ABBREVIATIONS

ACD – AUTOMATIC CONTROL DAMPER
ACT – ACOUSTICAL CEILING TILE
AHU – AIR HANDLING UNIT
AMB – AMBIENT
AS – AIR SEPARATOR
ATU – AIR TERMINAL UNIT
B – BOILER
CD – CEILING DIFFUSER
CFH – CUBIC FEET PER HOUR
CFM – CUBIC FEET PER MINUTE
CH – CHILLER
CHW – CHILLED WATER
CHWP – CHILLED WATER PUMP
CHWR – CHILLED WATER RETURN
CHWS – CHILLED WATER SUPPLY
CRU – COMPUTER ROOM UNIT
CVR – CONSTANT VOLUME REGULATOR
CW – COLD WATER
DB – DRY BULB
DDC – DIRECT DIGITAL CONTROL
EAL – EXHAUST AIR LOUVER
EF – EXHAUST FAN
EAG – EXHAUST AIR GRILLE
EAL – EXHAUST AIR LOUVER
ET – EXPANSION TANK
EX – EXISTING
FD – FIRE DAMPER
FLR – FLOOR
FO – FLAT OVAL
FT – FEET
GPM – GALLONS PER MINUTE
HOA – HAND–OFF–AUTOMATIC
HGR – HOT GAS REHEAT
HP – HORSEPOWER
HW – HOT WATER
HWP – HOT WATER PUMP
HWR – HOT WATER RETURN
HWS – HOT WATER SUPPLY
IAW – IN ACCORDANCE WITH
IPLV – INTEGRATED PART LOAD VALUE
LSD – LINEAR SLOR DIFFUSER
MAX – MAXIMUM
MBTU – THOUSAND BRITISH THERMAL UNIT
MH – MANHOLE
MIN – MINIMUM
MVD – MANUAL VOLUME DAMPER
NIC – NOT IN CONTRACT
OA – OUTSIDE AIR
OAL – OUTSIDE AIR LOUVRE
RA – RETURN AIR
RPM – REVOLUTIONS PER MINUTE
SA – SUPPLY AIR
SAR – SUPPLY AIR REGISTER
SPT – STATIC PRESSURE TRANSMITTER
SWR – SIDE WALL REGISTER
SWS – SIDE WALL SUPPLY GRILLE
SQ FT – SQUARE FEET
T'STAT – THERMOSTAT
TG – TRANSFER GRILLE
TYP – TYPICAL
VAV – VARIABLE AIR VOLUME
VFD – VARIABLE FREQUENCY DRIVE
WB – WET BULB

HVAC NOTES

1. T'STATS INDICATED ADJACENT TO DOORWAYS SHALL BE LOCATED WITHIN 18" OF JAMB. AT LOCATIONS WITH LIGHT SWITCHES, LOCATE T'STAT SUCH THAT LIGHT SWITCH IS BETWEEN T'STAT AND JAMB. T'STATS SHALL BE LOCATED 48" AFF. VERIFY T'STAT LOCATIONS WITH SYSTEMS FURNITURE LAYOUT PRIOR TO INSTALLING ANY T'STAT.
2. LOUVER DIMENSIONS INDICATED DOES NOT INCLUDE FRAME OR FLANGES. APPROXIMATE ROUGH OPENING IN WALL ASSEMBLY IS INDICATED ON ARCHITECTURAL.

TYPICAL DUCTWORK & INSULATION NOTES

1. ALL ROUND FLEXIBLE DUCT SHALL BE FACTORY PREINSULATED WITH THERMOFLEX OR EQUAL. MAXIMUM LENGTH OF ANY FLEXIBLE DUCT RUNOUT SHALL BE 8'–0". WHERE LENGTH REQUIRED EXCEEDS 8'–0", INSTALL EXTERNALLY INSULATED ROUND SNAPLOCK DUCT FOR BALANCE OF DISTANCE TO SPIN–IN TAP AT MAIN DUCT TRUNK.
2. SEAL ALL DUCT PENETRATIONS OF WALLS AIRTIGHT, REGARDLESS OF WHETHER WALLS ARE FIRE RATED OR NOT.
3. ALL SUPPLY AIR DUCTWORK (EXCEPT TAKEOFFS TO SUPPLY AIR DIFFUSERS) SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 1" W.G., SEAL CLASS C, EXTERNALLY INSULATED WITH 1" THICK FIBERGLASS DUCT WRAP.
4. ALL RETURN AIR DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 1" W.G., SEAL CLASS B. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS, PROVIDE 1" THICK EXTERNAL FIBERGLASS WRAP.
5. ALL OUTSIDE AIR INTAKE DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 1" W.G., SEAL CLASS B. PROVIDE 1" THICK EXTERNAL FIBERGLASS WRAP.
6. EXHAUST AIR DUCTWORK SHALL BE LOW PRESSURE RECTANGULAR, SMACNA STATIC PRESSURE CLASS 1/2" W.G., SEAL CLASS B.
7. ALL DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS.
8. AVOID ROUTING DUCTWORK OVER LIGHTS WHEREVER POSSIBLE. MAINTAIN MINIMUM 6" CLEARANCE BETWEEN DUCT INSULATION TO TOP OF LIGHTS. PROVIDE
9. CELLULAR GLASS INSULATION SHALL BE THE ONLY ACCEPTABLE INSULATION ON CONDENSER WATER PIPING.

LEGEND

WxH — RECTANGULAR DUCTWORK, SIZES SHOWN ARE INTERNAL CLEAR DIMENSIONS. (WIDTH x HEIGHT) FIRST FIGURE IS SIDE SHOWN.

WxH — INTERNALLY LINED RECTANGULAR DUCTWORK, SIZES SHOWN ARE INTERNAL CLEAR DIMENSIONS.

8"ø — ROUND SNAPLOCK GALVANIZED STEEL DUCTWORK, EXTERNALLY INSULATED, SMACNA STATIC PRESSURE CONSTRUCTION CLASS 1/2" w.g., SEAL CLASS C. SIZE SHOWN IS SHEET METAL DIAMETER. SHALL BE USED ONLY AT RUNOUTS TO AIR OUTLETS.

FACTORY FABRICATED/INSULATED FLEXIBLE ROUND DUCT, SIZE SHOWN IS INSIDE DIAMETER.

16"ø — ROUND SPIRAL SEAM GALVANIZED STEEL DUCTWORK, EXTERNALLY INSULATED. SIZE SHOWN IS SHEET METAL DIAMETER. SMACNA STATIC PRESSURE CLASS 4" W.G., SEAL CLASS A.

SQUARE THROAT ELBOW IN RECTANGULAR DUCT WITH DOUBLE WALL TURNING VANES.

LONG RADIUS ELBOW IN RECTANGULAR DUCT.

FLEXIBLE DUCT CONNECTION

TRANSITION

RECTANGULAR TO ROUND DUCT TRANSITION.

RECTANGULAR BRANCH DUCT TAKE OFF FROM RECTANGULAR DUCT MAIN WITH 45° COLLAR.

RECTANGULAR DUCTWORK TURNING 90° UP.

RECTANGULAR DUCTWORK TURNING 90° DOWN.

8"ø CD
220 CFM — CEILING DIFFUSER WITH 24"x24" FACE EQUAL TO "TITUS OMNI". PROVIDE SURFACE MOUNT STYLE FOR GYPSUM BOARD CEILINGS AND LAY–IN TYPE AT T–BAR CEILING GRID. ROUND NECK SIZE AND AIRFLOW AS INDICATED. 4–WAY DIRECTION OF THROW. PROVIDE WITH OPPOSED BLADE VOLUME CONTROL DAMPER. BACK FACE OF DIFFUSER SHALL HAVE INSULATION BLANKET.

ROUND BRANCH DUCT TAKEOFF FROM RECTANGULAR DUCT MAIN. BRANCH DUCT SHALL BE FLEXIBLE ROUND DUCT OR ROUND SNAPLOCK DUCT AS INDICATED. ROUND DUCT TAP IN SHALL BE MADE WITH SPIN–IN COLLAR WITH MANUAL VOLUME DAMPER.

TS — TEMPERATURE SENSOR

SPT — STATIC PRESSURE TRANSMITTER

FD / DUCT — FIRE DAMPER WITH ACCESS PANELS

TRANSITION POINT IN CHWS/R OR HWS/R PIPING

LETTER INDICATES SECTION
SHEET WHERE SECTION IS DRAWN
SHEET WHERE SECTION OCCURS

SD — SMOKE DETECTOR

BUTTERFLY VALVE FOR SHUTOFF SERVICE

GAGE FITTING W/COCK

GATE VALVE

STRAINER WITH VALVE AND BLOWDOWN

PRV — PRESSURE REDUCING VALVE

AUTOMATIC AIR VENT WITH GAGE COCK. ROUTE 1/4" SOFT COPPER TUBING FROM DISCHARGE TO FLOOR DRAIN UNLESS OTHERWISE INDICATED.

AUTOMATIC 3–WAY ELECTRIC CONTROL VALVE

AUTOMATIC 2–WAY ELECTRIC CONTROL VALVE

FLEXIBLE PIPE CONNECTOR

PRESSURE GAGE WITH GAGE COCK

P/T — COMBINATION PRESSURE AND TEMPERATURE TEST PLUG WITH EXTENDED NECK AND CAP

TRIPLE DUTY VALVE

AUTOMATIC FLOW CONTROL VALVE

ELBOW TURN UP

ELBOW TURN DOWN

CONNECTION, TOP

CONNECTION, BOTTOM

FRAME MOUNTED PUMP

DIFFERENTIAL PRESSURE SWITCH

(AI) — ANALOG INPUT INTO CONTROL PANEL
(AO) — ANALOG OUTPUT INTO CONTROL PANEL
(DI) — DIGITIAL INPUT INTO CONTROL PANEL
(DO) — DIGITIAL OUTPUT INTO CONTROL PANEL

MS — MOTOR STARTER

VFD — VARIABLE FREQUENCY DRIVE

DDC — DIRECT DIGITAL CONTROL PANEL

AIR TERMINAL UNIT

(T) # — SPACE THERMOSTAT SERVING UNIT #, MOUNT 48" A.F.F.

(E) — EMERGENCY SHUT–DOWN SWITCH, MOUNT 48" A.F.F.

