITEMS THAT ARE NEW OR RELOCATED.
 - RELEVANT EXISTING CONDITIONS SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD OBSERVATION(S). NOT ALL EXISTING ITEMS ARE SHOWN, OR COULD BE FIELD VERIFIED. ONCE AREAS OBTAINED FROM VIEW ARE EXPOSED, VERIFY THAT CONDITIONS ARE AS INDICATED ON THIS DRAWING. BEFORE PROCEEDING WITH WORK, NOTIFY THE ENGINEER IF CONDITIONS DIFFER FROM WHAT IS SHOWN.
 - EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
 - EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULE(S).



KEY PLAN NEW - WEST
NO SCALE

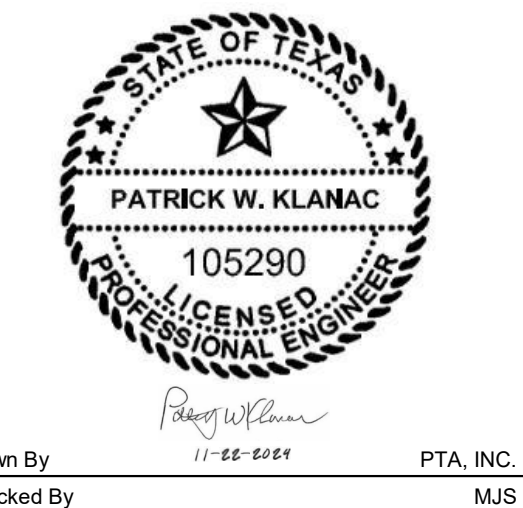
**Allstate DFW
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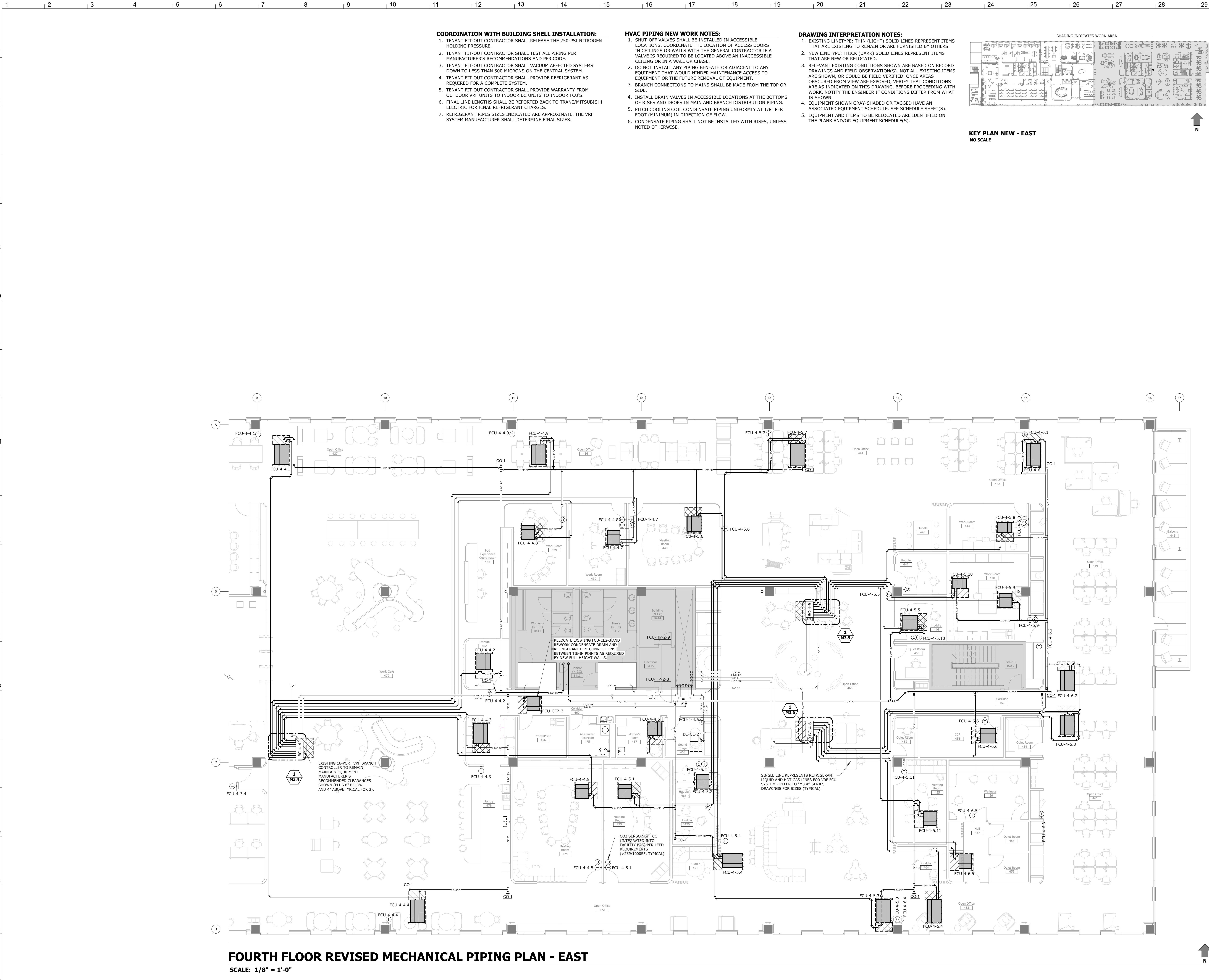
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FOURTH FLOOR REVISED
MECHANICAL PIPING
PLAN - WEST

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- COORDINATION WITH BUILDING SHELL INSTALLATION:**
1. TENANT FIT-OUT CONTRACTOR SHALL RELEASE THE 250-PSI NITROGEN HOLDING PRESSURE.
 2. TENANT FIT-OUT CONTRACTOR SHALL TEST ALL PIPING PER MANUFACTURER'S RECOMMENDATIONS AND PER CODE.
 3. TENANT FIT-OUT CONTRACTOR SHALL VACUUM AFFECTED SYSTEMS DOWN TO LESS THAN 500 MICRONS ON THE CENTRAL SYSTEM.
 4. TENANT FIT-OUT CONTRACTOR SHALL PROVIDE REFRIGERANT AS REQUIRED FOR A COMPLETE SYSTEM.
 5. TENANT FIT-OUT CONTRACTOR SHALL PROVIDE WARRANTY FROM OUTDOOR VRF UNITS TO INDOOR BC UNITS TO INDOOR FCU'S.
 6. FINAL LINE LENGTHS SHALL BE REPORTED BACK TO TRANE/MITSUBISHI ELECTRIC FOR FINAL REFRIGERANT CHARGES.
 7. REFRIGERANT PIPES SIZES INDICATED ARE APPROXIMATE. THE VRF SYSTEM MANUFACTURER SHALL DETERMINE FINAL SIZES.

- HVAC PIPING NEW WORK NOTES:**
1. SHUT-OFF VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. COORDINATE THE LOCATION OF ACCESS DOORS IN CEILINGS OR WALLS WITH THE GENERAL CONTRACTOR IF A VALVE IS REQUIRED TO BE LOCATED ABOVE AN INACCESSIBLE CEILING OR IN A WALL OR CHASE.
 2. DO NOT INSTALL ANY PIPING BENEATH OR ADJACENT TO ANY EQUIPMENT THAT WOULD HINDER MAINTENANCE ACCESS TO EQUIPMENT OR THE FUTURE REMOVAL OF EQUIPMENT.
 3. BRANCH CONNECTIONS TO MAINS SHALL BE MADE FROM THE TOP OR SIDE.
 4. INSTALL DRAIN VALVES IN ACCESSIBLE LOCATIONS AT THE BOTTOMS OF RISES AND DROPS IN MAIN AND BRANCH DISTRIBUTION PIPING.
 5. PITCH COOLING COIL CONDENSATE PIPING UNIFORMLY AT 1/8" PER FOOT (MINIMUM) IN DIRECTION OF FLOW.
 6. CONDENSATE PIPING SHALL NOT BE INSTALLED WITH RISES, UNLESS NOTED OTHERWISE.

- DRAWING INTERPRETATION NOTES:**
1. EXISTING LINETYPE: THIN (LIGHT) SOLID LINES REPRESENT ITEMS THAT ARE EXISTING TO REMAIN OR ARE FURNISHED BY OTHERS.
 2. NEW LINETYPE: THICK (DARK) SOLID LINES REPRESENT ITEMS THAT ARE NEW OR RELOCATED.
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 4. EQUIPMENT SHOWN GRAY-SHADED OR TAGGED HAVE AN ASSOCIATED EQUIPMENT SCHEDULE. SEE SCHEDULE SHEET(S).
 5. EQUIPMENT AND ITEMS TO BE RELOCATED ARE IDENTIFIED ON THE PLANS AND/OR EQUIPMENT SCHEDULE(S).

KEY PLAN NEW - EAST
NO SCALE

FOURTH FLOOR REVISED MECHANICAL PIPING PLAN - EAST
SCALE: 1/8" = 1'-0"

**Allstate DFW
Connection Pod**

Tenant Improvement
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Dallas, TX 75019

TDLR# TABS2025004935

Allstate PN: TX-5189-2024-4

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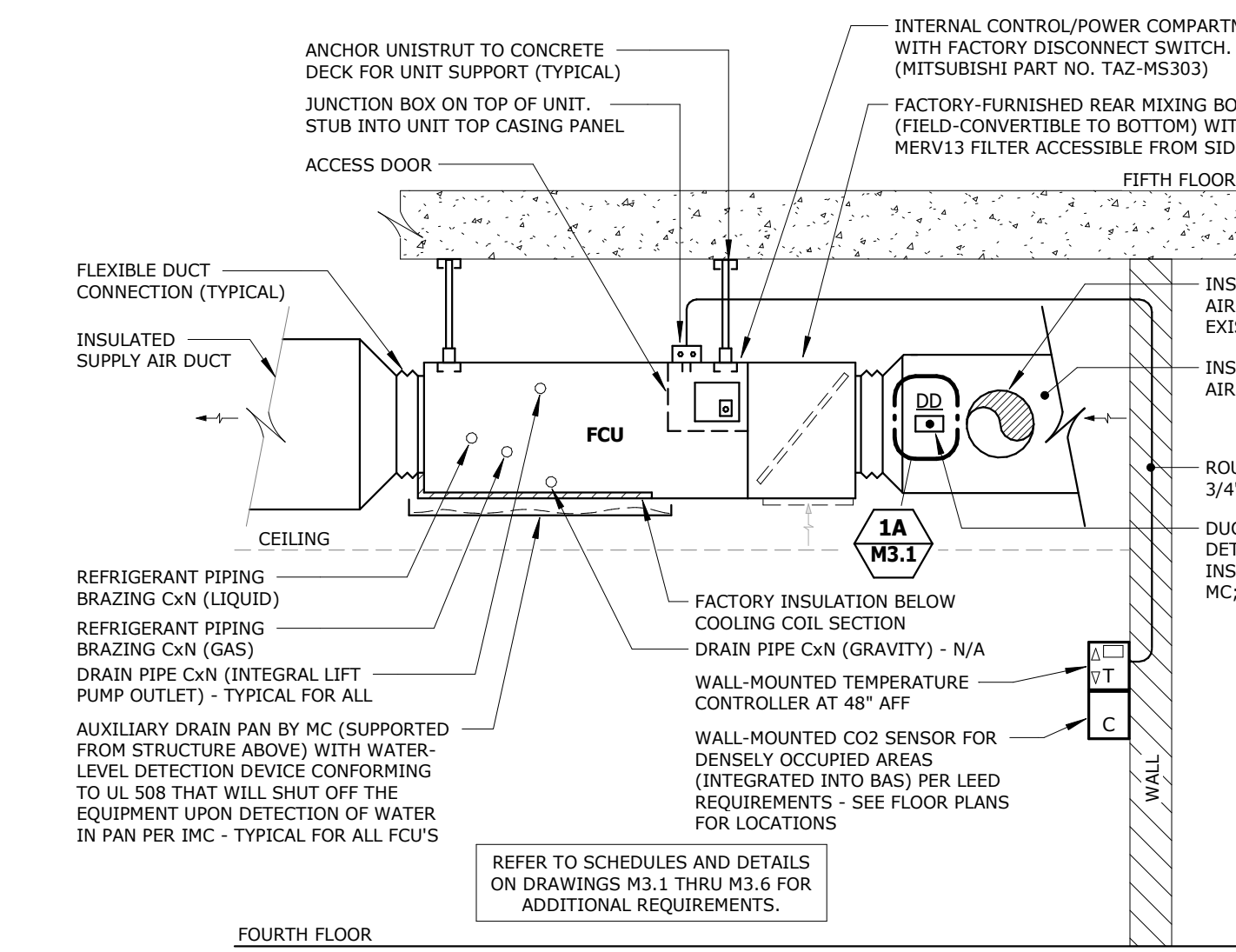
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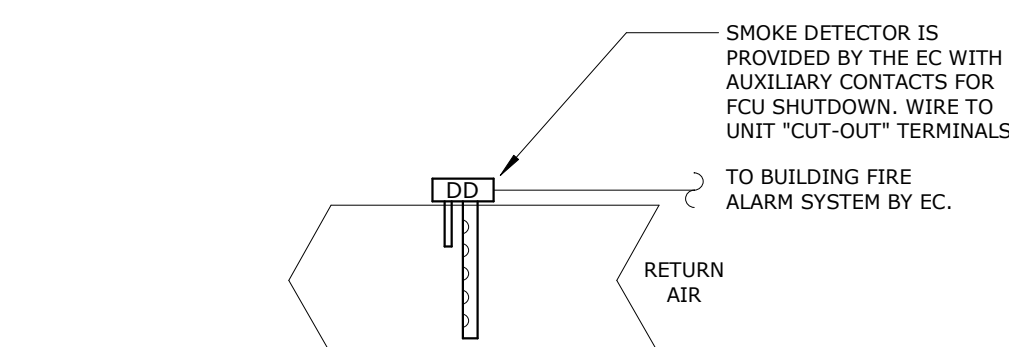
Drawn By: *Patrick W. Klanac* PTA, INC.
Checked By: *11-20-2024* MUS

