

MECHANICAL SYMBOL SCHEDULE

PIPING SYMBOLS		MECHANICAL LINE TYPES		ABBREVIATIONS	
	AUTOMATIC FLOW CONTROL VALVE		EXISTING DUCT TO REMAIN	ACCU	AIR COOLED CONDENSING UNIT
	AIR SEPARATOR		NEW SUPPLY DUCT	A.F.F.	ABOVE FINISHED FLOOR
	AUTOMATIC AIR VENT		NEW RETURN DUCT	AFMS	AIR FLOW MEASURING STATION
	BALL VALVE		NEW OUTSIDE AIR DUCT	AHU	AIR HANDLER
	BUTTERFLY VALVE		NEW EXHAUST DUCT	AS	AIR SEPARATOR
	CHECK VALVE		DUCT TO BE REMOVED	ADS	AIR DIRT SEPARATOR
	DOUBLE CHECK BACKFLOW PREVENTER		HWS HOT WATER SUPPLY PIPE	B	BOILER
	FLOW METER		HWR HOT WATER RETURN PIPE	CF	CEILING FAN
	GAS OUTLET TURRET		CHWS CHILLED WATER SUPPLY PIPE	CHLR	CHILLER
	GAS COCK		CHWR CHILLED WATER RETURN PIPE	CHWR	CHILLED WATER RETURN
	GATE VALVE		GLY GLYCOL PIPE	CHWS	CHILLED WATER SUPPLY
	GLOBE VALVE		LPSS LOW PRESSURE STEAM SUPPLY	CO	CARBON MONOXIDE
	HOSE THREAD END WITH CAP		LPSR LOW PRESSURE STEAM RETURN	CO2	CARBON DIOXIDE
	INLINE PIPE DROP		HPSS HIGH PRESSURE STEAM SUPPLY	COND	CONDENSATE DRAIN
	INLINE PUMP		HPSR HIGH PRESSURE STEAM RETURN	CUH	CABINET UNIT HEATER
	INLINE PIPE RISE		STR STEAM CONDENSATE	CWR	CONDENSER WATER RETURN
	MANUAL FLOW CONTROL VALVE		CWS CONDENSER WATER SUPPLY	CWB	CONDENSER WATER SUPPLY
	MANUAL AIR VENT		CWR CONDENSER WATER RETURN	D	DIFFUSER
	METER		FLEXIBLE DUCT	DC	DUCT COIL
	P&T RELIEF VALVE		IN-LINE PUMP	EF	EXHAUST FAN
	P&T PORT		MANUAL AIR VENT	EG	EXHAUST GRILLE
	PIPE BREAK		OPPOSED BLADE BALANCE DAMPER	ET	EXPANSION TANK
	PIPE CAP		RETURN/EXHAUST TRANSFER AIR GRILLE	F	FURNACE
	PIPE DROP		SHUTOFF VAV BOX WITH REHEAT	FD	FIRE DAMPER
	PIPE RISE		SINGLE BLADE BALANCE DAMPER	FM	FLOW METER
	PIPE THERMOMETER		STRAINER	FTR	FINNED TUBE RADIATION
	PRESSURE GAUGE		STRAINER WITH BLOWDOWN	HPSR	HIGH PRESSURE STEAM RETURN
	PRESSURE INDEPENDENT CONTROL VALVE		SUPPLY AIR DIFFUSER	HPSS	HIGH PRESSURE STEAM SUPPLY
	PRESSURE REDUCING VALVE		TEMPERATURE SENSOR	HVAC	HEATING VENTILATING AND COOLING UNIT
	PRESSURE REGULATING VALVE		THERMOMETER	HWR	HOT WATER RETURN
	STRAINER		UNIT HEATER	HWS	HOT WATER SUPPLY
	STRAINER WITH BLOWDOWN		WALL MOUNTED PRESSURE GAUGE	L	LOWER
	STEAM TRAP			LPSR	LOW PRESSURE STEAM RETURN
	TEMPERATURE SENSOR			LPSS	LOW PRESSURE STEAM SUPPLY
	THERMOSTATIC MIXING VALVE			LRP	LINEAR RADIANT PANEL
	2-WAY CONTROL VALVE			MAU	MAKE-UP AIR UNIT
	3-WAY CONTROL VALVE			OA	OUTSIDE AIR
	UNION			OAC	OPENING ABOVE CEILING
				P	PUMP
				RA	RETURN AIR
				RAD	RADIANT HEATER
				REL	RELIEF AIR
				RET	RETURN AIR
				RC	ROOF CAP
				RF	RELIEF FAN
				RG	RETURN GRILLE
				RTU	ROOF TOP UNIT
				RV	RELIEF VENT
				SA	SUPPLY AIR
				SFD	SMOKE FIRE DAMPER
				SR	SUPPLY REGISTER
				TG	TRANSFER GRILLE
				UH	UNIT HEATER
				UV	UNIT VENTILATOR
				VAV	VARIABLE AIR VOLUME BOX

