

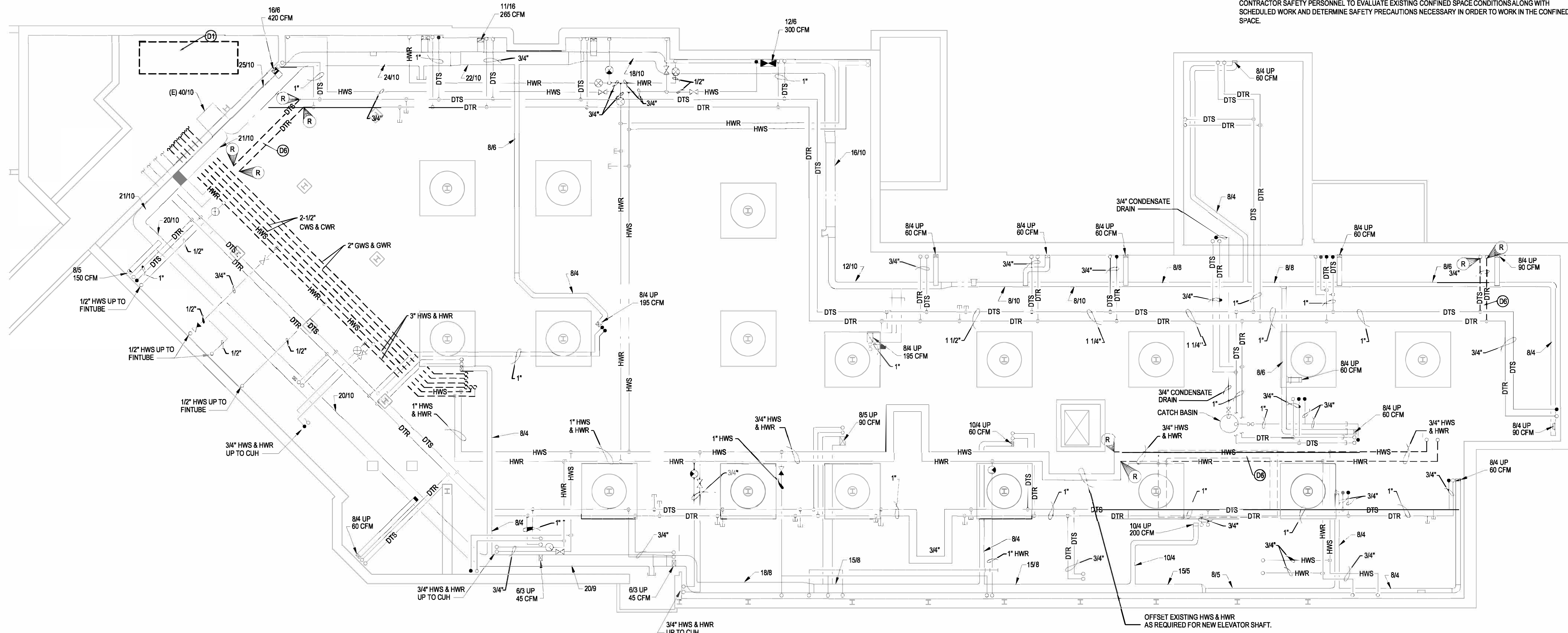
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Monday, April 08, 2019 - 5:02 PM

FAN COIL UNIT SCHEDULE - CHILLED WATER 42 °F E.W.T/HOT WATER 180°F E.W.T.																				
UNIT NO.		FC-1	FC-2	FC-3	FC-4	FC-5	FC-6	FC-7	FC-8	FC-9	FC-10									
LOCATION		SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS									
CFM		338 CFM	449 CFM	664 CFM	756 CFM	356 CFM	617 CFM	836 CFM	979 CFM	321 CFM	979 CFM									
TYPE		FLOOR MOUNTED VERTICAL CABINET	FLOOR MOUNTED VERTICAL CABINET	FLOOR MOUNTED VERTICAL CABINET	FLOOR MOUNTED VERTICAL CABINET	WALL CONCEALED VERTICAL CABINET	WALL CONCEALED VERTICAL CABINET	WALL CONCEALED VERTICAL CABINET	WALL CONCEALED VERTICAL CABINET	SEMI-RECESSED VERTICAL CABINET	FLOOR MOUNTED VERTICAL CABINET									
COOLING COIL	ENT. AIR °F (DB / WB)	75 / 63	75 / 63	75 / 63	75 / 63	75 / 63	75 / 63	75 / 63	75 / 63	75 / 63	75 / 63									
	LVG. AIR °F (DB / WB)	56.5 / 55.2	57.8 / 55.7	58.6 / 56	55.7 / 55.4	57.3 / 55.7	57.4 / 55.9	52.9 / 52	52.4 / 51.5	56.5 / 55.2	52.4 / 51.5									
	L.W.T °F	58°F	58°F	58°F	58°F	58°F	58°F	58°F	58°F	58°F	58°F									
	TOTAL MBH	7.24	10.81	12.45	17.27	7.24	14.38	24.75	29.37	7.24	29.37									
	GPM	.9	1.4	1.6	2.3	.9	1.8	3.5	4.8	.9	4.8									
	PRESS. DROP (FT.)	.5	1.2	.7	1.40	.5	2.1	3.8	7.1	.5	7.1									
HEATING COIL	ENT. AIR °F (DB / WB)	70	70	70	70	70	70	70	70	70	70									
	LVG. AIR °F (DB / WB)	110.2	107.4	127.3	128.0	110.2	112.0	122.7	119.9	110.2	119.9									
	L.W.T °F	160°F	160°F	160°F	160°F	160°F	160°F	160°F	160°F	160°F	160°F									
	TOTAL MBH	14.85	18.28	37.48	44.09	14.85	23.75	47.12	49.27	14.85	49.27									
	GPM	1.0	1.2	1.7	2.3	1.0	1.7	2.0	2.0	1.0	2.0									
	PRESS. DROP (FT.)	2.6	4.5	3.4	5.7	2.6	9.1	5.2	5.2	2.6	5.2									
MOTOR	MOP	3.2	3.2	4.6	4.6	3.2	3.4	4.6	4.6	3.2	4.6									
	HORSEPOWER	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$									
	ELEC. (VOLTS / PH. / HZ)	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60	115 / 1 / 60									
	MCA	1.8	1.8	3.5	3.5	1.8	2.4	3.5	3.5	1.8	3.5									
MANUFACTURER		PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE									
MODEL		FCVC104	FCVC106	FCVC110	FVCV110	FCVH104	FCVH108	FCVH112	FCVH112	FCVH104	FCVC112									
REMARKS																				
NOTES:																				

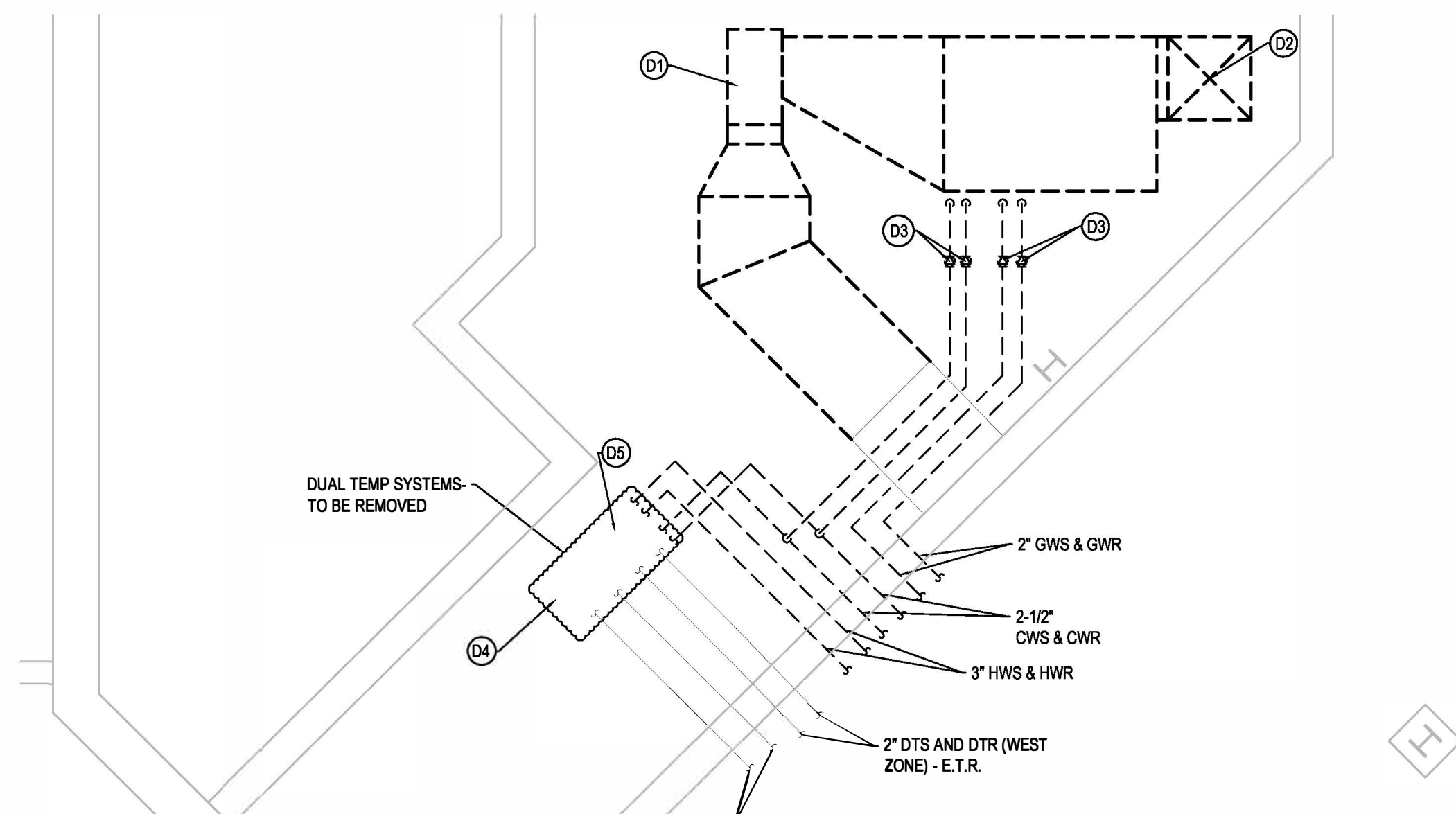
PUMP SCHEDULE																									
UNIT NO.		HWP-1,2		HWP-3,4		HWP-5,5A		HWP-6,6A		HWP-7		HWP-8		CWP-1,2		CWP-3,4		CWP-5		CWP-6		GWP-1,2		GWP-3,4	
SYSTEM		FOR BOILERS 1,1A		MAIN HOT WATER LOOP		FIRST FLOOR FAN COIL UNITS		SECOND FLOOR FAN COIL UNITS		RTU-2 COIL PUMP		RTU-1 COIL PUMP		MAIN CHILLER PUMP		CHILLED WATER SYSTEM PUMPS		RTU-2 COIL PUMP		RTU-1 COIL PUMP		BOILER PUMPS FOR B-2,2A		GLYCOL SYSTEM PUMPS	
SERVICE		BUILDING HEATING		BUILDING HEATING		1ST FLOOR HEATING		2ND FLOOR HEATING		HEATING COIL		HEATING COIL		CHILLED WATER		CHILLED WATER		COOLING COIL		COOLING COIL		GLYCOL WATER SYSTEM			
LOCATION		NEW BOILER ROOM		NEW BOILER ROOM		BASEMENT		NEW BOILER ROOM		NEW BOILER ROOM		NEW BOILER ROOM		CHILLER ROOM		CHILLER ROOM						NEW BOILER ROOM		2ND FLOOR STORAGE	
PUMP		120	260	92	50	32	36	152	152	21	16	40	40												
	GPM	120	260	92	50	32	36	152	152	21	16	40	40												
	HEAD (FT.)	20	60	46	50	10	10	30	60	10	10	40	30												
	STYLE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE	INLINE												
CONNECTIONS	SUCTION	3"	4"	3"	2-1/2"	2"	2"	4"	4"	2"	1-1/2"	2"	2"												
	DISCHARGE	3"	4"	3"	2-1/2"	2"	2"	4"	4"	2"	1-1/2"	2"	2"												
	MCA	2.75 A	11.0-8.80 A	6.18 A	6.18 A	--	--	6.1 A	6.1 A	--	7.5 A	--	7.5 A												
MOTOR	MOP	--	--	--	--	197 W	197 W	--	--	197 W	--	--													
	ELEC. (VOLTS / PH. / HZ)	115/1/60	480/3/60	115/1/60	115/1/60	115/1/60	115/1/60	460/3/60	460/3/60	115/1/60	200/1/60	200/1/60													
	MOTOR STARTER	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES													
	HORSEPOWER		7-1/2					5-1/2	5-1/2			1-1/2"	1-1/2"												
PIPE VIBRATION ISOLATORS	SUCTION																								
	DISCHARGE																								
MANUFACTURER		GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS	GRUNDFOS												
MODEL		MAGNA3 50-150 F	CRE-45-1-1 AN-F-A-E-HQOE	MAGNA3 65-150 F	MAGNA3 65-150 F	UPS 26-99 FC	UPS 26-99 FC	CRE 32-1 AN-G-A-E-HQOE	CRE 32-1 AN-G-A-E-HQOE	UPS 26-99 FC	UPS 26-99 FC	TPE 40-240/2	TPE 40-240/2												
SERIES		97924285	96123410	97924679	97924679	52722512	52722512	96432920	96432920	52722512	52722512	96432920	96432920												
REMARKS		VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER	VARIABLE SPEED CONTROLLER												
NOTES:																									