MANUAL VOLUME DAMPER,
PROVIDE WITH LOCKING QUADRANT

NEW CONNECTION POINT

DISCONNECTION POINT

DUCTWORK TO BE DEMOLISHED

M — MOTORIZED DAMPER

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PROJECT:
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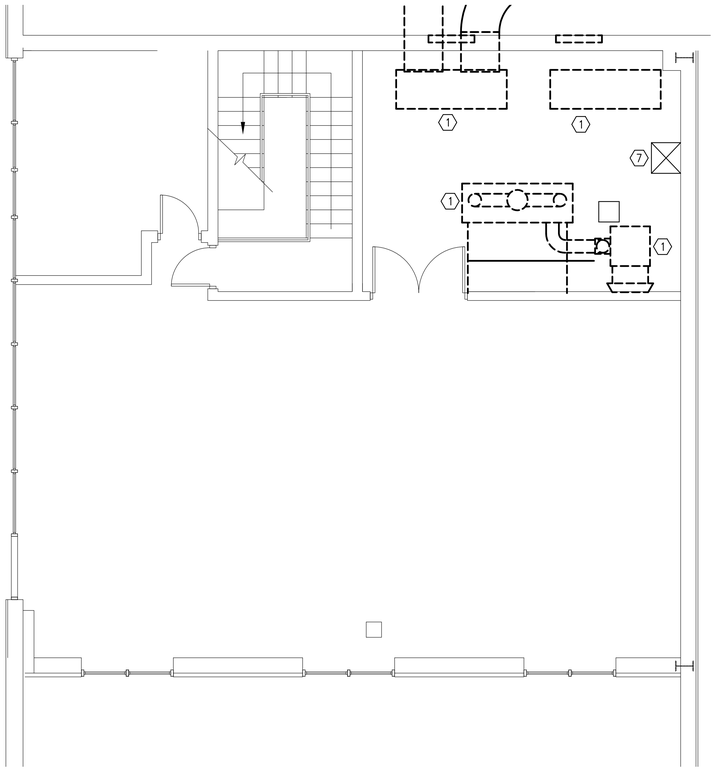
SHEET TITLE:
MECHANICAL GENERAL NOTES AND LEGEND

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

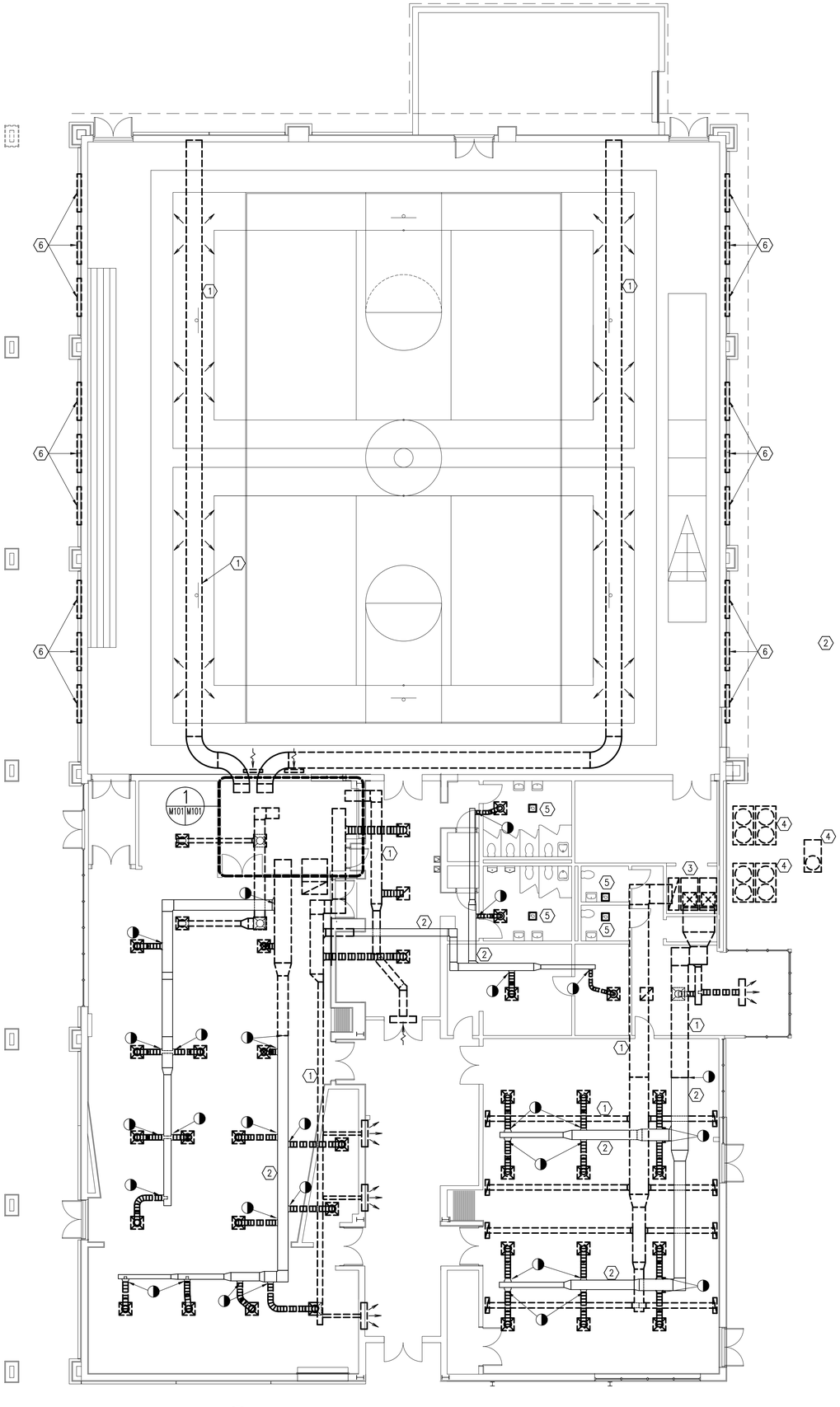
SHEET
M001

DEMOLITION NOTES

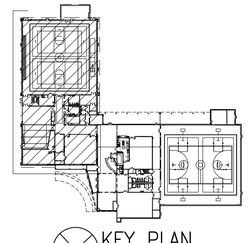
1. EXISTING DUCTWORK FLEX DUCT, DIFFUSERS, AND ASSOCIATED APPURTENANCES TO BE DEMOLISHED.
2. EXISTING TRUNK DUCTWORK TO REMAIN.
3. EXISTING AIR HANDLING UNIT TO BE DEMOLISHED.
4. EXISTING CONDENSING UNIT, REFRIGERANT PIPING, AND ASSOCIATED APPURTENANCES TO BE DEMOLISHED.
5. EXISTING EXHAUST FAN AND ASSOCIATED DUCTWORK TO BE DEMOLISHED.
6. EXISTING LOUVER TO BE REMOVED. SEE ARCHITECTURAL FOR INFILL.
7. EXISTING EXHAUST DUCT UP THRU ROOF. FIELD VERIFY DISCONNECTION POINT AND RECONNECT NEW EXHAUST DUCT AS INDICATED ON SHEET M402.



1 M101|M101 MECHANICAL MEZZANINE DEMOLITION
SCALE: 1/4" = 1'-0"



1 M101|M101 MECHANICAL DEMOLITION FLOOR PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

1/4"= 1'-0" 5' 0 5'

1/8"= 1'- 0" 5' 0 5' 15'

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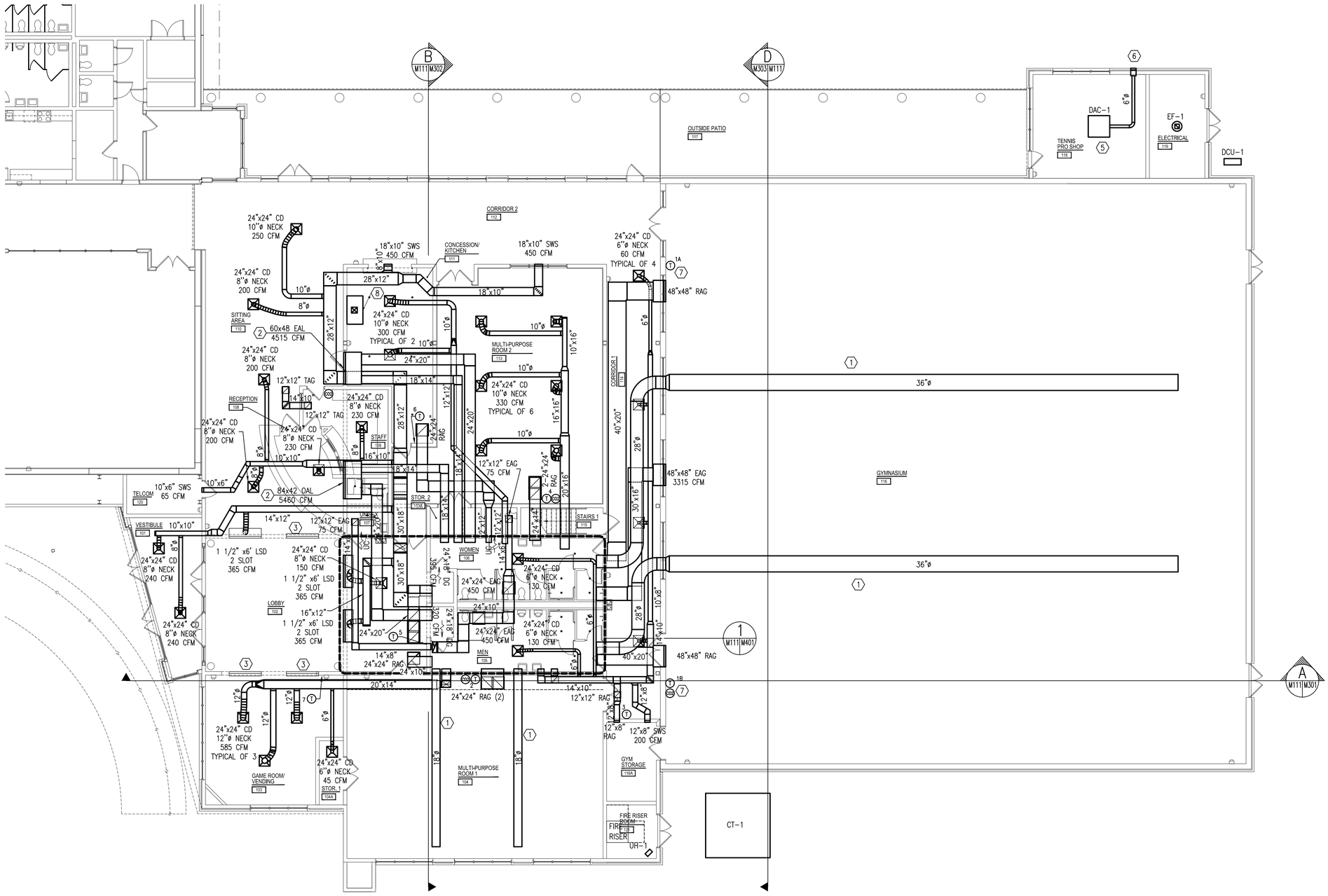
SHEET TITLE:
MECHANICAL DEMOLITION PLAN

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

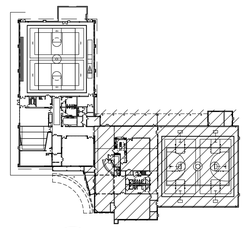
SHEET
M101

SHEET NOTES

1. PROVIDE FABRIC DUCT AT SIZE INDICATED; COORDINATE COLOR WITH PROJECT ARCHITECT.
2. PROVIDE WIND DRIVEN RAIN RESISTANT LOUVER. COORDINATE COLOR WITH PROJECT ARCHITECT.
3. PROVIDE 6' LINEAR SLOT DIFFUSER W/ 2 1-1/2" SLOTS. SEAL PLENUM BOX AIRTIGHT.
4. PROVIDE ROOF TOP EXHAUST FAN WITH SEVERE DUTY CURB.
5. PROVIDE CEILING CASSETTE DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT.
6. PROVIDE 12"X8" BRICK VENT WITH FLANGE.
7. PROVIDE ALUMINUM LOCKING THERMOSTAT GUARD.
8. KITCHEN HOOD AND SIDEWALL EXHAUST FAN TO BE PROVIDED BY KITCHEN CONSULTANT, INSTALLED BY DIV. 15



MECHANICAL NEW WORK FLOOR PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

1/8"= 1'- 0" 5' 0 5' 15'