MECHANICAL SYMBOLS		GENERAL LINE TYPES	
	BACKDRAFT DAMPER		EXISTING TO REMAIN LINE WEIGHT
	COMBINATION SMOKE/FIRE DAMPER		EXISTING TO BE DEMOLISHED LINE TYPE AND WEIGHT
	CONTROL DAMPER ACTUATOR		NEW DUCT LINE WEIGHT
	DUCT CAP		NEW PIPING LINE WEIGHT
	DUCT MOUNTED COIL		NEW EQUIPMENT LINE WEIGHT
	DUCTWORK WITH DUCT LINER		
	DUCTWORK WITHOUT DUCT LINER		
	FAN POWERED VAV BOX WITH REHEAT		
	FIRE DAMPER		
	FIRE DAMPER		

GENERAL SYMBOLS	
	EXTENT OF DEMOLITION
	TIE-IN OF NEW TO EXISTING

MECHANICAL CONTROL SYMBOLS			
	CARBON DIOXIDE SENSOR		THERMOSTAT
	CARBON MONOXIDE SENSOR		THERMOSTAT (LINE VOLTAGE)
	DUCT OR PIPE PRESSURE SENSOR		THERMOSTAT WITH HUMIDISTAT AND CO2 SENSOR
	SECURITY TYPE THERMOSTAT		HUMIDISTAT
	PNEUMATIC THERMOSTAT		DIFFERENTIAL PRESSURE SENSOR

CONTROLS RESPONSIBILITY CHART

ITEM	CONTROL CONTRACTOR	MECHANICAL CONTRACTOR	ELECTRICAL CONTRACTOR	REMARKS
FURNISH CONTROL VALVES	X			
INSTALL CONTROL VALVES		X		
FURNISH PIPE WELLS FOR SENSORS	X			
INSTALL PIPE WELLS FOR SENSORS		X		
PROVIDE 120 VOLT POWER FOR CONTROL PANELS			X	
PROVIDE INTERLOCK WIRING BETWEEN DEVICES, PANELS, BOILERS, CHILLERS, ETC		X		1
FURNISH VARIABLE SPEED DRIVES	X			2
INSTALL VARIABLE SPEED DRIVES			X	2
PROVIDE LINE AND LOAD WIRING TO VARIABLE SPEED DRIVES			X	
PROVIDE CONTROL WIRING TO VSD	X			
PROGRAM AND STARTUP VSD		X		
PROVIDE 120 VOLT POWER TO CONTROLS			X	
PROVIDE LOW VOLTAGE CABLING TO CONTROLS	X			
FURNISH CONTROL DAMPERS	X	X		3
INSTALL CONTROL DAMPERS		X		
FURNISH DAMPER ACTUATORS	X			
INSTALL DAMPER ACTUATORS		X		
WIRE LOW VOLTAGE DAMPER ACTUATORS	X			
WIRE LINE VOLTAGE DAMPER ACTUATORS		X	X	
PROGRAM AND COMMISSION BOILER SEQUENCER		X		
PROGRAM AND COMMISSION CHILLER SEQUENCER		X		
COORDINATE PROJECT SCHEDULE WITH ALL TRADES	X	X	X	
PROVIDE SHOP DRAWINGS TO ALL TRADES	X	X		
VERIFY AND TEST SEQUENCE OF OPERATIONS	X			
TERMINATE DUCT DETECTORS	X			
ROOF PENETRATIONS		X		4
PROVIDE DUCT DETECTORS			X	
PROVIDE 120 VOLT POWER TO SOLENOID VALVES			X	5
PROVIDE LOW VOLTAGE CABLING TO SOLENOID VALVES	X			
PROVIDE AND INSTALL REFRIGERANT MONITORING SYSTEM	X			

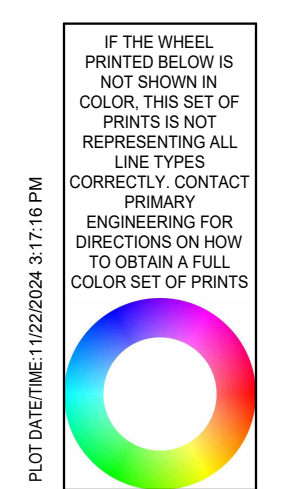
REMARKS:
1. MECHANICAL CONTRACTOR/MANUFACTURER SHALL PROVIDE AND INSTALL ALL ASSOCIATED INTERLOCK WIRING AND DEVICES FOR A COMPLETE UNIT.
2. PACKAGED VSD'S INTEGRAL TO HVAC EQUIPMENT SHALL BE FURNISHED BY EQUIPMENT MANUFACTURER UNLESS NOTED OTHERWISE. REFER TO EQUIPMENT SCHEDULES FOR VSD'S TO BE FURNISHED BY EQUIPMENT MANUFACTURER.
3. PACKAGED CONTROL DAMPERS INTEGRAL TO HVAC EQUIPMENT SHALL BE FURNISHED BY EQUIPMENT MANUFACTURER UNLESS NOTED OTHERWISE. REFER TO EQUIPMENT SCHEDULES AND DETAILS FOR MORE INFORMATION.
4. COORDINATE WITH GC FOR ROOF PENETRATIONS.
5. COORDINATE WITH MC FOR REFRIGERANT AND GAS PIPING SOLENOID VALVE LOCATIONS.