BOILER SCHEDULE			
UNIT NO.	B-1,1A		B-2,2A
LOCATION	NEW BOILER ROOM		NEW BOILER ROOM
BOILER	INPUT MBH	1250	399
	OUTPUT MBH	1200	372
	EWT / LWT (°F)	180/160	180/160
	TYPE	CONDENSING	CONDENSING
	% EFFICIENCY	96.2%	94.6%
BURNER	TYPE	GAS	GAS
	MAX INLET PRESSURE	14" W.C.	14" W.C.
	MBH INPUT	1250	399
BLOWER	CFH		
	TYPE		
	ELEC. (V / PH. / HZ)	120 / 1 / 60	120 / 1 / 60
DIMENSION	HEIGHT	78"	42-1/2"
	WIDTH	30"	15-1/2"
	LENGTH	54"	27"
CONNECTIONS	SUPPLY	3"	1-1/2"
	RETURN	3"	1-1/2"
	DRAIN	1-1/2"	3/4"
	FUEL CONN.	1-1/4"	1"
	COMBUSTION AIR	6"	
ELECTRICAL	VENT	8"	4"
	MCA	9 A	1.5 A
	F.L.A.	7 A	
MAKE		LOCHINVAR	LOCHINVAR
MODEL		FB-1251	KB-400
REMARKS		FOR MAIN HOT WATER HEATING LOOP	FOR GLYCOL COIL FEED LOOP
NOTES: PROVIDE AN EXPANSION TANK/WATTS ETSX-40, AND A AIR AND DIRT ELIMINATOR: SPIROTHERM VDR150 WITH UNIT			

ROOF TOP UNIT SCHEDULE		
UNIT NO.		RTU-1
SERVICE		VENTILATION
LOCATION		1ST FLOOR ROOF
TYPE		ENERGY RECOVERY
AIR PERFORMANCE	SUPPLY CFM	3500
	EXHAUST CFM	3500
	MAX. O.A. CFM	3500
	E.S.P. (IN. W.C.) (SUPPLY/EXHAUST)	1.25/1.25
	TOTAL S.P. (IN. W.C.) (SUPPLY / EXHAUST)	2.91/32.274
	OPERATING POWER (SUPPLY/EXHAUST)	1.15/1.87 BHP
	MOTOR SIZE (SUPPLY/EXHAUST)	1.5/1.0 H.P.
ELECTRICAL/MOTOR	VOLTS / PHASE / HERTZ	480/3/60
	MCA (A)	9.7
	MOP (A)	10.0
	SUPPLY MOTOR RPM	2211
	EXHAUST MOTOR RPM	2017
COOLING COIL	COOLING TYPE	CHILLED WATER
	ENTERING DRY-BULB/WET-BULB (°F)	77.9/65.2
	LEAVING DRY-BULB/WET-BULB (°F)	53.4/53.4
	COIL CAPACITY (MBH)	125.7
	E.W./T.L.A.T (°F)	42/58
	COIL GPM	15.7
	COIL DEPTH	6 ROWS
	COIL FPD (FT. WG)	.8
	HEATING COIL	TOTAL CAPACITY (MBH)
FACE VELOCITY		531 FT/MIN
ENTERING DRY-BULB(°F)		0
LEAVING DRY-BULB (°F)		76.0
FLUID TYPE		40% GLYCOL SOLUTION
E.W.T. / L.W.T. (°F)		180/160
FLUID FLOW RATE (GPM)		31 GPM
ROWS		2
WEIGHT	FIN SPACING	14 FINS/IN
	FIN TYPE	ALUMINUM
		3170 LBS
MANUFACTURER		VALENT
MODEL		VPRE-21D-CEV-HW-C-1XA
NOTES:		
PROVIDE WEATHERHOOD, PROVIDE WITH 120V SERVICE RECEPTACLES AND FACTORY DISCONNECTS		



**1 MECHANICAL BASEMENT DEMOLITION PLAN**  
1/8" = 1'-0"



**2 MECHANICAL BASEMENT DEMOLITION PLAN BLOWUP**  
1/4" = 1'-0"

**MECHANICAL DEMOLITION NOTES:**

1. REMOVE EXISTING SUPPLY FAN 1. THIS WILL INCLUDE HANGERS AND SUPPORTS, PUMPS, PIPING CONNECTIONS, COILS AND DUCTWORK OFF THE UNIT TO THE DROP AT THE CRAWL SPACE. PATCH OUTSIDE AIR LOUVER WHERE VENTILATION DUCT IS CONNECTED.
2. OUTSIDE AIR DUCT FROM MECHANICAL ROOM LEVEL ABOVE. REMOVE DUCTWORK IN ITS ENTIRETY, COORDINATE PATCHING OF EXTERIOR WALL WITH C CONTRACTOR.
3. REMOVE COIL SUPPLY PUMPS INCLUDING ALL ACCESSORIES.
4. DUAL TEMP CONTROL SYSTEM TO BE REMOVED. CUT EXISTING PIPING AND VALVES, LEAVE THE DTS & DTR PIPING CAPPED IN AREA FOR FUTURE RECONNECTION.
5. REMOVE HOT WATER CIRCULATION PUMPS FOR DUAL TEMP SYSTEM. PUMPS WILL BE LOCATED BEFORE 3 WAY VALVES. REMOVE ALL HANGERS AND SUPPORTS AND PUMP ACCESSORIES WITH PUMP REMOVAL.
6. REMOVE PIPING AS SHOWN. SHUT DOWN BRANCH PIPING AND REQUIRED. REMOVAL INCLUDES PIPING, VALVES, HANGERS AND SUPPORTS.

**CONFINED SPACE NOTE:**

CONTRACTOR SAFETY PERSONNEL TO EVALUATE EXISTING CONFINED SPACE CONDITIONS ALONG WITH SCHEDULED WORK AND DETERMINE SAFETY PRECAUTIONS NECESSARY IN ORDER TO WORK IN THE CONFINED SPACE.

