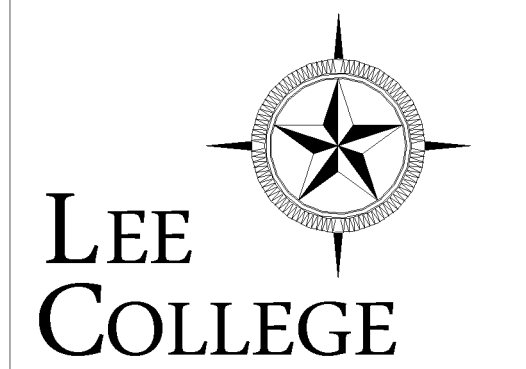


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2013 BOND

PROJECT NAME
LEE COLLEGE
NEW WELDING, PIPEFITTING,
MACHINE TECHNOLOGY,
AND MILLWRIGHT FACILITY
AT MCNAIR

PROJECT ADDRESS
3411 EAST FREEWAY
BAYTOWN, TEXAS
77521

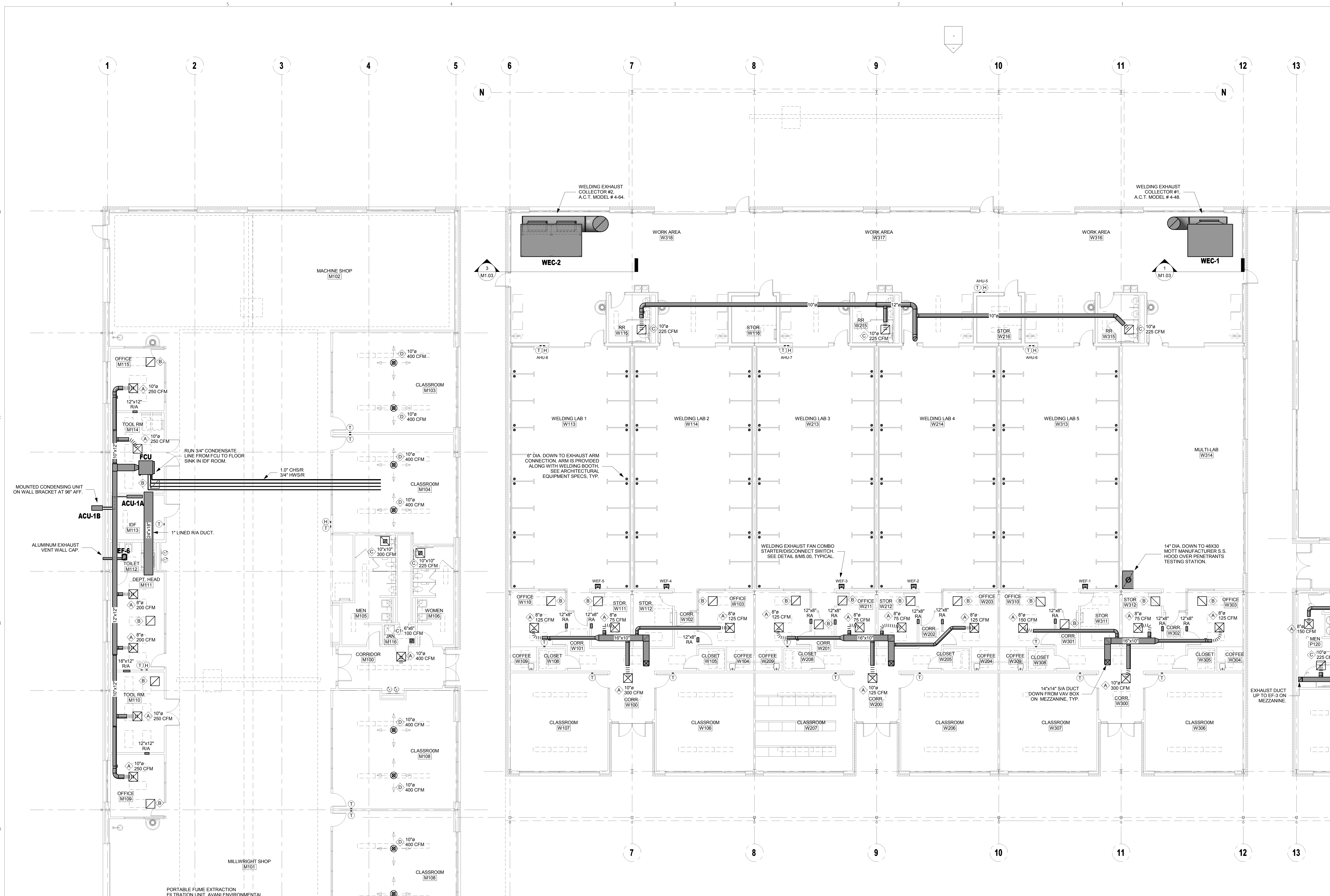
PROJECT NUMBER
13-0700

ISSUE DATE
18 JUNE 2014

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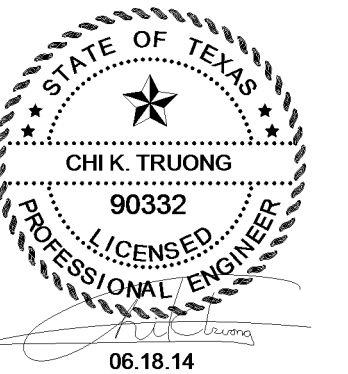
MECHANICAL
FIRST FLOOR PLAN
- AREA B & C

M1.02



1 MECHANICAL FIRST FLOOR PLAN - AREA B & C
1/8" = 1'-0"

FF&E NOTE: ALL WORK RELATED TO ALL THE SHOP EXHAUST AIR SYSTEMS INCLUDING, BUT NOT LIMITED TO, DUCT, BLOWERS, COLLECTORS, ELECTRICAL SERVICE, STRUCTURAL REQUIREMENTS, FOUNDATIONS, AND ALL OTHER RELATED ITEMS AS INDICATED IN THE CONSTRUCTION DOCUMENTS.



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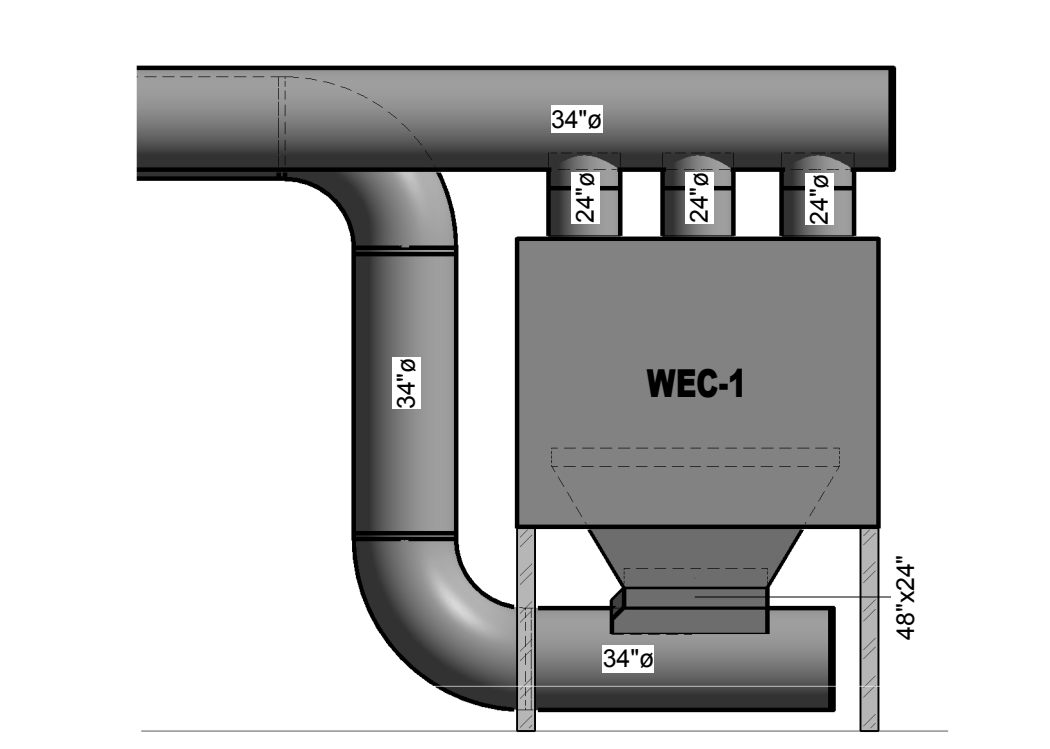
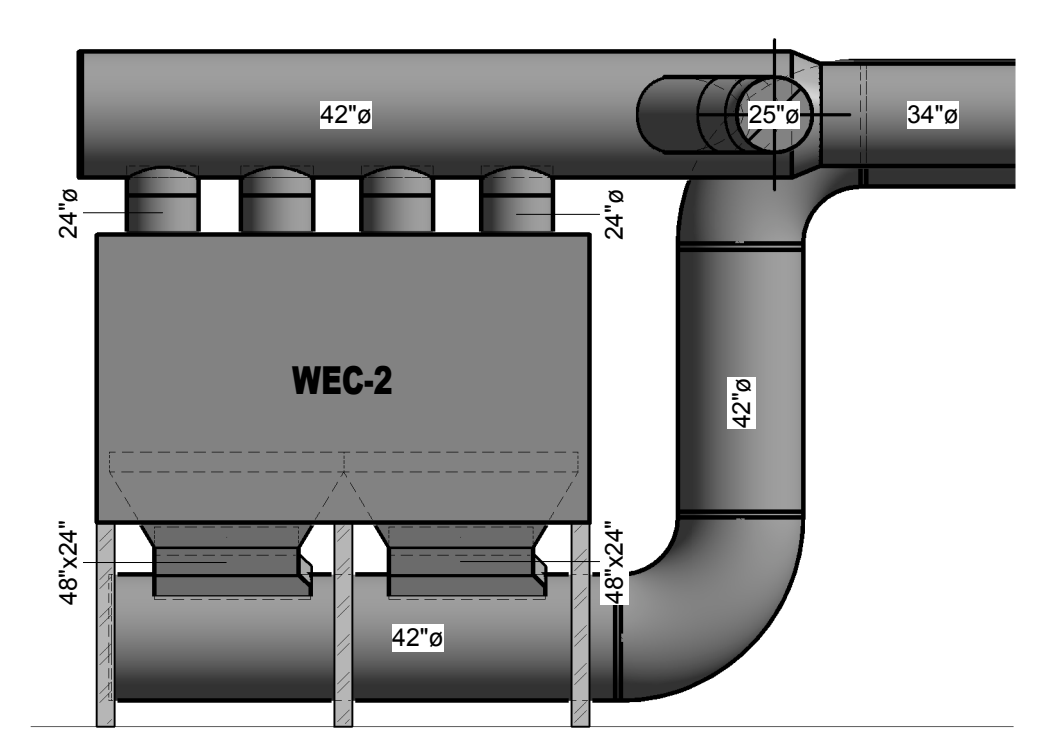
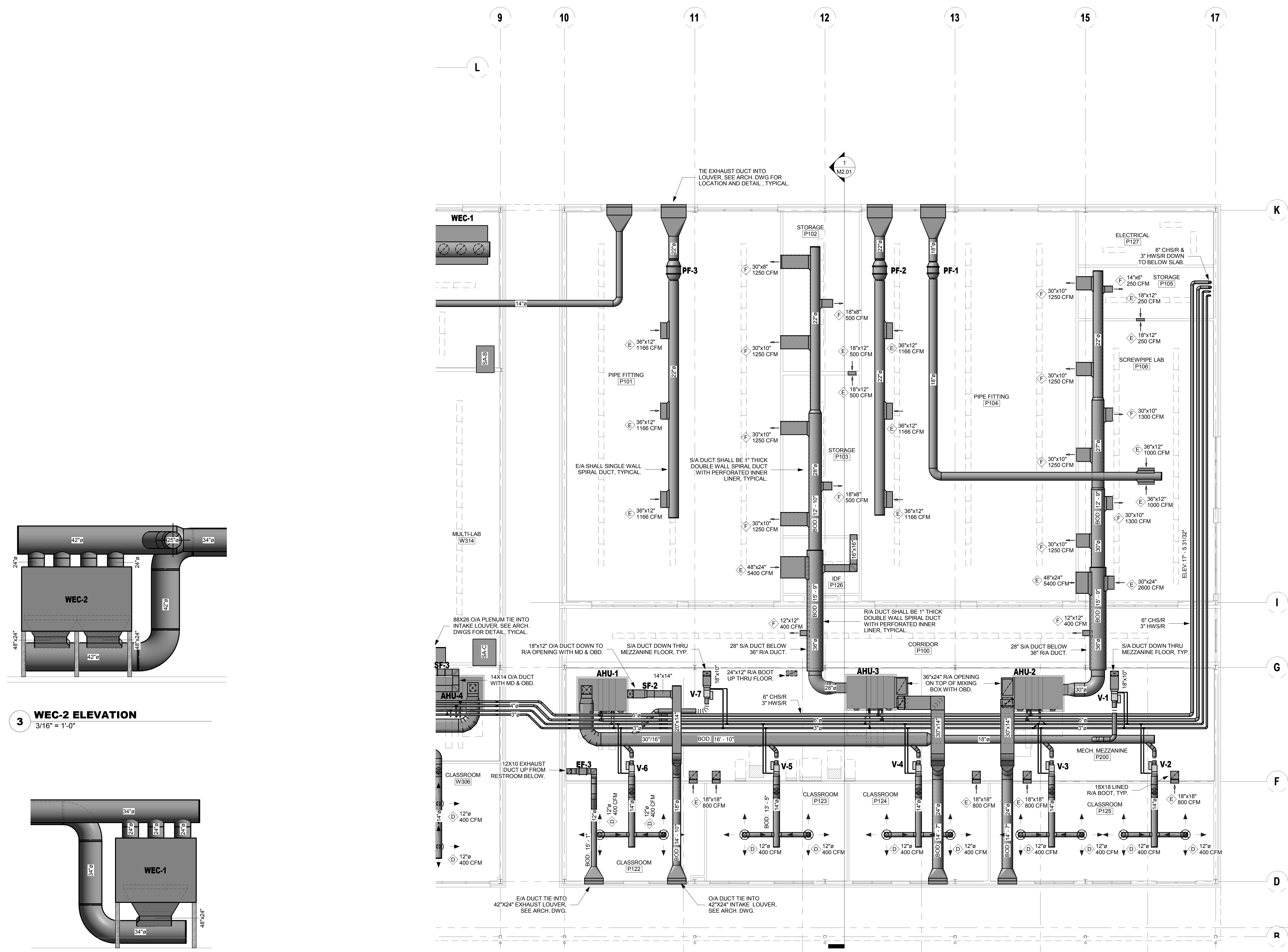
PROJECT NUMBER
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ISSUE DATE
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MECHANICAL SECOND
FLOOR PLAN - AREA A