GENERAL MECHANICAL NOTES

- DUCT AND PIPING LAYOUTS ARE SCHEMATIC IN NATURE. ADDITIONAL TRANSITIONS, ELBOWS, OFFSETS, AND FITTINGS SHALL BE ADDED AS REQUIRED TO COORDINATE WITH OBSTRUCTIONS AND OTHER TRADES.
- COORDINATE ALL WORK WITH OTHERS TRADES AND EXISTING WORK TO PERMIT ACCESS AND SERVICE CLEARANCES TO ALL SYSTEMS. COORDINATE DUCT WITH ELECTRICAL J-BOXES TO PREVENT OBSTRUCTIONS.
- DO NOT SCALE DRAWINGS FOR DIMENSIONS. REFER TO DIMENSIONED DRAWINGS.
- ALL GRILLES, DIFFUSERS, AND REGISTERS SHALL HAVE A VOLUME CONTROL DAMPER UNLESS NOTED OTHERWISE. DAMPER SHALL BE IN AN ACCESSIBLE LOCATION.
- REFER TO DETAIL SHEETS FOR ADDITIONAL INFORMATION ON INSTALLATION METHODS.
- DEVIATIONS FROM BASIS OF DESIGN THAT AFFECT OTHER TRADES ARE THE RESPONSIBILITY OF THIS CONTRACTOR. ADDITIONAL COSTS TO PROVIDE LARGER ELECTRICAL CIRCUITS, MORE FLOOR SPACE, ADDITIONAL SUPPORTS, ADDITIONAL MATERIALS, ETC. SHALL BE BORNE BY THIS CONTRACTOR. COORDINATE WITH OTHER TRADES.
- ALL THERMOSTATS/HUMIDITY SENSORS WITH ADJUSTMENT BUTTONS/SLIDERS/KNOBS/DISPLAYS, ETC. SHALL BE MOUNTED WITH THE TOP OF THE DEVICE NO MORE THAN 48" AFF. IN COMPLIANCE WITH LOCAL AND FEDERAL ADA WHEELCHAIR REACH DISTANCE GUIDELINES. PROVIDE ADDITIONAL SURFACE RACEWAYS, BOXES, CONDUIT, ETC AS REQUIRED TO OFFSET AROUND EXISTING DEVICES IN RENOVATION WORK.
- ALL DUCT SIZES LISTED ARE FOR INTERIOR FREE AREA. ANY DUCTS DESIGNATED OR SPECIFIED TO BE DOUBLE WALL OR INTERNALLY LINED SHALL HAVE OUTER DIMENSIONS ENLARGED TO ACCOMMODATE THE LINER OR INTERSTITIAL INSULATION.