**FOURTH FLOOR REVISED
MECHANICAL PIPING
PLAN - EAST**

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1 TYPICAL DUCTED VRF FAN COIL UNIT INSTALLATION DETAIL
NO SCALE



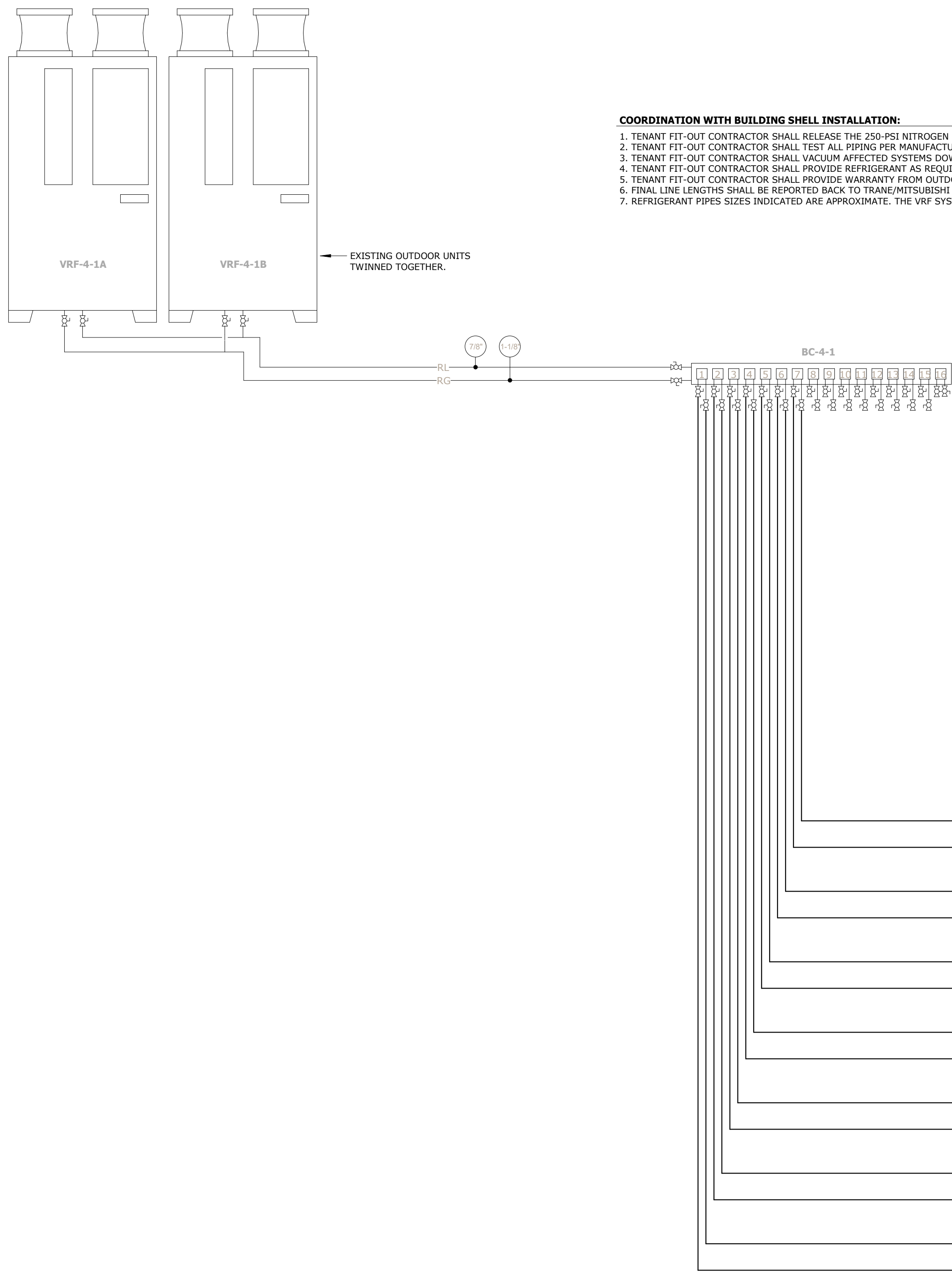
1A TYPICAL FCU DUCT-MOUNTED SMOKE DETECTOR WIRING DETAIL
NO SCALE

23 81 20 - VRF SYSTEM #4-1 FAN COIL UNIT SCHEDULE (FCU) - NEW																	
NOTES:					OPTIONS/ACCESSORIES:												
1.					1. FURNISH WITH INTEGRAL CONDENSATE LIFT PUMP.												
					2. FURNISH WITH FILTER BOX AND MERV13 FILTER.												
					3. FURNISH WITH BACNET INTERFACE AND DELUXE WIRED MA REMOTE CONTROLLER TO MATCH BUILDING STANDARD.												
					4. DESIGN COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 75°F (DB) / 50°RH AND OUTDOOR AMBIENT AIR OF 95°F (DB).												
					5. DESIGN HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) AND OUTDOOR AMBIENT AIR OF 43°F (DB).												
MARK	MANUFACTURER	MODEL	TYPE	SERVICE	SUPPLY AIR CFM	OUTDOOR AIR CFM	ESP	DESIGN LATENT/ SENSIBLE COOLING MBH	DESIGN HEATING MBH	REFRIGERANT	WEIGHT	VOLTS/ PHASE	FLA	MCA	MOCP	DISCONNECT BY	OPTIONS/ ACCESSORIES
FCU-4-1.1	MITSUBISHI ELECTRIC	TPEFYPO48MA144A	CEILING-CONCEALED (DUCTED)	NGLS 428 (NW/NE EXTERIOR)	1,300	65	0.6"	1.0 / 26.5	9.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-1.2	MITSUBISHI ELECTRIC	TPEFYPO54MA144A	CEILING-CONCEALED (DUCTED)	PANTRY 424 (NW EXTERIOR)	1,400	315	0.6"	10.0 / 43.0	14.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-1.3	MITSUBISHI ELECTRIC	TPEFYPO54MA144A	CEILING-CONCEALED (DUCTED)	CENTRAL SQUARE 422 (NW/SW EXTERIOR)	1,400	150	0.6"	5.0/27.0	11.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-1.4	MITSUBISHI ELECTRIC	TPEFYPO24MA144A	CEILING-CONCEALED (DUCTED)	NGLS 428 (NE EXTERIOR)	875	70	0.6"	1.0 / 15.5	4.5	R-410A	70 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-1.5	MITSUBISHI ELECTRIC	TPEFYPO15MA144A	CEILING-CONCEALED (DUCTED)	ENTERPRISE BADG. OFF. 426 (INTERIOR)	475	100	0.6"	1.0 / 9.0	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-1.6	MITSUBISHI ELECTRIC	TPEFYPO48MA144A	CEILING-CONCEALED (DUCTED)	TRAINING ROOM 419 (INTERIOR)	1,300	240	0.6"	8.5 / 28.5	0.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-1.7	MITSUBISHI ELECTRIC	TPEFYPO15MA144A	CEILING-CONCEALED (DUCTED)	ROOM 400, 413, 414, 416-418, 431 (INTERIOR)	475	140	0.6"	1.0 / 11.5	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5

SUM: 27.5 MBHcooling / 161.5 MBHcooling / 189.0 MBHheat / 39.5 MBHheating / 1080 CFM OA

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-1 OUTDOOR HEAT RECOVERY UNIT SCHEDULE (VRF) - FOR REFERENCE																	
NOTES:																	
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OPTIONS/ACCESSORIES:																	
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23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-1 INDOOR BRANCH CONTROLLER SCHEDULE (BC) - FOR REFERENCE																
NOTES:											OPTIONS/ACCESSORIES:					
1.											1.					
MARK	MANUFACTURER	MODEL	# OF BRANCHES	SOLENOID VALVE SWITCHING SOUND PRESSURE		MAX INDOOR UNIT CAPACITY CONNECTABLE TO		REFRIGERANT TYPE	ELECTRICAL DATA				ASSOCIATED INDOOR & OUTDOOR UNITS		WEIGHT	
				LEVEL	1 BRANCH	R-410A	CURRENT INPUT		POWER INPUT	COOLING	HEATING	VOLTS/ PHASE				MCA
BC-4-1	MITSUBISHI ELECTRIC	CMB-P1016NU-JA1	16	56 dB	54 MBH	R-410A	1.25 A	0.66 A	0.26 KW	0.14 KW	208/1	1.6	2.0	SEE DIAGRAM	150 LBS	



2 VRF #4-1 SYSTEM DIAGRAM
NO SCALE

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TDLR# TABS2025004935

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VRF #4-1 SYSTEM
DIAGRAM & SCHEDULES

M3.1

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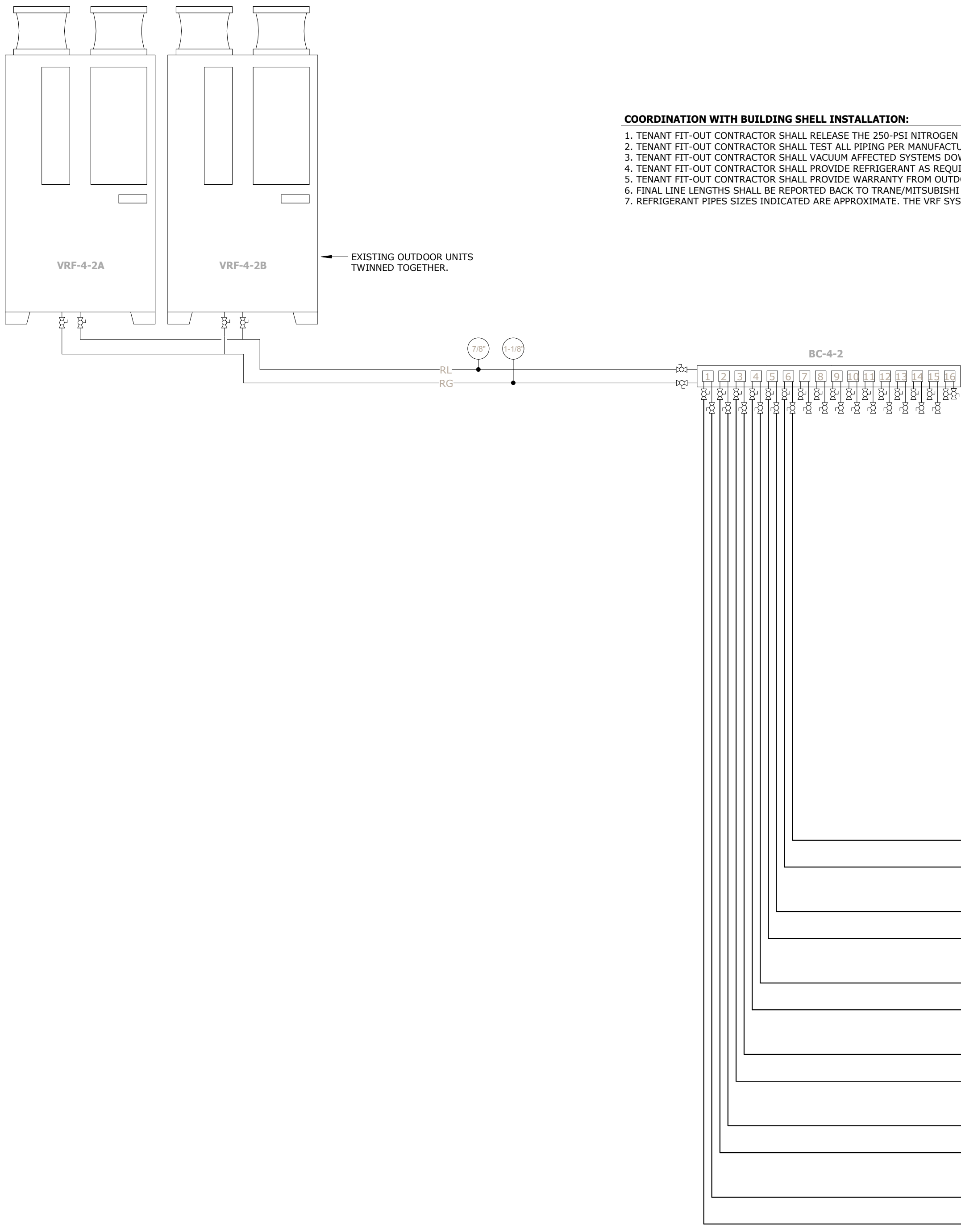
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23 81 20 - VRF SYSTEM #4-2 FAN COIL UNIT SCHEDULE (FCU) - NEW																	
NOTES:										OPTIONS/ACCESSORIES:							
1.										1. FURNISH WITH INTEGRAL CONDENSATE LIFT PUMP. 2. FURNISH WITH FILTER BOX AND MERV13 FILTER. 3. FURNISH WITH BACNET INTERFACE AND DELUXE WIRED MA REMOTE CONTROLLER TO MATCH BUILDING STANDARD. 4. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) AND OUTDOOR AMBIENT AIR OF 95°F (DB). 5. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) AND OUTDOOR AMBIENT AIR OF 43°F (DB).							
MARK	MANUFACTURER	MODEL	TYPE	SERVICE	SUPPLY AIR CFM	OUTDOOR AIR CFM	ESP	DESIGN LATENT/ SENSIBLE COOLING MBH	DESIGN HEATING MBH	REFRIGERANT	WEIGHT	VOLTS/ PHASE	FLA	MCA	MOCP	DISCONNECT BY	OPTIONS/ ACCESSORIES
FCU-4-2.1	DAIKIN ELECTRIC	TPEFP048MA144A	CEILING-CONCEALED (DUCTED)	TRAINING ROOM 420 (INTERIOR)	1,300	280	0.6"	8.5/30.5	0.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-2.2	DAIKIN ELECTRIC	TPEFP054MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 421 (SW EXTERIOR)	1,400	90	0.6"	2.0/42.0	13.1	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-2.3	DAIKIN ELECTRIC	TPEFP024MA144A	CEILING-CONCEALED (DUCTED)	INGLS 428 (INTERIOR)	875	70	0.6"	1.0/12.5	0.0	R-410A	70 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-2.4	DAIKIN ELECTRIC	TPEFP020MA145A	CEILING-CONCEALED (DUCTED)	INGLS 428 (NE EXTERIOR)	1,275	70	0.6"	1.0/19.5	7.0	R-410A	70 LB	208V/1PH	3.4	4.25	15	MANUFACTURER	1,2,3,4,5
FCU-4-2.5	DAIKIN ELECTRIC	TPEFP048MA144A	CEILING-CONCEALED (DUCTED)	ING DEPLOYMENT 432 (NE EXTERIOR)	1,300	190	0.6"	3.5/33.0	5.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-2.6	DAIKIN ELECTRIC	TPEFP054MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 409 (SW EXTERIOR)	1,400	65	0.6"	1.0/32.0	10.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5

SUM: 17.0 MB_{Latent} / 169.5 MB_{Heating} / 186.5 MB_{Latent} / 35.6 MB_{Heating} / 765 CFM OA

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-2 OUTDOOR HEAT RECOVERY UNIT SCHEDULE (VRF) - FOR REFERENCE																					
NOTES:										OPTIONS/ACCESSORIES:											
1.										1.											
MARK	MANUFACTURER	MODEL	COOLING PERFORMANCE (BASED ON 95°F AMBIENT)					HEATING PERFORMANCE (BASED ON 47°F DB/43°F WB)					REFRIGERANT	ELECTRICAL DATA					DISCONNECT BY	ASSOCIATED INDOOR UNITS	WEIGHT
			NOMINAL COOLING TONS	AMBIENT TEMPERATURE LOW	AMBIENT TEMPERATURE HIGH	EER/IEER @ AHRI	NOMINAL HEATING MBH	AMBIENT TEMPERATURE LOW	AMBIENT TEMPERATURE HIGH	COP/SCH @ AHRI	VOLTS/ PHASE	SCCR		MCA	MOCP						
			8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3		5KA	15	20					
VRF-4-2A	MITSUBISHI ELECTRIC	PURY-P96YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5KA	15	20	EXISTING	SEE DIAGRAM	600 LBS			
VRF-4-2B	MITSUBISHI ELECTRIC	PURY-P96YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5KA	15	20	EXISTING	SEE DIAGRAM	600 LBS			

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-2 INDOOR BRANCH CONTROLLER SCHEDULE (BC) - FOR REFERENCE																
NOTES:							OPTIONS/ACCESSORIES:									
1.							1.									
MARK	MANUFACTURER	MODEL	# OF BRANCHES	SOLENOID VALVE SWITCHING SOUND PRESSURE LEVEL	MAX INDOOR UNIT CAPACITY CONNECTABLE TO 1 BRANCH	REFRIGERANT TYPE	ELECTRICAL DATA								ASSOCIATED INDOOR & OUTDOOR UNITS	WEIGHT
							CURRENT INPUT		POWER INPUT		VOLTS/ PHASE		MCA	MOCP		
BC-4-2	MITSUBISHI ELECTRIC	CMB-P1016NU-JA1	16	56 dB	54 MBH	R-410A	COOLING	HEATING	COOLING	HEATING	208/1	1.6			20	SEE DIAGRAM



VRF #4-2 SYSTEM DIAGRAM
NO SCALE

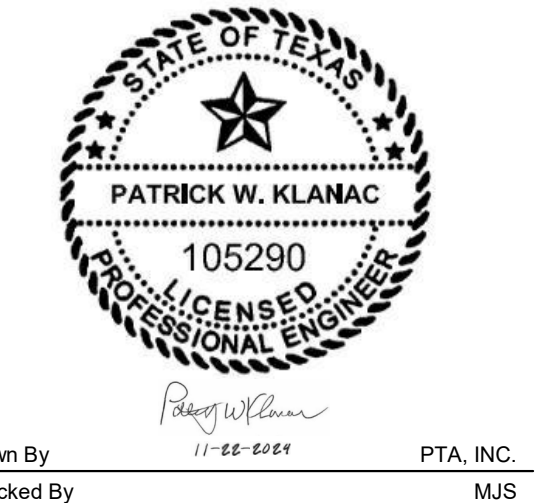
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VRF #4-2 SYSTEM
DIAGRAM & SCHEDULES