M1.03



2 MECHANICAL SECOND FLOOR PLAN - AREA A
1/8" = 1'-0"

FF&E NOTE: ALL WORK RELATED TO ALL THE SHOP EXHAUST AIR SYSTEMS INCLUDING, BUT NOT LIMITED TO, DUCT, BLOWERS, COLLECTORS, ELECTRICAL SERVICE, STRUCTURAL REQUIREMENTS, FOUNDATIONS, AND ALL OTHER RELATED ITEMS AS INDICATED IN THE CONSTRUCTION DOCUMENTS.



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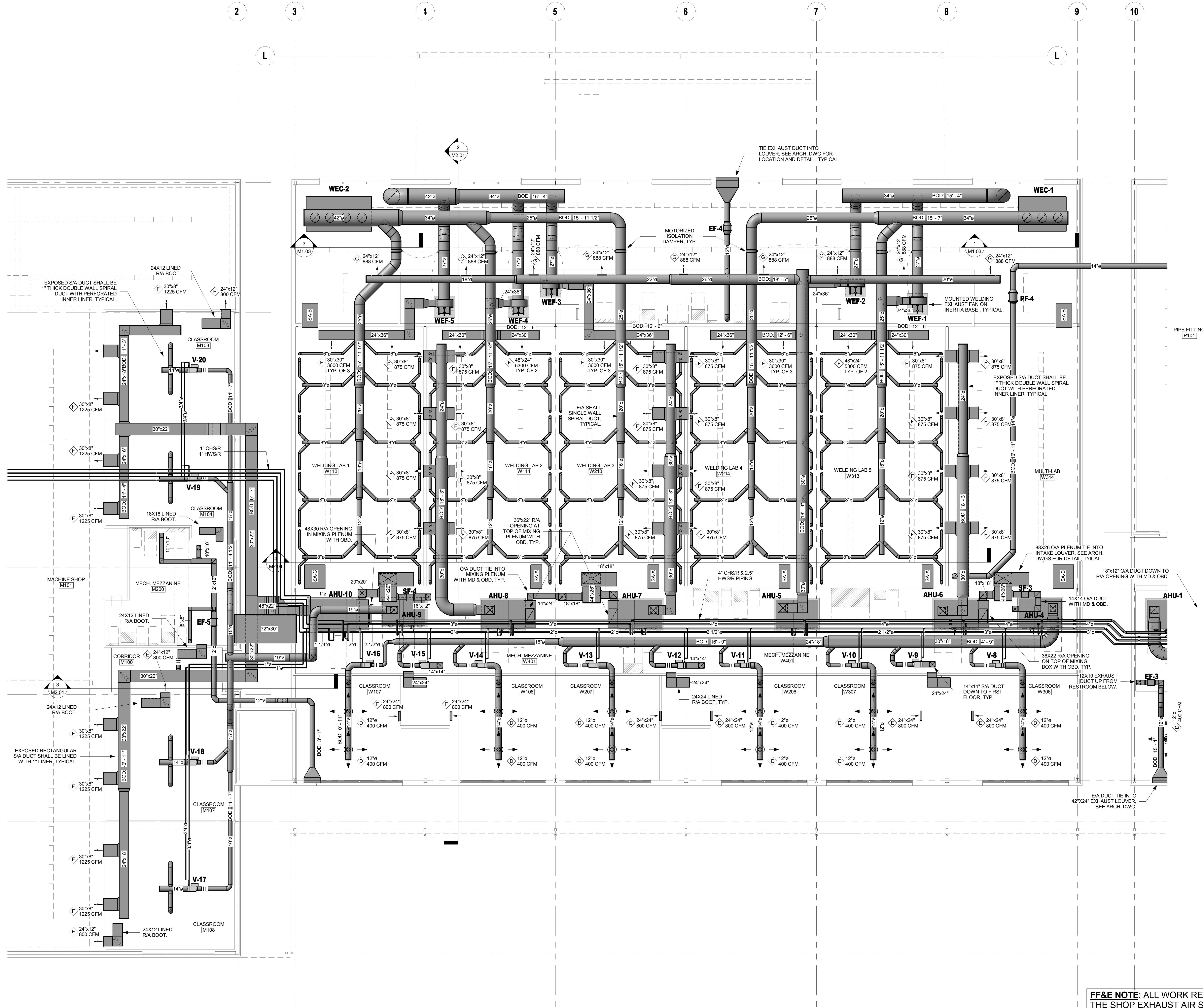
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**MECHANICAL SECOND
FLOOR PLAN - AREA B & C**

M1.04



MECHANICAL SECOND FLOOR PLAN - AREA B & C
1/8" = 1'-0"

FF&E NOTE: ALL WORK RELATED TO ALL THE SHOP EXHAUST AIR SYSTEMS INCLUDING, BUT NOT LIMITED TO, DUCT, BLOWERS, COLLECTORS, ELECTRICAL SERVICE, STRUCTURAL REQUIREMENTS, FOUNDATIONS, AND ALL OTHER RELATED ITEMS AS INDICATED IN THE CONSTRUCTION DOCUMENTS.