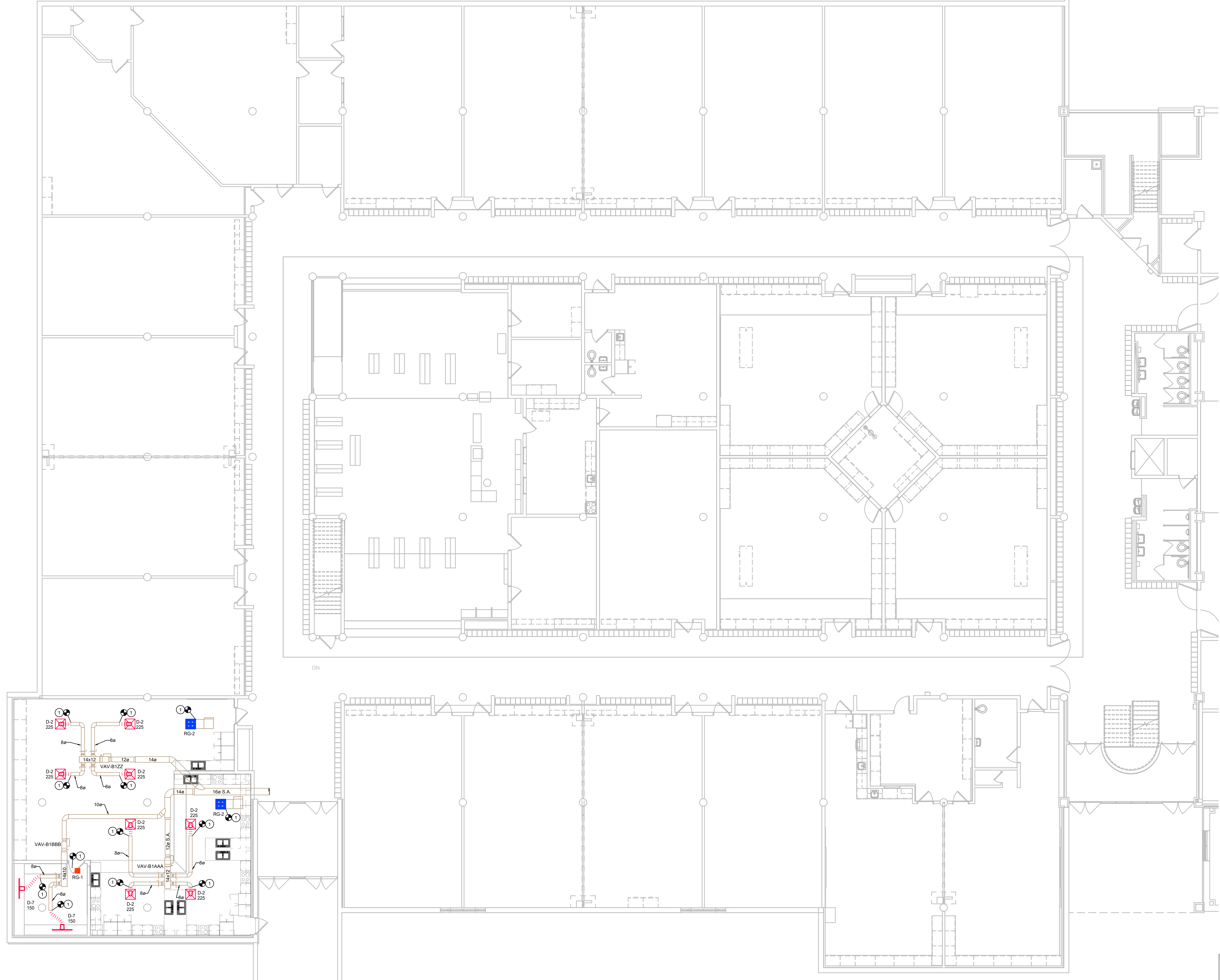
GENERAL DEMOLITION NOTES

- ALL EXISTING PENETRATIONS FROM DUCT/PIPE/WIRE/CONDUIT THAT IS REMOVED SHALL BE PATCHED BY PROPER TRADES TO MATCH SURROUNDINGS UNLESS PENETRATION IS TO BE REUSED. PATCH ALL FLOOR AND WALL PENETRATIONS TO MAINTAIN FIRE RATED CONSTRUCTION.
- ALL ROOF PENETRATIONS NOT BEING REUSED SHALL BE PATCHED TO MAINTAIN EXISTING ROOF WARRANTY. EXISTING CURBS TO BE ABANDONED SHALL BE CAPPED WITH ALUMINUM HOOD PAINTED WITH "N.I.S." (NOT IN SERVICE). INSULATE CAVITY BELOW CAP WITH TIGHT FITTING 3" FOAM BOARD WRAPPED WITH SHEET METAL.
- ALL PIPE SHALL BE REMOVED TO WITHIN AREAS THAT ARE INACCESSIBLE SUCH AS WALL CAVITIES AND BELOW SLAB. IN FINISHED SPACES REMOVE BELOW SURFACE. CAP WATER TIGHT, AND PATCH SURFACE TO MATCH SURROUNDINGS.
- ALL PATCHING OF WALLS SHALL MATCH MATERIALS AND WHEN COMPLETE SHALL NOT LOOK LIKE A PATCH.
- TOOTH-IN NEW BRICK/ BLOCK WITH FULL UNITS. DO NOT CUT FILLER PIECES.
- PRIOR TO CUTTING EXISTING SLAB ON GRADE, CONTRACTOR SHALL VERIFY EXISTENCE OF EXISTING UTILITIES SUCH AS PIPING, CONDUIT, WIRE, ETC. BY MEANS OF GROUND PENETRATING RADAR TO LOCATE AND DETERMINE DEPTH OF BURY. TAKE PRECAUTIONS TO DE-ENERGIZE POWER TO CIRCUITS AND CAREFULLY CUT AND REMOVE SLAB. ANY UTILITIES THAT WERE LOCATED AND SUBSEQUENTLY DAMAGED SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDED COST TO THE OWNER.

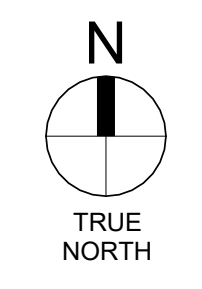
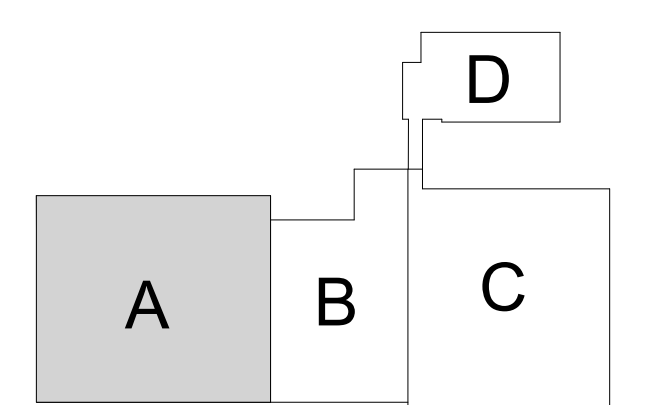
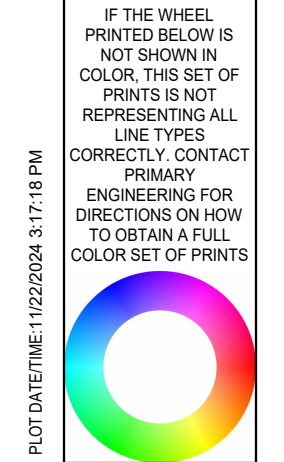