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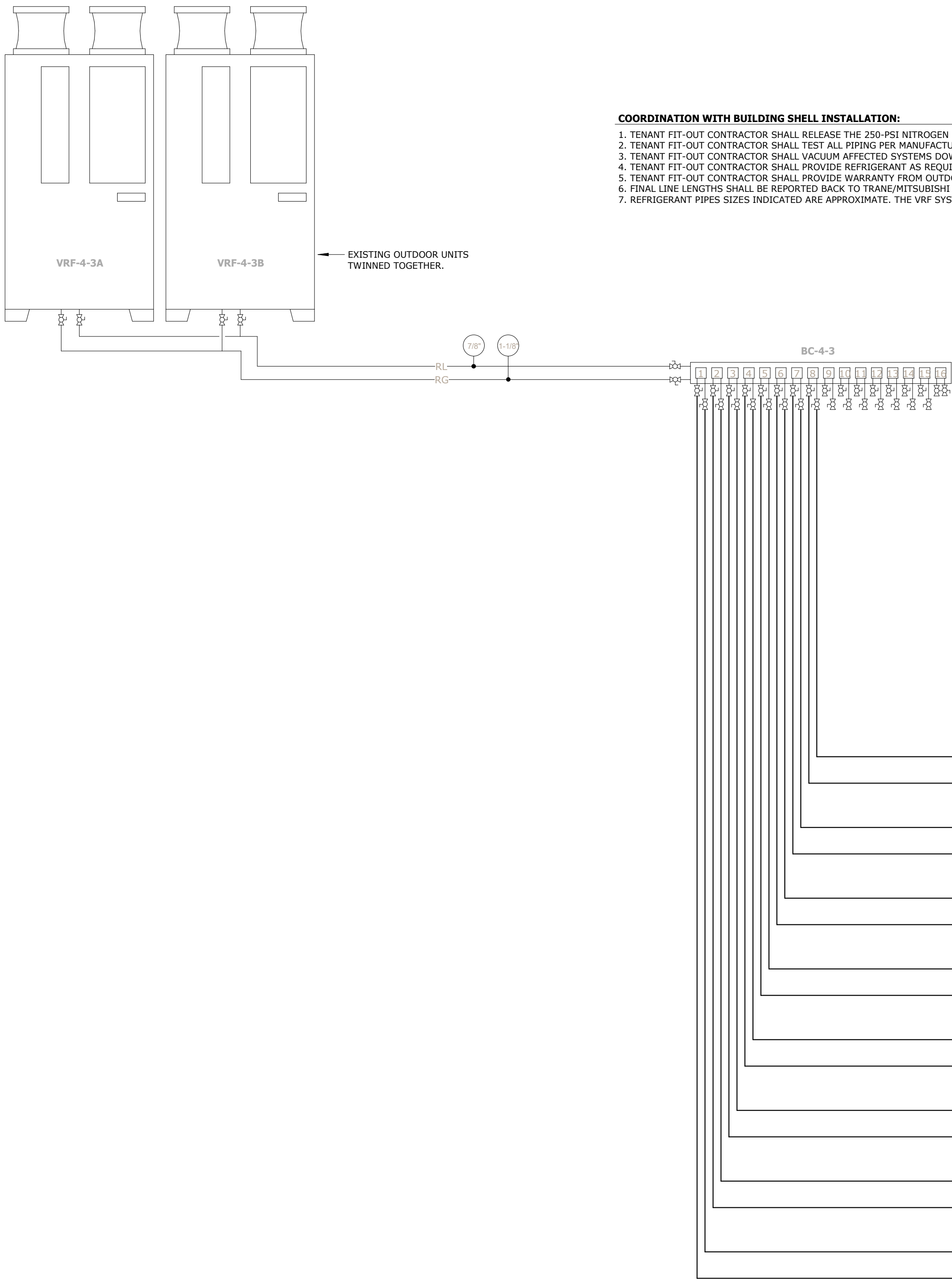
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23 81 20 - VRF SYSTEM #4-3 FAN COIL UNIT SCHEDULE (FCU) - NEW																	
NOTES: 1.						OPTIONS/ACCESSORIES:											
						1. FURNISH WITH INTEGRAL CONDENSATE LIFT PUMP.											
						2. FURNISH WITH FILTER BOX AND MERV13 FILTER.											
						3. FURNISH WITH BACKET INTERFACE AND DELUXE WIRED MA REMOTE CONTROLLER TO MATCH BUILDING STANDARD.											
						4. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) AND OUTDOOR AMBIENT AIR OF 95°F (DB).											
						5. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) AND OUTDOOR AMBIENT AIR OF 43°F (DB).											
MARK	MANUFACTURER	MODEL	TYPE	SERVICE	SUPPLY AIR CFM	OUTDOOR AIR CFM	ESP	DESIGN LATENT / SENSIBLE COOLING MBH	DESIGN HEATING MBH	REFRIGERANT	WEIGHT	VOLTS / PHASE	FLA	MCA	MOCP	DISCONNECT BY	OPTIONS / ACCESSORIES
FCU-4-3.1	mitsubishi electric	TPFPY054MA144A	CEILING-CONCEALED (DUCTED)	MDF 412 (INTERIOR)	1,350	0	0.6"	0.0/38.0	0.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.2	mitsubishi electric	TPFPY024MA144A	CEILING-CONCEALED (DUCTED)	XL CONFERENCE 408 (INTERIOR)	875	150	0.6"	4.0/13.0	0.0	R-410A	70 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.3	mitsubishi electric	TPFPY054MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 409 (SW EXTERIOR)	1,400	80	0.6"	2.0/27.0	10.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.4	mitsubishi electric	TPFPY030MA145A	CEILING-CONCEALED (DUCTED)	ROOM 403-406 (INTERIOR)	1,250	175	0.6"	4.0/23.5	0.0	R-410A	70 LB	208V/1PH	3.4	4.25	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.5	mitsubishi electric	TPFPY018MA145A	CEILING-CONCEALED (DUCTED)	RECEPTION 401, LOCK 402 (INTERIOR)	875	110	0.6"	1.5/11.0	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.6	mitsubishi electric	TPFPY018MA145A	CEILING-CONCEALED (DUCTED)	LEGAL OFFICE 434 (INTERIOR)	875	70	0.6"	2.0/12.0	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.7	mitsubishi electric	TPFPY018MA145A	CEILING-CONCEALED (DUCTED)	MEETING ROOM 435 (INTERIOR)	875	115	0.6"	3.5/11.0	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-3.8	mitsubishi electric	TPFPY048MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 437 (NE EXTERIOR)	1,300	150	0.6"	4.0/30.0	8.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
SUM: 21.0 MB _{Heat} / 175.5 MB _{Heads} / 196.5 MB _{Heat} / 18.5 MB _{Heads} / 850 CFM OA																	

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-3 OUTDOOR HEAT RECOVERY UNIT SCHEDULE (VRF) - FOR REFERENCE																				
NOTES:						OPTIONS/ACCESSORIES:														
1.						1.														
						COOLING PERFORMANCE (BASED ON 95°F AMBIENT)					HEATING PERFORMANCE (BASED ON 47°F DB/43°F WB)					ELECTRICAL DATA				
						NOMINAL COOLING TONS	LOW	HIGH	EER/IEER @ AHRI	NOMINAL HEATING MBH	LOW	HIGH	COP/SCHE @ AHRI	REFRIGERANT TYPE	VOLTS/ PHASE	SCCR	MCA	MOCB	DISCONNECT BY	ASSOCIATED INDOOR UNITS
MARK	MANUFACTURER	MODEL																		
VRF-4-3A	MITSUBISHI ELECTRIC	PURY-P96YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5kA	15	20	EXISTING	SEE DIAGRAM	600 LBS		
VRF-4-3B	MITSUBISHI ELECTRIC	PURY-P96YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5kA	15	20	EXISTING	SEE DIAGRAM	600 LBS		

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-3 INDOOR BRANCH CONTROLLER SCHEDULE (BC) - FOR REFERENCE															
NOTES:						OPTIONS/ACCESSORIES:									
1.						1.									
						# OF BRANCHES	SOLENOID VALVE SWITCHING SOUND PRESSURE LEVEL	MAX INDOOR UNIT CAPACITY CONNECTABLE TO 1 BRANCH	REFRIGERANT TYPE	ELECTRICAL DATA					
										CURRENT INPUT	POWER INPUT	VOLTS/ PHASE	MCA	MOCP	ASSOCIATED INDOOR & OUTDOOR UNITS
BC-4-3	mitsubishi electric	CMB-P1016NU-1A1	16	56 dB	54 MBH	R-410A	1.25 A	0.66 A	0.26 KW	0.14 KW	208/1	1.6	20		SEE DIAGRAM



VRF #4-3 SYSTEM DIAGRAM
NO SCALE

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VRF #4-3 SYSTEM
DIAGRAM & SCHEDULES

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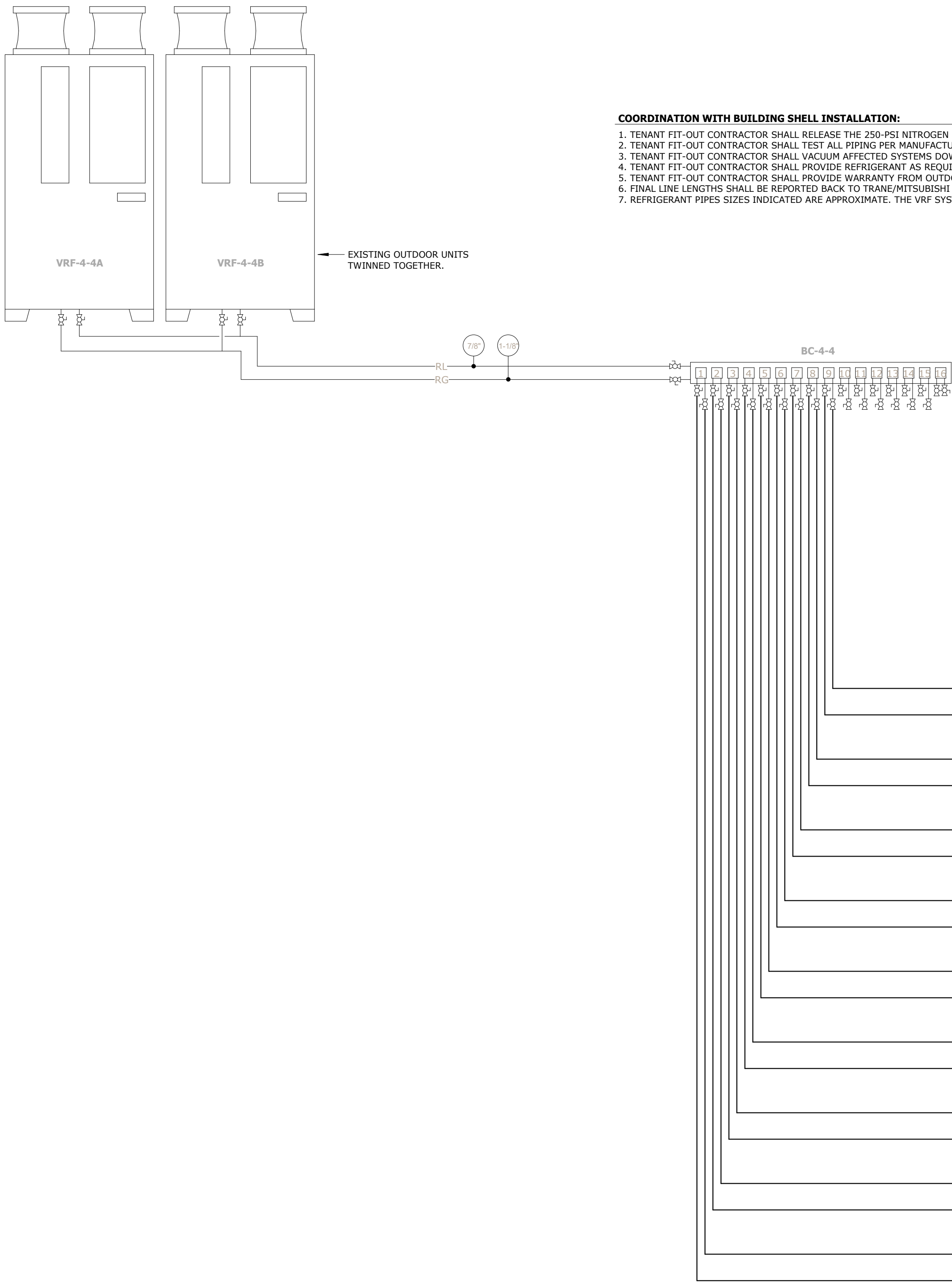
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23 81 20 - VRF SYSTEM #4-4 FAN COIL UNIT SCHEDULE (FCU) - NEW																
NOTES:										OPTIONS/ACCESSORIES:						
1.										1. FURNISH WITH INTEGRAL CONDENSATE LIFT PUMP. 2. FURNISH WITH FILTER BOX AND MERV13 FILTER. 3. FURNISH WITH BACKET INTERFACE AND BELLIE WIRED 1/4 REMOTE CONTROLLER TO MATCH BUILDING STANDARD. 4. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/MB) AND OUTDOOR AMBIENT AIR OF 95°F (DB). 5. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) AND OUTDOOR AMBIENT AIR OF 43°F (DB).						
MARK	MANUFACTURER	MODEL	TYPE	SERVICE	SUPPLY AIR CFM	OUTDOOR AIR CFM	ESP	DESIGN LATENT/ SENSIBLE COOLING MBH	DESIGN HEATING MBH	REFRIGERANT	WEIGHT	ELECTRICAL DATA				OPTIONS/ ACCESSORIES
FCU-4-4.1	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 436-437 (NE EXTERIOR)	1,300	160	0.6"	4.0/29.0	9.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.2	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	ECO WORK CAFE 479,438 (INTERIOR)	1,250	290	0.6"	8.0/19.5	0.0	R-410A	70 LB	208V/1PH	3.4	4.25	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.3	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	ECO WORK CAFE 479, PANTRY 478 (INTERIOR)	1,300	450	0.6"	10.5/37.0	0.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.4	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 472 (SW EXTERIOR)	1,400	115	0.6"	3.5/35.0	9.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.5	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	MEETING ROOM 474 (INTERIOR)	875	100	0.6"	3.0/10.5	0.0	R-410A	60 LB	208V/1PH	2.3	4.38	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.6	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	ROOM 460, 467-468, 476 (INTERIOR)	875	75	0.6"	1.5/14.5	0.0	R-410A	60 LB	208V/1 PH	2.3	4.38	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.7	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	MEETING ROOM 440 (INTERIOR)	475	65	0.6"	2.0/8.0	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.8	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	WORK ROOM 438, 469 (INTERIOR)	475	80	0.6"	2.5/7.5	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER 1,2,3,4,5
FCU-4-4.9	DAIKIN	FEH250A144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 436,441 (NE EXTERIOR)	1,300	150	0.6"	4.0/29.5	0.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER 1,2,3,4,5

SUM: 39.0 MBHcooling / 190.5 MBHheating / 229.0 MBHtotal / 19.0 MBHcooling / 1485 CFM OA

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-4 OUTDOOR HEAT RECOVERY UNIT SCHEDULE (VRF) - FOR REFERENCE																		
NOTES:			OPTIONS/ACCESSORIES:															
1.			1.															
MARK	MANUFACTURER	MODEL	COOLING PERFORMANCE (BASED ON 95°F AMBIENT)					HEATING PERFORMANCE (BASED ON 47°F DB/43°F WB)					ELECTRICAL DATA					
			NOMINAL COOLING TONS	AMBIENT TEMPERATURE		EER / EER @ AHRI	NOMINAL HEATING MBH	AMBIENT TEMPERATURE		COP / SCHE @ AHRI	REFRIGERANT TYPE	VOLTS/ PHASE	SCCR	MCA	MOCP	DISCONNECT BY	ASSOCIATED INDOOR UNITS	WEIGHT
VRF-4-4A	DAIKIN	PURV-P96YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5kA	15	20	EXISTING	SEE DIAGRAM	600 LBS
VRF-4-4B	DAIKIN	PURV-P96YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5kA	15	20	EXISTING	SEE DIAGRAM	600 LBS

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-4 INDOOR BRANCH CONTROLLER SCHEDULE (BC) - FOR REFERENCE															
NOTES:										OPTIONS/ACCESSORIES:					
1.										1.					
MARK	MANUFACTURER	MODEL	# OF BRANCHES	SOLENOID VALVE SWITCHING SOUND PRESSURE LEVEL	MAX INDOOR UNIT CAPACITY CONNECTABLE TO 1 BRANCH	REFRIGERANT TYPE	ELECTRICAL DATA						ASSOCIATED INDOOR & OUTDOOR UNITS	WEIGHT	
							CURRENT COOLING	HEATING	POWER COOLING	HEATING	VOLTS/ PHASE	MCA			MOCP
BC-4-4	MITSUBISHI ELECTRIC	CMB-P1016NU-JA1	16	56 db	54 MBH	R-410A	1.25 A	0.66 A	0.26 KW	0.14 KW	208/1	1.6	20	SEE DIAGRAM	150 LBS



VRF #4-4 SYSTEM DIAGRAM
NO SCALE

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VRF #4-4 SYSTEM
DIAGRAM & SCHEDULES

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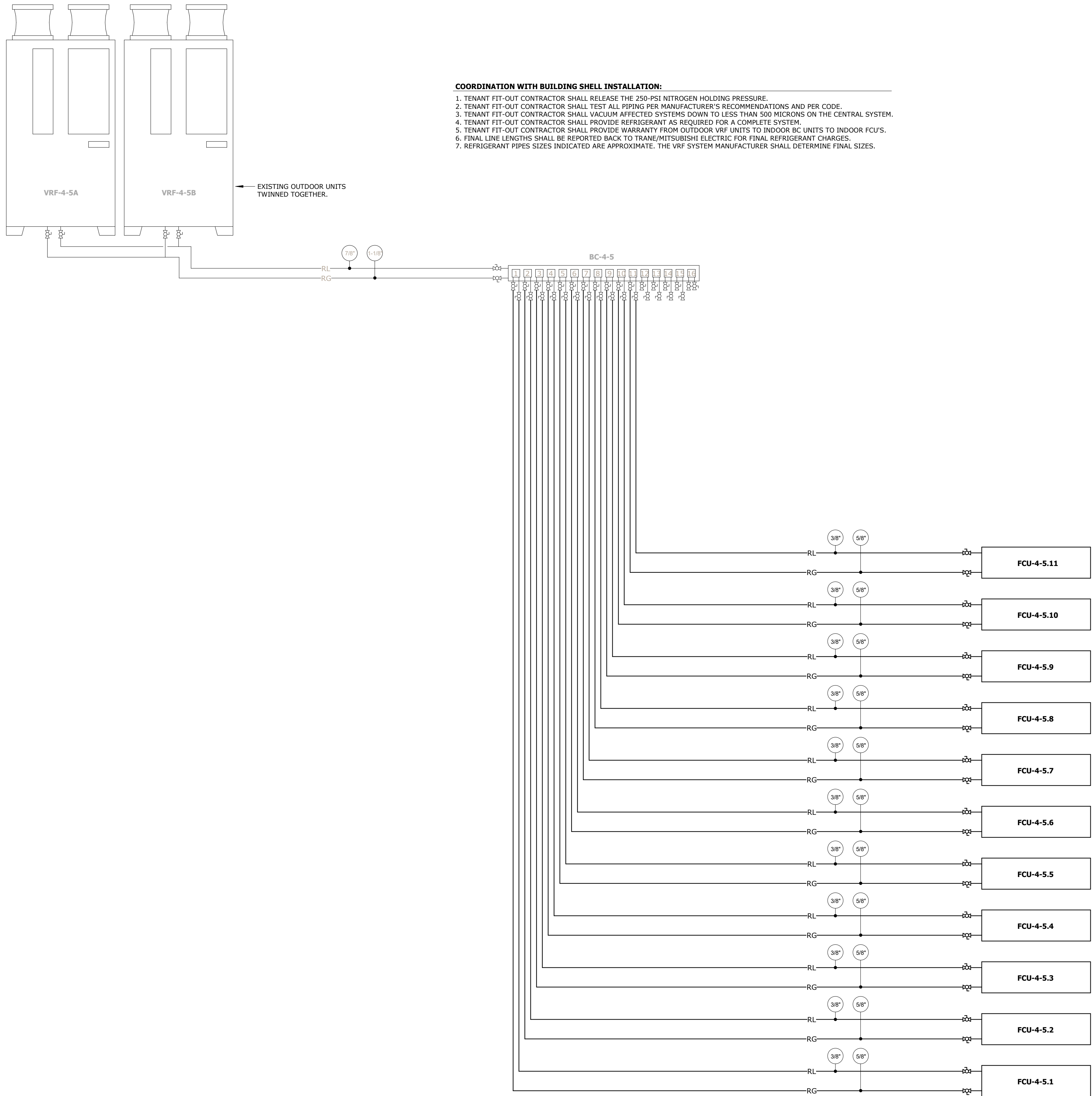
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