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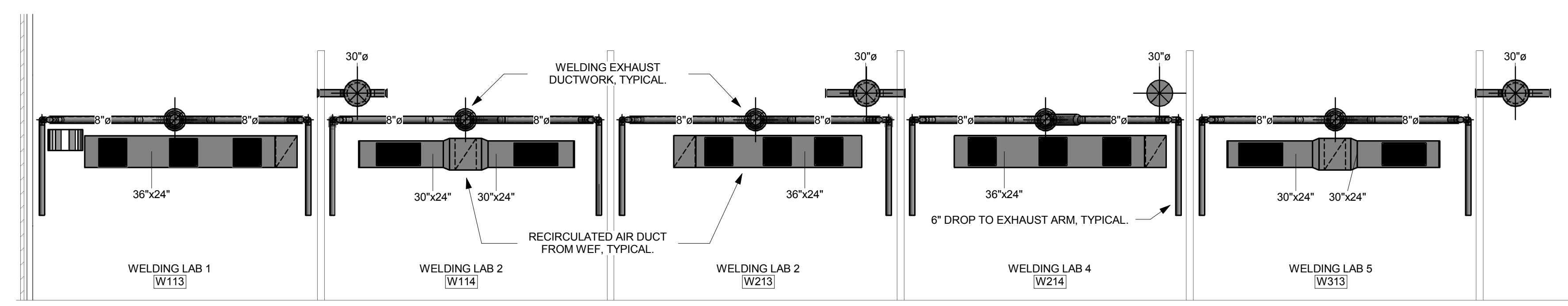
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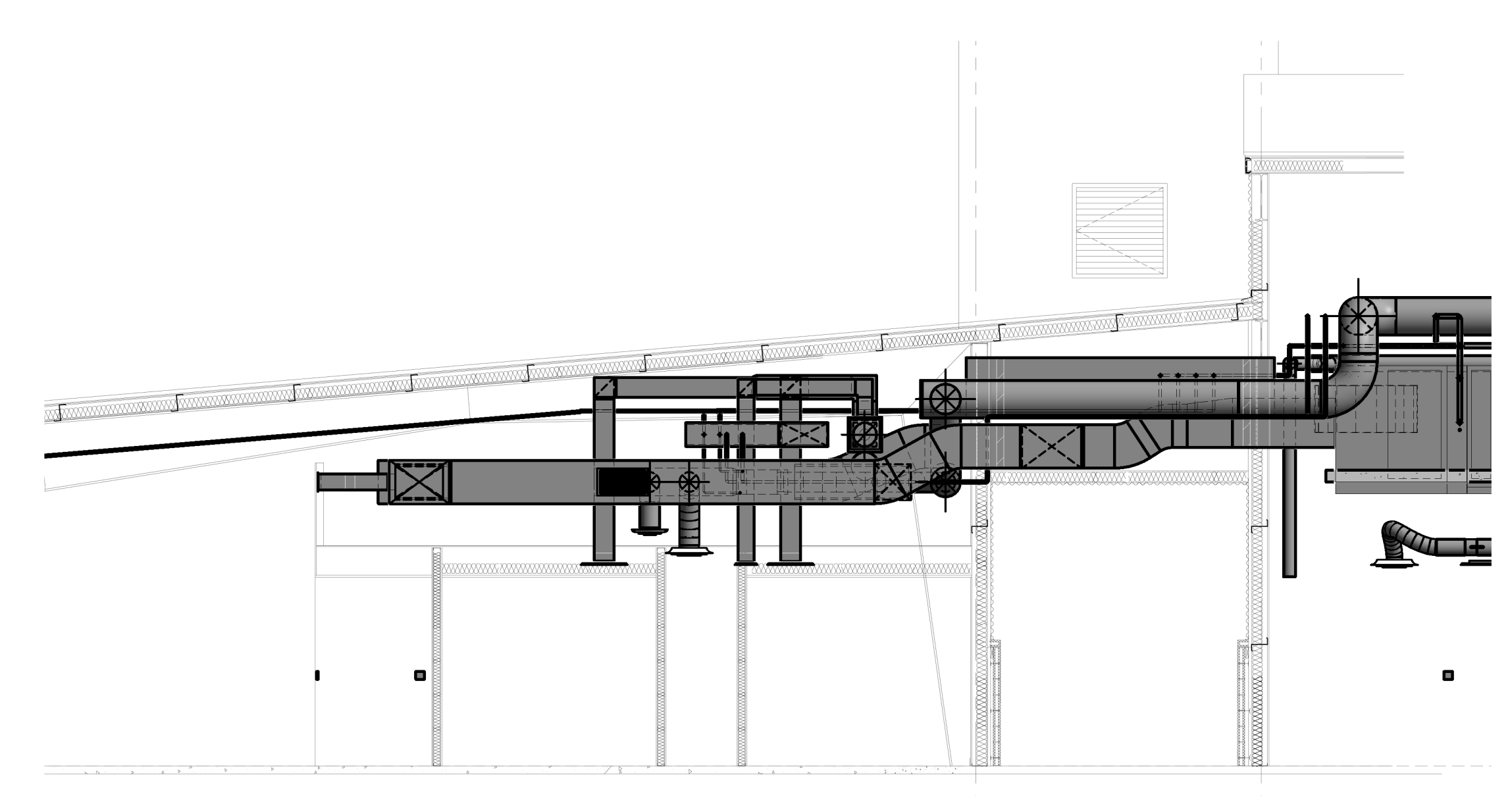
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MECHANICAL
BUILDING SECTIONS

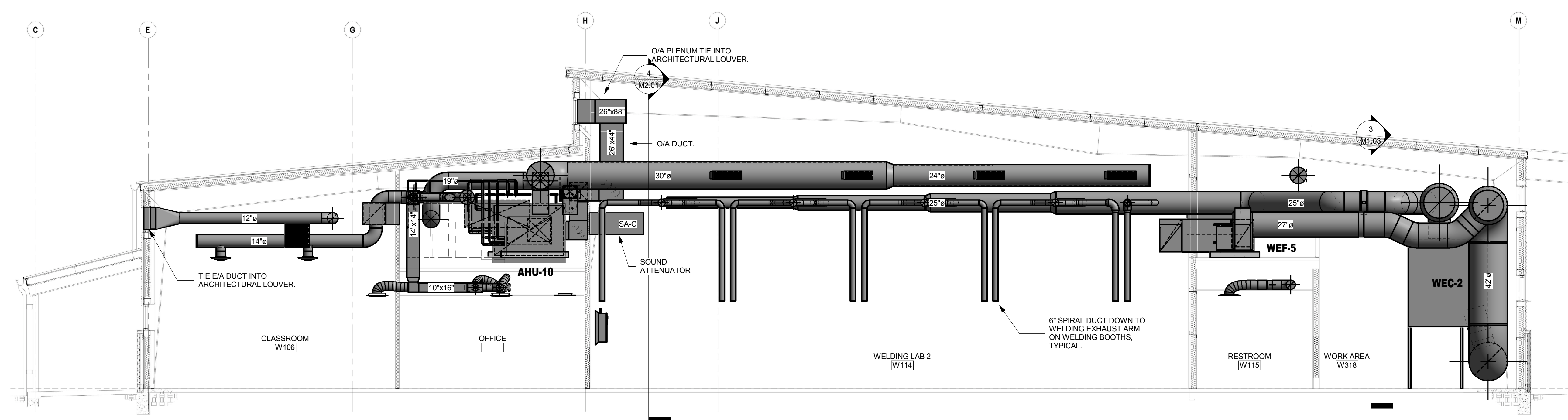
M2.01



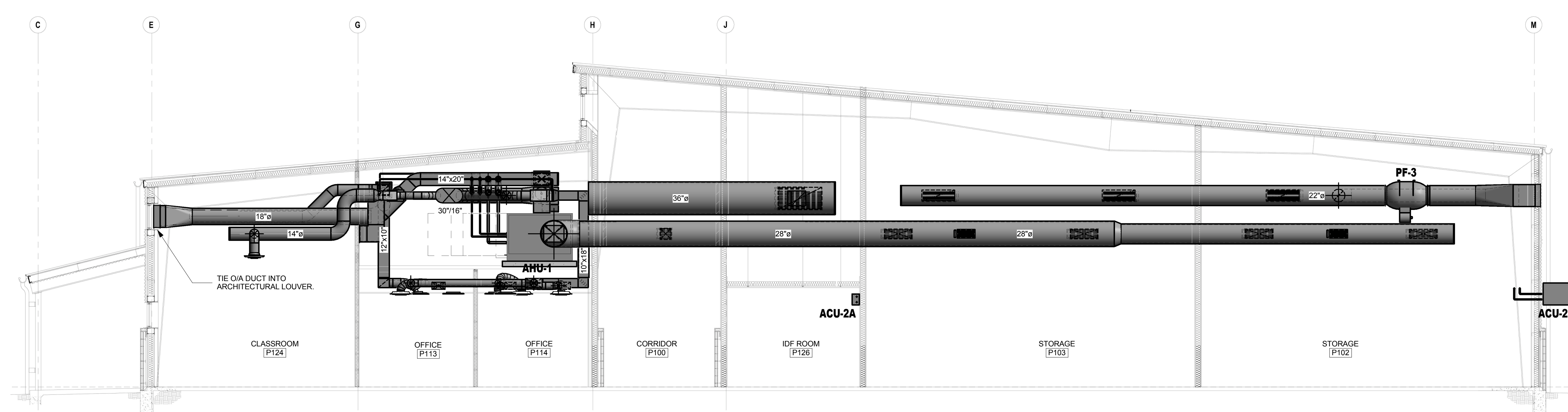
4 WELDING LABS SECTION
1/8" = 1'-0"



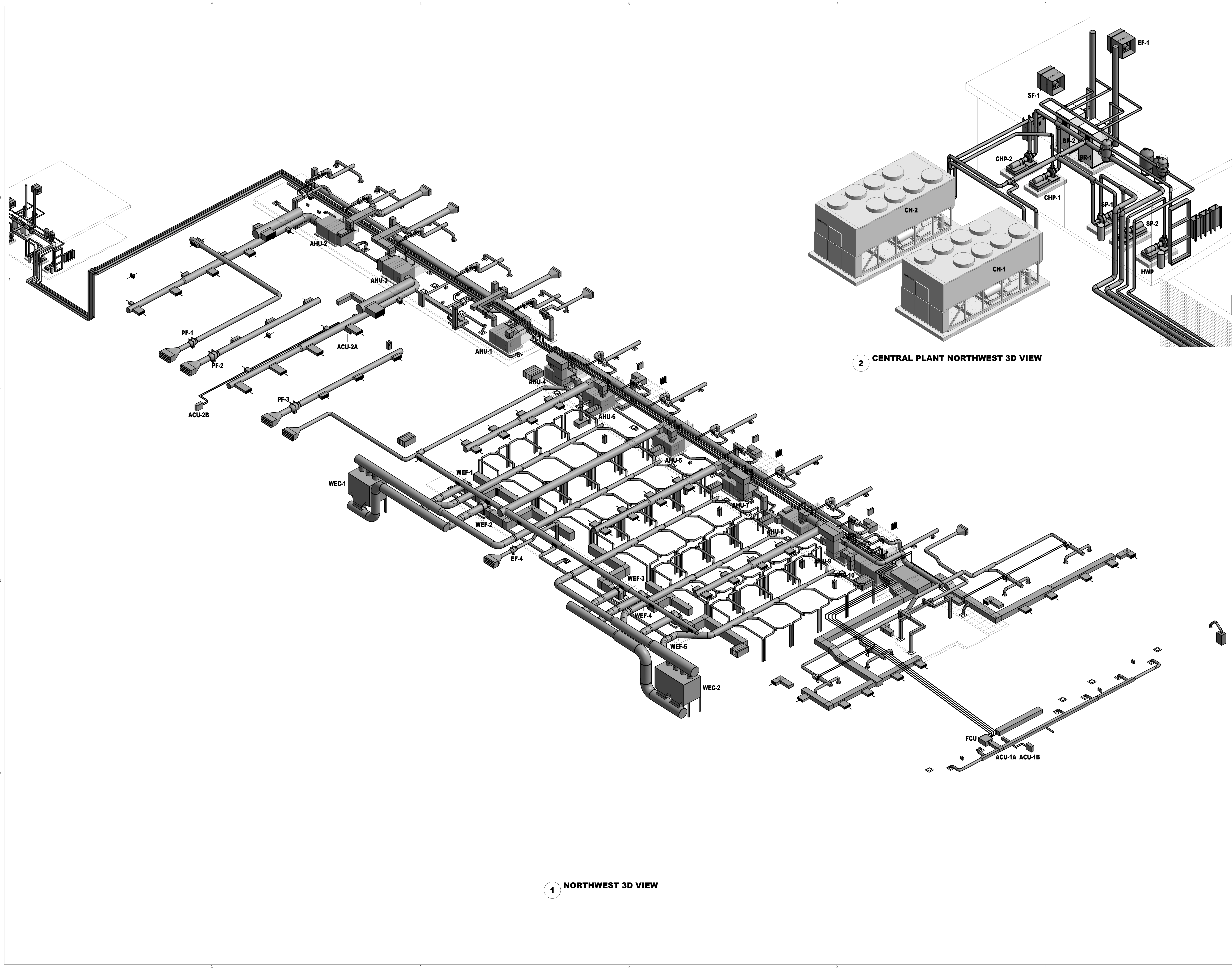
3 MECHANICAL MEZZANINE M200 SECTION
3/16" = 1'-0"