PLAN NOTES

1. PROVIDE AND INSTALL NEW DIFFUSER/GRILLE. CONNECT TO EXISTING DUCTWORK WITH NEW FLEX DUCT.



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

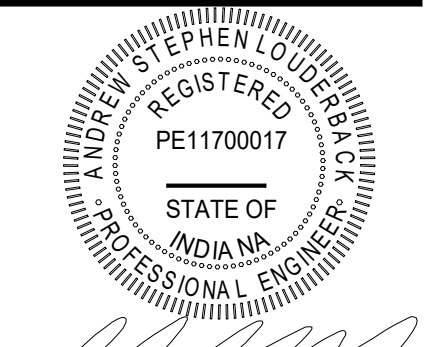


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**SUNMAN-DEARBORN COMMUNITY SCHOOLS
EAST CENTRAL MIDDLE SCHOOL RENOVATIONS**
8356 SCHUMAN RD, BROOKVILLE, IN 47012



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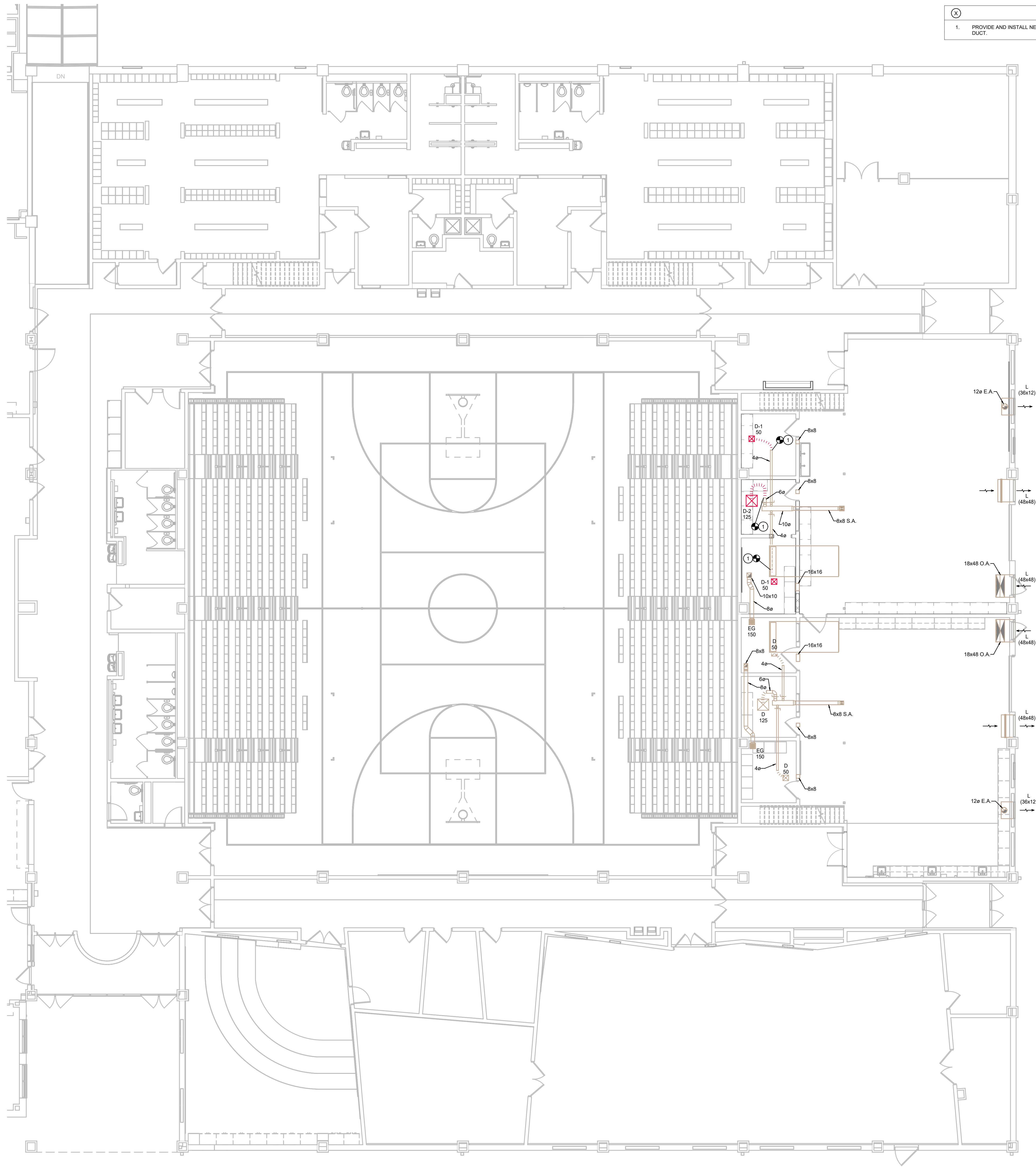
FIRST FLOOR - MECHANICAL PLAN - UNIT A