23 81 20 - VRF SYSTEM #4-5 FAN COIL UNIT SCHEDULE (FCU) - NEW																	
NOTES: 1.					OPTIONS/ACCESSORIES: 1. FURNISH WITH INTEGRAL CONDENSATE LIFT PUMP. 2. FURNISH WITH FILTER BOX AND MERV13 FILTER. 3. FURNISH WITH BACNET INTERFACE AND DELUXE WIRED MA REMOTE CONTROLLER TO MATCH BUILDING STANDARD. 4. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) AND OUTDOOR AMBIENT AIR OF 95°F (DB). 5. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) AND OUTDOOR AMBIENT AIR OF 43°F (DB).												
MARK	MANUFACTURER	MODEL	TYPE	SERVICE	SUPPLY AIR CFM	OUTDOOR AIR CFM	ESP	DESIGN LATENT/ SENSIBLE COOLING MBH	DESIGN HEATING MBH	REFRIGERANT	WEIGHT	ELECTRICAL DATA			DISCONNECT BY	OPTIONS/ ACCESSORIES	
VOHS/ PHASE	FLA	MCA	MOCp														
FCU-4-5.1	MITSUBISHI ELECTRIC	TPEFY018MA145A	CEILING-CONCEALED (DUCTED)	MEETING ROOM 473 (INTERIOR)	875	85	0.6"	3.0/9.5	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.2	MITSUBISHI ELECTRIC	TPEFY015MA144A	CEILING-CONCEALED (DUCTED)	HUDDLE 466, 470-471 (INTERIOR)	490	55	0.6"	2.0/7.5	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.3	MITSUBISHI ELECTRIC	TPEFY054MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 465, 472 (SW EXTERIOR)	1,400	70	0.6"	2.0/33.5	9.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.4	MITSUBISHI ELECTRIC	TPEFY048MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 465 (INTERIOR)	1,300	245	0.6"	6.5/19.0	0.0	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.5	MITSUBISHI ELECTRIC	TPEFY030MA145A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 465 (INTERIOR)	1,250	200	0.6"	5.0/17.0	0.0	R-410A	70 LB	208V/1 PH	3.4	4.25	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.6	MITSUBISHI ELECTRIC	TPEFY030MA145A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 441, 465 (INTERIOR)	1,250	110	0.6"	3.0/17.0	0.0	R-410A	70 LB	208V/1 PH	3.4	4.25	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.7	MITSUBISHI ELECTRIC	TPEFY054MA144A	CEILING-CONCEALED (DUCTED)	OPEN OFFICE 441, 442 (NE EXTERIOR)	1,400	130	0.6"	3.0/31.0	8.5	R-410A	90 LB	208V/1PH	3.5	4.38	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.8	MITSUBISHI ELECTRIC	TPEFY012MA144A	CEILING-CONCEALED (DUCTED)	HUDDLE 443, WORK ROOM 474 (INTERIOR)	370	75	0.6"	2.5/7.0	0.0	R-410A	50 LB	208V/1PH	2.3	2.13	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.9	MITSUBISHI ELECTRIC	TPEFY018MA145A	CEILING-CONCEALED (DUCTED)	QUIET ROOM 448 (INTERIOR)	875	60	0.6"	2.0/10.5	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.10	MITSUBISHI ELECTRIC	TPEFY012MA144A	CEILING-CONCEALED (DUCTED)	HUDDLE 446-447, QUIET ROOM 450, CORRIDOR 451 (INTERIOR)	370	60	0.6"	1.5/6.5	0.0	R-410A	50 LB	208V/1PH	2.3	2.13	15	MANUFACTURER	1,2,3,4,5
FCU-4-5.11	MITSUBISHI ELECTRIC	TPEFY015MA144A	CEILING-CONCEALED (DUCTED)	QUIET ROOM 452,454, MEETING 455, HUDDLE 464 (INTERIOR)	490	85	0.6"	3.0/9.5	0.0	R-410A	60 LB	208V/1PH	2.3	2.88	15	MANUFACTURER	1,2,3,4,5

SUM: 33.5 MBHcooling / 168.0 MBHheating / 201.0 MBHtotal / 18.0 MBHcooling / 1175 CFM OA

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-5 OUTDOOR HEAT RECOVERY UNIT SCHEDULE (VRF) - FOR REFERENCE																
NOTES:										OPTIONS/ACCESSORIES:						
1.										1.						
MARK	MANUFACTURER	MODEL	COOLING PERFORMANCE (BASED ON 95°F AMBIENT)				HEATING PERFORMANCE (BASED ON 47°F DB/43°F WB)				ELECTRICAL DATA					
			NOMINAL COOLING TONS	AMBIENT TEMPERATURE LOW	AMBIENT TEMPERATURE HIGH	EER/IEER @ AHRI	NOMINAL HEATING MBH	AMBIENT TEMPERATURE LOW	AMBIENT TEMPERATURE HIGH	COP/SCHE @ AHRI	REFRIGERANT TYPE	VOLTS/ PHASE	SCCR	MCA	MOCP	DISCONNECT BY
VRF-4-5A	MITSUBISHI ELECTRIC	PURY-P06YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5kA	15	20	EXISTING
VRF-4-5B	MITSUBISHI ELECTRIC	PURY-P06YNU-A	8	23°F	126°F	12.8/25.5	108	-4°F	60°F	3.88/23.5	R-410A	460/3	5kA	15	20	EXISTING

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-5 INDOOR BRANCH CONTROLLER SCHEDULE (BC) - FOR REFERENCE																
NOTES:										OPTIONS/ACCESSORIES:						
1.										1.						
MARK	MANUFACTURER	MODEL	# OF BRANCHES	SOLENOID VALVE SWITCHING SOUND PRESSURE LEVEL	MAX INDOOR UNIT CAPACITY CONNECTABLE TO 1 BRANCH	REFRIGERANT TYPE	CURRENT INPUT				POWER INPUT				ASSOCIATED INDOOR & OUTDOOR UNITS	
							COOLING	HEATING	COOLING	HEATING	COOLING	HEATING	VOLTS/ PHASE	MCA	MOCP	WEIGHT
BC-4-5	MITSUBISHI ELECTRIC	CMB-P1016NU-JA1	16	56 dB	54 MBH	R-410A	1.25 A	0.66 A	0.26 KW	0.14 KW	208/1	1.6	20		SEE DIAGRAM	150 LBS



VRF #4-5 SYSTEM DIAGRAM
NO SCALE

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Connection Pod

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TDLR# TABS2025004935

Allstate PN: TX-5189-2024-4

ISSUED FOR:

75% Review 13 November 2024
Permit 22 November 2024



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Checked By MUS

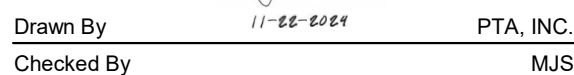
VRF #4-5 SYSTEM
DIAGRAM & SCHEDULES

M3.5

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Allstate PN: TX-5189-2024-4

75% Review	13 November 2024
Permit	22 November 2024



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SUM: 19.5 MBH_{latent} / 186.0 MBH_{sensible} / 205.5 MBH_{total} / 39.0 MBH_{heating} / 640 CFM OA

23 81 20 - EXISTING VARIABLE REFRIGERANT FLOW SYSTEM #4-6 INDOOR BRANCH CONTROLLER SCHEDULE (BC) - FOR REFERENCE

NOTES:							OPTIONS/ACCESSORIES:										
1.							1.										
MARK	MANUFACTURER	MODEL	# OF BRANCHES	SOLENOID VALVE SWITCHING SOUND PRESSURE LEVEL		MAX INDOOR UNIT CAPACITY CONNECTABLE TO 1 BRANCH		REFRIGERANT TYPE	ELECTRICAL DATA							ASSOCIATED INDOOR & OUTDOOR UNITS	WEIGHT
									CURRENT INPUT		POWER INPUT		VOLTS/ PHASE	MCA	MOPC		
									COOLING	HEATING	COOLING	HEATING					
BC-4-6	MITSUBISHI ELECTRIC	CMB-P1016NU-JA1	16	56 dB		1.25 A	0.66 A	R-410A	1.25 A	0.66 A	0.26 KW	0.14 KW	208/1	1.6	20	SEE DIAGRAM	150 LBS



Autodesk Docs://Allstate DFW Connection Pod/062-24-01 MFP R24.rvt

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

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23 22 10 - GRILLE AND DIFFUSER SCHEDULE

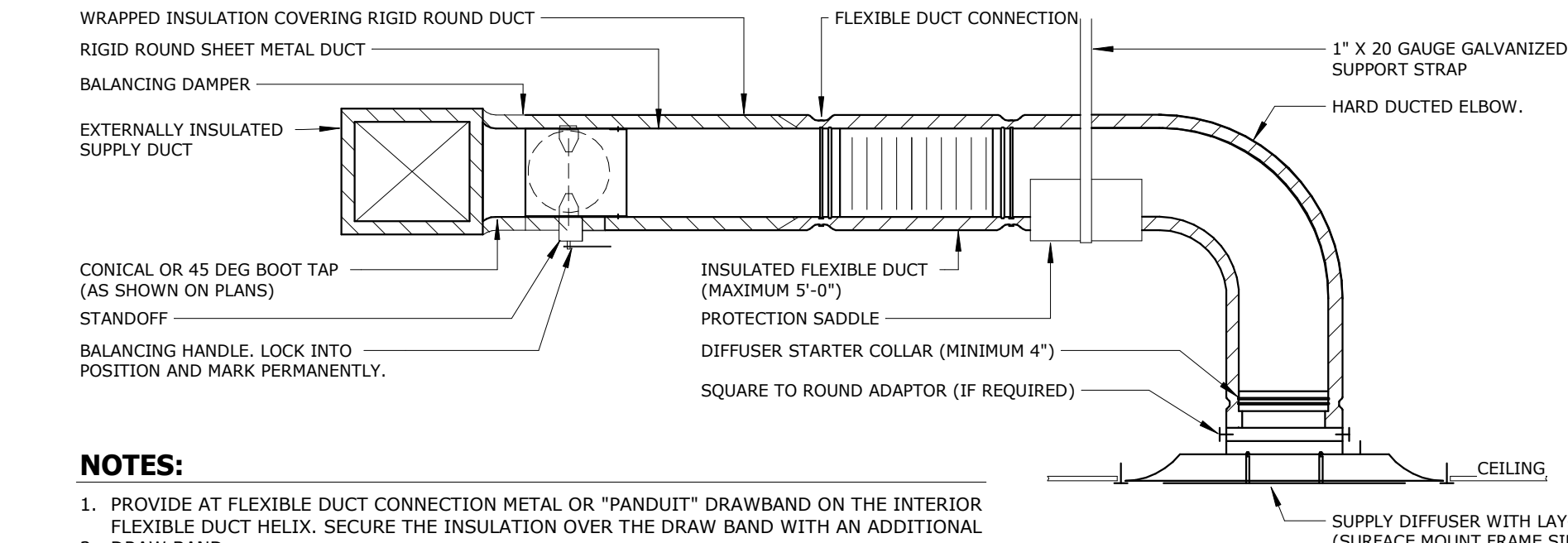
NOTES: APPLICABLE TO EACH MARK

- COLOR SHALL BE WHITE UNLESS NOTED OTHERWISE.
- ORIENT GRILLE BLADES PARALLEL TO LONG DIMENSION FOR CEILING APPLICATIONS, ORIENT PARALLEL WITH FLOOR FOR WALL MOUNTED APPLICATIONS.
- SHEET METAL, VISIBLE THROUGH THE GRILLE COILS SHALL BE PAINTED BLACK.
- DIFFUSERS TAGGED "XS", "XE", AND "XR" ARE EXISTING FIXTURES. CLEAN TO LIKE NEW CONDITION. BALANCE AIRFLOW AS INDICATED.

OPTIONS/ACCESSORIES:

- MANUFACTURER SHALL FURNISH SURFACE MOUNTED REGISTERS AND GRILLES WITH STANDARD FLAT 1-1/4" THICK BORDER.
- FURNISH WITH INTEGRAL OPPOSED BLADE DAMPER.
- FURNISH WITH INSULATED PLENUM.

MARK	SERVICE	PRICE MODEL #	OVERALL SIZE	NECK SIZE	THROW TYPE	MOUNTING TYPE	MAX FLOW	MAX NC	OPTIONS/ACCESSORIES
GS12/12	SUPPLY		14"x14"	12"x12"	DOUBLE DEFLECTION	SURFACE/DUCT	750 CFM	30	
CS8	SUPPLY	SPD	24"x24"	8" DIA	4 WAY	SURFACE	330 CFM	25	2
EL6	SUPPLY	SCD	24"x24"	6" DIA	4 WAY	LAY-IN	210 CFM	25	
EL8	SUPPLY	SCD	24"x24"	8" DIA	4 WAY	LAY-IN	340 CFM	25	
EL10	SUPPLY	SCD	24"x24"	10" DIA	4 WAY	LAY-IN	490 CFM	25	
ES6	SUPPLY	SCD	24"x24"	6" DIA	4 WAY	SURFACE	210 CFM	25	2
ES8	SUPPLY	SCD	24"x24"	8" DIA	4 WAY	SURFACE	340 CFM	25	2
ES10	SUPPLY	SCD	24"x24"	10" DIA	4 WAY	SURFACE	490 CFM	25	2
GS12/6	SUPPLY	520/F/S	11.75"x7.75"	10"x6"	DOUBLE DEFLECTION	WALL	255 CFM	25	2
GS12/8	SUPPLY	520/F/S	13.75"x9.75"	12"x8"	DOUBLE DEFLECTION	WALL/DUCT	450 CFM	25	2
GW10/6	SUPPLY	520/F/S	11.75"x7.75"	10"x6"	DOUBLE DEFLECTION	WALL	255 CFM	25	2
XS10	SUPPLY	EXISTING	-	10" DIA		CEILING/SURFACE	400 CFM	25	
HR48	RETURN	SDR100	48"L x 4"W x 2"H	-	1-SLOT	CEILING/SURFACE	300 CFM	25	
HS6	SUPPLY	ASPI215	48"L x 4" W x 12"H	6" DIA	1-SLOT	CEILING/SURFACE	150 CFM	25	2,3
HS8	SUPPLY	ASPI215	48"L x 7-5/16"W x 16"H	8" DIA	2-SLOT	CEILING/SURFACE	250 CFM	25	2,3
PL10	RETURN	80	24"x12"	22" x 10"	-	LAY-IN	960 CFM	25	
PL22	RETURN	80	24"x24"	22" x 22"	-	LAY-IN	2000 CFM	25	
PS10	EXHAUST	80	24"x12"	22" x 10"	-	SURFACE	960 CFM	25	
PS22	RETURN	80	24"x24"	22" x 22"	-	SURFACE	2000 CFM	25	
UC10/10	EXHAUST	535/F/L	12"x12"	10"x10"		CEILING	310 CFM	25	
UC22/10	EXHAUST	535/F/L	24"x12"	22"x10"		CEILING	750 CFM	25	
XE24/12	EXHAUST	EXISTING	26"x14"	24"x12"		CEILING	750 CFM	25	
XE12/12	EXHAUST	EXISTING	14"x14"	12"x12"		SURFACE	310 CFM	25	

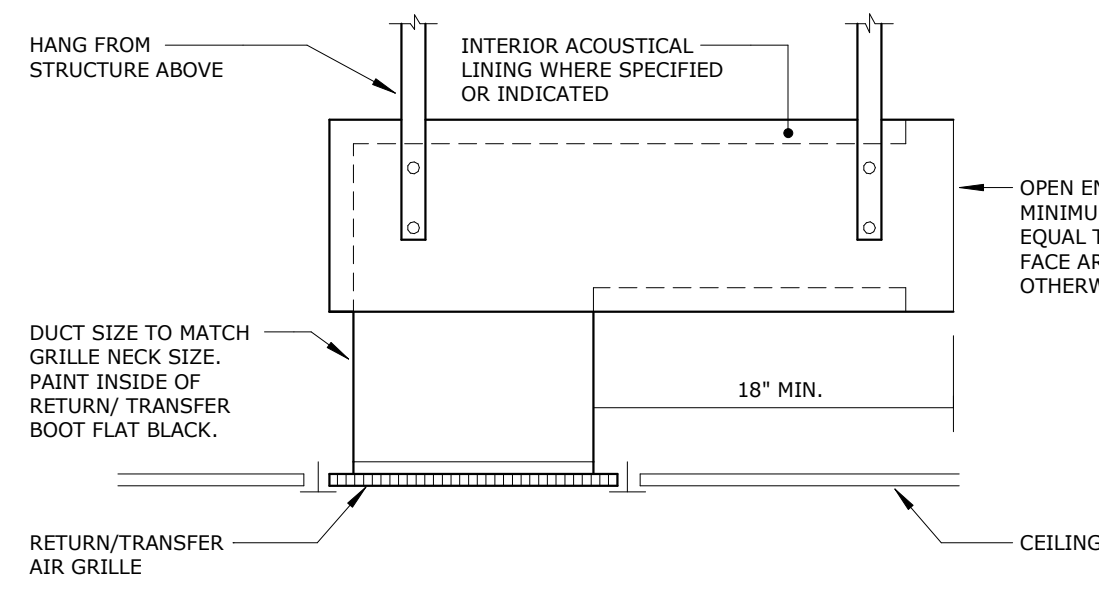


NOTES:

- PROVIDE AT FLEXIBLE DUCT CONNECTION METAL OR "PANOUT" DRAWBAND ON THE INTERIOR FLEXIBLE DUCT HELIX. SECURE THE INSULATION OVER THE DRAW BAND WITH AN ADDITIONAL 2. DRAW BAND.
- PROVIDE BEADING ON ROUND METAL DUCT 12" OR LARGER IN DIAMETER.
- PROVIDE MINIMUM 4" COLLARS FOR ATTACHMENT OF THE FLEXIBLE DUCT TO ROUND DUCT, DAMPERS AND DIFFUSERS.
- BAND RIGID ROUND DUCT INSULATION TO DUCT AND PROVIDE TAPE FOR INSULATION OVERLAP.