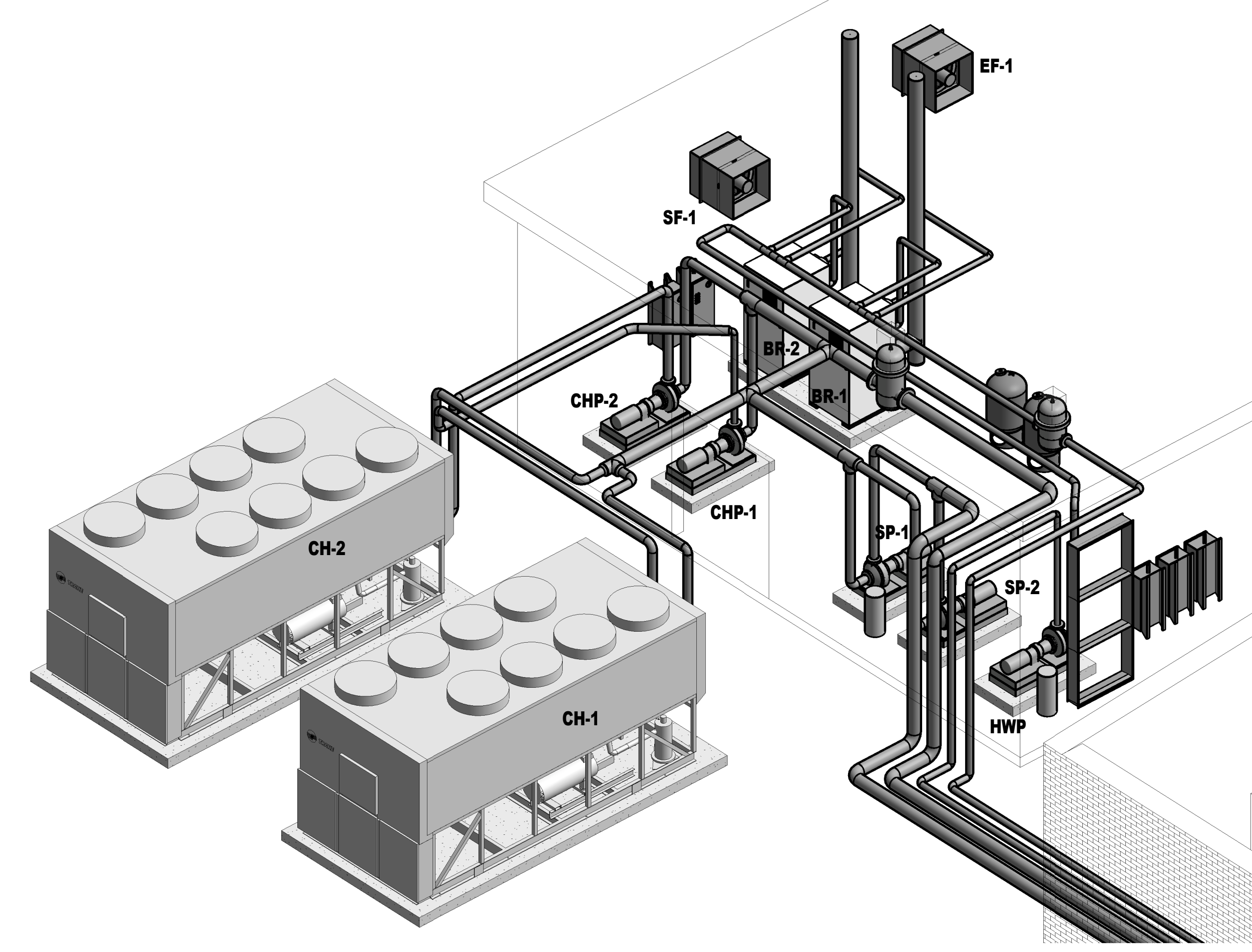
2 MECHANICAL SECTION - WELDING LAB
3/16" = 1'-0"



1 MECHANICAL SECTION - PIPE FITTING
3/16" = 1'-0"



1 NORTHWEST 3D VIEW



2 CENTRAL PLANT NORTHWEST 3D VIEW

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MECHANICAL OVERALL
 3D VIEW - NORTHWEST

M2.03

AIR DEVICE SCHEDULE

MARK	DESCRIPTION
A	CEILING DIFFUSER - 24" X 24" FACE, PATTERN TYPE, ALUMINUM CONSTRUCTION, CLEAR ANODIZED FINISH, NARROW-TEE TITUS TMS-AA-NT A1 = 12" X 12" FACE
B	EGGCRATE RETURN GRILLE - 1/2" X 1/2" X 1/2" CORE, ALUMINUM CONSTRUCTION, CLEAR ANODIZED FINISH, NARROW-TEE TITUS SOF-NT
C	EGGCRATE EXHAUST GRILLE - 1/2" X 1/2" X 1/2" CORE, ALUMINUM CONSTRUCTION, CLEAR ANODIZED FINISH, NARROW-TEE TITUS TMS-AA
D	SUPPLY GRILLE - ADJUSTABLE VERTICAL TO HORIZONTAL DISCHARGE PATTERN, ALUMINUM CONSTRUCTION, HARD DUCTED, ALUMINUM FINISH, NECK SIZE SHOWN ON DRAWING
E	HEAVY DUTY RETURN GRILLE - 14 GAUGE BLADES, 1.6 GAUGE BORDER, STEEL CONST., CLEAR ANODIZE FINISH, 1/2" BLADE SPACING, 38" FIXED DEFLECTION TITUS S3RL
F	SIDEWALL REGISTER - DOUBLE DEFLECTION, STAINLESS STEEL CONSTRUCTION, 3/4" BLADE SPACING, MIL FINISH, OBD TITUS 300RS-SS
G	SPIRAL DUCT-MOUNTED GRILLES - 3/4" BLADES SPACING, DOUBLE DEFLECTION, ALUMINUM CONSTRUCTION, CLEAR ANODIZE FINISH TITUS S300FS

NOTES:
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN TO VERIFY CEILING TYPES FOR AIR DEVICES.

MECHANICAL SYMBOL SCHEDULE

CHS	CHILLED WATER SUPPLY	DM	DAMPER MOTOR
CHR	CHILLED WATER RETURN	FT	TEMPERATURE TRANSMITTER
HWS	HEATING WATER SUPPLY	FS	FLOW SWITCH
HWR	HEATING WATER RETURN	FP	DIFFERENTIAL PRESSURE SENSOR
D	CONDENSATE LINE	SD	DUCT SMOKE DETECTOR
P	PETE'S PLUG	SPS	STATIC PRESSURE SENSOR
V	VALVE	SPH	STATIC PRESSURE SENSOR HI-LIMIT
ECV	ELECTRONIC CONTROL VALVE	AP	ACCESS PANEL
MV	MOTORIZED BUTTERFLY VALVE	ACU	AIR CONDITIONING UNIT
BV	BUTTERFLY VALVE	A.P.	ACCESS PANEL
BR	BOILER	A.H.U.	AIR HANDLING UNIT
CH	CHILLER	BR	BOILER
CHP	CHILLED WATER PUMP	CH	CHILLER
E/A	EXHAUST AIR	CHP	CHILLED WATER PUMP
EF	EXHAUST FAN	E/A	EXHAUST AIR
F&B	FACE & BYPASS	EF	EXHAUST FAN
HOT	HORIZONTAL DRAW THROUGH	F&B	FACE & BYPASS
O/A	OUTSIDE AIR	HOT	HORIZONTAL DRAW THROUGH
OBD	OPPOSED-BLADES DAMPER	O/A	OUTSIDE AIR
PF	PURGE FAN	OBD	OPPOSED-BLADES DAMPER
R/A	RETURN AIR	PF	PURGE FAN
S/A	SUPPLY AIR	R/A	RETURN AIR
SA	SOUND ATTENUATOR	S/A	SUPPLY AIR
SF	SPLITTER DAMPER	SA	SOUND ATTENUATOR
SPD	SINGLE ZONE	SF	SPLITTER DAMPER
SZ	SINGLE ZONE	SPD	SINGLE ZONE
VAV	VARIABLE AIR VOLUME	SZ	SINGLE ZONE
VD	VOLUME DAMPER	VAV	VARIABLE AIR VOLUME
VOT	VERTICAL DRAW THROUGH	VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE	VOT	VERTICAL DRAW THROUGH
WEC	WELDING EXHAUST COLLECTION	VFD	VARIABLE FREQUENCY DRIVE
WH	WATER HEATER	WEC	WELDING EXHAUST COLLECTION
R	DESIGNATION FOR "ROUND"	WH	WATER HEATER
O	DESIGNATION FOR "OVAL"	R	DESIGNATION FOR "ROUND"
		O	DESIGNATION FOR "OVAL"

AIR COOLED ROTARY CHILLER

MARK	CH-1	CH-2
H CAPACITY TONS	138.3	138.3
I COOLER FLOW RATE, GPM	237 GPM	237 GPM
L EWT, 'F	58F	58F
E LWT, 'F	44F	44F
M MAX. P.D.	10 FT	10 FT
R FLOU/G FACTOR	0.00010	0.00010
COMPRESSOR TYPE	SCREW	SCREW
M REFRIGERANT	R-134a	R-134a
I EER/COP/PLV	9.7/-/13.6	9.7/-/13.6
S VOLTAGE	480V/3 PH	480V/3 PH
MCA / MOCP, AMPS	293 / 400	293 / 400
NAME MODEL #	RTAC-140	RTAC-140

NOTES:
1. CHILLER SHALL HAVE ONE (1) POINT POWER CONNECTION.
2. PROVIDE CAPACITY CONTROL TO 15% OF FULL LOAD.
3. AMBIENT AIR = 95FDB / 80FWB.
4. PROVIDE HEAD PRESSURE CONTROLS FOR OPERATION DOWN TO 25F AMBIENT AND 5 YEARS WHOLE UNIT WARRANTY.
5. PROVIDE LOUVERED COIL GUARDS, COMPRESSOR ACCESS SECTION GUARDS AND E-COATED COILS.
6. PROVIDE FACTORY INSTALLED SOUND ENCLOSURES FOR THE COMPRESSORS AND SOUND REDUCTION KITS FOR THE CONDENSER FANS. SOUND LEVELS NOT TO EXCEED THOSE AS SPECIFIED IN THE WRITTEN SPECIFICATIONS, SECTION 15650.