M101A

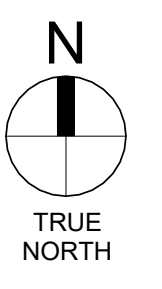
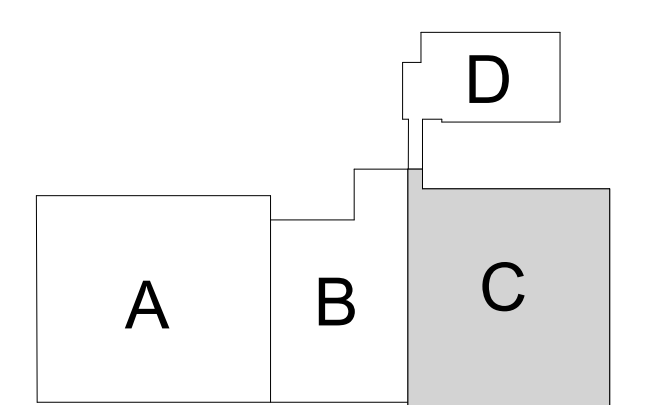
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PLAN NOTES

1. PROVIDE AND INSTALL NEW DIFFUSER/GRILLE. CONNECT TO EXISTING DUCTWORK WITH NEW FLEX DUCT.

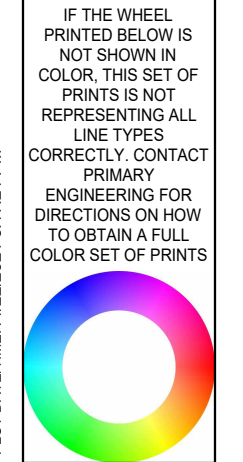


1 FIRST FLOOR - MECHANICAL PLAN - UNIT C
SCALE: 1/8" = 1'-0"



M101C

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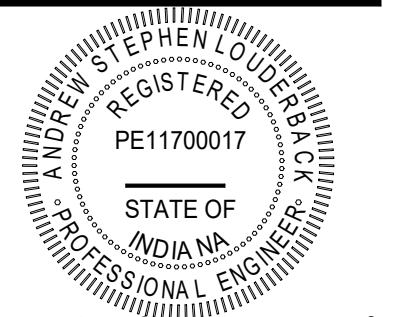


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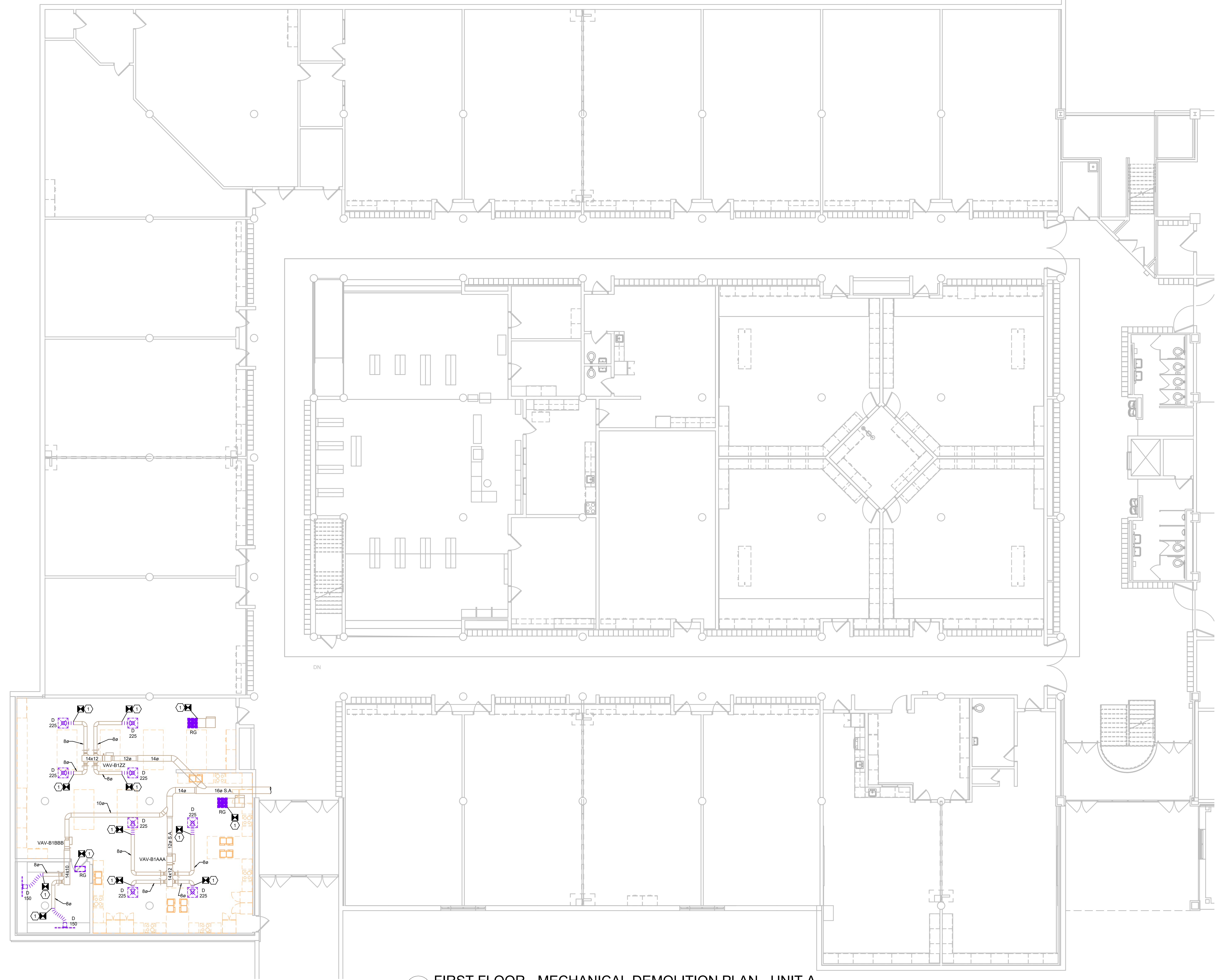
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FIRST FLOOR - MECHANICAL PLAN - UNIT C