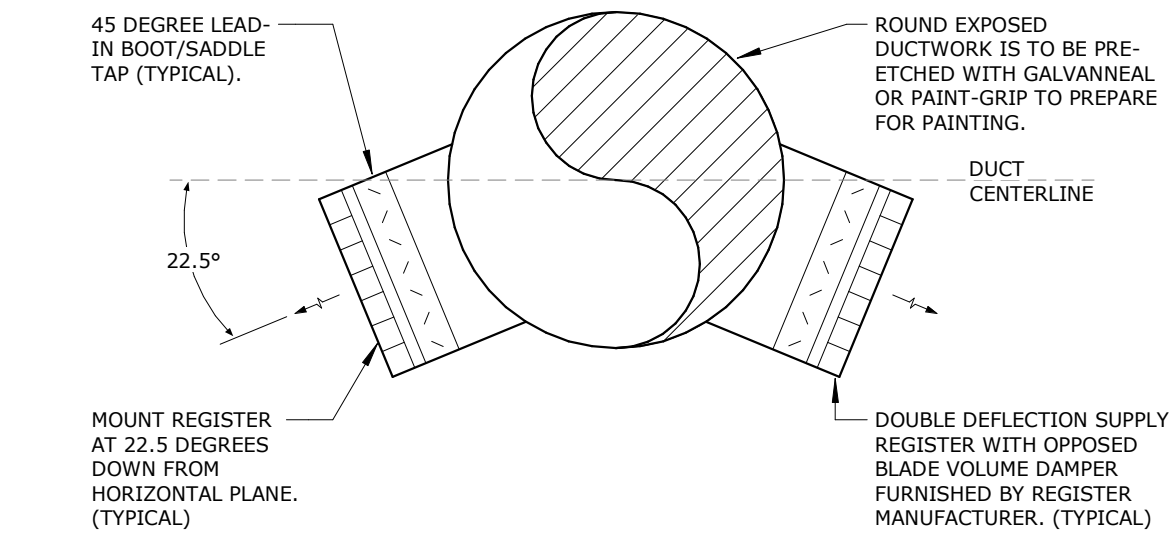
10 SUPPLY AIR DIFFUSER CONNECTION DETAIL

NO SCALE



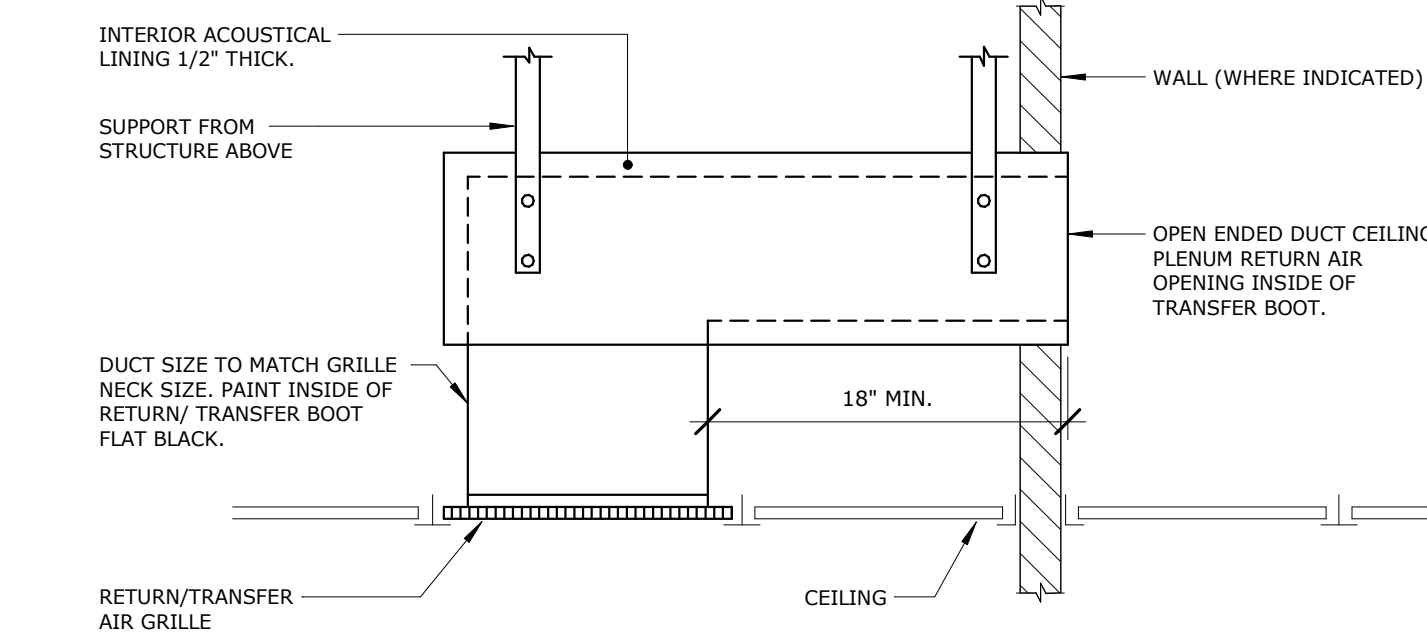
7 RETURN/TRANSFER AIR BOOT DETAIL

NO SCALE



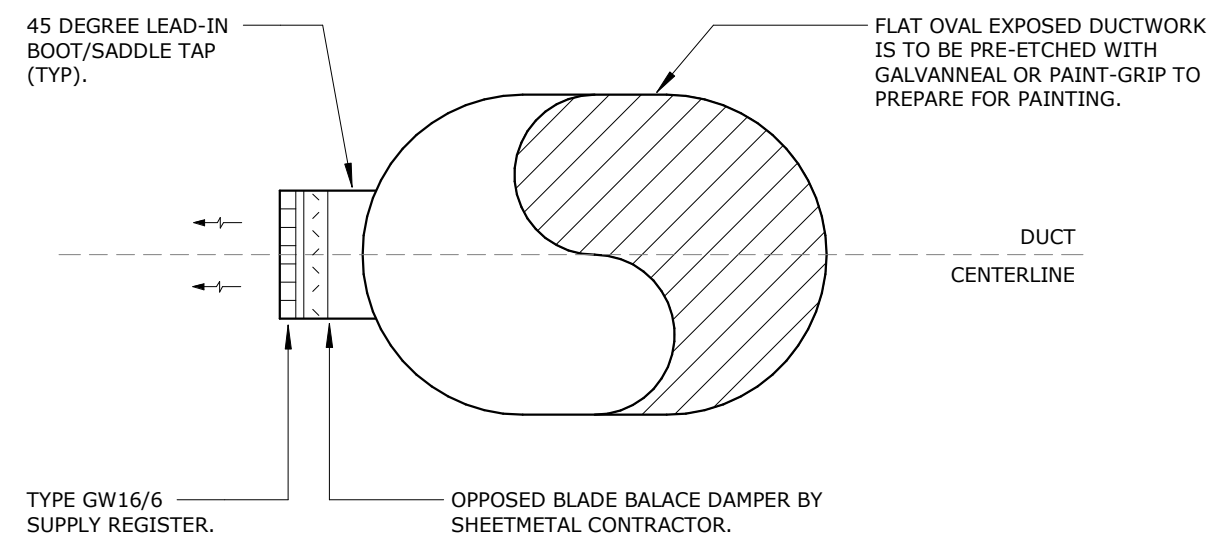
5 DUCT MOUNTED SUPPLY REGISTER DETAIL

NO SCALE



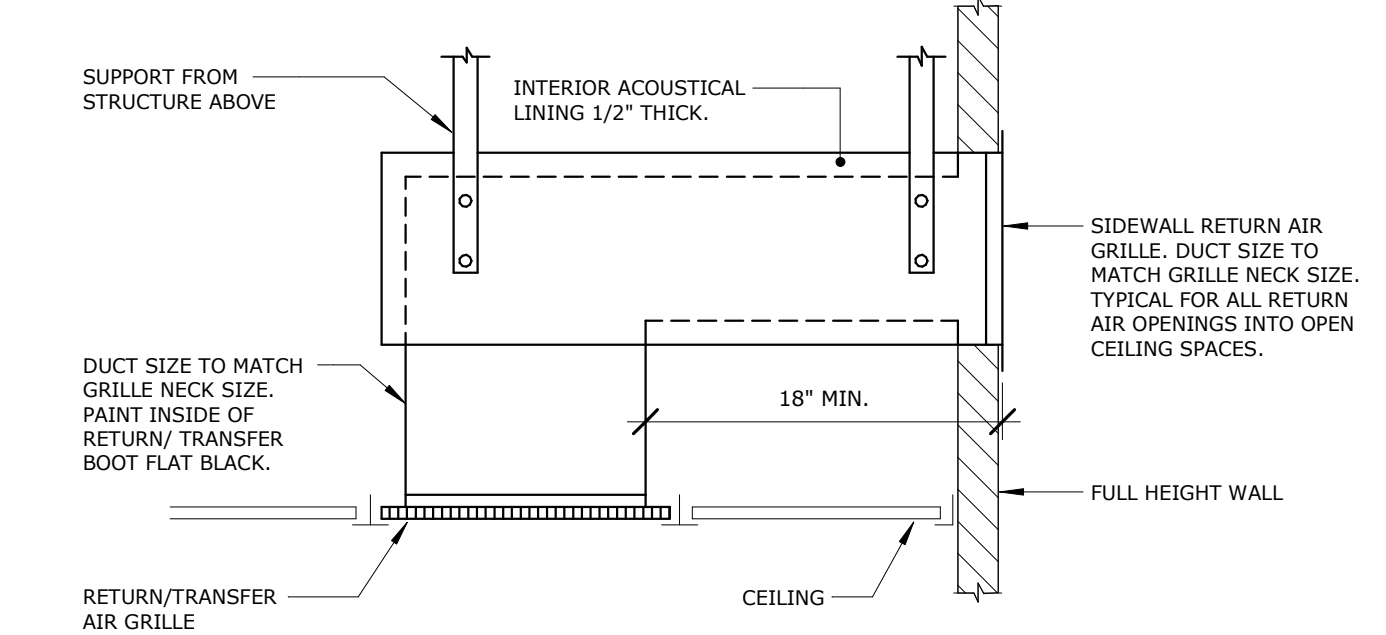
8 RETURN/TRANSFER AIR BOOT DETAIL (THRU WALL)

NO SCALE



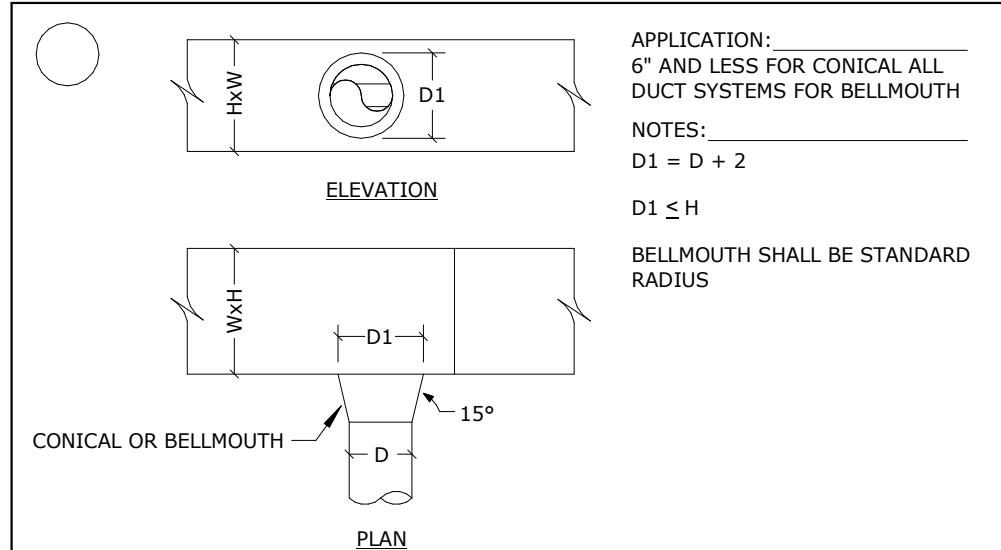
6 DUCT MOUNTED SUPPLY REGISTER DETAIL - FLAT OVAL

NO SCALE



9 RETURN/TRANSFER AIR BOOT DETAIL - SIDEWALL GRILLE

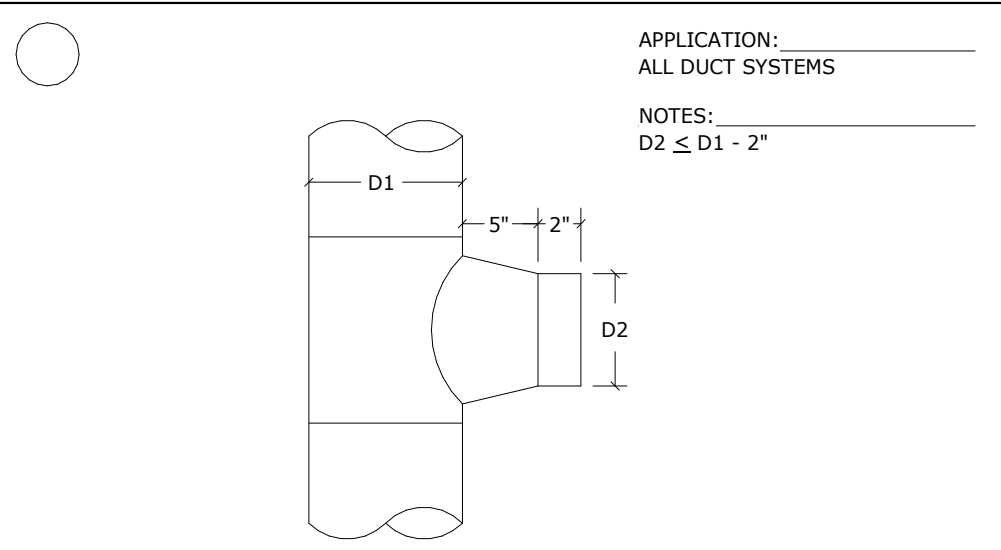
NO SCALE



90 DEGREE BRANCH CONICAL OR BELLMOUTH TAKEOFF

(ROUND BRANCH OFF RECTANGULAR MAIN)

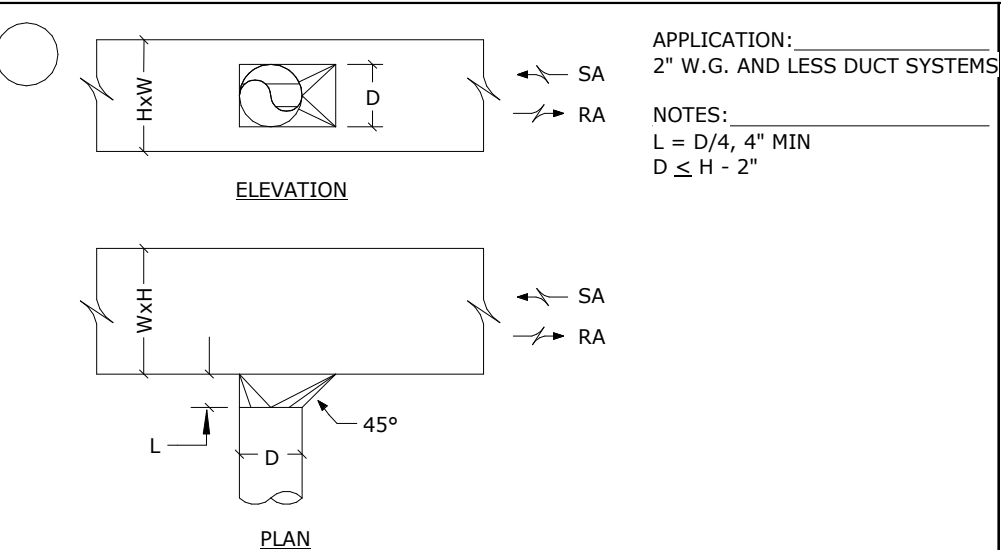
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90 DEGREE BRANCH CONICAL TAKEOFF

(ROUND/FLAT OVAL DUCT)