DB



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Client: **BUFFALO & FORT ERIE PUBLIC BRIDGE AUTHORITY**

Project: **R.F. WILLSON MECH. AND ELEC. UPGRADES**

Project Address: **1 PEACE BRIDGE PLAZA, BUFFALO, NEW YORK 14213**

Drawing History: # Date Description

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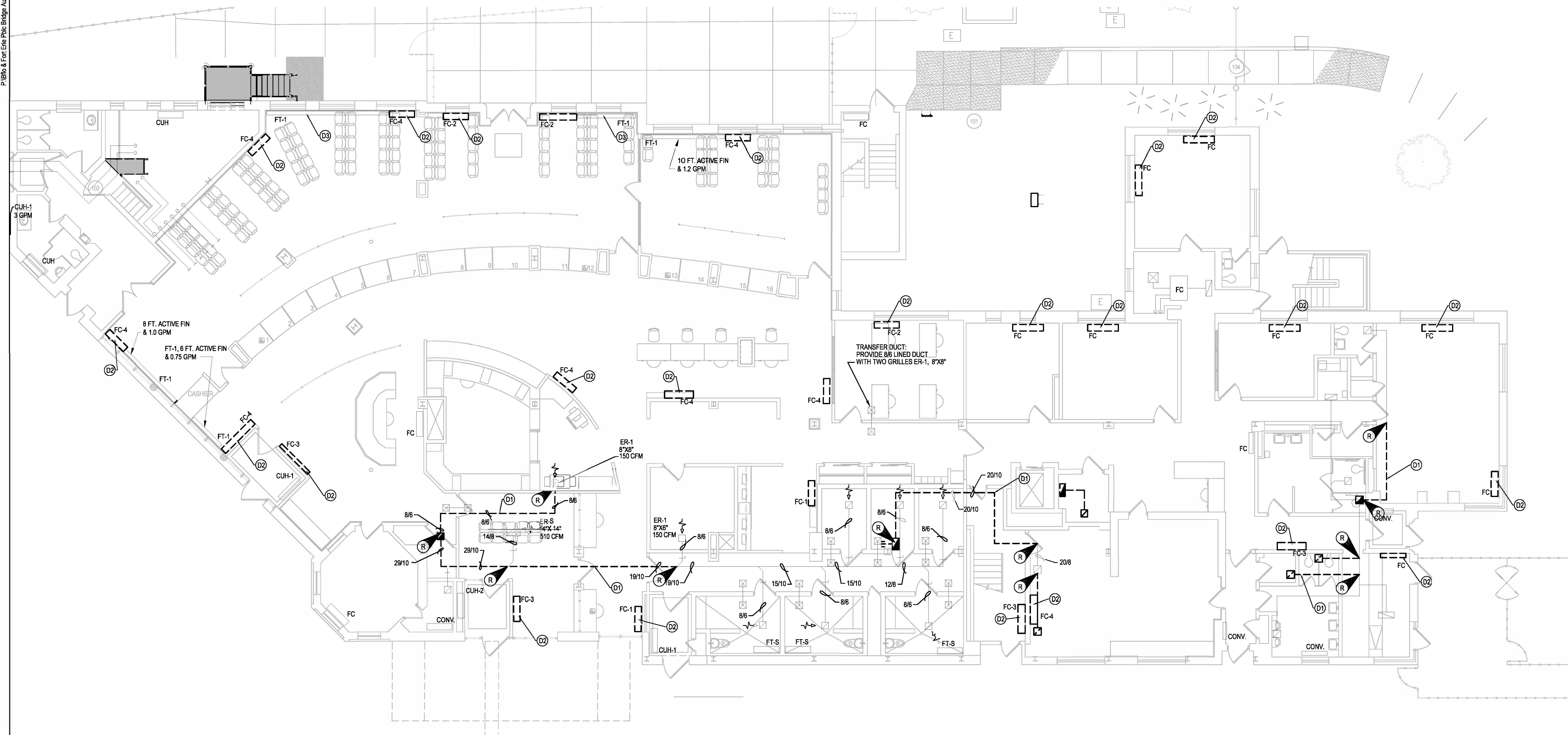
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Project Number: 18023  
Sheet Title: **MECHNIACAL BASEMENT DEMOLITION PLAN**

Sheet Number: **MD-100**

**WILLSON BUILDING**







## 1 FIRST FLOOR DEMOLITION PLAN

**D#**

1. RETURN DUCTWORK TO BE REMOVED. THIS INCLUDES HANGERS AND SUPPORTS AND ALL DUCT ACCESSORIES. COORDINATE WORK WITH C CONTRACTOR AND PBA PERSONAL.
2. REMOVE EXISTING FAN COIL UNIT. CAP PIPING OUTSIDE UNIT CONNECTION. PIPING TO BE REUSED FOR NEW FAN COIL UNITS. COORDINATE REMOVAL WITH OWNER. PATCH WALL AS NEEDED AFTER REMOVAL. CONTROLS WILL BE REUSED FOR NEW FCU.
3. FIN TUBE TO BE REMOVED. REMOVE CONTROLS AND CAP IN BASEMENT AREA. COORDINATE WITH GC TO FILL IN FLOOR PENETRATIONS. GC TO PATH WALL AS NEEDED.



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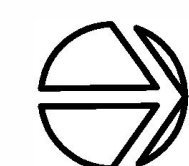
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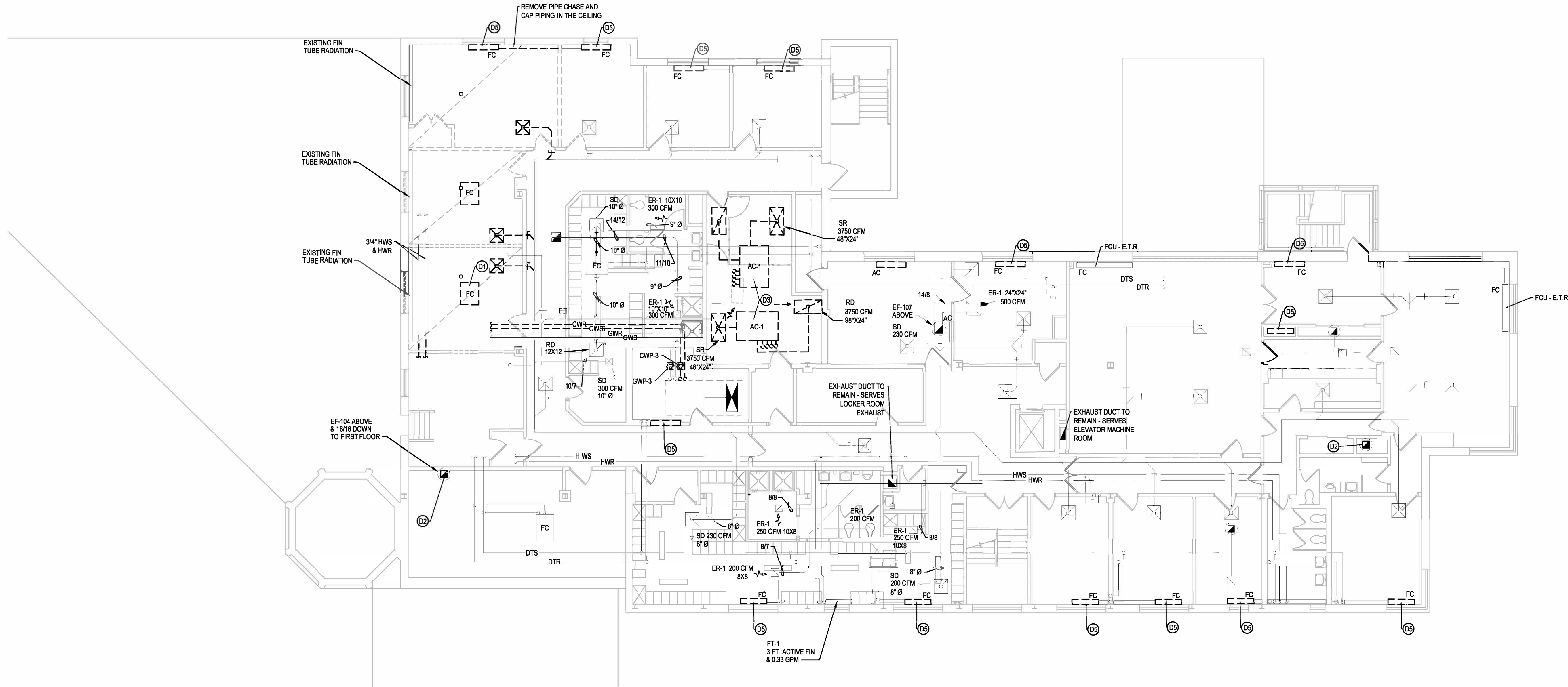
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**Project Number:** 18023  
**Sheet Title:** MECHANICAL  
1ST FLOOR  
DEMOLITION PLAN

Sheet Number: **MD-101**

# WILLSON BUILDING





**1 SECOND FLOOR DEMOLITION PLAN**  
1/8" = 1'-0"

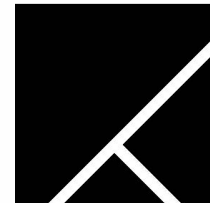
**GENERAL MECHANICAL NOTES:**

1. ALL COMMON AREA DUCTWORK SHALL HAVE A DIFFUSER OR GRILLE WITH AN INTEGRATED FIRE DAMPER.
2. ALL EXHAUST REGISTERS THAT ARE NOT MARKED ARE TO BE ER-1, SIZE 6"X6", AND 20 CFM.
3. ALL SOUTH WING DUCTWORK TO BE ABOVE CEILING UNLESS OTHERWISE NOTED. REFER TO NOTE 10 FOR DROPS TO EXPOSED DUCTWORK.

**MECHANICAL DEMOLITION NOTES:**

1. REMOVE EXISTING FAN COIL UNIT. EACH FCU HAS A SUPPLY AND RETURN GRILL IN THE CEILING, THESE ARE TO BE REMOVED AS WELL. REMOVE ALL ASSOCIATED COMPONENTS. PIPING WILL BE REMOVED BACK TO MAINS AND CAPPED.
2. REMOVE DUCTWORK UP TO EXHAUST FAN. THIS WILL INCLUDE ALL BRANCH DUCTWORK AND DIFFUSERS. VERIFY LOCATION IN FIELD.
3. REMOVE SERVER ROOM AC UNITS. ONLY REMOVE 1 UNIT AT A TIME. DEMOLITION OF THE SECOND UNIT MAY BEGIN ONCE THE OTHER UNIT IS REPLACED. REFER TO PHASING PLAN FOR MORE INFORMATION.
4. REMOVE EXISTING SUPPLY AIR DUCTWORK. NEW DUCTWORK TO BE RUN. THIS INCLUDES ALL ACCESSORIES, HANGERS AND SUPPORTS, AND DIFFUSERS. SIZES INDICATED WHERE KNOWN.
5. REMOVE HYDRONIC FAN COIL UNIT. CAP PIPING OUTSIDE OF ENCLOSURE. PIPING TO RE-FEED NEW FAN COIL UNITS TO BE PROVIDED. REMOVE PARTS OF PIPE ENCLOSURE AS NECESSARY, TO BE REPLACED WITH FCU IS REPLACED.