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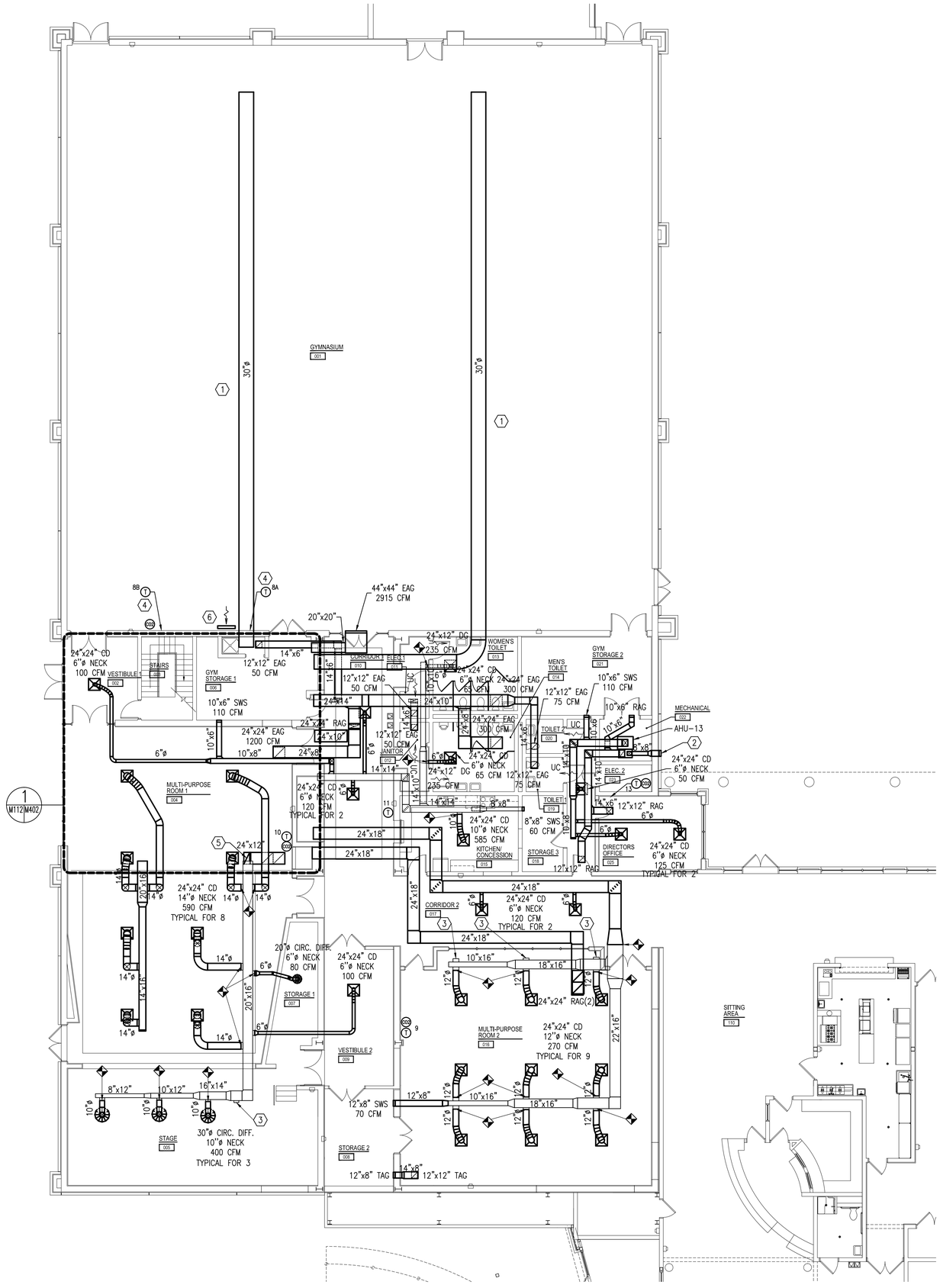
SHEET TITLE:
MECHANICAL NEW WORK PLAN

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

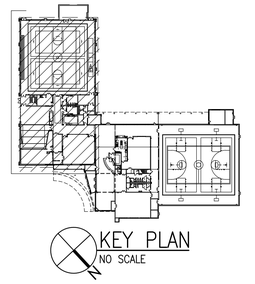
SHEET
M111



MECHANICAL NEW WORK FLOOR PLAN
SCALE: 1/8" = 1'-0"

SHEET NOTES

1. PROVIDE FABRIC DUCT AT SIZE INDICATED; COORDINATE COLOR WITH PROJECT ARCHITECT.
2. PROVIDE 12"X8" BRICK VENT WITH FLANGE.
3. CAP AND SEAL EXISTING TAKE-OFF.
4. PROVIDE ALUMINUM LOCKING THERMOSTAT GUARD.
5. COORDINATE PENETRATION UP THRU FLOOR WITH STRUCTURAL AND THE RETURN PLENUM ON MEZZANINE ABOVE.
6. RETURN AIR GRILLES TO BE REPLACED. SEE ENLARGED PLAN ON SHEET M402.



KEY PLAN
NO SCALE

1/8"= 1'- 0"

5' 0 5' 15'

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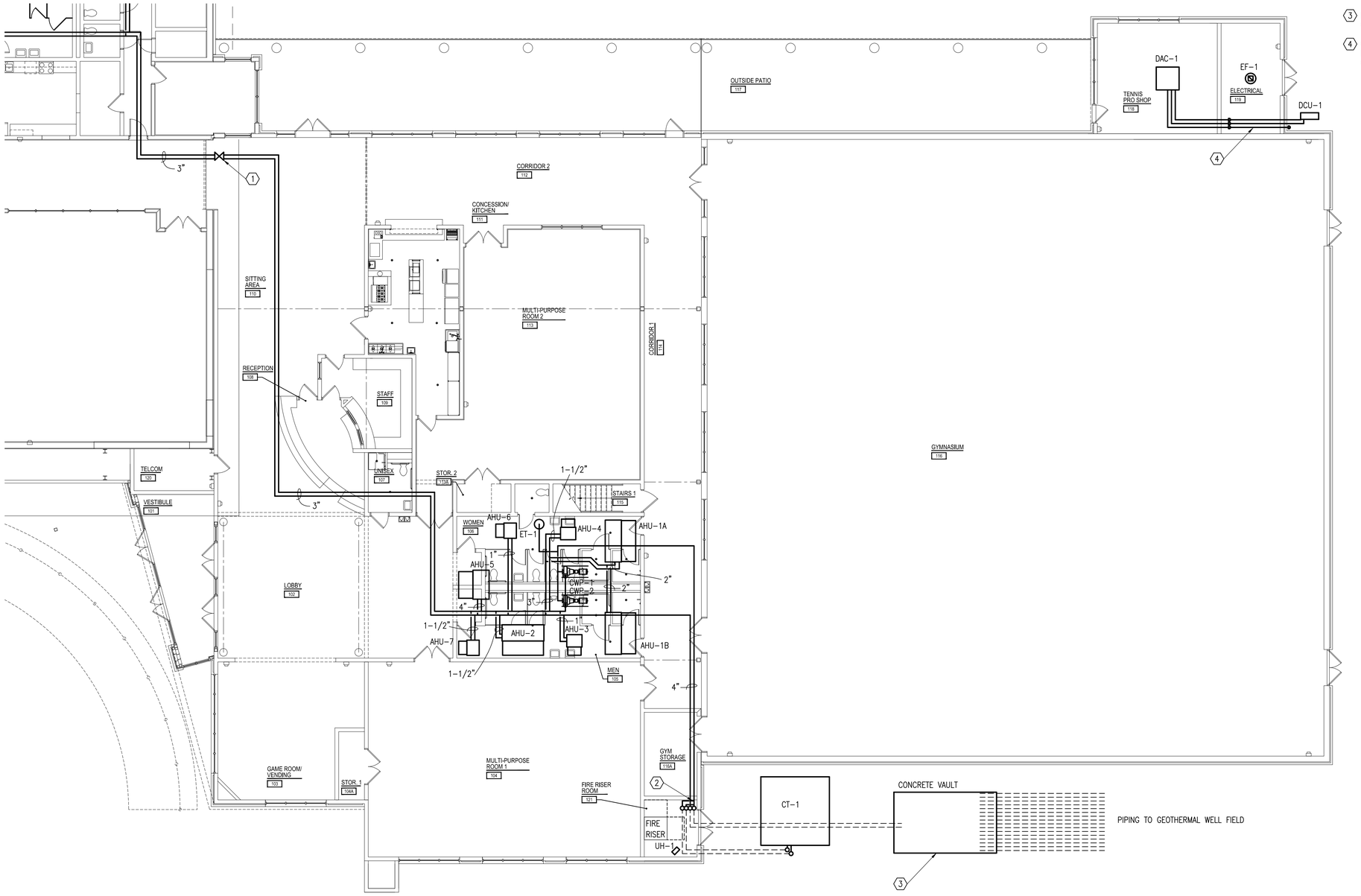
SHEET TITLE:
MECHANICAL NEW WORK PLAN

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

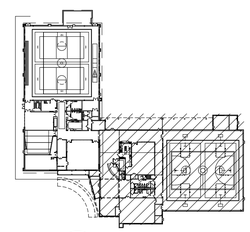
SHEET
M112

SHEET NOTES

1. PROVIDE DOUBLE BLIND FLANGE WITH ISOLATION VALVE FOR CONNECTION ONCE ADDITION IS COMPLETE. THE CONDENSER WATER SYSTEM SHALL NOT BE SHUTDOWN FOR CONNECTION ONCE RENOVATION OF EXISTING BUILDING IS COMPLETE.
2. PROVIDE 3-WAY COOLING TOWER DIVERTING VALVE IN FIRE RISER ROOM AT APPROXIMATELY 48" A.F.F.
3. PROVIDE UNDERGROUND CONCRETE VAULT WITH SPRING LOADED COVER FOR GEOTHERMAL ZONE VALVES AND BALANCING VALVES.
4. COORDINATE REFRIGERANT PIPING AND CONDENSATE PIPING WITH ELECTRICAL EQUIPMENT. PROVIDE CONCRETE SPLASH GUARD OUTSIDE FOR CONDENSER DISPOSAL.