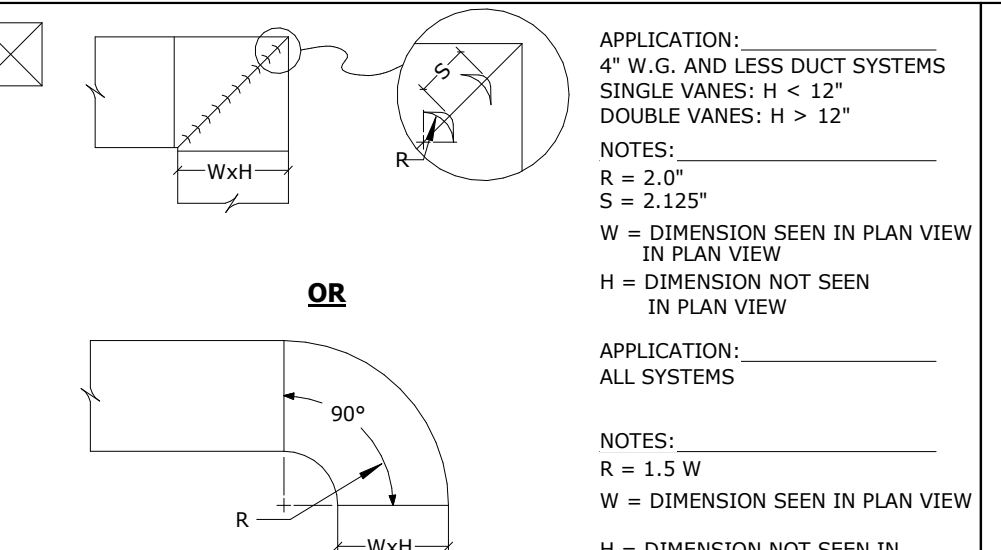
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90 DEGREE BRANCH TAKEOFF

(ROUND BRANCH DUCT OFF RECTANGULAR MAIN)

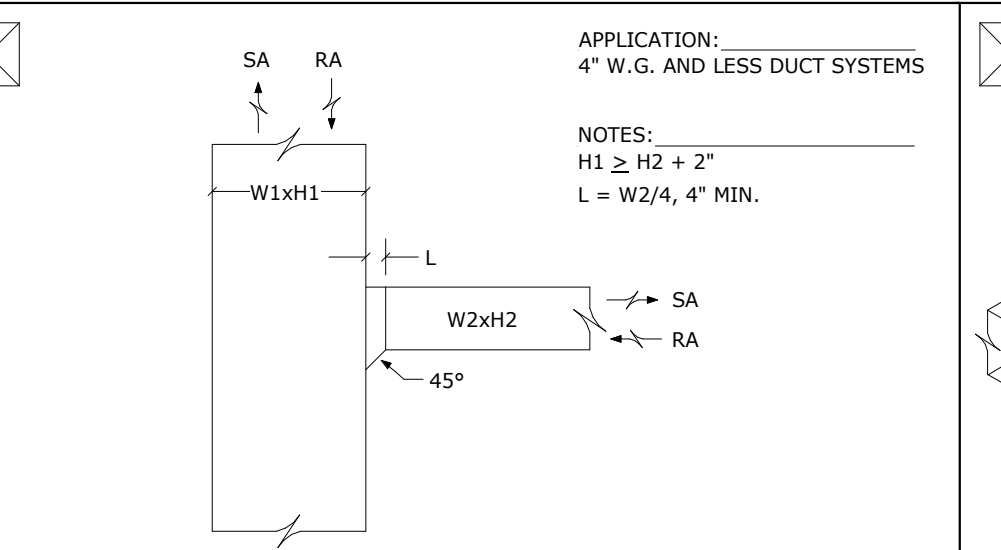
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90 DEGREE ELBOW

(RECTANGULAR DUCT)

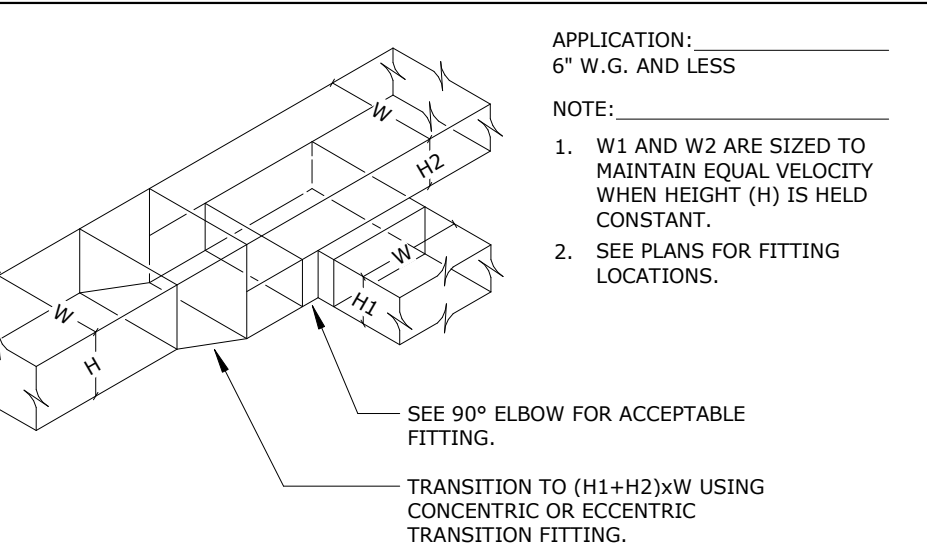
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90 DEGREE BRANCH TAKEOFF

(RECTANGULAR MAIN, RECTANGULAR BRANCH)

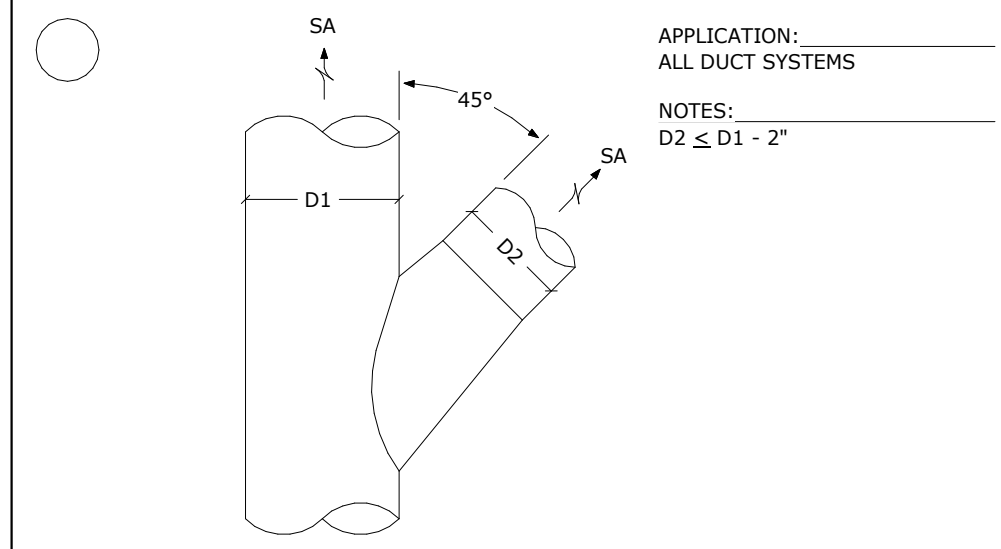
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TWO-WAY SPLIT

(1) 90 DEGREE BOTTOM, (1) STRAIGHT TOP

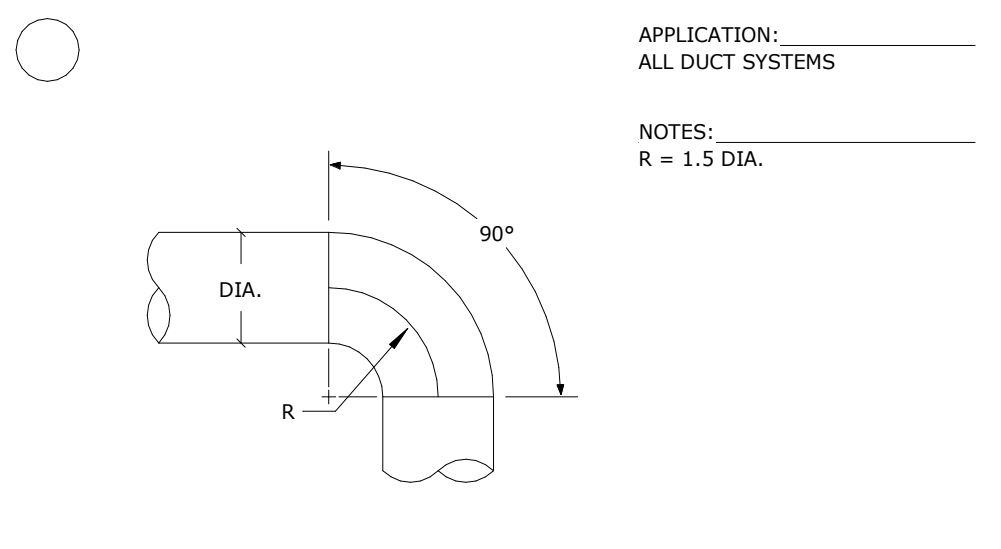
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45 DEGREE CONICAL LATERAL TAKEOFF

(ROUND/FLAT OVAL DUCT)

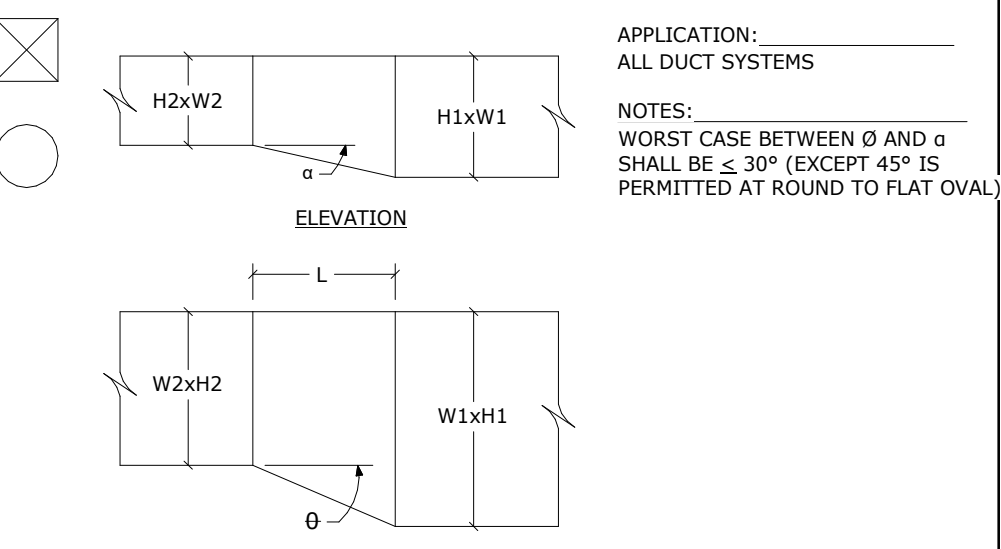
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90 DEGREE ELBOW

(ROUND DUCT)

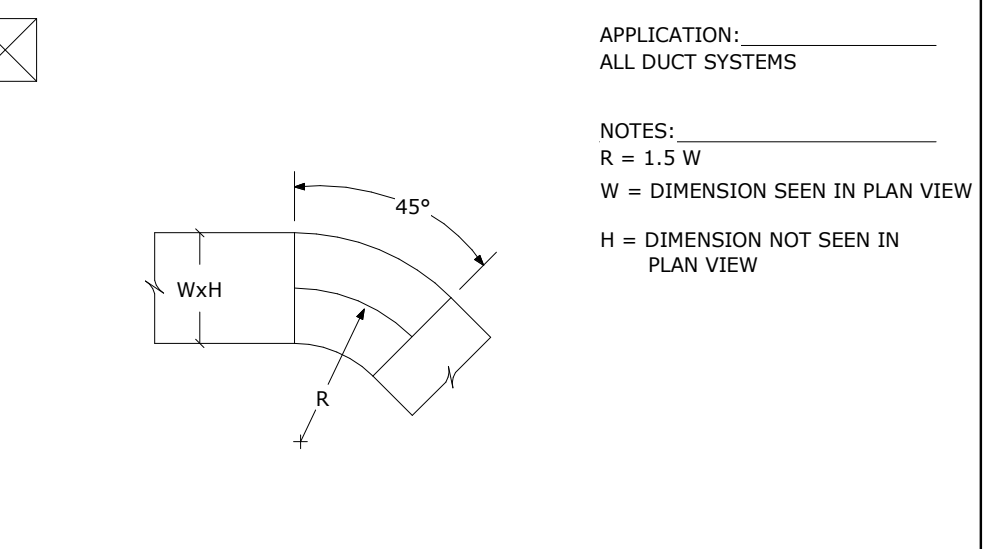
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ECCENTRIC TRANSITION

(RECTANGULAR SHOWN - ALSO APPLIES TO ROUND DUCT)

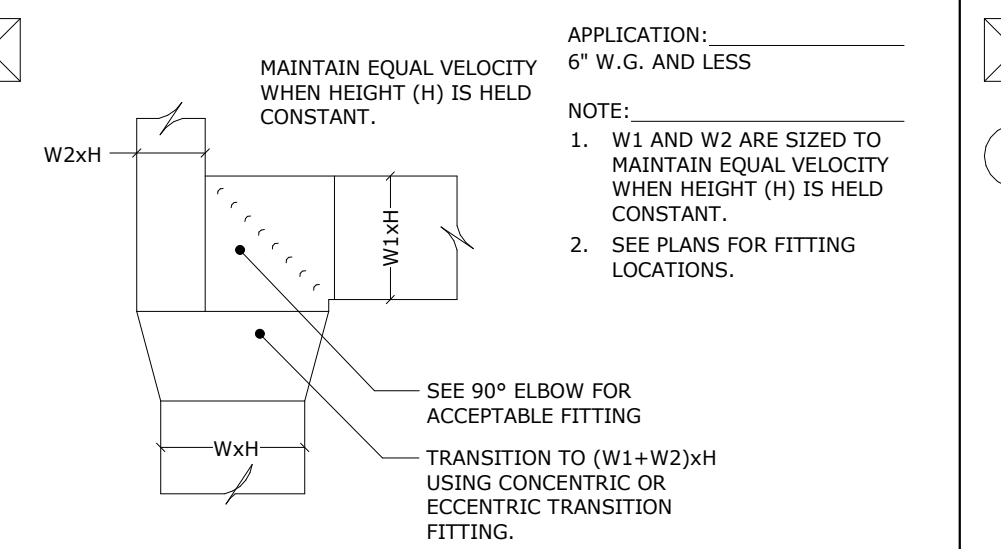
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45 DEGREE ELBOW

(RECTANGULAR DUCT)

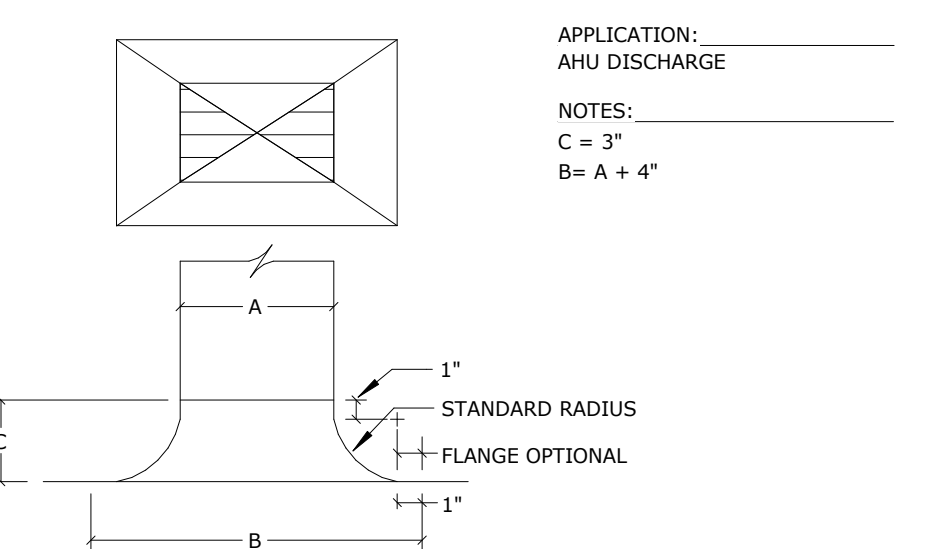
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TWO-WAY SPLIT

(1) 90 DEGREE, (1) STRAIGHT (SIDE x SIDE)

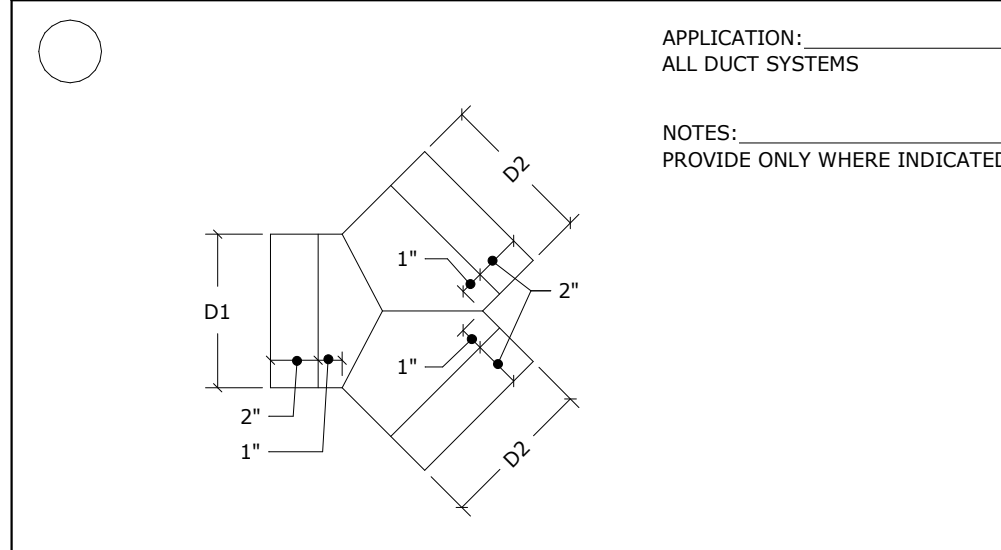
NOT TO SCALE



STANDARD BELLMOUTH

(RECTANGULAR SHOWN - ALSO APPLIES TO ROUND DUCT)