(DP)



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Project: **R.F. WILLSON MECH.  
AND ELEC. UPGRADES**

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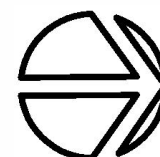
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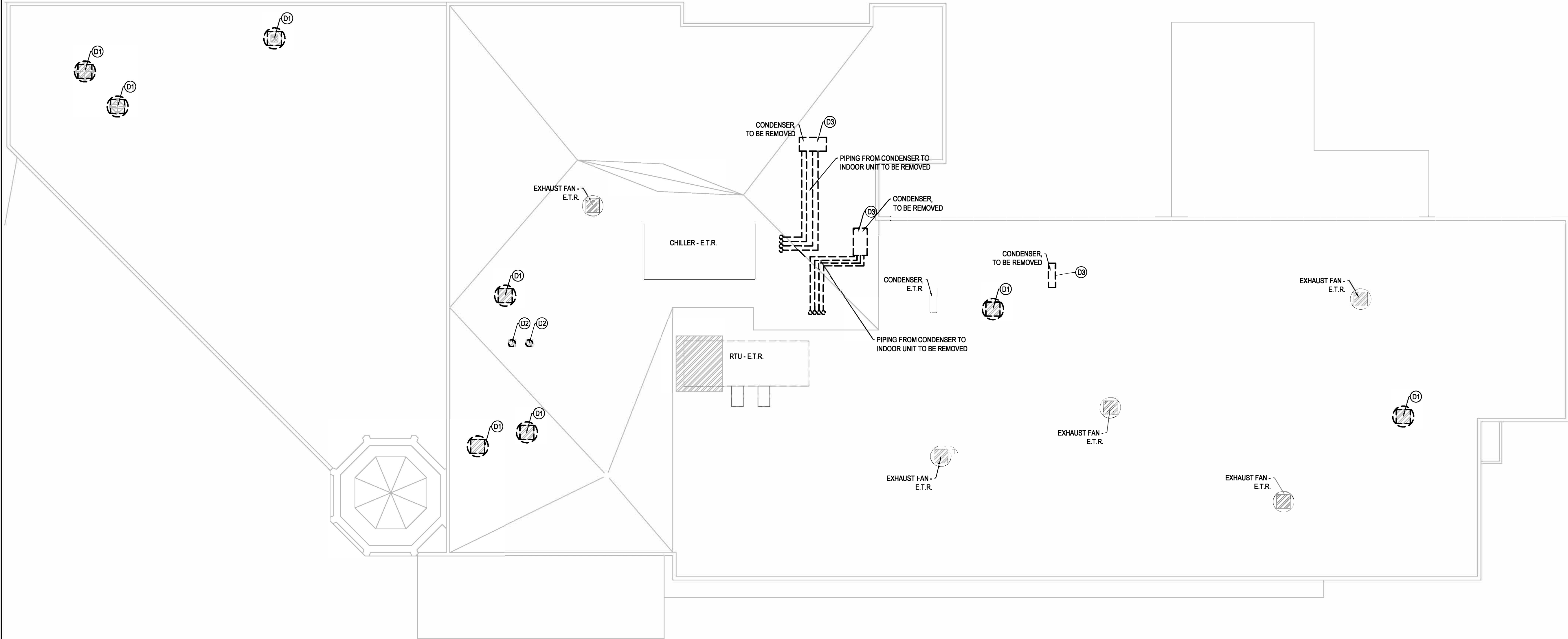
Project Number: 18023

Sheet Title: **MECHANICAL  
2ND FLOOR  
DEMOLITION PLAN**

Sheet Number: **MD-102**

**WILLSON  
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**1 ROOF DEMOLITION PLAN**  
1/8" = 1'-0"

**GENERAL MECHANICAL NOTES:**

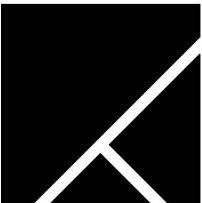
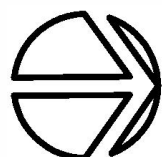
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2. ALL EXHAUST REGISTERS THAT ARE NOT MARKED ARE TO BE ER-1, SIZE 6"x6", AND 20 CFM.
3. ALL SOUTH WING DUCTWORK TO BE ABOVE CEILING UNLESS OTHERWISE NOTED. REFER TO NOTE 10 FOR DROPS TO EXPOSED DUCTWORK.

**MECHANICAL DEMOLITION NOTES:**

(D#)

1. REMOVE EXISTING EXHAUST FAN. GC TO PATCH EXISTING ROOF AFTER REMOVAL.
2. REMOVE EXISTING INTAKE AND VENT FLUES. GC TO PATCH EXISTING ROOF AFTER REMOVAL.
3. REMOVE EXISTING CONDENSER. THIS INCLUDES THE SUPPORT STAND, REFRIGERANT PIPING, PIPING SUPPORTS, AND ALL ACCESSORIES. LEAVE THE PIPE PORTAL IN PLACE FOR RE-USE. COORDINATE REMOVAL WITH THE GC FOR ROOF PATCHING.

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BUILDING**



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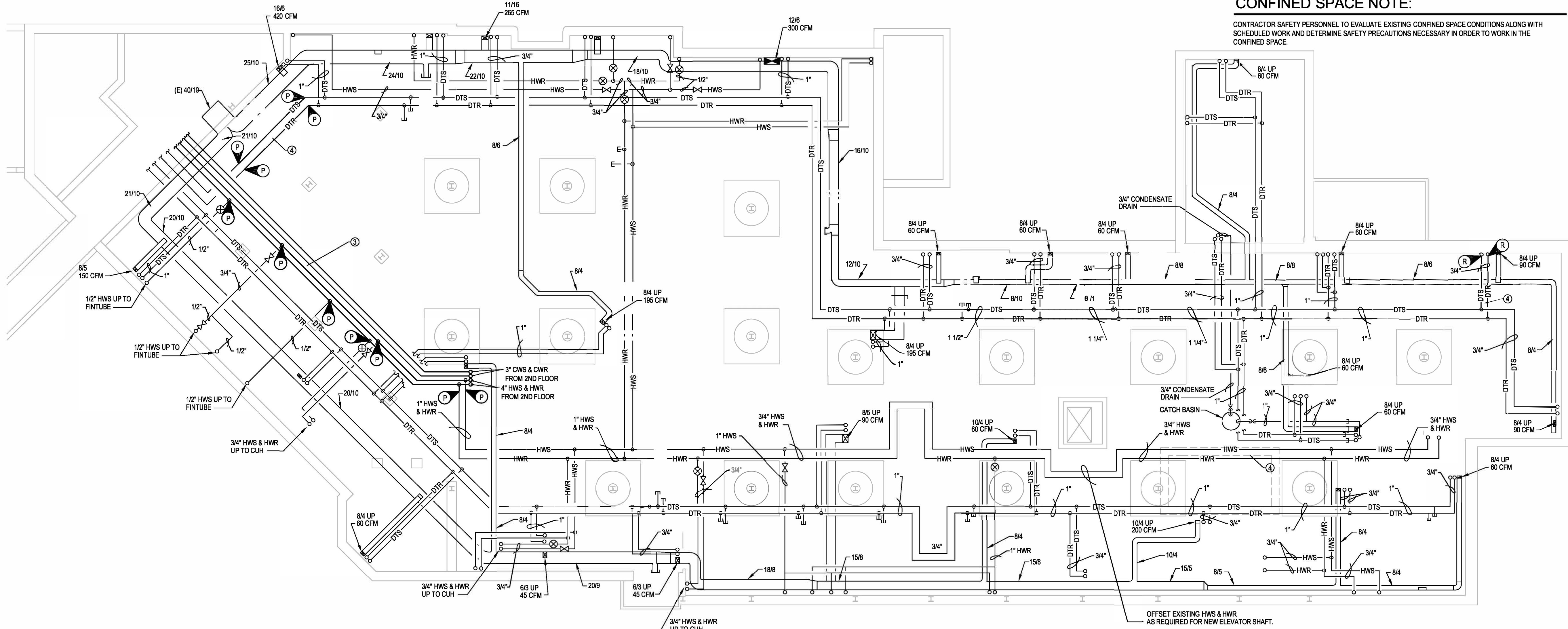
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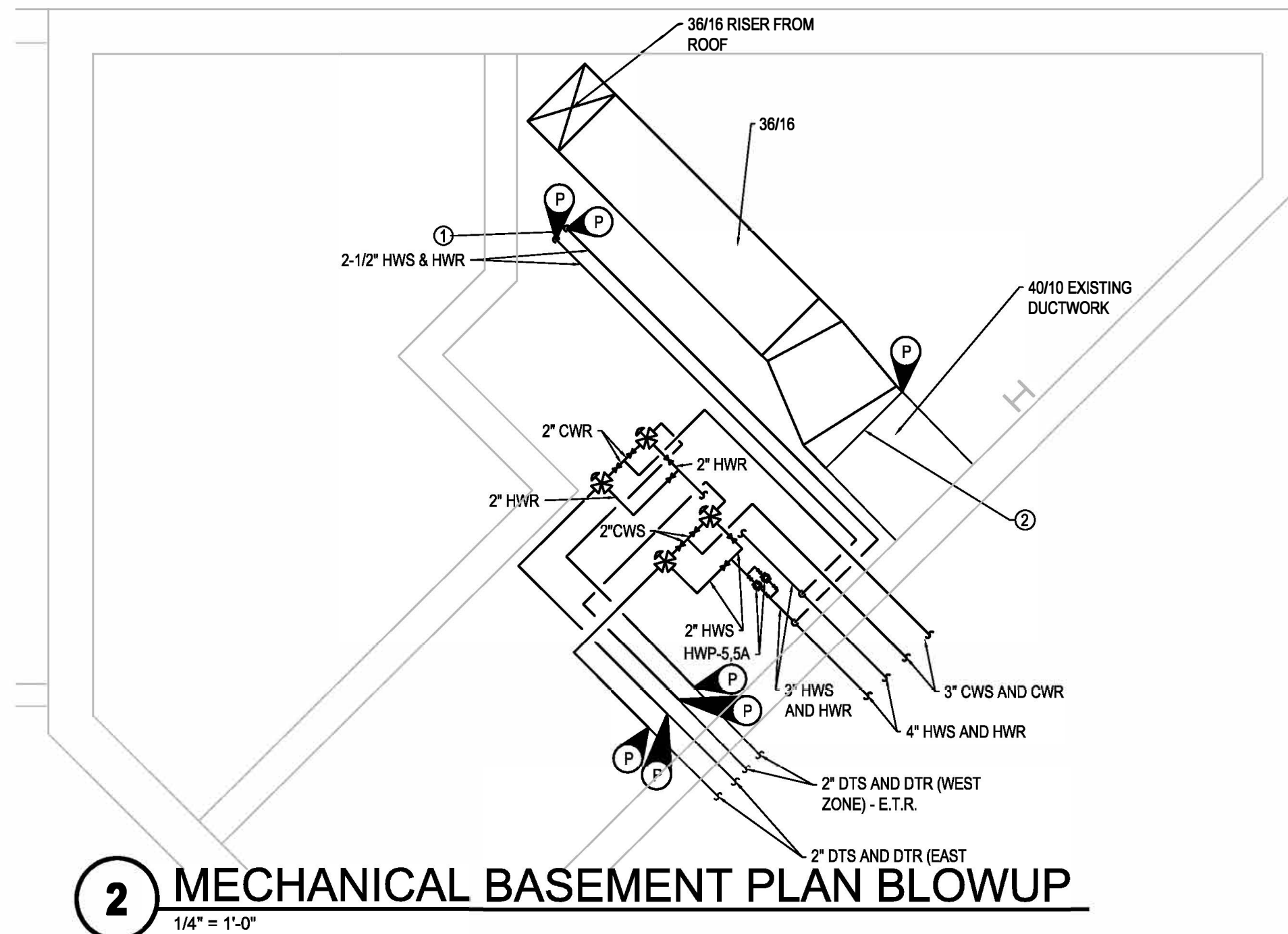
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**Project Number:** 18023  
**Sheet Title:** MECHANICAL  
ROOF  
DEMOLITION PLAN