MECHANICAL NEW WORK FLOOR PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

1/8"= 1'- 0"

5' 0 5' 15'

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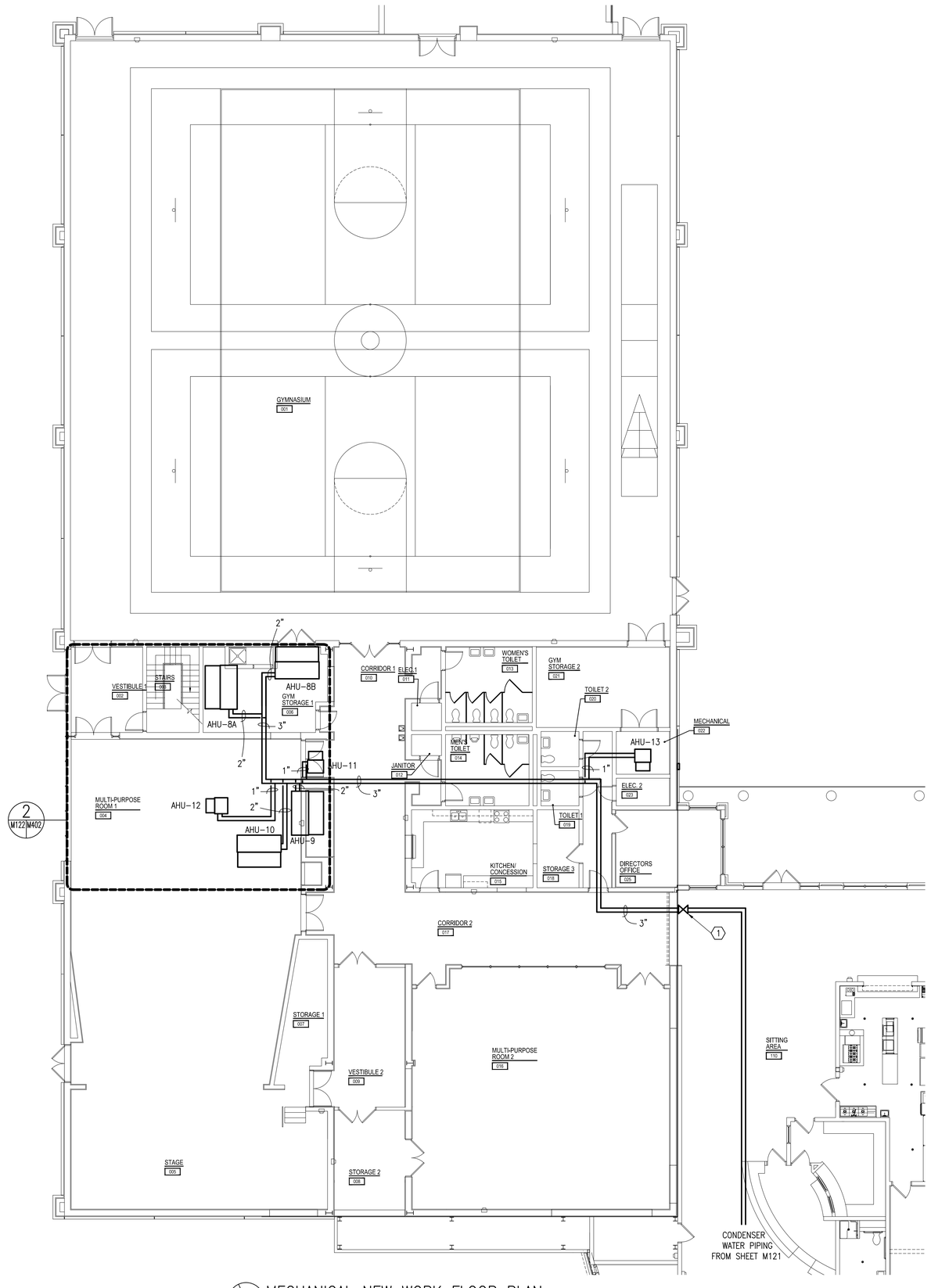
SHEET TITLE: MECHANICAL NEW WORK PIPING PLAN

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

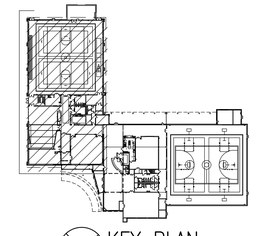
SHEET
M121

SHEET NOTES

1. PROVIDE DOUBLE BLIND FLANGE WITH ISOLATION VALVE FOR CONNECTION ONCE ADDITION IS COMPLETE. THE CONDENSER WATER SYSTEM SHALL NOT BE SHUTDOWN FOR CONNECTION ONCE RENOVATION OF EXISTING BUILDING IS COMPLETE.



MECHANICAL NEW WORK FLOOR PLAN
SCALE: 1/8" = 1'-0"



KEY PLAN
NO SCALE

1/8"= 1'- 0"

5' 0 5' 15'

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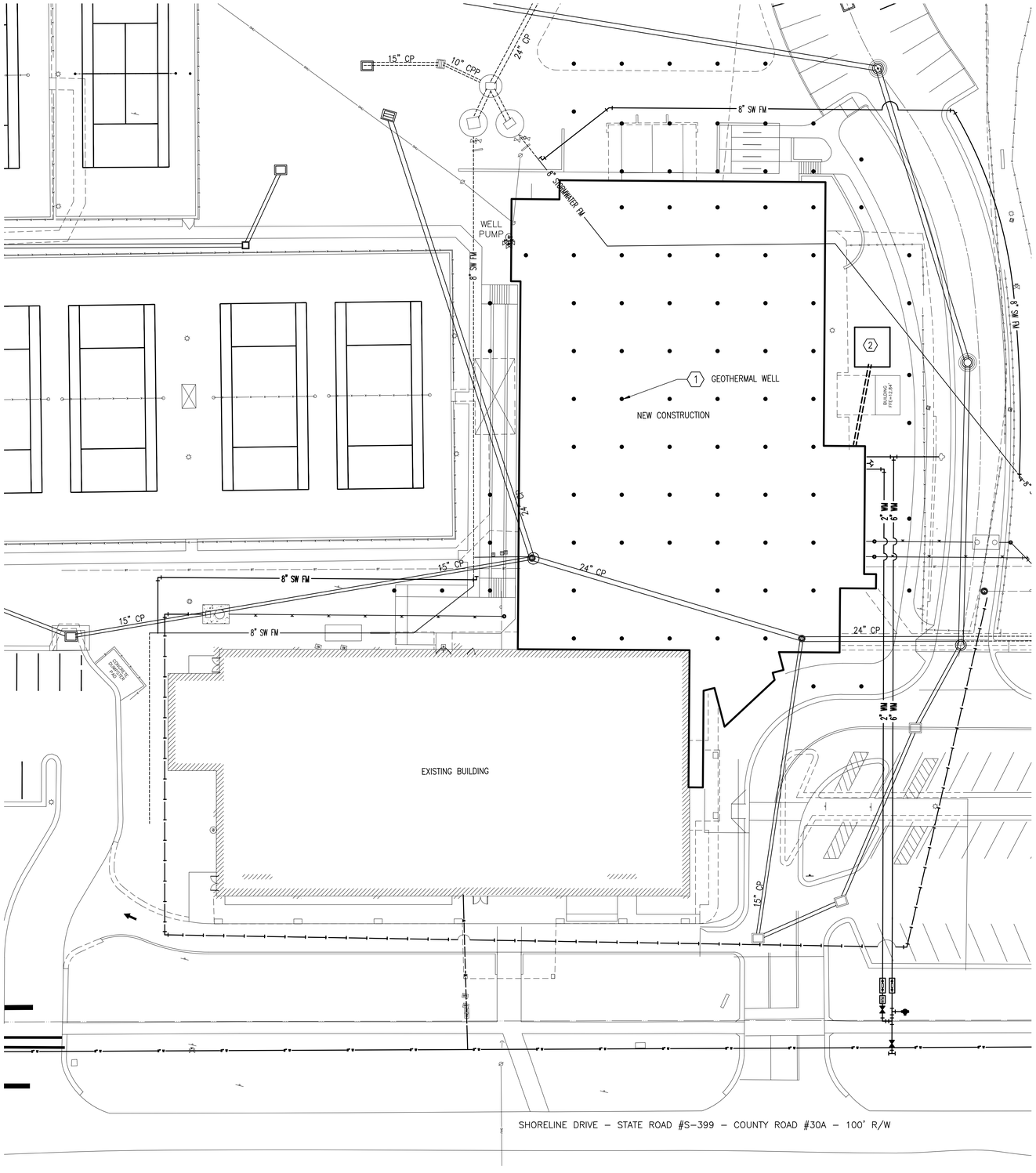
SHEET TITLE:
MECHANICAL NEW WORK PIPING PLAN

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

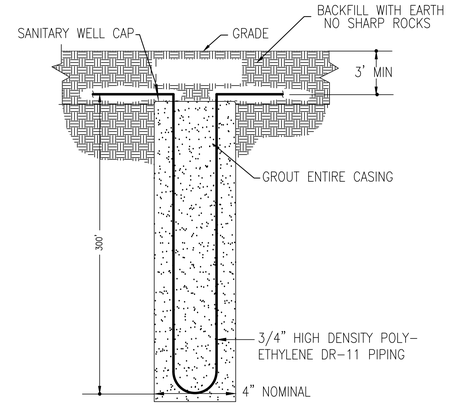
SHEET
M122



MECHANICAL SITE PLAN
SCALE: 1" = 20'-0"

SHEET NOTES

1. ALL WELLS SHALL BE A MINIMUM OF 20' APART. COORDINATE ALL WELLS AND UNDERGROUND PIPING WITH SITE UTILITIES. EACH ZONE SHALL HAVE NO MORE THAN 10 WELLS AND SHALL BE PIPED USING A REVERSE RETURN CONFIGURATION. A MINIMUM OF 90 WELLS SHALL BE PROVIDED.
2. UNDERGROUND CONCRETE VAULT FOR ALL GEOTHERMAL ZONE VALVES.



GEOTHERMAL WELL DETAIL
NOT TO SCALE

20' 10' 0' 20' 40' 60'
SCALE 1" = 20"