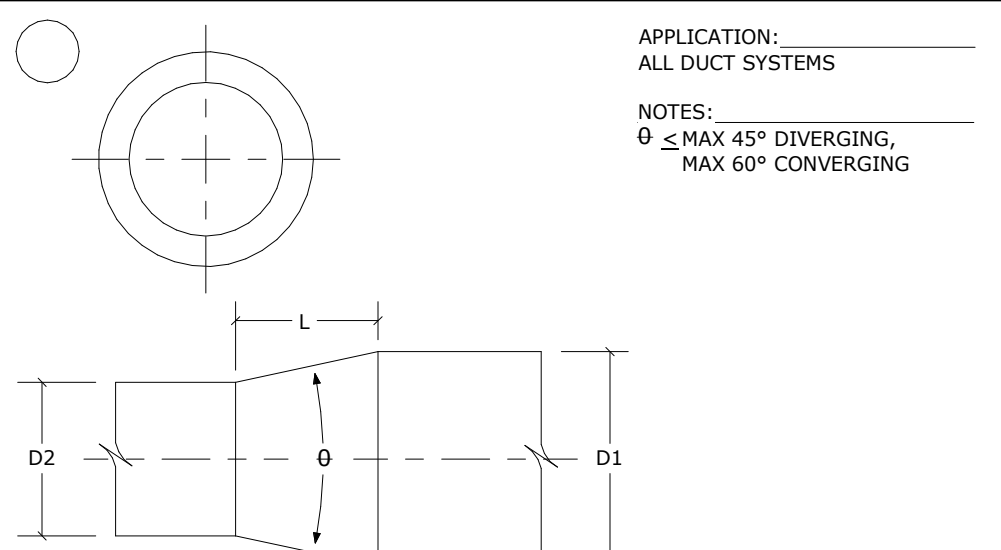
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TWO-WAY SPLIT

(2) 45 DEGREE (90 DEGREES TOTAL)

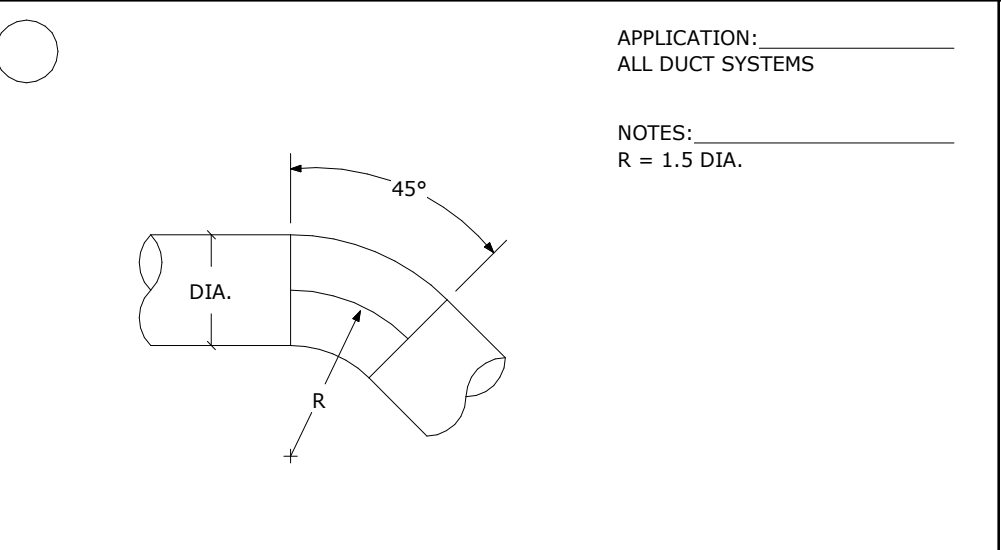
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ROUND CONCENTRIC TRANSITION

(RECTANGULAR SHOWN - ALSO APPLIES TO ROUND DUCT)

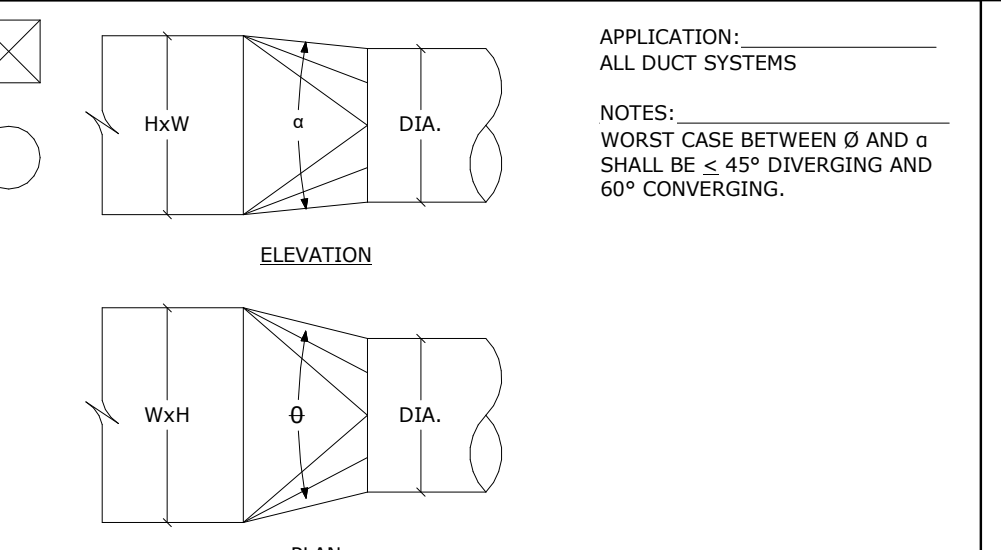
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45 DEGREE ELBOW

(ROUND DUCT)

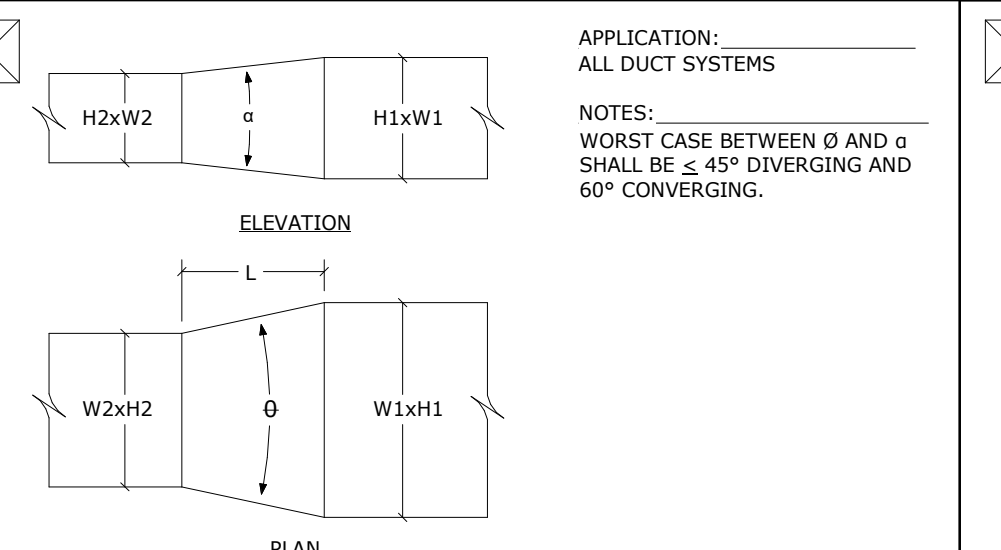
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RECTANGULAR TO ROUND TRANSITION

(RECTANGULAR SHOWN - ALSO APPLIES TO ROUND DUCT)

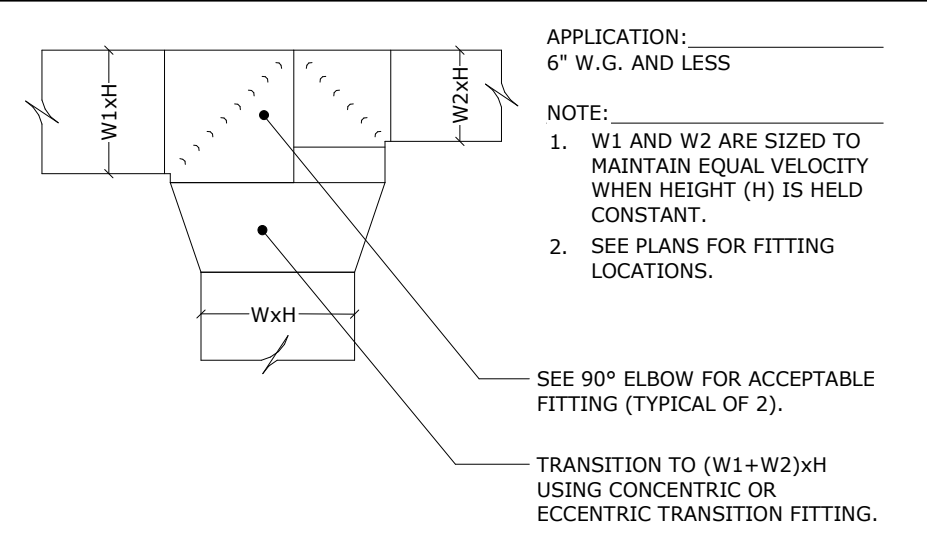
NOT TO SCALE



RECTANGULAR CONCENTRIC TRANSITION

(RECTANGULAR SHOWN - ALSO APPLIES TO ROUND DUCT)

NOT TO SCALE



TWO-WAY SPLIT

(2) 90 DEGREE (180 DEGREES TOTAL)

NOT TO SCALE

DUCTWORK FITTINGS DETAIL

GENERAL NOTES:

- SEE SPECIFICATIONS FOR DUCT MATERIALS, GAUGES, AND PERFORMANCE REQUIREMENTS.
- DEFAULT TO SMACNA REQUIREMENTS FOR ANY DISCREPANCIES BETWEEN THIS DETAIL AND SMACNA.
- RECTANGULAR DUCT SIZES ARE SHOWN AS THE "LENGTH OF THE SIDE SEEN" BY THE "LENGTH OF SIDE INTO THE PAGE."
- THE SYMBOL "○" LOCATED IN THE UPPER LEFT HAND CORNER OF EACH FITTING BOX INDICATES FITTINGS APPLIES TO ROUND OR FLAT OVAL DUCT SYSTEMS.
- THE SYMBOL "□" LOCATED IN THE UPPER LEFT HAND CORNER OF EACH FITTING BOX INDICATES FITTINGS APPLIES TO RECTANGULAR DUCT SYSTEMS.
- NO DOVETAILS OR SPIN-IN STRAIGHT SADDLES.

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TDLR# TABS2025004935

Allstate PN: TX-5189-2024-4

ISSUED FOR:

75% Review 13 November 2024
Permit 22 November 2024



Drawn By PTA, INC.
Checked By MJS

MECHANICAL SCHEDULES
& DETAILS - DUCTWORK

M3.7

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DOAS 2 (WEST) ASHRAE STANDARD 62.1 - VENTILATION RATE PROCEDURE							
ROOM NAME & NUBMER	VRF Unit	AREA SQFT (Az)	ZONE POPULATION (Pz)	CFM/ PERSON Rp	CFM/ SQFT Ra	Vbz (D)(Pz)(Rp)+(Az)(Ra)	OA REQ'D, CFM
NGLS 428	1	814	5	5.0	0.06	57	57
National Subro Evidence Storage 427	1	363	1	5.0	0.06	23	23
Food Vendor equipment 480 & Storage 481	1	235	0	5.0	0.06	14	14
Pantry 424	1	1725	36	5.0	0.12	268	268
Central Square 422	1	629	24	5.0	0.12	116	116
NGLS 428	1	846	5	5.0	0.06	59	59
Secure Storage 429	1	356	0	5.0	0.06	21	21
NGLS Storage 430	1	142	0	5.0	0.06	9	9
Enterprise Badging Office 426	1	444	3	5.0	0.06	32	32
Corridor 425, Corridor 431	1	732	0	0.0	0.06	44	44
Quiet room 418	1	60	1	5.0	0.06	5	5
Quiet room 417	1	60	1	5.0	0.06	5	5
Furniture Storage 416	1	300	0	5.0	0.06	18	18
Training Room 419	1	571	42	10.0	0.12	211	211
All Gender restroom 415	1	127	0	0.0	0	0	0
Mother's Room 414	1	127	1	5.0	0.06	9	9
Mail Room 413	1	151	1	5.0	0.06	11	11
NG Deployment Storage 433	1	309	0	5.0	0.06	19	19
Vestibule 400	1	586	0	0.0	0.06	35	35
Corridor 411	1	413	0	0.0	0.06	25	25
Open Office 421	2	1001	8	5.0	0.06	74	74
Training Room 420	2	1212	42	10.0	0.12	288	288
NGLS 428	2	894	5	5.0	0.06	62	62
NGLS 428	2	987	4	5.0	0.06	66	66
NG Deployment 432	2	747	8	5.0	0.06	58	58
NG Deployment 432	2	1047	9	5.0	0.06	78	78
Open Office 409	2	785	5	5.0	0.06	56	56
MDF 412	3	228	0	5.0	0.06	14	14
XL Conference 408	3	1070	18	5.0	0.06	95	95
Open Office 409	3	646	10	5.0	0.06	56	56
Global Security command Center 406	3	713	10	5.0	0.06	60	60
Furniture Storage 407	3	365	0	5.0	0.06	22	22
Family Room 403	3	138	4	5.0	0.06	15	15
Security 404	3	153	2	5.0	0.06	13	13
Reception 401	3	1204	6	5.0	0.06	82	82
Lockers/Delivery 402	3	203	0	5.0	0.06	12	12
Legal Office 434	3	591	9	5.0	0.06	51	51
Meeting Room 435	3	685	16	5.0	0.06	68	68
Open Office 437	3	1169	18	5.0	0.06	101	101
Huddle 405	3	115	3	5.0	0.06	12	12
Total			297			2265	2265

OA SUPPLIED BY DOAS (CFM)		3000
SUPPLIED OA > REQUIRED OA ✓		

SYSTEM POPULATION (Ps)	MAX ZONE POPULATION (Pz)	OCCUPANT DIVERSITY, Ps/Pz (D)
101	297	0.34

DESIGN DATA

- CLIMATE ZONE 3A

WINTER CONDITIONS:

- 20.3 F OUTDOOR DRY BULB TEMPERATURE, 58 F OUTDOOR WET BULB TEMPERATURE [WMO #722590 (99.6%)]
- 75 F INDOOR DRY-BULB, INDOOR RELATIVE HUMIDITY 50%
- WINTER GLASS U VALUE: 0.27

SUMMER CONDITIONS:

- 100.4 F OUTDOOR DRY BULB TEMPERATURE, 75 F OUTDOOR WET BULB TEMPERATURE [WMO #722590 (0.4%)]
- 75 F INDOOR DRY-BULB, INDOOR RELATIVE HUMIDITY 50%
- SUMMER GLASS U VALUE: 0.30

DOAS 4 (EAST) ASHRAE STANDARD 62.1 - VENTILATION RATE PROCEDURE							
ROOM NAME & NUBMER	VRF Unit	AREA SQFT (Az)	ZONE POPULATION (Pz)	CFM/ PERSON Rp	CFM/ SQFT Ra	Vbz (D)(Pz)(Rp)+(Az)(Ra)	OA REQ'D, CFM
Open Office 437	4	1174	20	5.0	0.06	125	125
Echo Work café 479, Pod Experience coordinator 438	4	1768	39	5.0	0.12	318	318
Storage 462	4	113	0	5.0	0.06	7	7
Echo work café 479	4	1377	14	5.0	0.12	203	203
Echo work café 479	4	1633	38	5.0	0.12	299	299
Open Office 472	4	683	16	5.0	0.06	84	84
Meeting Room 474	4	568	14	5.0	0.06	72	72
Pantry 478	4	129	1	5.0	0.06	10	10
Corridor 460	4	323	0	0.0	0.06	19	19
Copy/Print 476	4	111	1	5.0	0.06	9	9
All Gender restroom 475	4	96	0	0.0	0	0	0
Mother's Room 467	4	104	1	5.0	0.06	9	9
Sound Stage	4	118	3	5.0	0.06	15	15
Meeting Room 440	4	416	10	5.0	0.06	52	52
Work room 439	4	258	5	5.0	0.06	29	29
Work Room 469	4	279	6	5.0	0.06	33	33
Open Office 436	4	1156	18	5.0	0.06	118	118
Meeting Room 473	5	445	13	5.0	0.06	62	62
Huddle 466	5	106	3	5.0	0.06	14	14
Huddle 470	5	108	3	5.0	0.06	15	15
Huddle 471	5	99	3	5.0	0.06	14	14
Open Office 472	5	655	8	5.0	0.06	61	61
Open Office 465	5	1601	31	5.0	0.06	180	180
Open Office 465	5	1406	25	5.0	0.06	152	152
Open Office 465	5	827	14	5.0	0.06	88	88
Open Office 441, open Office 442	5	1159	13	5.0	0.06	105	105
Work Room 444	5	210	6	5.0	0.06	29	29
Huddle 443	5	128	6	5.0	0.06	24	24
Quiet Room 448	5	405	9	5.0	0.06	49	49
huddle 446	5	126	3	5.0	0.06	16	16
Quiet Room 450	5	65	1	5.0	0.06	7	7
Corridor 451	5	211	0	0.0	0.06	13	13
Quiet Room 452	5	54	1	5.0	0.06	6	6
Quiet Room 454	5	82	1	5.0	0.06	8	8
Meeting Room 455	5	235	6	5.0	0.06	30	30
Hudle 464	5	111	4	5.0	0.06	17	17
Huddle 447	5	116	3	5.0	0.06	15	15
Open Office 442	6	867	20	5.0	0.06	106	106
Open office 449	6	950	15	5.0	0.06	98	98
IDF 453	6	188	0	5.0	0.06	11	11
Open Office 461	6	911	21	5.0	0.06	112	112
Wellness 456	6	264	5	20.0	0.06	70	70
Hall 457	6	135	2	20.0	0.06	30	30
Quiet room 458	6	61	1	20.0	0.06	14	14
Quiet room 459	6	60	1	20.0	0.06	14	14
Open Office 463	6	371	5	5.0	0.06	36	36
Open Office 461	6	656	14	5.0	0.06	77	77
Total			423			2874	2874

OA SUPPLIED BY DOAS 4 (CFM)		3000
SUPPLIED OA > REQUIRED OA ✓		

SYSTEM POPULATION (Ps)	MAX ZONE POPULATION (Pz)	OCCUPANT DIVERSITY, Ps/Pz (D)
229	423	0.54

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Allstate PN: TX-5189-2024-4

ISSUED FOR:

75% Review 13 November 2024
Permit 22 November 2024



Drawn By
Checked By

PTA, INC.
MJS

VENTILATION
CALCULATIONS & DESIGN
DATA

M3.8

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NOTE: REFER TO ARCH. SPECS FOR COMMON LEED REQUIREMENTS.