**Sheet Number:** MD-103

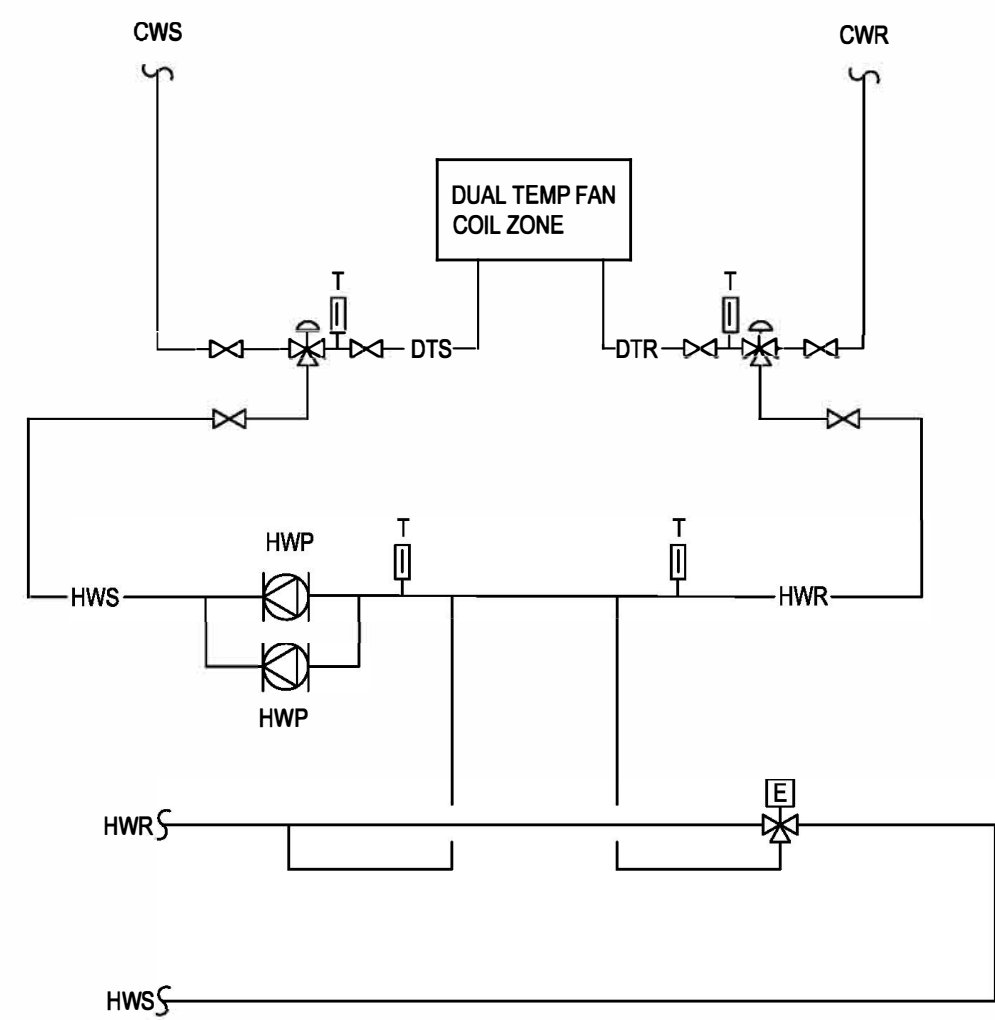




**1 MECHANICAL BASEMENT PLAN**  
1/8" = 1'-0"



**2 MECHANICAL BASEMENT PLAN BLOWUP**  
1/4" = 1'-0"



**3 DUAL TEMP ZONE VALVE OPERATION**  
NTS

**SEQUENCE OF OPERATION:**

- CONTROLS CONTRACTOR TO REVIEW SEQUENCING OF OPERATIONS WITH PBA PERSONAL PRIOR TO WORK STARTING.
- THE DDC SHALL DETERMINE THE DUAL TEMPERATURE MODE OF OPERATION AS PROGRAMMED AT THE CENTRAL OPERATORS WORKSTATION SUBJECT TO THE OUTSIDE AIR TEMPERATURE AND RAISED BY THE REPRESENTATIVE ZONE SPACE TEMPERATURE SENSORS.
  - 65°F AND BELOW AND SUBJECT TO THE SPACE ZONE SENSORS THE DDC SHALL TWO-POSITION 3-WAY CHANGEOVER VALVES TO THE HEATING MODE OF OPERATION. UPON POSITIVE VALVE POSITION INDICATION TO THE HEATING MODE THE DDC SHALL START THE HOT WATER PUMP THAT SERVES THE ZONES. CURRENT SENSOR RELAYS SHALL PROVIDE POSITIVE PROOF STATUS OF PUMP OPERATION. SUPPLY HOT WATER SENSOR SHALL MODULATE THE 3-WAY CONTROL VALVE TO MAINTAIN THE SUPPLY WATER TEMPERATURE TO THE FAN COIL UNITS AS RESET BY THE OUTSIDE AIR TEMP.
  - ABOVE 68°F OUTSIDE AIR TEMPERATURE AND SUBJECT TO THE SPACE ZONE SENSORS, THE DDC SHALL COMMAND THE DUAL TEMP SYSTEM TO THE COOLING MODE OF OPERATION. BEFORE CHANGEOVER IS ACCOMPLISHED THE DDC SHALL POSITION THE HOT WATER 3-WAY CONTROL VALVE TO THE NO HEAT ADD POSITION. HOT WATER LOOP SENSORS SHALL DELAY THE 3-WAY CHANGEOVER CONTROL VALVES TO INSURE THE LOOP WATER IS BELOW 90°F LOOP WATER TEMPERATURE. ONCE THE FAN COILS HAVE DISSIPATED HEAT THE DDC SHALL POSITION THE CHANGEOVER 3-WAY VALVES TO ALLOW CHILLED WATER FLOW TO THE FAN COILS UNIT ZONE.
  - DIFFERENTIAL PRESSURE SENSOR ON THE ZONE HOT WATER LOOP SHALL MODULATE THE HOT WATER PUMPS VFD AS SENSED BY THE DDC TO MAINTAIN LOOP DIFFERENTIAL SETPOINT. IN THE EVENT OF PUMP OR VFD FAILURE AN ALARM SHALL BE DISPLAYED AT THE CENTRAL OPERATORS WORKSTATION.

**GENERAL MECHANICAL NOTES:**

- COORDINATE THE INSTALL OF DUCTWORK AND PIPING WITH ALL TRADES. ENSURE THAT WORK SHOULD BE DONE IN THE RIGHT ORDER.
- CRAWL SPACE IS TIGHT, ENSURE PROPER TRAINING OF PERSONAL THAT WILL CONDUCT WORK IN SPACE.

**MECHANICAL DRAWING NOTES:**

- RECONNECT INTO THE EXISTING BUS TERMINAL LOOP. BUS LOOP PUMPS ARE EXISTING TO REMAIN. CONNECT INTO HWS & HWR PIPING BEFORE PUMP VALVES AND GAUGES.
- CONNECT DUCTWORK FROM RTU-1 TO CRAWL SPACE DUCTWORK. THIS DUCTWORK IS FED TO ALL SUPPLY DUCTWORK THAT SERVES THE FIRST FLOOR.
- HOT WATER AND CHILLED WATER PIPING TO SERVE CRAWL SPACE, BUS TERMINAL, AND DUAL TEMP SYSTEM IN BASEMENT.
- REINSTALL PIPING AT THE HIGHEST POINT POSSIBLE. RECONNECT TO ALL BRANCHES AND ENSURE ALL SYSTEMS ARE BACK TO OPERATIONAL. REPLACE VALVES AS REQUIRED.

**CONFINED SPACE NOTE:**

CONTRACTOR SAFETY PERSONNEL TO EVALUATE EXISTING CONFINED SPACE CONDITIONS ALONG WITH SCHEDULED WORK AND DETERMINE SAFETY PRECAUTIONS NECESSARY IN ORDER TO WORK IN THE CONFINED SPACE.