DEMOLITION PLAN NOTES

1. REMOVE EXISTING DIFFUSER/RETURN GRILLE COMPLETE INCLUDING ASSOCIATED FLEX DUCT AND HANGERS. PREPARE FOR RECONNECT WITH NEW IN SAME LOCATION.



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

SCALE: 1/16" = 1'-0" SCALE: 3/32" = 1'-0" SCALE: 1/8" = 1'-0" SCALE: 1/4" = 1'-0" SCALE: 1/2" = 1'-0" SCALE: 3/4" = 1'-0" SCALE: 1" = 1'-0"

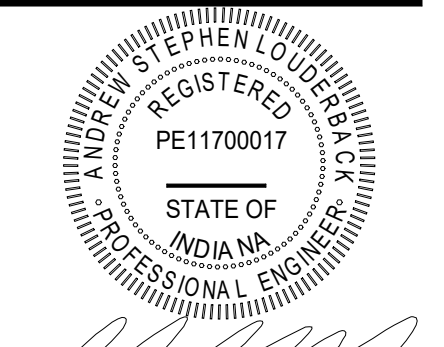
THE WHITE IS NOT SHOWN IN COLOR. THE SET OF PRINTS IS NOT REPRESENTING ALL LINE TYPES. CORRECTLY CONTACT ENGINEERING FOR DIRECTIONS ON HOW TO OBTAIN A FULL COLOR SET OF PRINTS.

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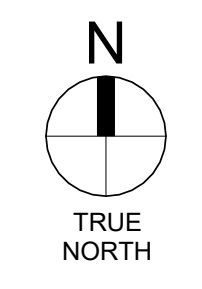
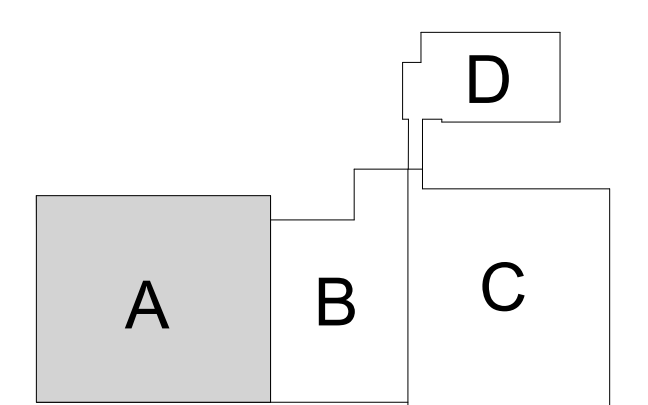