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PROJECT:
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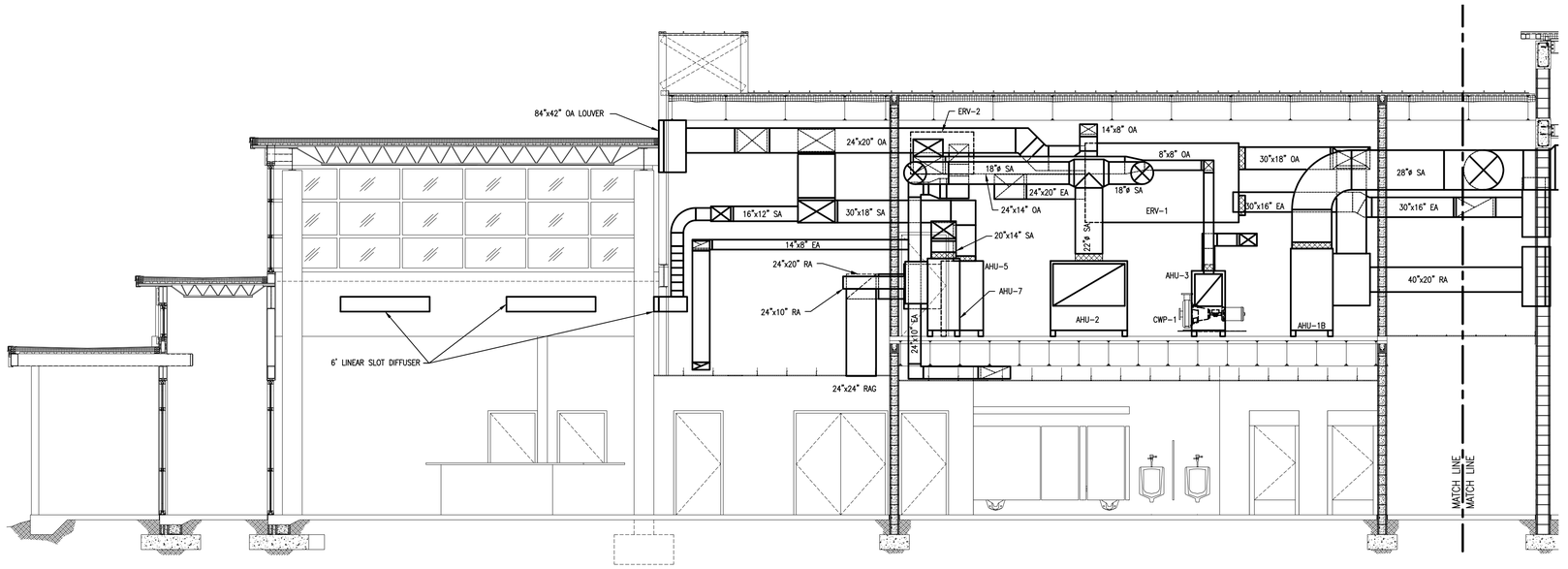
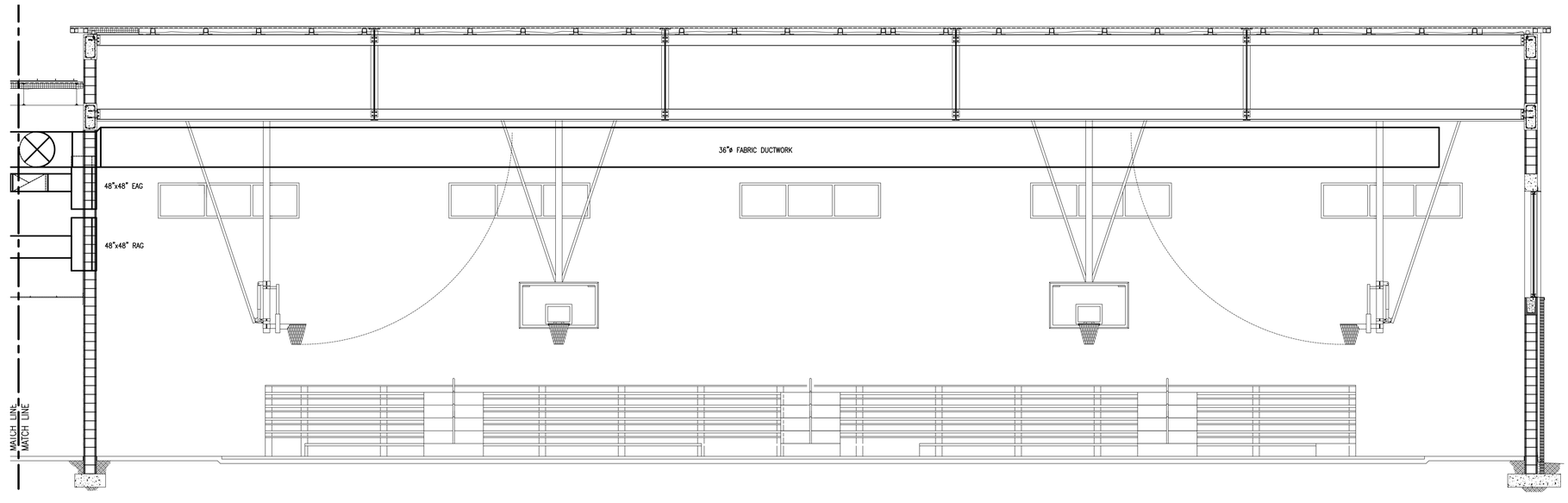
SHEET TITLE: MECHANICAL SITE PLAN

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

SHEET
M123





GYMNASIUM MECHANICAL SECTION (E / XX M303)

SCALE: 1/4" = 1'-0"

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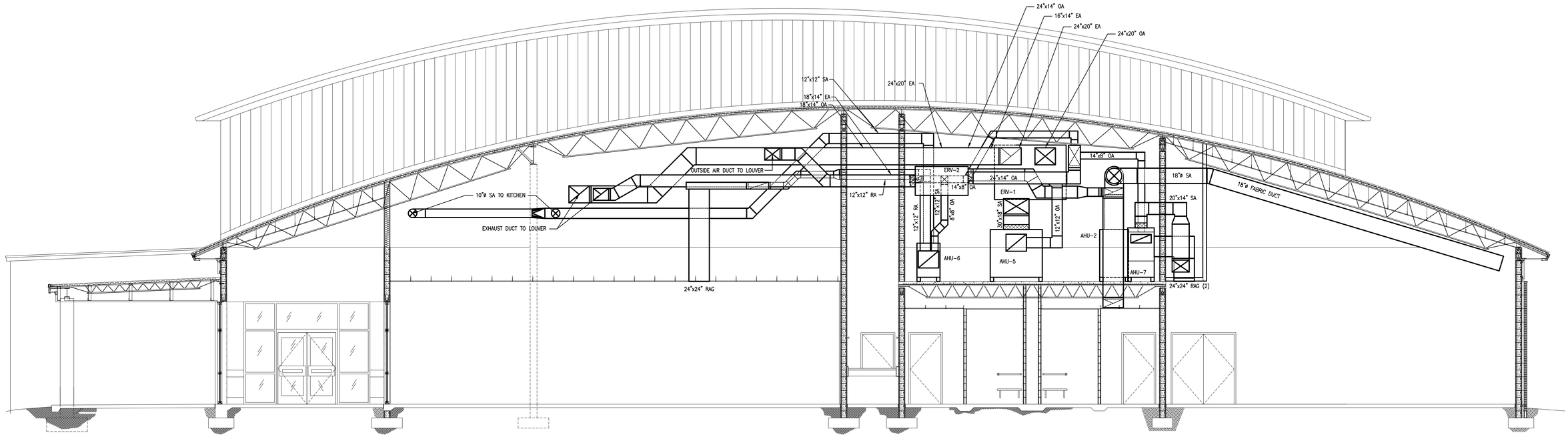
SHEET TITLE:
MECHANICAL SECTION

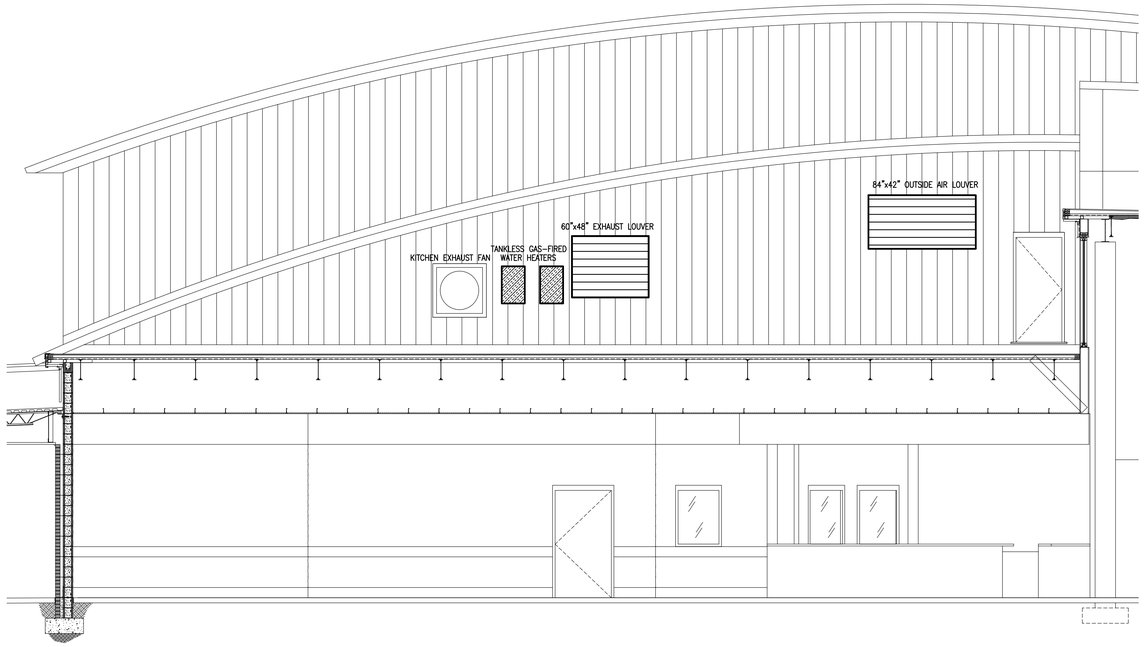
PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

SHEET
M301



GYMNASIUM MECHANICAL SECTION
SCALE: 1/4" = 1'-0"

C / XX M302



BUILDING ELEVATION
SCALE: 1/4" = 1'-0"

C / XX M302

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PROJECT:
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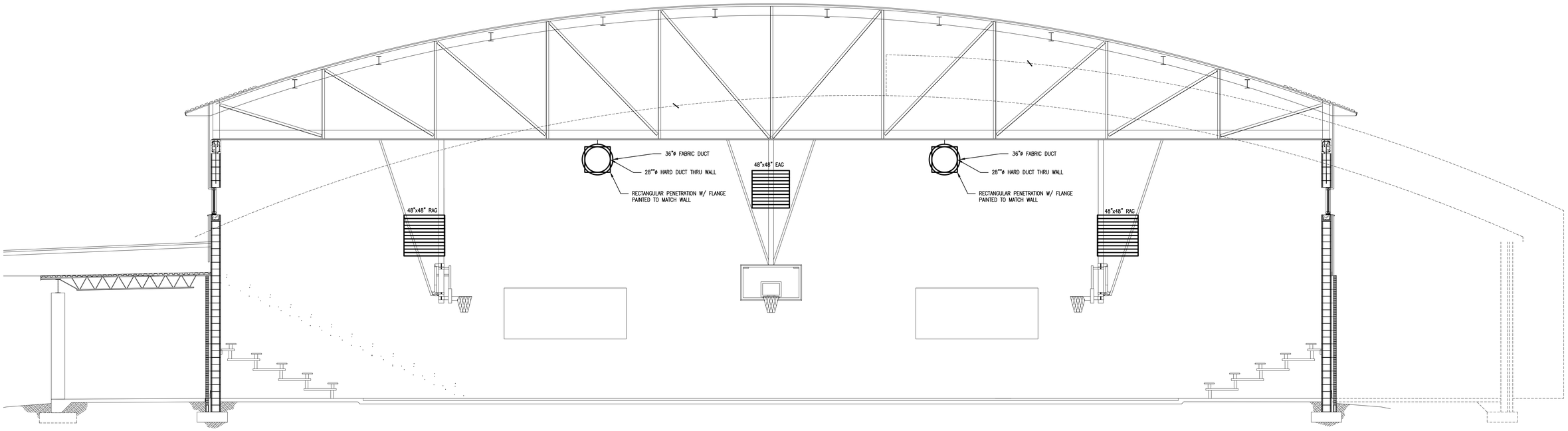
Gulf Breeze, Fl 32561