GENERAL MECHANICAL NOTES

- REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- DUCT SIZES SHOWN ARE NET FREE AIR PASSAGE DIMENSIONS, DUCTS ARE NOT LINED, BUT ARE EXTERNALLY INSULATED. RUNOUTS TO CEILING OUTLETS SHALL BE EXTERNALLY INSULATED GALVANIZED SHEET METAL WITH SPIN-IN V.D. AT TRUNK TAPS, SEE DETAIL 1/M5.
- PROVIDE CONDENSATE DRAIN TRAP FOR EACH AHU AND RTU, SEE DETAIL 12/M5.
- PROVIDE MAIN VENT AT HIGH POINT OF ALL WATER SYSTEMS, REFER TO WRITTEN SPECIFICATIONS.
- MAIN CHILLED/HOT WATER PIPING SHALL BE HUNG FROM TOP CHORD OF JOISTS, REF. STRUCTURAL DRAWINGS. ALTERNATE PIPE HANGERS BETWEEN JOISTS TO ASSURE EVEN LOADING OF EACH JOIST. SEE DETAIL 17/M5 & 18/M5 FOR PIPE SUPPORT DETAIL.
- REFER TO ARCHITECTURAL REFLECTED CEILING DRAWINGS FOR EXACT LOCATIONS OF CEILING OUTLETS IN RELATION TO OTHER CEILING EXITITIES. OUTLETS MUST BE COMPATIBLE WITH THE CEILING TYPES FOR THE VARIOUS AREAS.
- IN AREAS WHERE SUPPLY AIR ENTERS CEILING CAVITY THRU RETURN AIR GRILLES AND FREE RETURNS TO AHU'S VIA CEILING CAVITY, PROVIDE LINED RETURN AIR ELBOW THROUGH WALLS ABOVE CEILING THAT BLOCK PATH, REFER TO ARCHITECTURAL DRAWINGS. RETURN AIR ELBOWS SHALL BE SIZED AT 1 SQ. FT PER 800 CFM SUPPLY AIR, REFER TO DRAWINGS.
- COORDINATE INSTALLATION OF EQUIPMENT AND PIPING WITH THE ELECTRICAL CONTRACTOR TO INSURE NEC CLEARANCE (42 INCHES) IN FRONT OF ALL ELECTRICAL PANELS. SEE DETAIL 22/M5.
- ARRANGE PIPING CONNECTIONS TO ALL EQUIPMENT TO ALLOW EASY REMOVAL OF EQUIPMENT, SUB-ASSEMBLIES, COILS, FANS, MOTORS, FILTERS, ACCESS PANELS, ETC., PROVIDE UNIONS, FLANGES AND VALVES AT CONNECTIONS. PROVIDE AND INSTALL VERTICAL JOINTS AT COILS, REF. SPECIFICATIONS. PLACE STOP VALVES ON SYSTEM SIDE OF REMOVABLE PIPE SECTIONS.
- DO NOT INSTALL DUCTWORK OR WATER PIPING OVER THE TOP OF ELECTRICAL PANELS, SEE DETAIL 22/M5.
- CONTRACTOR SHALL FIELD MEASURE STRUCTURAL ELEMENTS AND COORDINATE EQUIPMENT, PIPING AND DUCT ROUTING TO FIT EXISTING CONSTRUCTION. PROVIDE OFFSETS, BOOTS OR ENVELOP OBSTRUCTIONS THAT CANNOT BE AVOIDED. CONSTRUCTION SHALL BE PER SMACNA FIGURE 2-10.
- REFER TO DRAWING 3/M4 FOR MECHANICAL SYSTEM INSTALLATION ORDER.

AIR HANDLING UNIT SCHEDULE

MARK	AHU-1	AHU-2	AHU-3	AHU-4	AHU-5	AHU-6	AHU-7	AHU-8	AHU-9	AHU-10
SERVES	PIPE FIT CR'S	PIPE FITTING	PIPE FITTING	WELDING CR'S	WELD. WORK AREA	WELDING LAB	WELDING LAB	WELDING LAB	MACH. SHOP CR'S	MILLWRIGHT
TYPE	SZ-HDT-VAV	SZ-HDT	SZ-HDT	SZ-HDT-VAV	SZ-HDT	SZ-HDT	SZ-HDT	SZ-HDT	SZ-HDT-VAV	SZ-HDT
TOTAL CFM	8,000 CFM	8,250 CFM	6,400 CFM	8,000 CFM	8,000 CFM	7,000 CFM	7,000 CFM	7,000 CFM	4,000 CFM	11,000 CFM
O/A CFM	1,500 CFM	4,000 CFM	3,000 CFM	1,500 CFM	0 CFM	2,000 CFM	2,000 CFM	2,000 CFM	1,200 CFM	3,000 CFM
EXT. STATIC WG	2.50"	0.75"	0.75"	2.50"	1.00"	0.75"	0.75"	0.75"	2.50"	1.25"
DESIGN HP	10 HP	10 HP	10 HP	10 HP	7.5 HP	7.5 HP	7.5 HP	7.5 HP	5.0 HP	10 HP
VOLTAGE	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH	480V/3 PH
COIL CFM	8,000 CFM	8,250 CFM	6,400 CFM	8,000 CFM	8,000 CFM	7,000 CFM	7,000 CFM	7,000 CFM	4,000 CFM	11,000 CFM
MIN. ROWS	6	6	6	6	6	6	6	6	6	6
MAX. FINS/INCH	12	12	12	12	12	12	12	12	12	12
MAX. FACE VELOCITY	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM
EAT db./wb. 'F	76.6F / 64F	84.2F / 70.1F	83.8F / 69.9F	76.6F / 64F	72F / 62F	79.1F / 66.1F	79.1F / 66.1F	79.1F / 66.1F	79.5F / 66.4F	78.6F / 66.6F
LAT db./wb. 'F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F	52F / 51.8F
GSH MBH	214 MBH	288 MBH	221 MBH	214 MBH	174 MBH	206 MBH	206 MBH	206 MBH	119 MBH	331 MBH
GTH MBH	287 MBH	476 MBH	364 MBH	287 MBH	235 MBH	301 MBH	301 MBH	301 MBH	176 MBH	516 MBH
GPM/SIZE	41 GPM / 2.0"	68 GPM / 2.5"	52 GPM / 2.5"	41 GPM / 2.0"	34 GPM / 2.0"	43 GPM / 2.0"	43 GPM / 2.0"	43 GPM / 2.0"	25 GPM / 1.5"	74 GPM / 2.5"
EWT/LWT, 'F	44F / 58F	44F / 58F	44F / 58F	44F / 58F	44F / 58F	44F / 58F	44F / 58F	44F / 58F	44F / 58F	44F / 58F
MAX. P.D. FEET	12 FT	12 FT	12 FT	12 FT	12 FT	12 FT	12 FT	12 FT	12 FT	12 FT
COND. CONN. SIZE	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"	1.5"
COIL POSITION	PREHEAT	REHEAT	REHEAT	PREHEAT	REHEAT	REHEAT	REHEAT	REHEAT	PREHEAT	REHEAT
COIL CFM	2,400 CFM	8,250 CFM	6,400 CFM	2,400 CFM	8,000 CFM	7,000 CFM	7,000 CFM	7,000 CFM	1,200 CFM	11,000 CFM
MIN. ROWS	1	1	1	1	1	1	1	1	1	2
MAX. FINS/INCH	12	12	12	12	12	12	12	12	12	12
MAX. FACE VELOCITY	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM	500 FPM
EAT db. 'F	45.3F	50F	50.6F	45.3F	57.9F	57.9F	57.9F	57.9F	31F	58.9F
LAT db. 'F	25F	35F	30F	25F	30F	30F	30F	30F	55F	30F
GTH MBH	55 MBH	98 MBH	274 MBH	55 MBH	174 MBH	206 MBH	206 MBH	206 MBH	31 MBH	388 MBH
GPM/SIZE	1.5 GPM / 0.75"	18 GPM / 1.5"	14 GPM / 1.25"	1.5 GPM / 0.75"	9 GPM / 1.0"	10 GPM / 1.25"	10 GPM / 1.25"	10 GPM / 1.25"	2.0 GPM / 1.0"	20 GPM / 1.5"
EWT/LWT, 'F	180F / 140F	180F / 140F	180F / 140F	180F / 140F	180F / 140F	180F / 140F	180F / 140F	180F / 140F	180F / 140F	180F / 140F
MAX. P.D. FEET	6 FT	6 FT	6 FT	6 FT	6 FT	6 FT	6 FT	6 FT	6 FT	6 FT
NAME MODEL	P-SERIES	P-SERIES	P-SERIES	P-SERIES	P-SERIES	P-SERIES	P-SERIES	P-SERIES	P-SERIES	P-SERIES

NOTES:
1. EXT. SP DOES NOT INCLUDE FILTERS, COILS, CASING, CONVERSION OR MIXING DAMPER LOSSES. USE MERV 8 FILTERS TO DETERMINE TOTAL STATIC PRESSURE.
2. MOTORS SHALL BE INVERTER DUTY, TEFC, PREMIUM EFFICIENCY TYPE (+90% MIN).
3. MAXIMUM FILTER VELOCITY 350 FT/MIN.
4. UNIT SHALL BE INTERNALLY ISOLATED AND HAVE MULTIPLE BELT DRIVE.
5. DESIGN FAN HP IS MOTOR SIZE WIRED BY ELECTRICAL MANUFACTURERS REQUIRING LARGER MOTORS MUST PAY FOR INCREASED CIRCUIT COSTS. SMALLER MOTORS MAY BE PROVIDED IF BHP IS LESS THAN SCHEDULED AND A 1/4" WG PRESSURE DROP DOES NOT OVERLOAD MOTOR.
6. FOR VAV AHU'S, HEATING COIL SHALL BE SELECTED TO HANDLE FAN CFM. HEATING COIL CFM SHOWN IS WORST CASE SCENARIO IN HEATING SEASON.
7. PROVIDE 12" MINIMUM EXTENDED DRAIN PAN AND ACCESS SECTIONS WITH MINIMUM 12" WIDE DOUBLE-WALLED DOORS DOWNSTREAM OF EACH COIL FOR CLEANING AND INSPECTION.
8. MANUFACTURERS NOT SCHEDULED SHALL VERIFY SPACE CONSTRAINTS PRIOR TO BIDDING AND SUBMITTING OF UNITS.
9. ALL UNITS SHALL BE EQUIPPED WITH AIRFOIL FAN AND E-COATED CHILLED & HOT WATER COILS.
10. VAV UNITS SHALL HAVE MOTOR SHAFT GROUNDING RINGS.