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FIRST FLOOR - MECHANICAL DEMOLITION PLAN - UNIT A

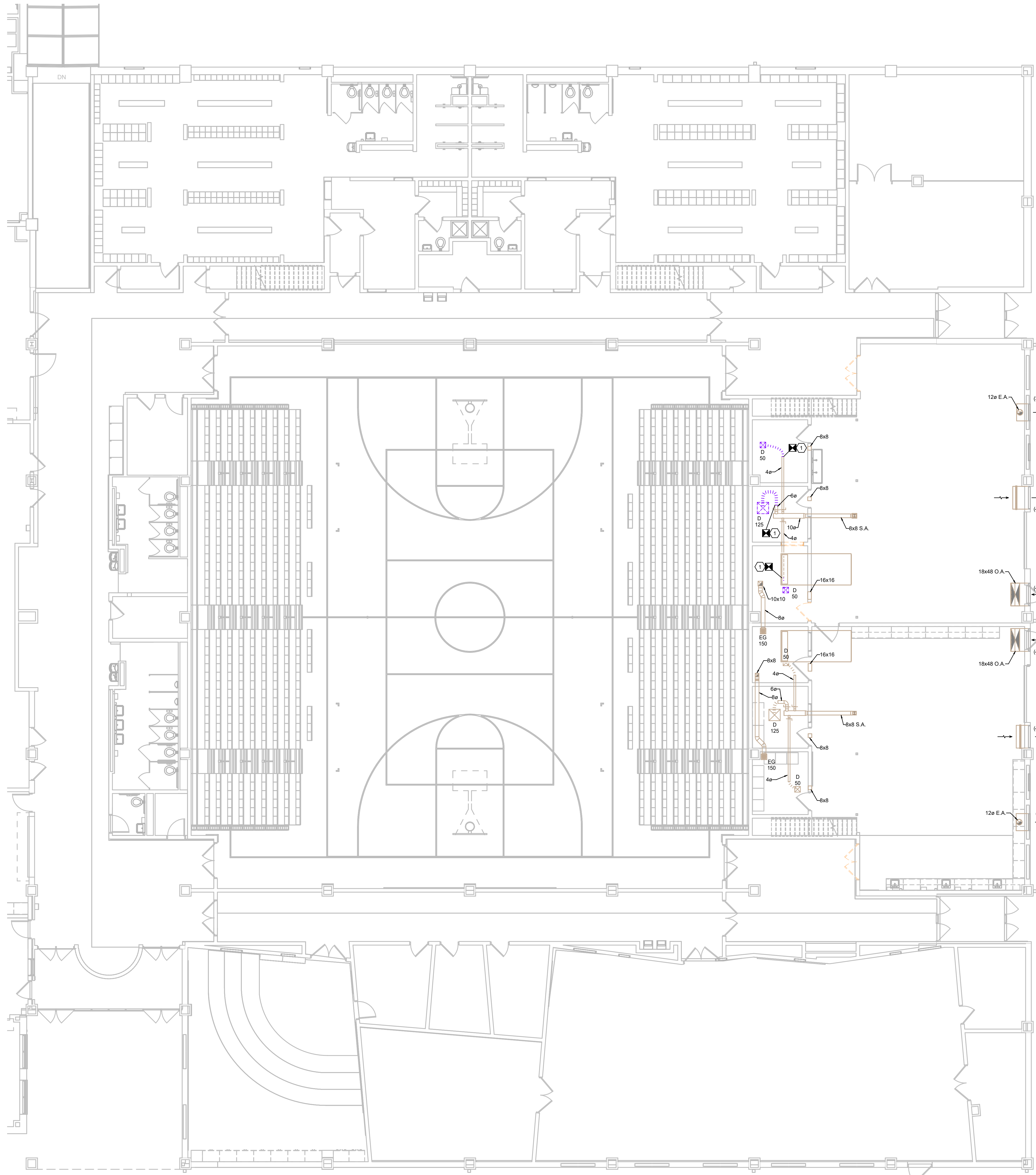


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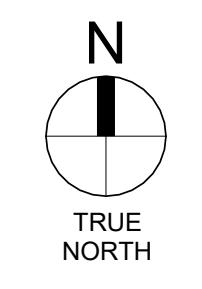
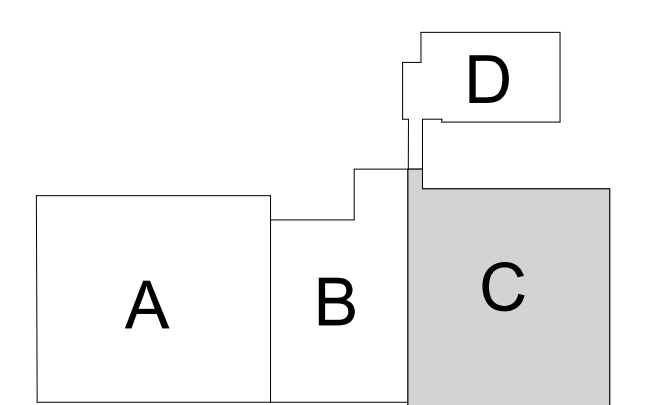
DEMOLITION PLAN NOTES

1. REMOVE EXISTING DIFFUSER/RETURN GRILLE COMPLETE INCLUDING ASSOCIATED FLEX DUCT AND HANGERS. PREPARE FOR RECONNECT WITH NEW IN SAME LOCATION.



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

IF THE WHITE PRINTED AREA IS NOT SHOWN IN COLOR, THE SET OF PRINTS IS NOT REPRESENTING ALL INFORMATION. CONTACT THE ENGINEERING FIRM FOR INSTRUCTIONS ON HOW TO OBTAIN A FULL COLOR SET OF PRINTS.



MD101C

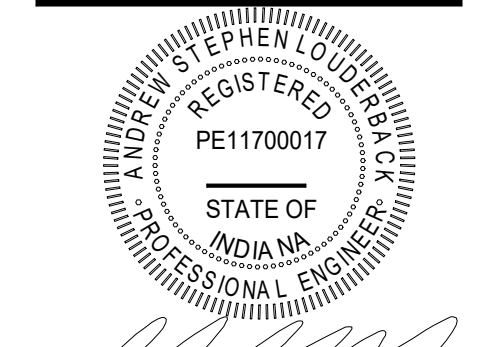
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