SHEET TITLE:
MECHANICAL SECTIONS

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

SHEET
M302



GYMNASIUM MECHANICAL SECTION (D / M111 | M303)
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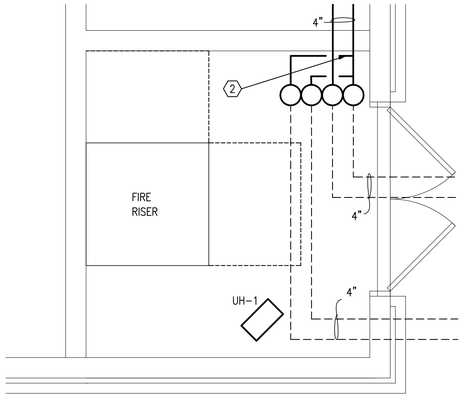
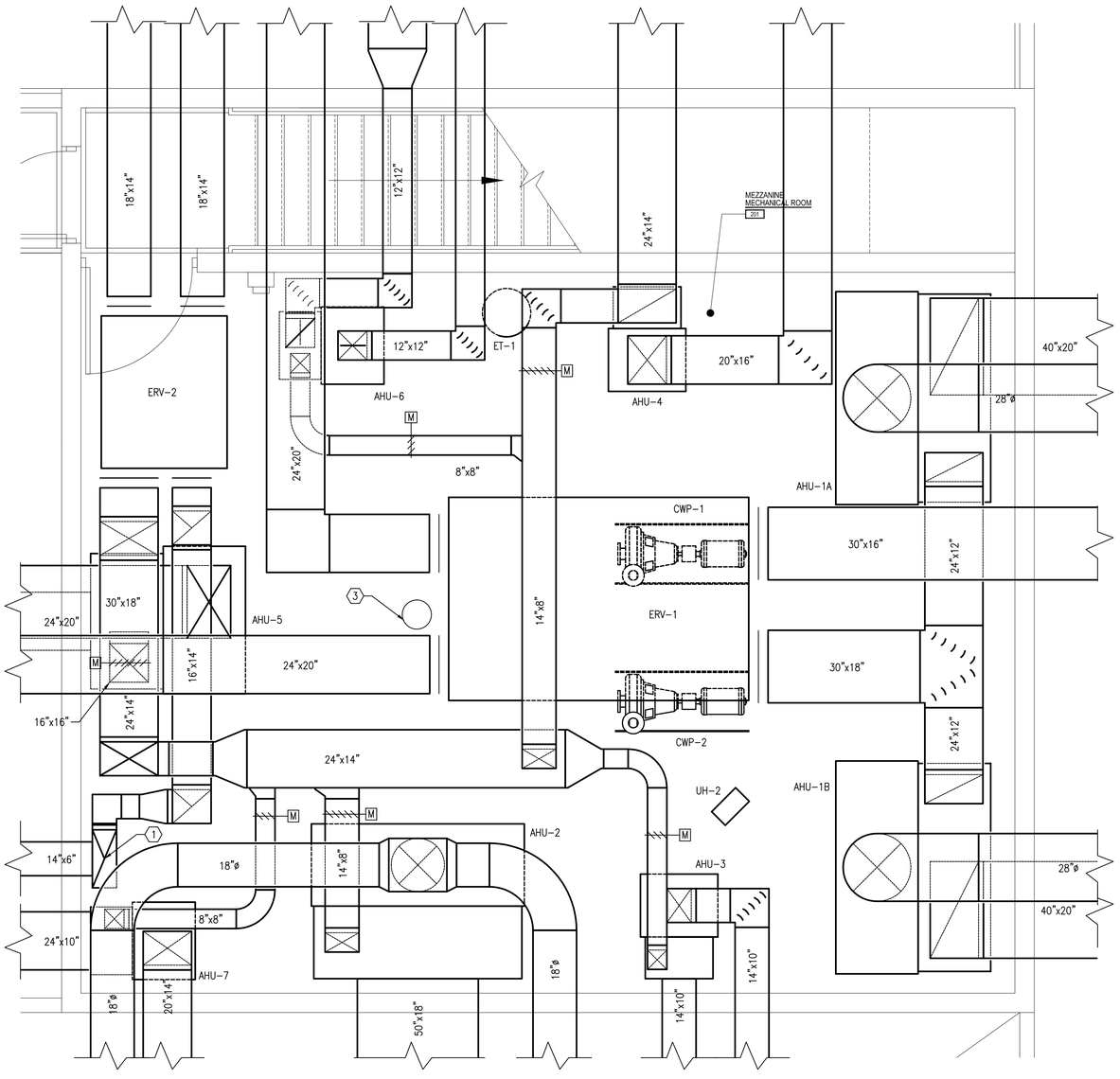
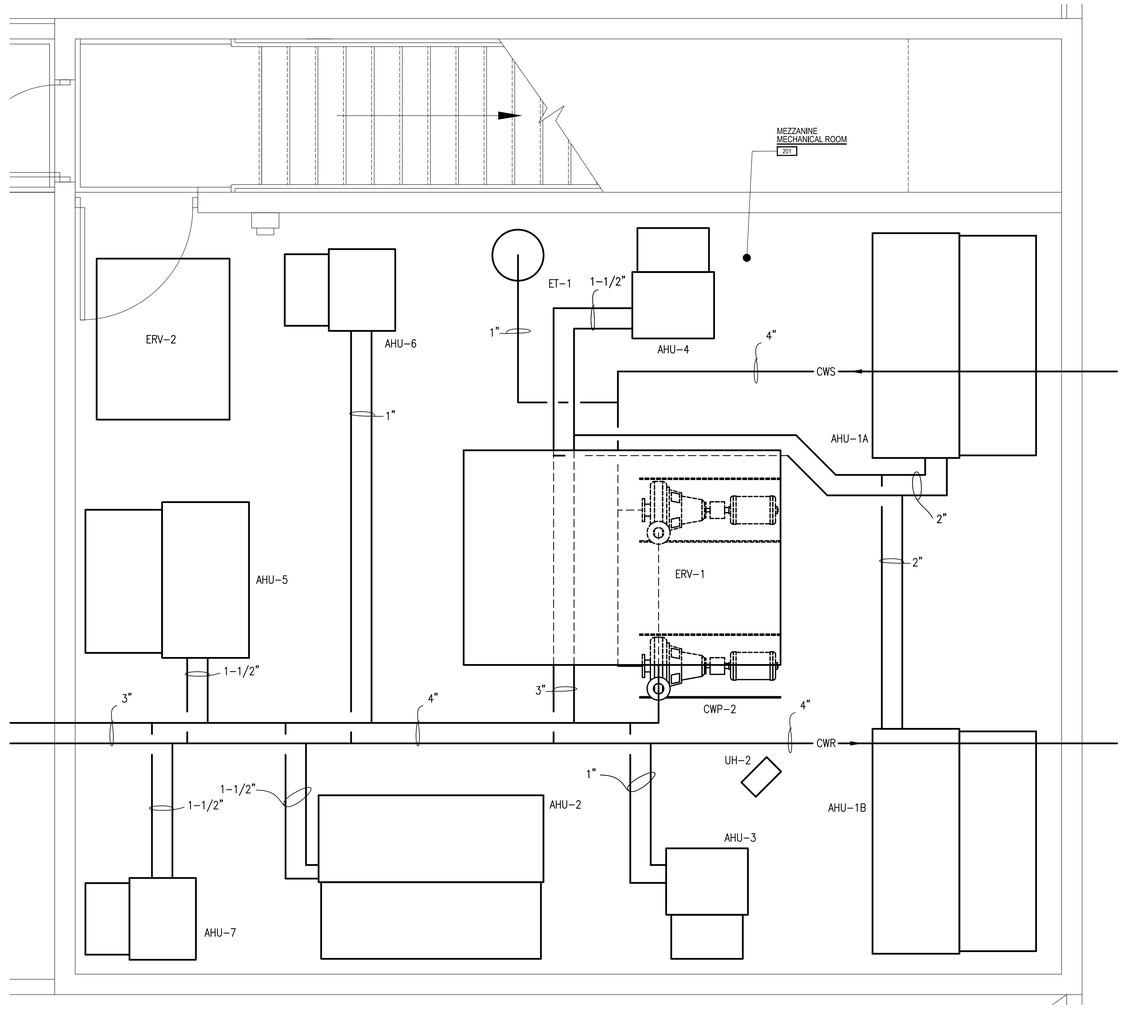


FIRE RISER ROOM PLAN
SCALE: 1/2" = 1'-0"



MECHANICAL MEZZANINE DUCTWORK PLAN
SCALE: 1/2" = 1'-0"



MECHANICAL MEZZANINE PIPING PLAN
SCALE: 1/2" = 1'-0"

SHEET NOTES

1. CONTRACTOR SHALL COORDINATE FLOOR PENETRATION WITH STRUCTURAL BELOW.
2. PROVIDE 3-WAY COOLING TOWER DIVERTING VALVE IN FIRE RISER ROOM AT APPROXIMATELY 48" A.F.F.
3. CONTRACTOR SHALL COORDINATE PLUMBING VENT THRU ROOF WITH DUCTWORK ABOVE.

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SHEET TITLE:
MECHANICAL LARGE SCALE PLANS

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

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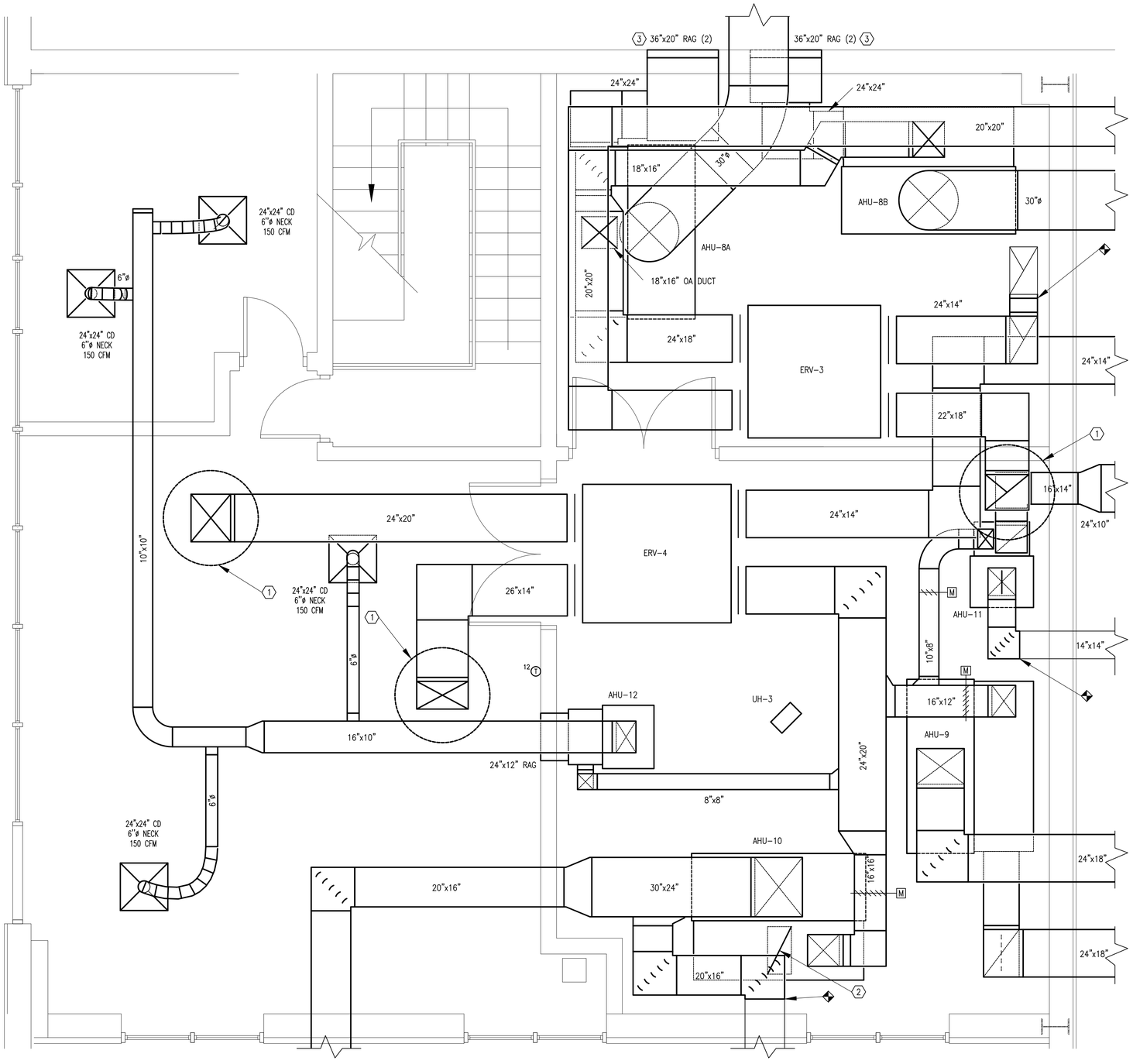
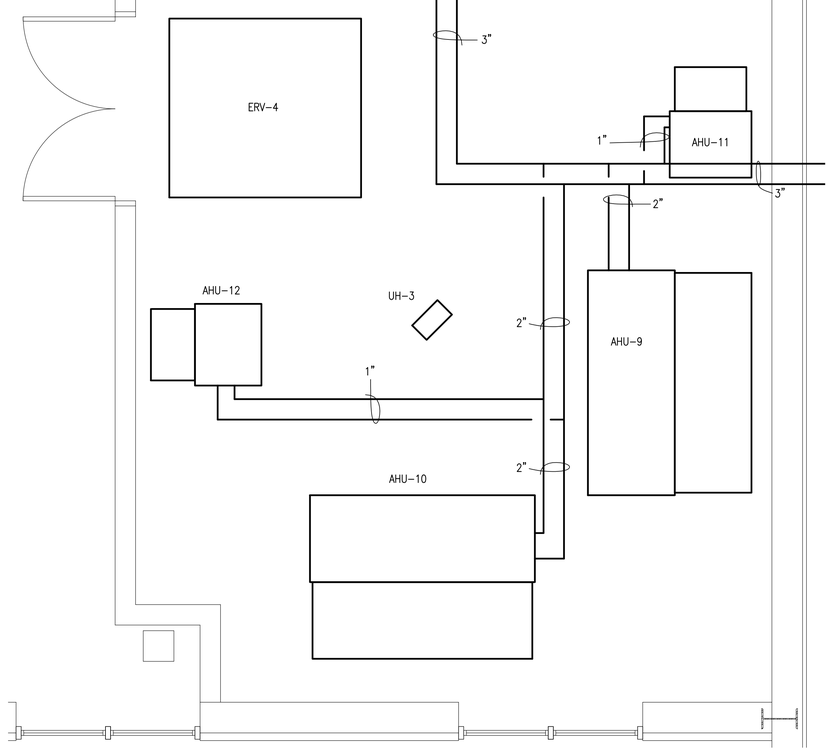
M401