PURGE & WELDING EXHAUST FAN SCHEDULE

MARK	PF-1	PF-2 & 3	PF-4	WEF-1, 2, 3, 4, 5
SERVES	SCREW-PIPE LAB	PIPE FIT LAB	MP LAB	WELDING LAB
TYPE	TUBULAR INLINE	TUBULAR INLINE	TUBULAR INLINE	CENTRIFUGAL BLOWER
DRIVE	BELT	BELT	BELT	BELT
CFM	2,000 CFM	3,500 CFM	1,500 CFM	10,800 CFM
STATIC PRESSURE	0.5"	0.5"	0.5"	0.5"
SIZE	16	20	12	22.5
DESIGN H.P.	1/2 HP	1.0 HP	1/2 HP	30 HP
VOLTAGE	120V	480V/3 PH	120V	480V/3 PH
COOK MODEL #	16CV-S	20CV-S	12CV-S	225CF
SONES	9.9	18.3	14.1	93 dBa
NOTES	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3

NOTES:
1. DISCONNECT SWITCH
2. BACKDRAFT DAMPER
3. MOTOR/BELT GUARD
4. BOTTOM MOUNTED MOTOR

EXHAUST & SUPPLY FAN SCHEDULE

MARK	EF-1	EF-2	EF-3	EF-4	EF-5	EF-6	SF-1	SF-2	SF-3	SF-4
SERVES	MAIN ELECT.	TOILET	TOILETS	TOILETS	TOILETS	TOILET	BOILER ROOM	AHU-1	AHU-4	AHU-9
TYPE	WALL-PROT.	CLG. CAB.	CLG. CAB.	CLG. CAB.	CLG. CAB.	CLG. CAB.	WALL-PROT	INLINE	INLINE	INLINE
DRIVE	DIRECT	DIRECT	BELT	BELT	BELT	DIRECT	DIRECT	BELT	BELT	BELT
CFM	2,000	100	450	625	625	100	2,000	1,500	1,500	1,200
STATIC PRESSURE	0.25"	0.50"	0.50"	0.50"	0.625"	0.50"	0.25"	0.50"	0.50"	0.50"
SIZE	18	144	9	9	9	144	18	12	12	12
DESIGN H.P.	1/2 HP	85.2 WATTS	1/4 HP	1/4 HP	1/4 HP	85.2 WATTS	1/2 HP	1/2 HP	1/2 HP	1/3 HP
VOLTAGE	120V	115V	115V	115V	115V	115V	120V	120V	120V	120V
COOK MODEL #	18SP10D	GC-144	90S01B	90S01B	90S01B	GC-144	18SP10D	120S01B	120S01B	120S01B
SONES	12.4	3.4	5.7	7.4	7.6	13.7	15.4	15.4	11.5	11.5
NOTES	6	4.5	1,2,4,5	1,2,4,5	1,2,4,5	4.5	6	1,2,4,5	1,2,4,5	1,2,4,5

NOTES:
1. ALL FANS SHALL BE CAPABLE OF 120% OF THE SCHEDULED CFM CAPACITIES.
2. STATIC PRESSURES SHOWN ARE EXTERNAL TO UNIT. MANUFACTURER SHALL ADD DAMPER AND ACCESSORY LOSSES TO THIS VALUE BEFORE SELECTING FAN.
3. INSULATED ROOF CURB & BIRDSCREEN
4. DISCONNECT SWITCH
5. BACKDRAFT DAMPER
6. PACKAGED FAN WITH AUTOMATIC LOUVER, INLET SCREEN/GUARD, AND DISCONNECT SWITCH

PUMP SCHEDULE

MARK	CHP-1	CHP-2	SP-1 & 2	HWP
SERVICE	CHILLED WTR	CHILLED WTR	CHILLED WTR	HOT WATER
TYPE	END SUCTION	END SUCTION	END SUCTION	END SUCTION
GPM	237 GPM	237 GPM	240 GPM	130 GPM
HEAD, FT.	30 FT	30 FT	75 FT	105 FT
MIN. EFF. %	73%	73%	76%	82%
MAX. RPM	1760 RPM	1760 RPM	1760 RPM	1760 RPM
MOTOR H.P.	3 HP	3 HP	10 HP	10 HP
VOLTAGE	480V / 3 PH	480V / 3 PH	480V / 3 PH	480V / 3 PH
TACO MODEL	FI-2507	FI-2507	FI-2510C	FI-1511

NOTE: REF. DETAIL 14/M5 AND SPECS. FOR ADDITIONAL REQUIREMENTS.

BOILER SCHEDULE

MARK	BR-1 & BR-2
TYPE	COPPER FIN/TUBE
BTUH INPUT	1,500 MBH
BTUH OUTPUT	1,305 MBH
MIN. EFFICIENCY	87%
OPERATING PRESSURE	120 PSJ
GAS PRESSURE	4-8 OZ.
GPM	65 GPM
EWT / F LWT 'F	140F / 180F
MAX. PD. FT. WATER	5 FT.
VOLTAGE	120V
RBI MODEL #	120V
	RBI FUTERA III

NOTES: PROVIDE 3/4 HP 120V CIRCULATION PUMPS, GAS PRESSURE REGULATING VALVES, FLUE VENTS, TEMPERATURE CONTROL 3-WAY VALVE, AND SEALED COMBUSTION VENTS.

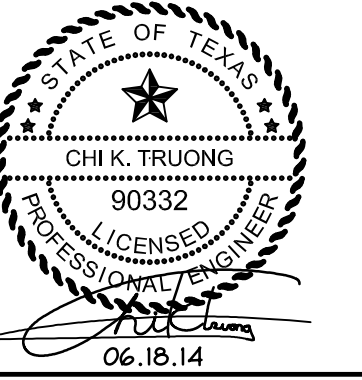
VAV TERMINAL UNIT SCHEDULE

MARK	INLET SIZE	CFM	E.S.P. (W.G.)	MIN. HEATING CAPACITY, MBH	GPM/SIZE	MAX. P.D FOR WATER	TITUS MODEL
VAV-1	10"	975	-3	37.0	1.9 / 3/4"	5 FT	DESV
VAV-2	9"	800	-3	30.4	1.6 / 3/4"	5 FT	DESV
VAV-3	9"	800	-3	30.4	1.6 / 3/4"	5 FT	

BGK ARCHITECTS

5271 MEMORIAL DR.
SUITE 100
HOUSTON, TEXAS 77007
P 713-864-0058
F 713-583-2028

3718 DECKER DRIVE
BAYTOWN, TEXAS 77520
P 281-424-4853
F 281-424-4851



JSE CONSULTING ENGINEERS, INC.
TEXAS ENG. FIRM REG. NO. F-501332
16225 PARK TEN PLACE
SUITE 810
HOUSTON, TX 77084
TEL (281) 945-5454
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2013 BOND