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Project: **R.F. WILLSON MECH. AND ELEC. UPGRADES**

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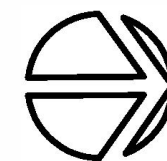
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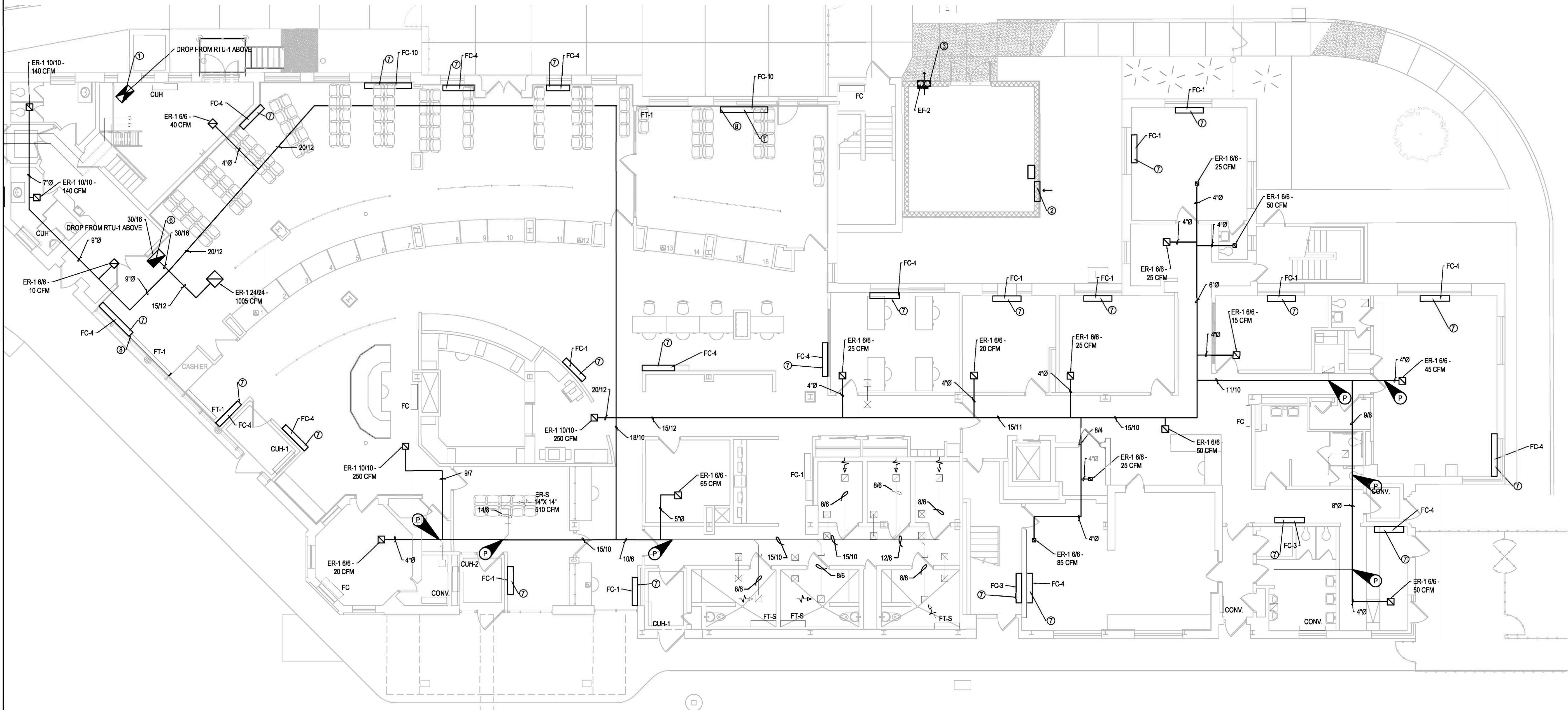
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Sheet Title: **MECHNIACAL BASEMENT PLAN**

Sheet Number: **M-200**

**WILLSON BUILDING**





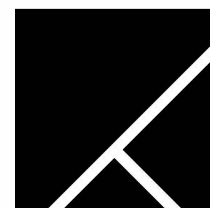
**1 MECHANICAL FIRST FLOOR PLAN**  
1/8" = 1'-0"

GENERAL MECHANICAL NOTES:

- COORDINATE THE INSTALL OF DUCTWORK AND PIPING WITH ALL TRADES. ENSURE THAT WORK SHOULD BE DONE IN THE RIGHT ORDER.
- CRAWL SPACE IS TIGHT, ENSURE PROPER TRAINING OF PERSONAL THAT WILL CONDUCT WORK IN SPACE.
- PROVIDE VOLUME DAMPERS ON ALL DUCT BRANCHES.
- BALANCE DUAL TEMP SYSTEM TO COOLING UNIT GPMS.

MECHANICAL DRAWING NOTES:

- CONNECT INTO EXISTING SUPPLY DUCT IN OLD MECHANICAL ROOM. SUPPLY DUCT SERVES FLOOR IN CRAWL SPACE. DUCT IN CRAWL SPACE TO REMAIN. REFER TO BASEMENT PLAN FOR MORE INFORMATION.
- 2' LONG BY 1" HIGH LOUVER WITH MOTOR OPERATED DAMPER. CONTROL DAMPER OFF OF EXHAUST FAN CONTROL. WHEN EXHAUST FAN TURNS ON, THE DAMPER SHALL OPEN.
- PROPELLER TYPE EXHAUST FAN TO BE INSTALLED HIGH ON WALL. FAN TO BE ON TIME SWITCH. FAN TO ALSO CONTROL LOUVER DAMPER.
- CABINET UNIT HEATER TO BE INSTALLED 8" OFF OF FINISHED FLOOR. CONTROL HEATER ON TEMP SENSOR IN THE ROOM. WHEN THE ROOM GETS BELOW 65°F, HEATER TO TURN ON.
- TRANSFER GRILLE IN WALL. GRILLE TO BE 9" L X 6" H. GRILLE TO HAVE AN INTEGRAL FIRE DAMPER FOR THE RATED WALL.
- RETURN DUCT FROM RTU-1 ON SECOND FLOOR ROOF. RETURN DUCTWORK TO RUN IN 1ST FLOOR CEILING. COORDINATE INSTALL WITH GENERAL CONTRACTOR AS THEY WILL NEED TO REMOVE CEILINGS. ENSURE THAT BRIDGE PERSONAL ARE AWARE OF WORK SCHEDULE.
- NEW FAN COIL UNIT. COORDINATE WITH GC TO PATCH WALL AS NECESSARY. PIPING SIZES TO FEED UNIT WILL NOT CHANGE, PIPING IS FED FROM BASEMENT BELOW. MODIFY PIPING FROM BELOW AS REQUIRED. NEW 2 WAY CONTROL VALVE PIPING PACKAGES TO BE PROVIDED WITH THE UNITS.
- MODIFY FIN TUBE AS REQUIRED FOR THE NEW FAN COIL UNIT TO FIT.



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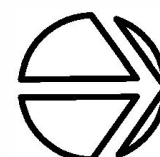
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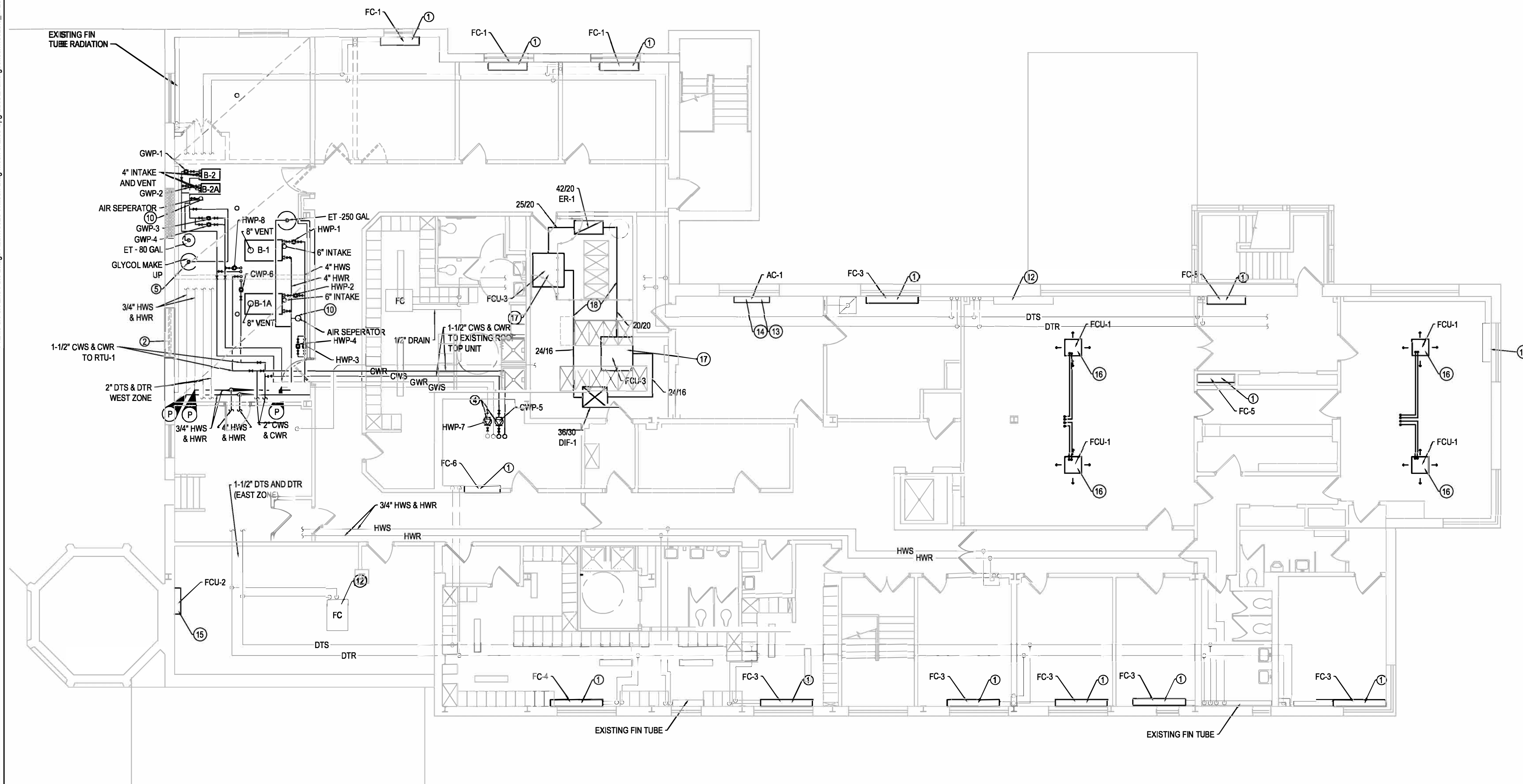
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1ST FLOOR  
PLAN**