SHEET NOTES

1. PROVIDE 48"ø ROOF CAP W/ SEVERE DUTY CURB.
2. 24"x12" RETURN AIR DUCTWORK DOWN THRU FLOOR. CONTRACTOR TO COORDINATE PENETRATION WITH EXISTING STRUCTURE BELOW.
3. CONTRACTOR TO INSTALL 36"x20" RETURN AIR GRILLES IN EXISTING ROUGH OPENING.



EXISTING BUILDING 2ND FLOOR DUCTWORK PLAN
SCALE: 1/2" = 1'-0"



EXISTING BUILDING MECHANICAL ROOM PIPING PLAN
SCALE: 1/2" = 1'-0"

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SHEET TITLE:
MECHANICAL LARGE SCALE PLANS

PROJECT NO:	2413
FILE NO:	
DATE:	06.01.2011
REVISION:	

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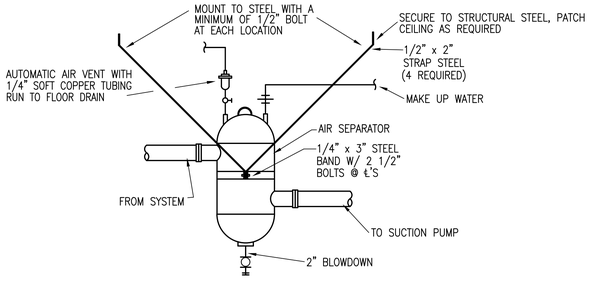
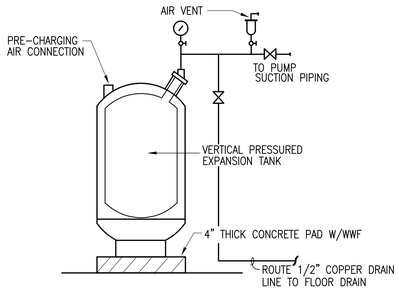
M402



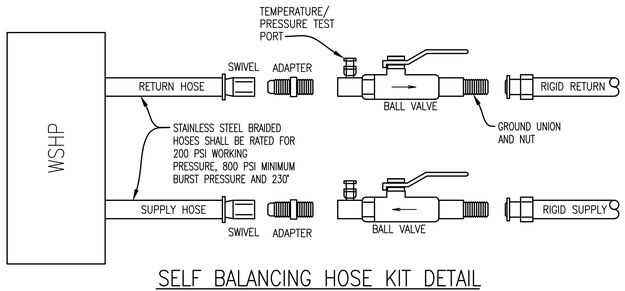
AIR SEPARATOR DETAIL

NOT TO SCALE



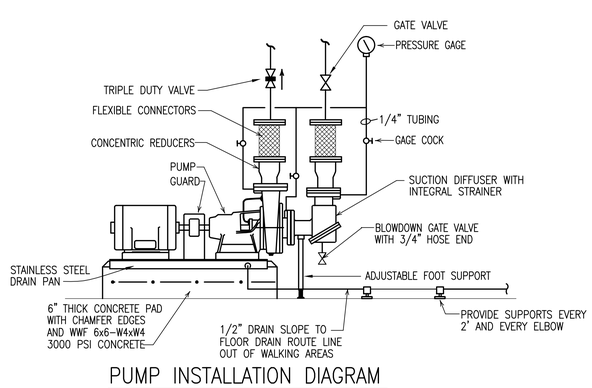
EXPANSION TANK DETAIL

NOT TO SCALE



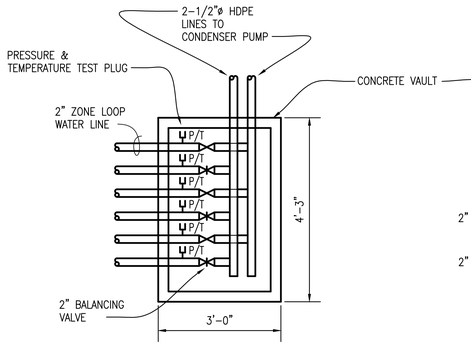
SELF BALANCING HOSE KIT DETAIL

N.T.S.



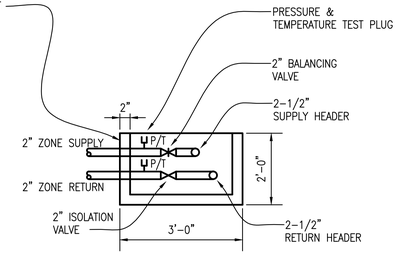
PUMP INSTALLATION DIAGRAM

N.T.S.



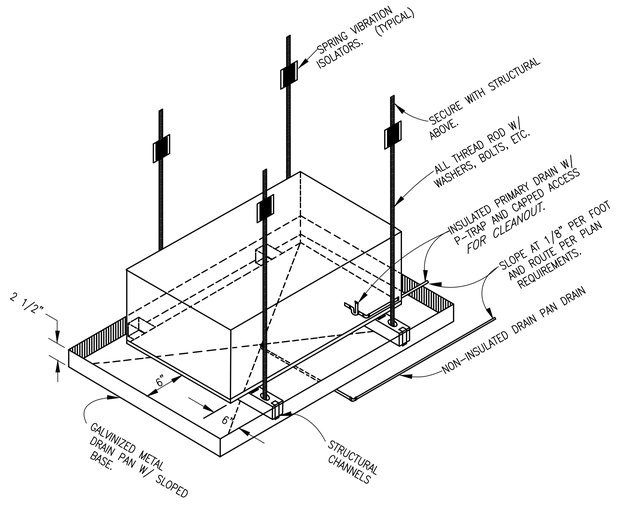
PIPE HEADER VAULT DETAIL

NOT TO SCALE



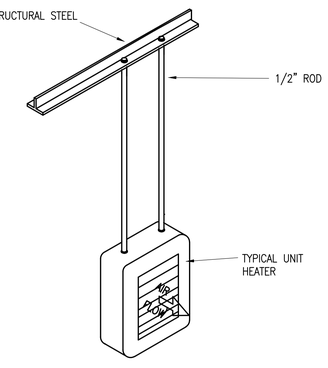
PIPE HEADER VAULT SECTION

NOT TO SCALE



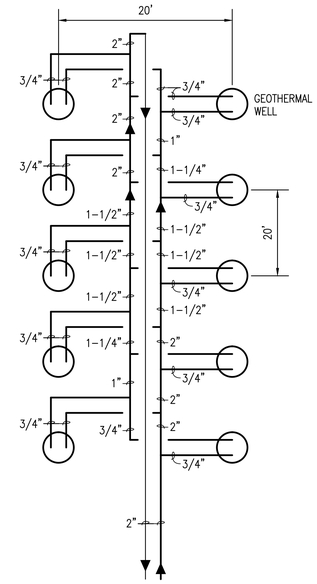
TYPICAL HORIZONTAL ERV DETAIL

NOT TO SCALE



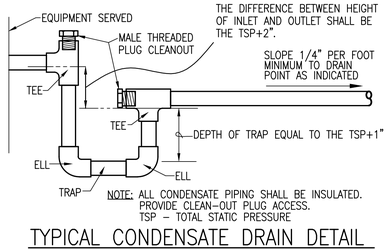
TYPICAL UNIT HEATER DETAIL

NOT TO SCALE



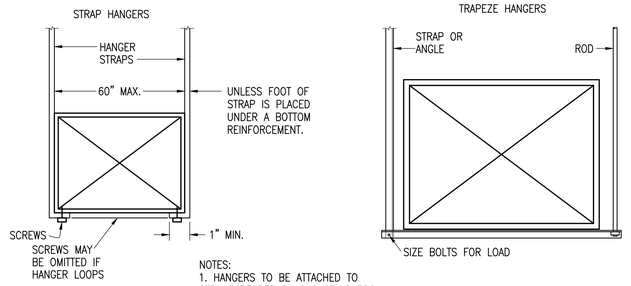
ZONE LOOP DETAIL

NOT TO SCALE:



TYPICAL CONDENSATE DRAIN DETAIL DRAW THROUGH UNIT

NOT TO SCALE



NOTES:
1. HANGERS TO BE ATTACHED TO STRUCTURE PER SMACNA STANDARDS.
2. SIZE OF STRAPS, RODS, AND OR ANGLES TO BE PER SMACNA STANDARDS.