PROJECT NAME
LEE COLLEGE
NEW WELDING, PIPEFITTING,
MACHINE TECHNOLOGY,
AND MILLWRIGHT FACILITY
AT MCNAIR

PROJECT ADDRESS
3411 EAST FREEWAY
BAYTOWN, TEXAS
77521

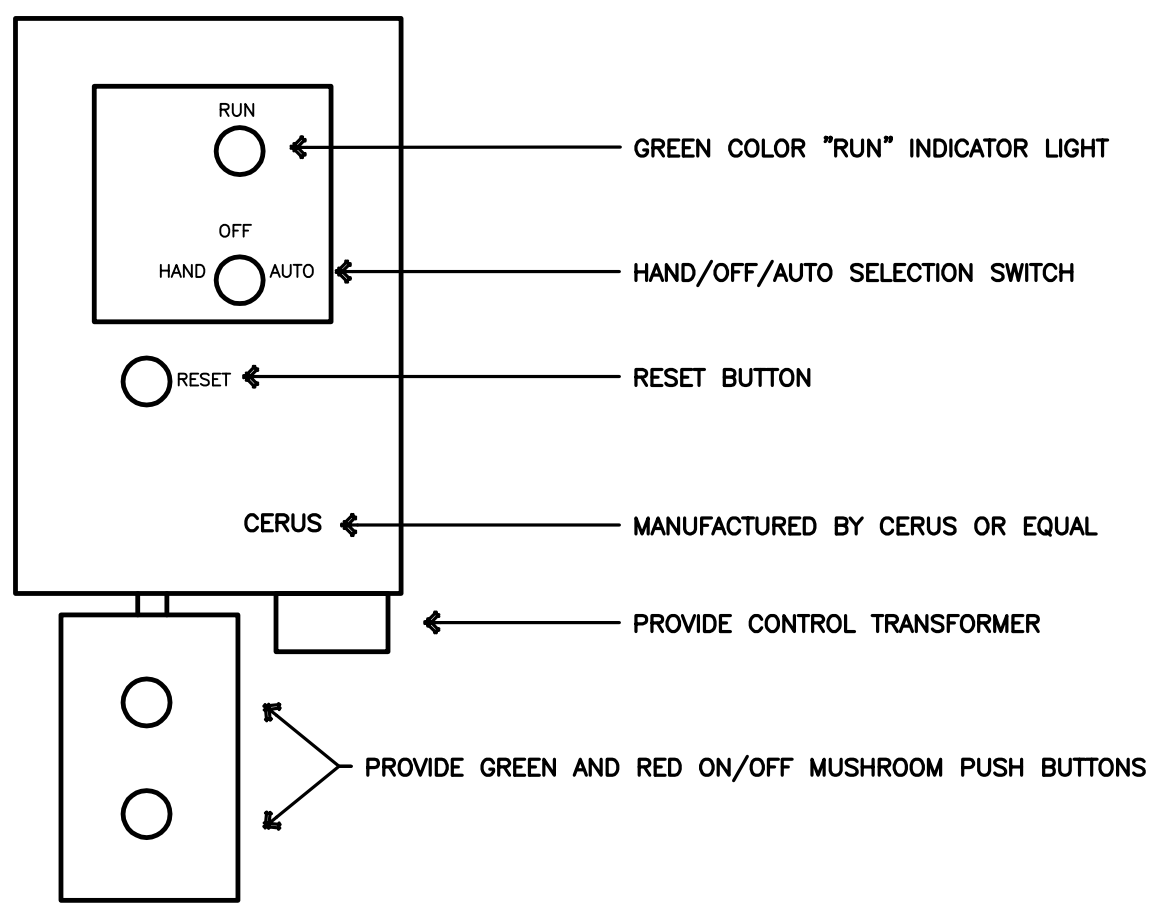
PROJECT NUMBER
13-0700

ISSUE DATE
30 MAY 2014

ISSUED FOR
100% REVIEW

MECHANICAL PIPING
AND CONTROLS
SCHEMATICS

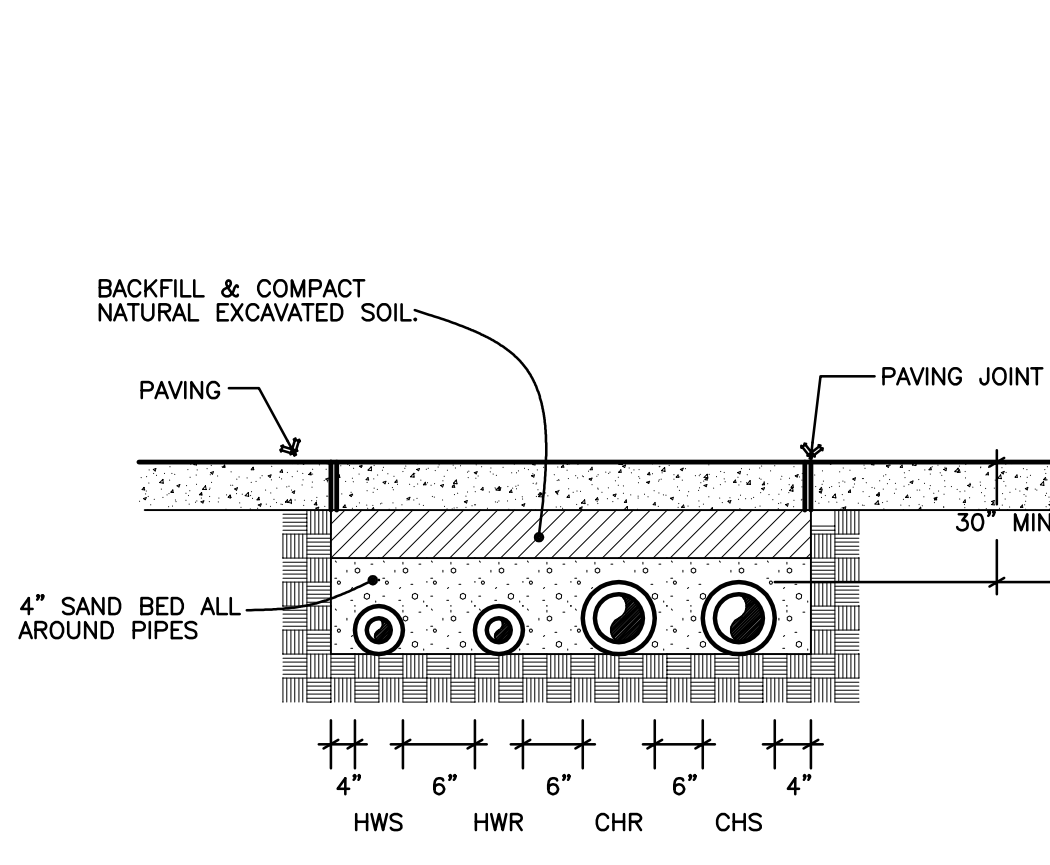
M5.00



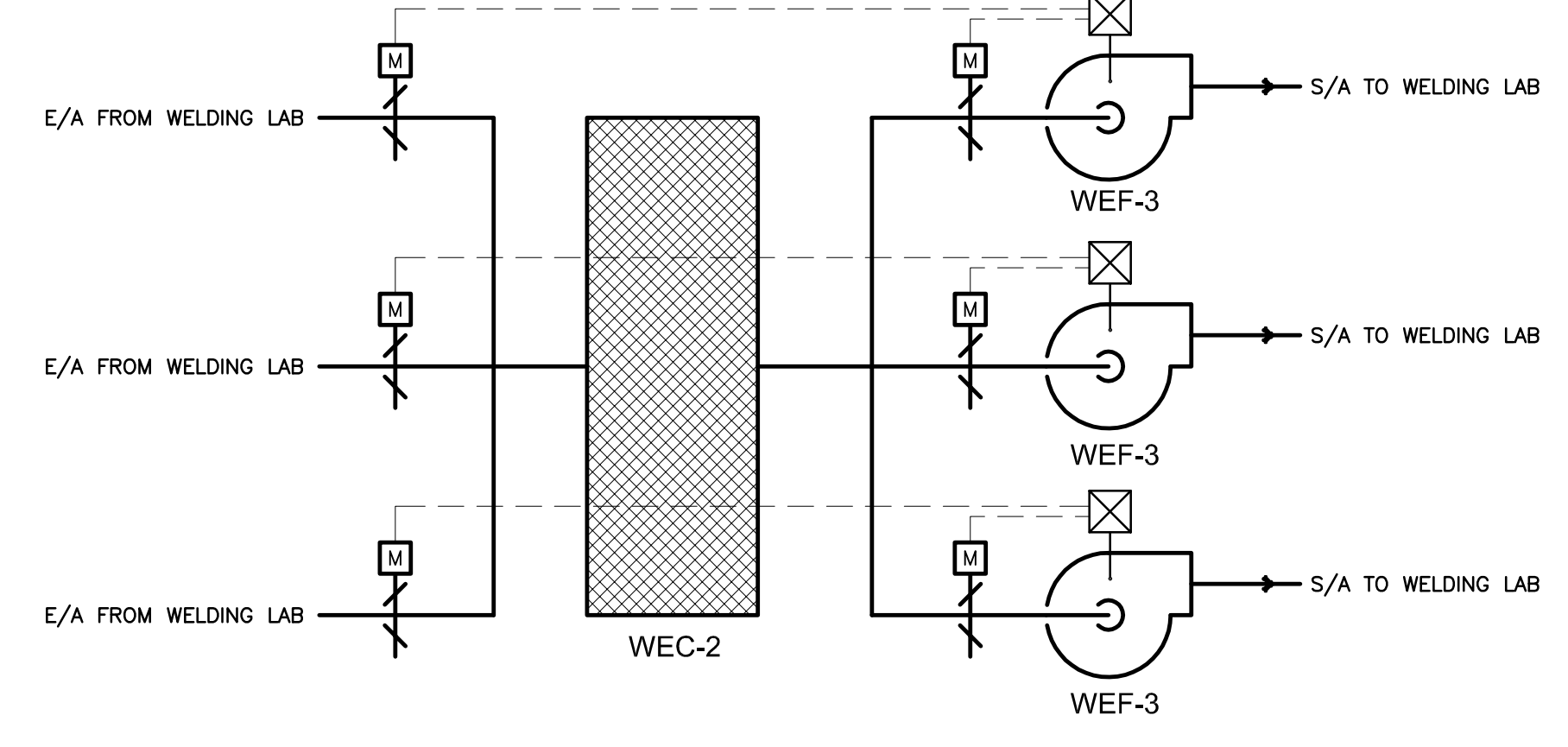
8 WELDING AREA EXHAUST FAN CONTROLLER DETAIL
NO SCALE

THIS DETAIL IS APPLY FOR EACH OF ALL 480V/3PH WELDING FANS WEF-1, 2, 3, 4, 5 AND PF-2 & 3 ALSO, CONTRACTOR SHALL INTERLOCK THIS CONTROLLER WITH BAS TO ENERGIZE THE CONTROLLER AT THE BEGINNING OF EACH SCHOOL DAY. DE-ENERGIZE THE CONTROLLER AFTER NORMAL SCHOOL HOURS.

MOTOR STARTER AND MUSHROOM PUSH BUTTON SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. INSTALLATION AND WIRING BY ELECT. CONTRACTOR.