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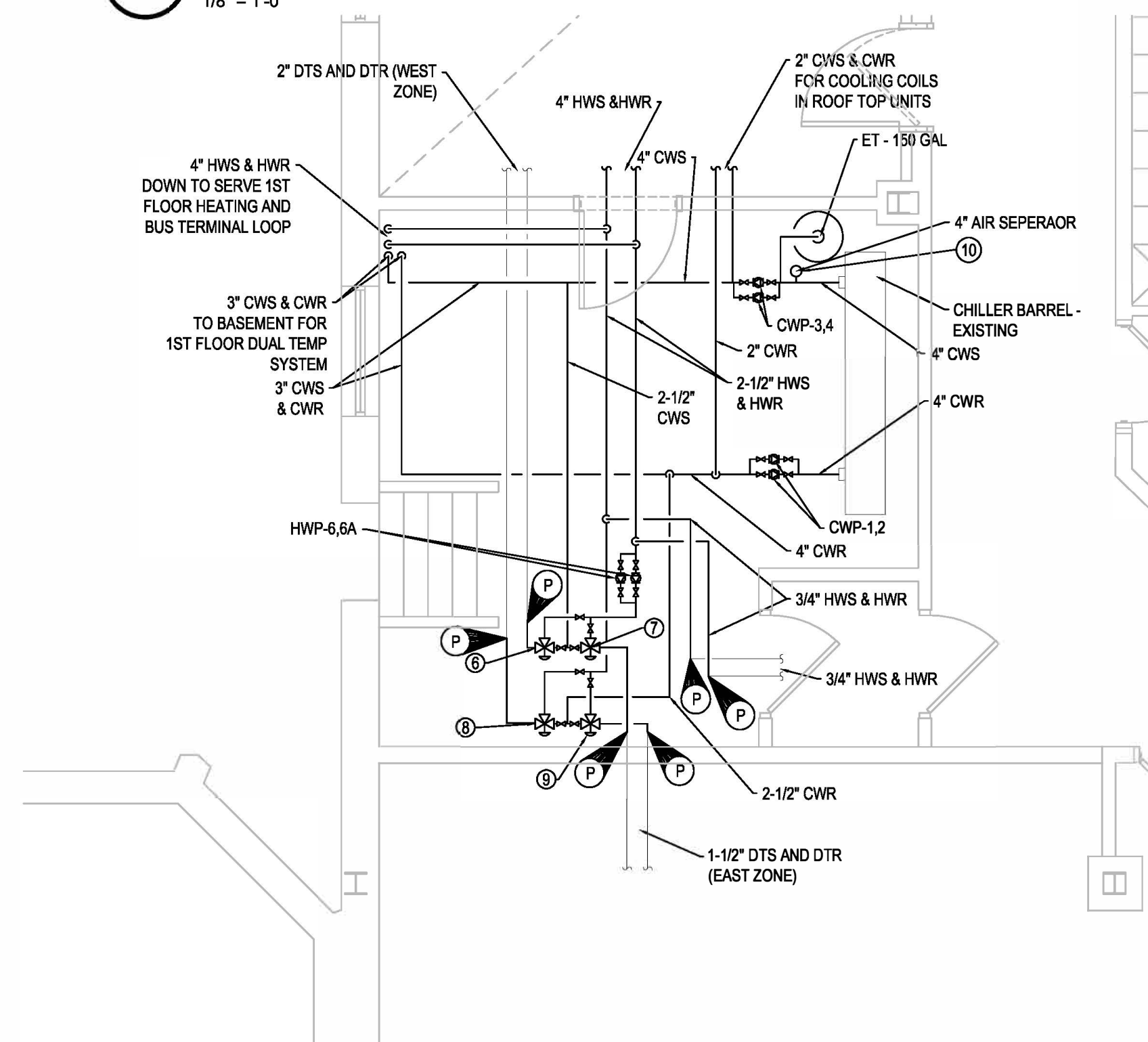
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# 1 MECHANICAL SECOND FLOOR PLAN



## 2 MECHANICAL SECOND FLOOR CHILLER ROOM PLAN

GENERAL MECHANICAL NOTES:

1. COORDINATE THE INSTALL OF DUCTWORK AND PIPING WITH ALL TRADES. ENSURE THAT WORK SHOULD BE DONE IN THE RIGHT ORDER.
2. CRAWL SPACE IS TIGHT, ENSURE PROPER TRAINING OF PERSONAL THAT WILL CONDUCT WORK IN SPACE.
3. BOILER FLUES AND VENTS TO BE COORDINATED WITH ROOF PLAN. RUN VENTS IN CEILING AS REQUIRED TO GET TO SHOWN LOCATIONS ON THE ROOF PLAN.
4. SECOND FLOOR DUCTWORK IS ALL EXISTING UNLESS OTHERWISE NOTED.

### MECHANICAL DRAWING NOTES:

1. NEW FAN COIL UNIT. REFER TO SCHEDULES PAGE FOR INFORMATION. NEW 2 WAY CONTROL VALVE PIPING PACKAGES TO BE PROVIDED WITH THE UNITS. RECONNECT EXISTING PIPING TO THE PIPING PACKAGES AND FEED NEW FAN COIL UNITS. MODIFY PIPE CHANGES AS REQUIRED FOR THE NEW SIZE OF THE UNIT.
2. 5x6" LOUVER IN WINDOW OPENING. LOUVER TO BE MODULATING OFF OF MOTOR OPERATED DAMPER. DAMPER CONTROLLED BY TEMPERATURE SENSOR IN ROOM. TO OPEN WHEN ROOM GETS ABOVE 75°F.
3. 88 DUCT FROM EXHAUST FAN 1 ABOVE. LEAVE OPEN ENDED AT CEILING. PROVIDE BIRDCOAST SCREEN ON END OF DUCT.
4. COIL PUMP TO BE REPLACED. REFER TO SCHEDULES PAGE FOR PUMP INFORMATION.
5. GYLOCI. MAKE UP PACKAGE TO BE EQUAL TO WESSELS' - GMP-13050. CONTRACTOR MAY SUBMIT EQUAL FOR APPROVAL.
6. FEED 3-WAY VALVE WITH 2" HWS AND CWS. TO FEED 2" DUAL TEMP SYSTEM - SECOND FLOOR WEST ZONE.
7. FEED 3-WAY VALVE WITH 1 1/2" HWS AND CWS. TO FEED 1 1/2" DUAL TEMP SYSTEM - SECOND FLOOR EAST ZONE.
8. FEED 3-WAY VALVE WITH 2" HWR AND CWR. TO FEED 2" DUAL TEMP SYSTEM - SECOND FLOOR WEST ZONE.
9. FEED 3-WAY VALVE WITH 1 1/2" HWR AND CWR. TO FEED 1 1/2" DUAL TEMP SYSTEM - SECOND FLOOR EAST ZONE.
10. AIR SEPARATOR TO BE PROVIDED WITH AN INTEGRAL AIR/DIRT ELIMINATOR.
11. 3/8" SPLY AND RETURN DUCTWORK FROM RTU-2 ABOVE. COORDINATE INSTALL WITH STRUCTURAL CONTRACTOR AS THESE DUCTS REQUIRE ROOF PENETRATIONS. DUCTWORK TO BE HUNG HIGH TO CEILING.
12. FAN COIL UNIT IS EXISTING TO REMAIN. SPLIT SYSTEM UNIT TO BE ADDED TO THE ROOM. MODIFY CONTROL OF THE FAN COIL UNIT TO TURN ON FOR AUXILIARY HEAT. TURN UNIT ON AND RUN WHEN OUTSIDE TEMP IS UNDER 0°F.
13. PROVIDE A CONDENSATE PUMP FOR THE UNIT. PUMP TO CONDENSATE LINE FEEDING THE SPLIT SYSTEMS. DISCHARGE THE EXISTING CONDENSATE LINE IN THE CEILING SPACE.
14. COORDINATE WALL PATCHING WITH THE GENERAL CONTRACTOR. KEEP AIR INTAKE LOUVER THROUGH THE EXTERIOR WALL FOR NEW UNIT. REFRIGERANT PIPING FROM ROOF. HIDE PIPING AS REQUIRED PER OWNER.
15. WALL HUNG, INDOOR FAN COIL UNIT FOR SPLIT SYSTEM. INSTALL ABOVE THE MIRROR ON THE WALL. CONDENSATE PUMP TO BE PROVIDED TO GET CONDENSATE TO CHILLER ROOM. COORDINATE INSTALL WITH ALL CONTRACTORS.
16. VRF CEILING CASSETTE. 1 CONTROLLER PER ROOM TO CONTROL BOTH INDOOR UNITS. CONDENSATE PUMP WILL NEED TO BE PROVIDED FOR EACH UNIT. RUN CONDENSATE TO THE COMPUTER ROOM AND CONNECT INTO THE MAIN LINE THERE. COORDINATE NEEDED CEILING REMOVAL WITH ALL TRADES. SERVER ROOM COOLING UNIT. HANG UNIT FROM DECK ABOVE. HANG UNIT ABOVE COOLING RACKS. UNITS TO HAVE COMMON SUPPLY DUCTING WITH A SINGLE THERMOSTAT CONTROL. PROVIDE A CONDENSATE PUMP WITH EACH UNIT, AND HANG FROM DECK. RUN CONDENSATE TO PIPE LEFT IN CEILING SPACE. REFRIGERANT PIPING IS FEED FROM ROOF ABOVE.
17. HANG DUCTWORK TIGHT TO CEILING. CUT HOLES IN CASE AS NEEDED FOR INSTALL.