- CITY OF DALLAS CH. 61 GREEN BUILDING NOTES - HVAC
- SEQUENCE OF OPERATIONS
1. GENERAL
- A. THE CONTROLS CONTRACTOR (CC) - ALSO CALLED THE TEMPERATURE CONTROLS CONTRACTOR (TCC) OR BUILDING AUTOMATION CONTRACTOR SHALL PROVIDE ALL NECESSARY SENSORS, PROGRAMMING, TESTING, ADJUSTING DEVICES, MATERIALS, LABOR, ETC., TO FACILITATE IMPLEMENTATION OF THESE SEQUENCES OF OPERATION.
- B. THE TCC SHALL COORDINATE ALL PROGRAMMING WITH THE OWNER. THE TCC SHALL REVIEW WITH THE OWNER ALL FINAL CONTROL PARAMETERS (TIMES, TEMPERATURES, SETPOINTS, ETC.) PRIOR TO THE COMPLETION OF THE PROJECT PROGRAMMING.
- C. ALL SETPOINT VALUES SHOWN HEREIN SHALL BE ADJUSTABLE.
- D. THE BAS SHALL REPORT ANY DETECTED SENSOR FAILURE.
- E. THE BAS SHALL ACCUMULATE RUN TIMES FOR EACH PUMP MOTOR, FAN MOTOR AND EQUIPMENT.
- F. ALL EQUIPMENT IS TO HAVE DDC CONTROLS WITH ELECTRIC ACTUATION, UNLESS INDICATED OTHERWISE.
- G. SUBMITTALS
- (1) THE CONTROLS CONTRACTOR SHALL INCLUDE WRITTEN SEQUENCES OF OPERATION IN THE CONTROLS SUBMITTALS. THE CONTROLS CONTRACTOR SHALL MODIFY THE SEQUENCES TO ACCURATELY REFLECT ANY CHANGES MADE TO THE ENGINEER'S SEQUENCES DURING THE VENDOR'S DETAILED DESIGN OF THE TEMPERATURE CONTROL SYSTEM
2. VARIABLE REFRIGERANT FLOW (VRF) SYSTEM
- A. THE VARIABLE REFRIGERANT FLOW SYSTEM SHALL BE CONTROLLED VIA A MASTER CONTROLLER AND TERMINAL EQUIPMENT CONTROLLERS FURNISHED BY THE VRF MANUFACTURER, INSTALLED AND WIRED BY THE CONTROLS CONTRACTOR. CONTROLLERS SHALL MAKE THE DECISIONS REGARDING COMPRESSOR STAGING, MODULATION OF COMPRESSOR SPEED, CONDENSER FAN STAGING AND SPEED MODULATION AND REFRIGERANT FLOW POSITIONING FOR EACH INDIVIDUAL FAN COIL UNIT TO PROVIDE HEATING OR COOLING (SIMULTANEOUSLY) TO MEET THE SETPOINT TEMPERATURE OF EACH INDIVIDUAL ROOM SENSOR. EACH INDOOR VRF FAN COIL UNIT SHALL RUN CONTINUOUSLY DURING OCCUPIED HOURS.
- B. SERIAL COMMUNICATIONS FOR THE VARIABLE REFRIGERANT FLOW (VRF) SYSTEM SHALL BE PROVIDED BY THE VRF MANUFACTURER FOR CONTROL INTEGRATION INTERFACE (VIA BACNET) BY THE BAS CONTROLS CONTRACTOR.
- C. ROOM TEMPERATURE SENSORS FOR THE VRF SYSTEM INDOOR FAN COIL UNITS SHALL BE FURNISHED BY THE VRF MANUFACTURER AND INSTALLED BY THE CONTROLS CONTRACTOR.
- D. BACNET INTERFACE WITH THE VRF SYSTEM CONTROLLER SHALL ALLOW THE BAS OPERATOR TO MONITOR AND CHANGE SETPOINTS FOR:
- (1) ENABLE/DISABLE INDIVIDUAL INDOOR FAN COIL UNITS TO OPERATE (BASED ON OCCUPIED/UNOCCUPIED SCHEDULE).
- (2) EACH INDOOR FAN COIL UNIT TEMPERATURE SETPOINT.
- (3) EACH INDOOR FAN COIL UNIT ALARM.
- (4) EACH CONDENSING UNIT ALARM.
3. DUCT-MOUNTED SMOKE DETECTORS
- A. DUCT SMOKE DETECTORS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL (SHEETMETAL) CONTRACTOR. WIRING BETWEEN THE DUCT SMOKE DETECTOR AND THE FIRE ALARM SYSTEM IS BY THE ELECTRICAL CONTRACTOR.
- B. SMOKE DETECTOR ACTIVATION SHALL ALSO BE WIRED DIRECTLY TO THE INDOOR FAN COIL UNIT CONTROLLER BY THIS CONTRACTOR. THE CONTROLLER SHALL SHUT DOWN THAT SPECIFIC UNIT'S SUPPLY FAN WHEN SMOKE DETECTOR IS ACTIVATED.

ACOUSTICAL FLEX SCHEDULE									
SIZE		ARRANGEMENT		INSERTION LOSS, DB					
				OCTAVE BAND CENTER FREQUENCY, HZ					
				63	125	250	500	1,000	2,000 4,000
6"	STRAIGHT	1	2	10	11	11	12	8	
8"	STRAIGHT	3	4	10	11	11	11	6	
12"	STRAIGHT	4	5	9	8	10	8	4	
6"	90 DEG ELBOW	1	2	8	12	12	12	9	
8"	90 DEG ELBOW	3	4	9	12	11	11	7	
12"	90 DEG ELBOW	3	4	10	10	10	9	4	

HVAC INSULATION SCHEDULE			
SECTION: FILTERS FOR AIR CONDITIONING SYSTEMS THAT SERVE OCCUPIED SPACES IN MULTI-FAMILY RESIDENTIAL UNITS OR LIGHT COMMERCIAL SPACES SHALL BE RATED AT A MINIMUM R-5 FOR SYSTEMS RATED AT 30,000 BTU/H OR LESS AND MINIMUM R-6 FOR SYSTEMS RATED OVER 30,000BTU/H BUT NOT GREATER THAN 60,000 BTU/H.			
SECTION 804 SPECIFIC INSULATION AIR QUALITY AND POLLUTANT CONTROL MEASURES			
804.2 POST-CONSTRUCTION, PRE-OCCUPANCY BASLINE IAQ TESTING: WHERE THIS SECTION IS INDICATED TO BE APPLICABLE IN TABLE 302.1, AND AFTER ALL INTERIOR FINISHES ARE INSTALLED, THE BUILDING SHALL BE TESTED FOR INSULATION AIR QUALITY AND THE TESTING RESULTS SHALL INDICATE THAT THE LEVELS OF VOCs DO NOT EXCEED A TOTAL AMOUNT OF 500 MICROGRAMS PER CUBIC METER USING TESTING PROTOCOLS IN ACCORDANCE WITH ASTM D 6196, ASTM C 4446, ASTM D 5197, ASTM C 6346, AND ISO 7708. TESTING SAMPLES SHALL BE TAKEN IN NO LESS THAN ONE LOCATION IN EACH 25,000 SQUARE FEET OF FLOOR AREA OR IN EACH CONTIGUOUS FLOOR AREA.			
EXCEPTIONS:			
1. GROUP 1, F-1, 2, H, S, AND U OCCUPANCIES SHALL NOT BE REQUIRED TO COMPLY WITH THIS SECTION.			
2. A BUILDING SHALL NOT BE REQUIRED TO BE TESTED WHERE A SIMILARLY DESIGNED AND CONSTRUCTED BUILDING AS DETERMINED BY THE CODE OFFICIAL, FOR THE SAME OWNER OR TENANT, HAS BEEN TESTED FOR INSULATION AIR QUALITY AND THE TESTING RESULTS INDICATE THAT THE LEVEL OF VOCs DID NOT EXCEED 500 MICROGRAMS PER CUBIC METER.			
3. WHERE THE BUILDING INSURANCE ENVIRONMENT DOES NOT MEET THE CONDITIONS OF 500 MICROGRAMS PER CUBIC METER AND THE TENANT DOES NOT ADDRESS THE AIR QUALITY ISSUE BY MITIGATION AND RETESTING, THE BUILDING SHALL BE FLUSHED OUT BY SUPPLYING CONTINUOUS VENTILATION WITH ALL AIR HANDLING UNITS AT THEIR MAXIMUM OUTDOOR AIR RATE FOR AT LEAST 14 DAYS WHILE MAINTAINING AN INTERNAL TEMPERATURE OF AT LEAST 60°F, AND RELATIVE HUMIDITY NOT HIGHER THAN 60 PERCENT. OCCUPANCY SHALL BE PERMITTED TO START 7 DAYS AFTER THE START OF THE FLUSH-OUT, PROVIDED THAT THE FLUSH-OUT CONTINUES FOR THE FULL 14 DAYS.			
INSULATION TYPE DESCRIPTIONS			
FD	FLEXIBLE DUCT WRAP INSULATION; MINIMUM THERMAL CONDUCTIVITY OF R = 7.4 WITH A DERATED VALVE OF R = 6.0 AT 70 DEG. F. MEAN TEMPERATURE WHEN COMPRESSED 25%. DENSITY = 0.75 POUNDS PER CUBIC FOOT.		
FP	PREFORMED ONE-PIECE FIBERGLASS PIPE INSULATION WITH ALL-SERVICE JACKET WITH MOLDED UV RESISTANT PVC FITTING COVERS; MAXIMUM THERMAL CONDUCTIVITY K=0.23 AT 75 DEG. F. MEAN TEMPERATURE.		
ER	FLEXIBLE, CLOSED-CELL, ELASTOMERIC ROLL INSULATION; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.		
EP	FLEXIBLE UNICELLULAR, PREFORMED ELASTOMERIC PIPE INSULATION; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.		
EF	FLEXIBLE, CLOSED-CELL, CFC-FREE, FACTORY INSTALLED MOLDED ELASTOMERIC PIPE INSULATION; THERMAL CONDUCTIVITY K = 0.30 AT 70 DEG. MEAN TEMPERATURE; WATER VAPOR TRANSMISSION = 0.08 PERM-INCH, UV-RESISTANT FOR OUTDOOR APPLICATIONS.		
PR	RTU RETURN AIR DUCTS: FLEXIBLE, NON-POROUS, NON-FIBROUS MOISTURE AND MOLD RESISTANT, CLOSED CELL POLYMERIC DUCT LINER; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.		
	RETURN AIR BOOTS ONLY: KNAUF EM SONIC XP DUCT LINER FLEXIBLE, NON-POROUS, NON-FIBROUS MOISTURE AND MOLD RESISTANT, FIBERGLASS DUCT LINER; MAXIMUM THERMAL CONDUCTIVITY K = 0.28 AT 70 DEG. MEAN TEMPERATURE.		
RD	PREFORMED RIGID FIBERGLASS BOARD INSULATION; MAXIMUM THERMAL CONDUCTIVITY K=0.23 AT 75 DEG MEAN TEMPERATURE; DENSITY=3.0 POUNDS PER CUBIC FOOT.		
RI	REMOVABLE INSULATION JACKET		
INSULATION FINISH DESCRIPTIONS			
AJ	0.016" THICK SHEET ALUMINUM JACKET WITH MOLDED UV RESISTANT PVC FITTING COVERS		
ASJ	ALL SERVICE JACKET WITH SELF-SEAL LAP		
FFV	FOIL FACED KRAFT PAPER VAPOR SEAL, FACTORY APPLIED		
PVC	POLYVINYL CHLORIDE		
V	VENTURECLAD		
SERVICE	TYPE	THICKNESS	FINISH
OUTSIDE AIR DUCTWORK	FD	3"	FFV
RETURN AIR DUCTWORK (WHERE INDICATED)	PR	1"	-
SUPPLY, MIXED AND RELIEF AIR DUCTWORK	FD	2"	FFV
COOLING COIL CONDENSATE DRAIN PIPING (NOT IN AIR-HANDLING UNIT)	EP	1/2"	-
COOLING COIL CONDENSATE DRAIN PIPING (WITHIN AIR HANDLING UNIT)	EP	1/2"	-
REFRIGERANT LINESET (MINI-SPLIT AND VRF SYSTEMS)	EF	1/2"	-
REFRIGERANT SUCTION AND HOT GAS PIPING (INDOOR)	EP	1"	-
EXPOSED VERTICAL PIPE OUTSIDE OF MECHANICAL ROOMS - UP TO 8 FEET AFF	-	-	AJ

HVAC PIPE AND FITTING SCHEDULE				
* WHERE MORE THAN ONE TYPE OF MATERIAL IS INDICATED AS AN OPTION, SELECTION IS INSTALLER'S CHOICE.				
SERVICE	SIZE	PIPE MATERIAL	FITTINGS	JOINTS
REFRIGERANT PIPING	ALL SIZES	TYPE L HARD COPPER	WROUGHT COPPER	BRAZED
	ALL SIZES	TYPE L HARD COPPER	BRASS OR COPPER	BRAZED
COOLING COIL CONDENSATE DRAIN PIPING (INDOOR)	ALL SIZES	TYPE L HARD COPPER	BRASS OR COPPER	BRAZED
COOLING COIL CONDENSATE DRAIN PIPING (WITHIN AIR HANDLER)	ALL SIZES	TYPE L HARD COPPER	BRASS OR COPPER	BRAZED

FIRESTOP SCHEDULE			
NOTES:			
1. FIRESTOP ASSEMBLY TYPE (REQUIRED FIRESTOPPING MATERIALS) SHALL BE DETERMINED BY THE WALL OR FLOOR/CEILING ASSEMBLY AND PENETRATION TYPE AND SHALL BE UL LISTED AND TESTED IN ACCORDANCE WITH ASTM E814. FIRE RATING OF THE ASSEMBLY SHALL BE EQUIVALENT TO THE WALL OR FLOOR/CEILING ASSEMBLY RATING.			
2. ACCEPTABLE FIRE BARRIER PRODUCTS: HILTI "FS-ONE", NELSON "FLAMESEAL" OR APPROVED EQUAL AS MANUFACTURED BY 3M.			
3. IF REQUESTED, THE CONTRACTOR SHALL SHOW PROOF OF COMPLIANCE BY PROVIDING THE APPROPRIATE UL FIRESTOPPING SYSTEM NUMBER TO THE INSPECTION AUTHORITY HAVING JURISDICTION OR THE ARCHITECT/ENGINEER.			
PENETRATION	RATING	U.L. SYSTEM	
METAL DUCT WITHOUT FIRE DAMPER THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL7040 OR #WL7042 OR APPROVED EQUAL	
METAL DUCT WITHOUT FIRE DAMPER THROUGH MASONRY/CONCRETE	1 OR 2 HOUR	HILTI UL #WJ7021 OR #WJ7022 OR APPROVED EQUAL	
METAL DUCT WITHOUT FIRE DAMPER THROUGH MASONRY/CONCRETE	3 HOUR	HILTI UL #CAJ7046 OR APPROVED EQUAL	
METAL PIPE THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL1054 OR APPROVED EQUAL	
METAL PIPE THROUGH MASONRY/CONCRETE	2 HOUR	HILTI UL #CAJ1291 OR APPROVED EQUAL	
METAL PIPE THROUGH MASONRY/CONCRETE	3 HOUR	HILTI UL #CAJ1155 OR #CAJ1226 OR APPROVED EQUAL	
METAL PIPE THROUGH POURED CONCRETE FLOOR SLAB	3 HOUR	HILTI UL #FA1017 OR APPROVED EQUAL	
INSULATED METAL PIPE THROUGH GYPSUM BOARD	1 OR 2 HOUR	HILTI UL #WL5029 OR APPROVED EQUAL	
INSULATED METAL PIPE THROUGH MASONRY/CONCRETE	2 HOUR	HILTI UL #CAJ5091 OR APPROVED EQUAL	
INSULATED METAL PIPE THROUGH MASONRY	4 HOUR	HILTI UL #WJ5028 OR APPROVED EQUAL	
INSULATED METAL PIPE THROUGH POURED CONCRETE FLOOR SLAB	2 HOUR	HILTI UL #FA5017 OR APPROVED EQUAL	

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Permit 22 November 2024

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PROFESSIONAL ENGINEER

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Checked By

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MJS

MECHANICAL
SPECIFICATIONS

M4.3

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