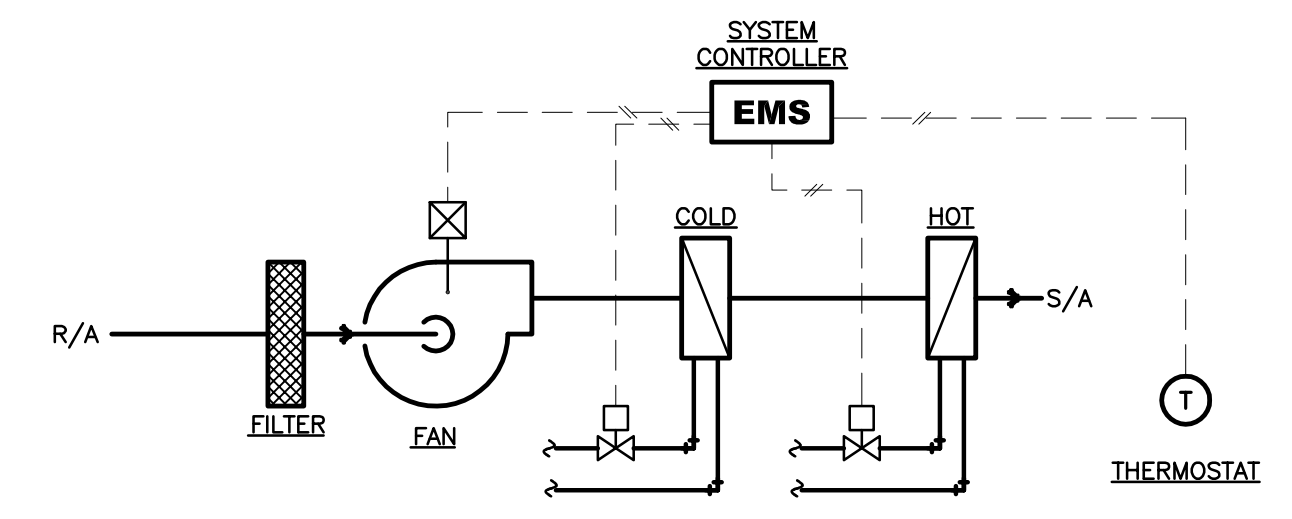


7 HVAC PIPING BELOW GRADE
NO SCALE



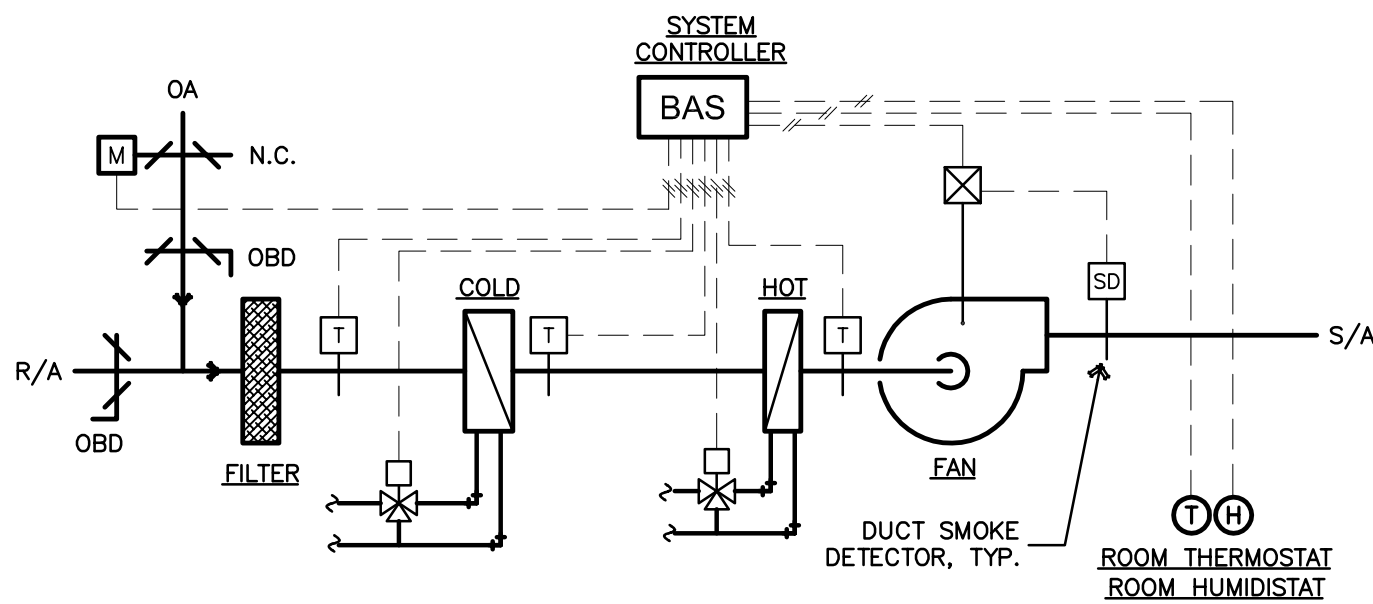
6 WELDING EXHAUST SYSTEM CONTROLS DIAGRAM
NO SCALE

NOTE: SEE SPECIFICATIONS FOR SEQUENCE OF OPERATION.



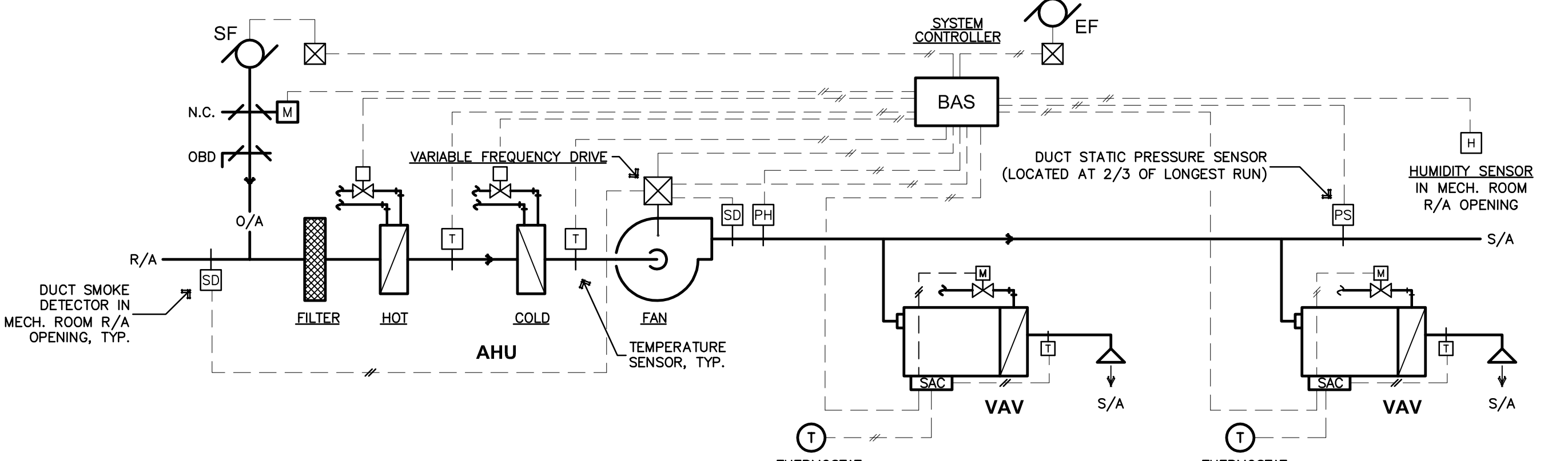
5 FCU CONTROLS SCHEMATIC
NO SCALE

NOTE: REFERENCE WRITTEN SPECIFICATIONS FOR SEQUENCE OF OPERATION.



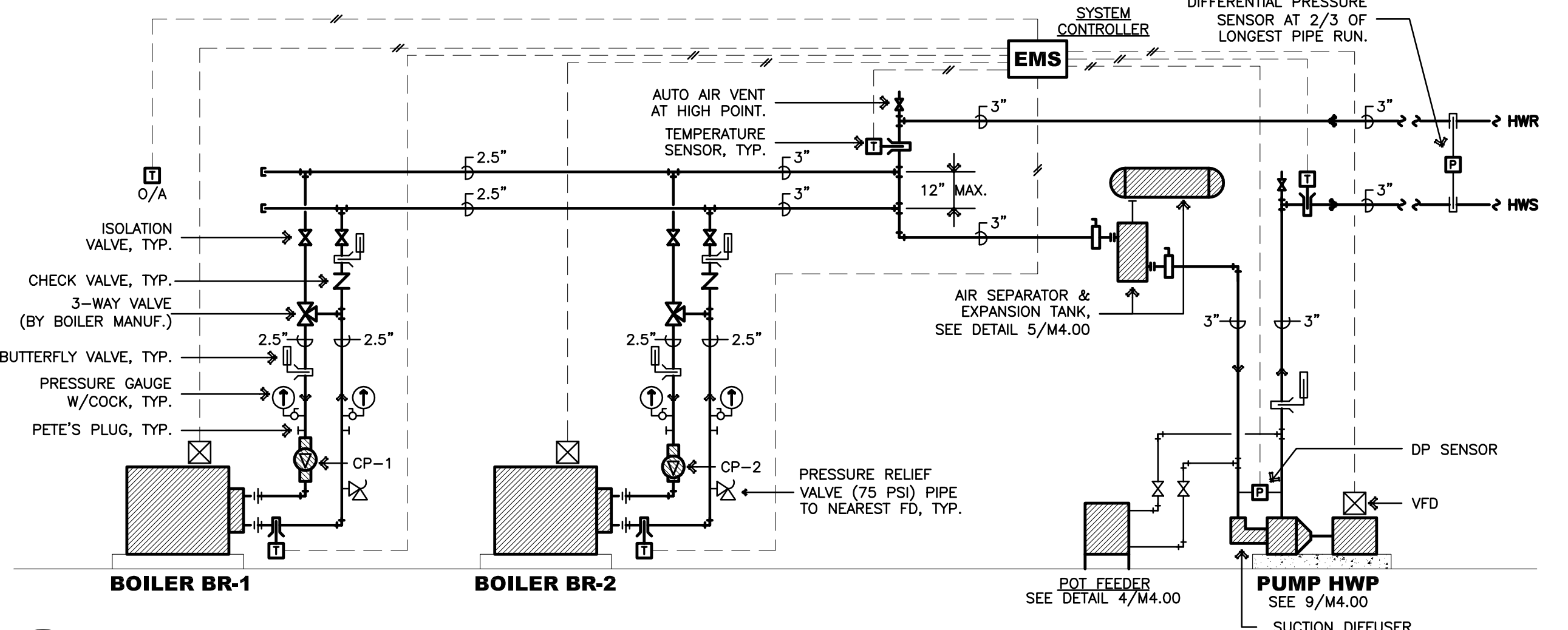
4 SINGLE ZONE AHU CONTROL SCHEMATIC
NO SCALE

NOTE: SEE SPECIFICATIONS FOR SEQUENCE OF OPERATION.



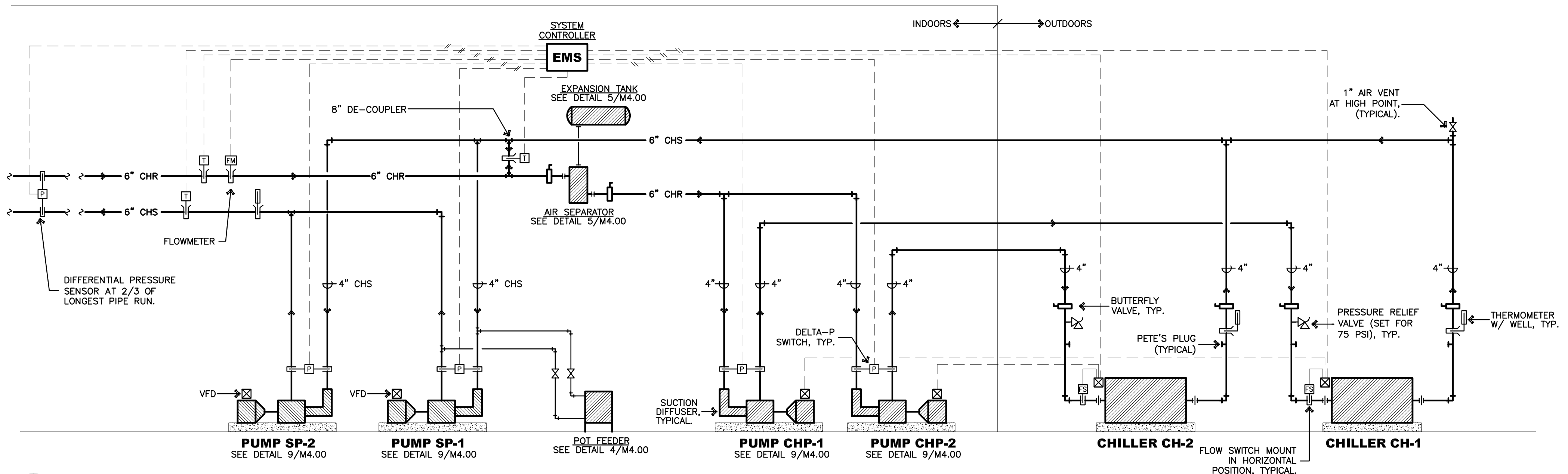
3 VAV SYSTEM CONTROLS SCHEMATIC
NO SCALE (AHU - 1, 4 & 9)

NOTE: SEE SPECIFICATIONS FOR SEQUENCE OF OPERATION.



2 HOT WATER SYSTEM PIPING & CONTROLS SCHEMATIC
NO SCALE

SEE SPECIFICATIONS FOR SEQUENCE OF OPERATION.



1 CHILLED WATER SYSTEM PIPING AND CONTROLS SCHEMATIC
NO SCALE

NOTE: SP-1 & SP-2 SHALL NOT OPERATE TOGETHER. SEE WRITTEN SPECIFICATIONS FOR SEQUENCE OF OPERATION.