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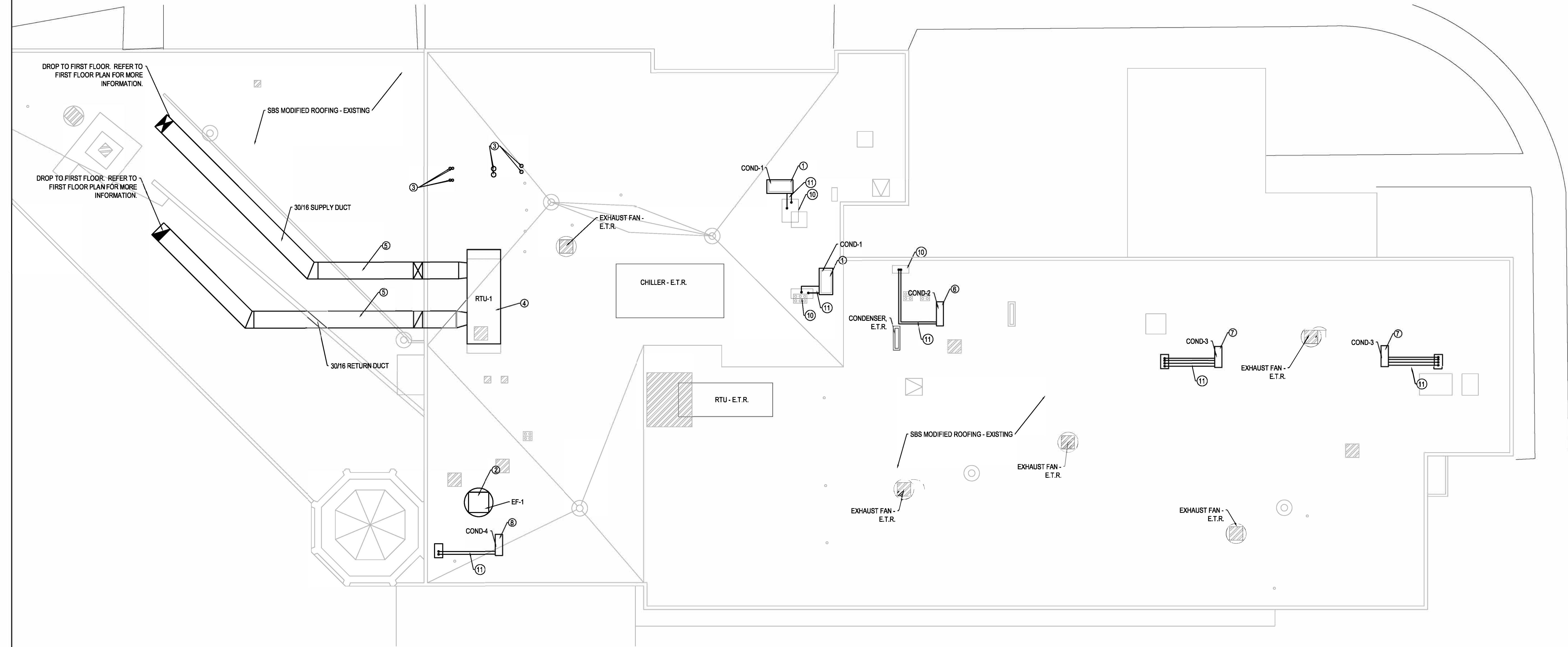
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**Sheet Title:** MECHANICAL  
2ND FLOOR  
PLANS

Sheet Number: **M-202**

# WILLSON BUILDING







**1 MECHANICAL ROOF PLAN**  
1/8" = 1'-0"

**GENERAL MECHANICAL NOTES:**

1. ALL COMMON AREA DUCTWORK SHALL HAVE A DIFFUSER OR GRILLE WITH AN INTEGRATED FIRE DAMPER.
2. ALL EXHAUST REGISTERS THAT ARE NOT MARKED ARE TO BE ER-1, SIZE 6"x6" AND 20 CFM.
3. ALL SOUTH WING DUCTWORK TO BE ABOVE CEILING UNLESS OTHERWISE NOTED. REFER TO NOTE 10 FOR DROPS TO EXPOSED DUCTWORK.

**MECHANICAL DRAWING NOTES:**

1. REPLACEMENT CONDENSERS FOR THE SERVER ROOM HVAC UNITS. PROVIDE CONDENSER SUPPORT RAILS AS PER THE SPEC. THE RAILS ARE TO MEET THE SEISMIC REQUIREMENTS. COORDINATE INSTALL OF RAILS, PIPING AND UNIT WITH ALL TRADES. RAIL SUPPORT DETAIL ON DRWG A-401.
2. PROVIDE EXHAUST FAN FOR CHILLER ROOM. ROOF CURB TO BE PROVIDED WITH UNIT, FLASHING TO BE DONE BY C CONTRACTOR.
3. FLUES/ INTAKES FROM BOILERS BELOW. COORDINATE LOCATIONS WITH C CONTRACTOR, C CONTRACTOR TO FLASH AROUND THE PENETRATIONS. REFER TO A-402 FOR HOT STACK ROOF DETAIL.
4. ROOF TOP UNIT TO SERVE 1ST FLOOR SUPPLY AND RETURN. REFER TO STRUCTURAL DRAWINGS FOR EXACT LOCATION. DUCTWORK TO RUN ON THE ROOF TO LOCATION SHOWN. 18" HIGH CURB TO BE PROVIDED WITH UNIT. REFER TO A-402 FOR FLASHING DETAIL.
5. EXPOSED DUCTWORK ON ROOF TO BE EQUAL TO PRODUCT THERMODUCT. REFER TO DUCTWORK SUPPORT DETAIL ON PAGE A-402. INSTALL SUPPORTS PER SMACNA REQUIREMENTS.
6. CONDENSER TO SERVE THE COMPUTER ROOM COOLING. PROVIDE CONDENSER SUPPORT RAILS AS PER THE SPEC. THE RAILS ARE TO MEET THE SEISMIC REQUIREMENTS. COORDINATE INSTALL OF RAILS, PIPING AND UNIT WITH ALL TRADES.
7. SPLIT SYSTEM TO SERVE MEETING ROOM ON THE SECOND FLOOR BELOW. PROVIDE CONDENSER SUPPORT RAILS FOR EACH UNIT, FOLLOW THE SPEC. COORDINATE INSTALL WILL ALL TRADES.
8. SPLIT SYSTEM TO BE PROVIDED FOR THE
9. PIPE PORTAL TO BE PROVIDED FOR REFRIGERANT PIPING AND ELECTRICAL. REFER TO PAGE A-401 FOR PIPE PORTAL DETAIL. SEAL REFRIGERANT PIPING TO PORTAL FLASHING. ENSURE NO LEAKS.
10. REUSE THE EXISTING PIPE PORTAL FOR COMPUTER ROOM SYSTEM. SEAL PIPING THROUGH PORTAL AND ENSURE THAT THERE ARE NO LEAKS THROUGH.
11. PROVIDE PIPE SUPPORTS AS REQUIRED. PIPE SUPPORT TO BE SECURED TO THE ROOF AND IS TO KEEP PIPING IN PLACE FROM THE UNIT TO THE PORTAL. INSTALL PER SPEC.



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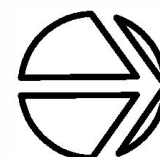
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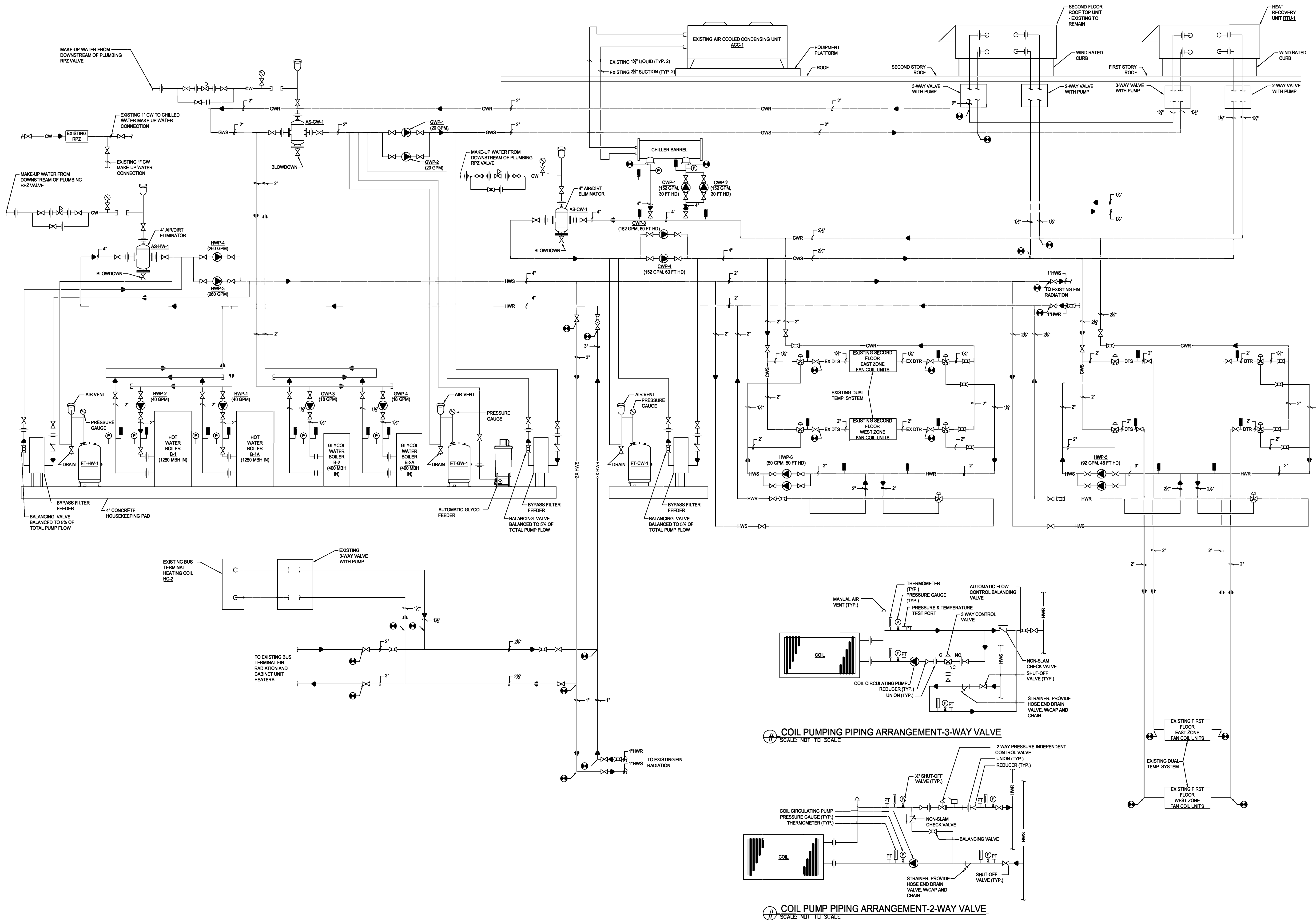
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ROOF PLAN**

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# 1 HYDRONIC SYSTEM SCHEMATIC

NTS



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