DUCT HANGER DETAILS

NO SCALE

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SHEET TITLE: MECHANICAL DETAILS

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

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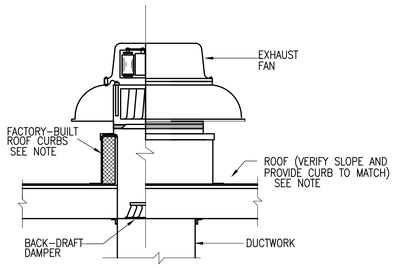
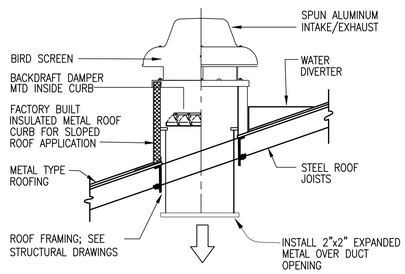
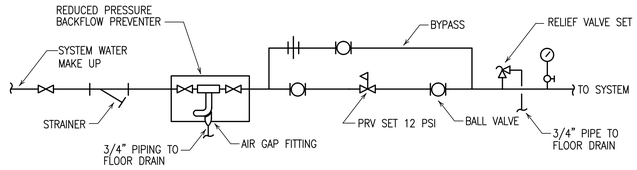


NOTE:
ROOF CURB TO BE SUPPLIED BY ROOF MANUFACTURER AND INSTALLED AS PER MANUFACTURERS PRINTED INSTRUCTIONS.

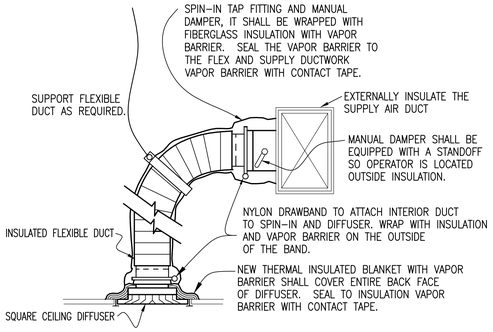
ROOF MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE



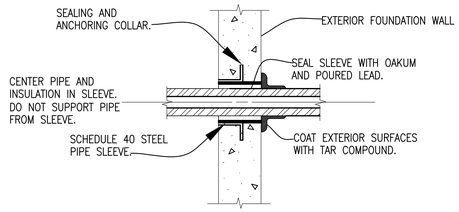
ROOF CAP DETAIL
NOT TO SCALE



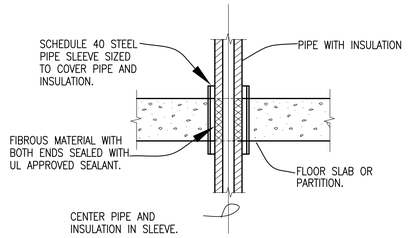
MAKE UP WATER PIPING DIAGRAM
NOT TO SCALE



PANEL DIFFUSER DETAIL
NOT TO SCALE

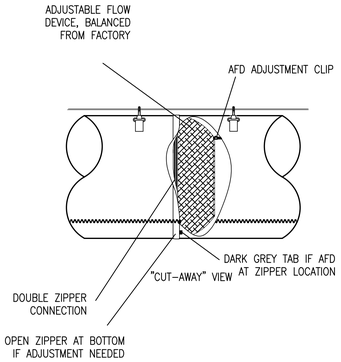


TYPICAL EXTERIOR WALL SLEEVE DETAIL
NOT TO SCALE

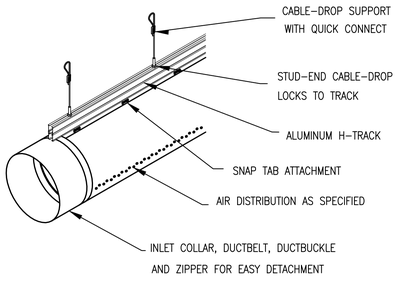


NOTE: FOR FIRE BARRIER PENETRATIONS DUPLICATE INSTALLATION OF FIRE SAFING INSULATION PER TYPICAL WALL SLEEVE DETAIL.

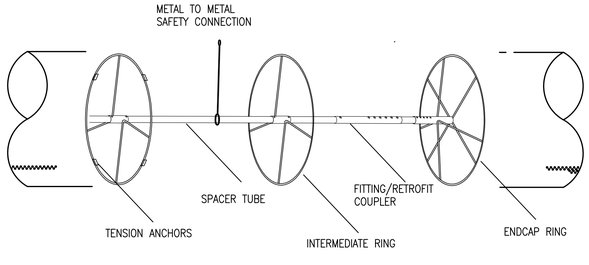
TYPICAL PIPE RISER SLEEVE DETAIL
NOT TO SCALE



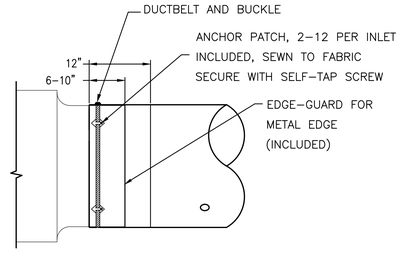
FABRIC DUCT ADJUSTABLE FLOW DEVICE (AFD) DETAIL
NOT TO SCALE
INSTALLED AT ZIPPER LOCATION AT INLET OR AS SPECIFIED



FABRIC DUCT SUSPENSION DETAIL
NOT TO SCALE



CUT AWAY VIEW OF FABRIC DUCT DETAIL
NOT TO SCALE



INLET ATTACHMENT DETAIL
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PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
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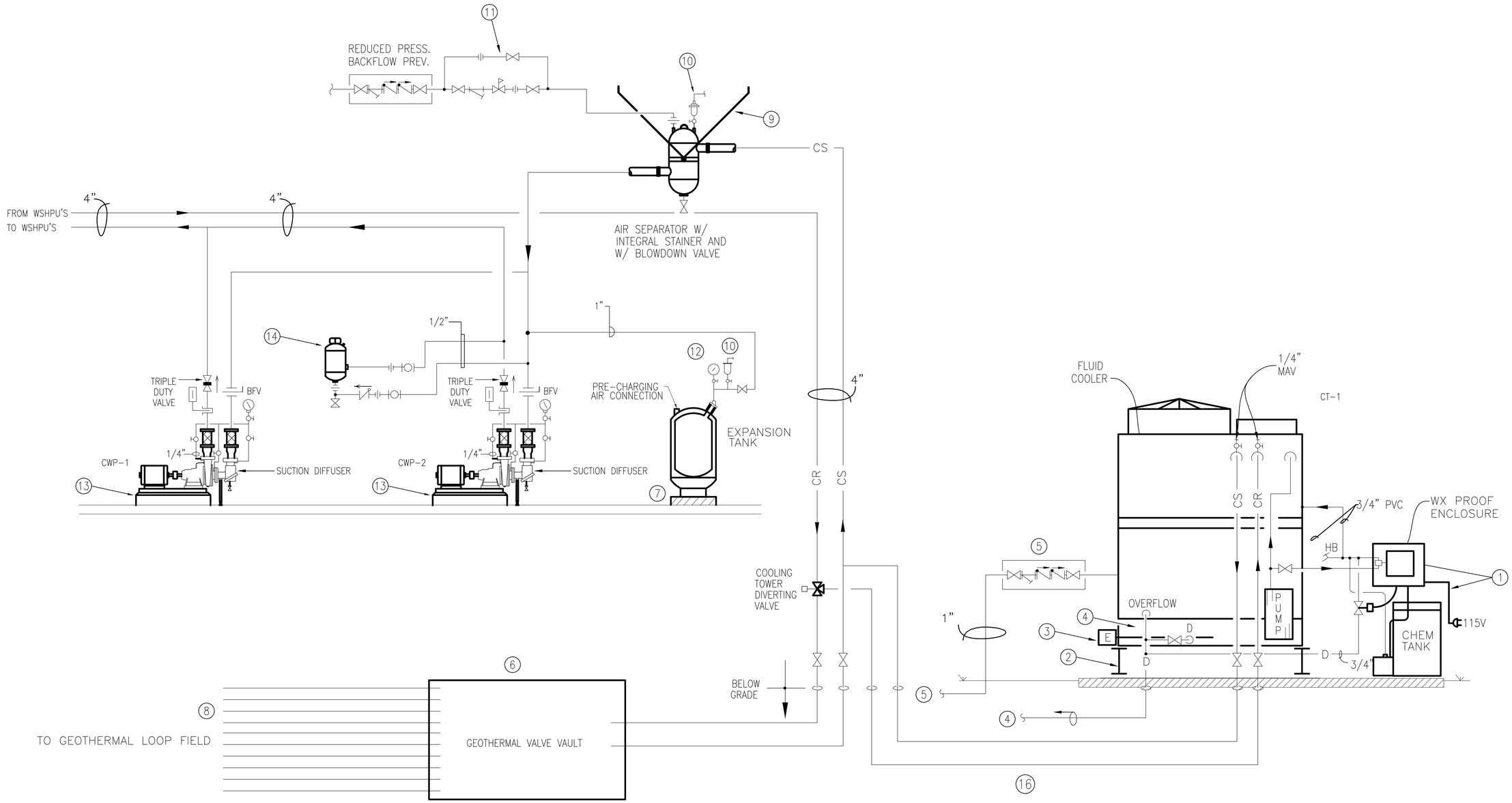

CONDENSER WATER PIPING DETAIL

NOT TO SCALE

DRAWING NOTES

1. CHEMICAL TREATMENT SYSTEM CONSISTING OF CONDUCTIVITY CONTROLLER MOUNTED IN WX PROOF HOUSING, BLOWDOWN VALVE, AND CHEMICAL MIX TANK WITH CHEMICAL FEEDER PUMP.
2. CONTRACTOR TO COORDINATE WITH STRUCTURAL FOR MOUNTING DETAILS.
3. ELECTRICAL SUMP HEATER.
4. CONNECT OVERFLOW AND DRAIN TOGETHER @ FULL SIZE OF TOWER OUTLET
5. INSULATED AND JACKETED REDUCED PRESSURE BACKFLOW PREVENTER AND 3/4" MAKE-UP WATER
6. CONCRETE GEOTHERMAL VALVE VAULT.
7. PROVIDE 4" THICK CONCRETE PAD ON MEZZANINE FLOOR. TYPICAL, ALL EQUIPMENT
8. INDUVIDUAL GEOTHERMAL ZONE PIPING TO WELL FIELD.
9. SUPPORT AIR SEPARATOR FROM STRUCTURE.
10. AUTOMATIC AIR VENT PIPED TO FLOOR DRAIN.
11. BACKFLOW PREVENTION/PRESSURE REDUCING STATION 1" MINIMUM.
12. 23 GAL MINIMAL ACCEPTANCE VERTICAL EXPANSION TANK; PIPE AAV TO FLOOR DRAIN; MOUNT TANK ON 4" CONCRETE HOUSEKEEPING PAD.
13. MOUNT PUMP ON 4" CONCRETE HOUSEKEEPING PAD.
14. MOUNT NEW 2 GAL CHEMICAL SHOT FEEDER ON WALL.
15. TYPICAL H.P. DRAIN RISER WITH TOP CLEANOUT PLUG.
16. PROVIDE MILL WRAPPED STEEL UNDERGROUND W/ FIELD WRAPPING AT THE WELDED JOINTS

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EXPANSION TANK SCHEDULE

MARK	VOLUME (GAL)		CHARGE PRESSURE PSI.	NOTES
	TANK MIN.	ACCEPTANCE MIN.		
ET-1	23	23	15	–

AIR SEPARATOR SCHEDULE

MARK	FLOW		WORKING PRESSURE	INLET SIZE	OUTLET SIZE	NOTES
	RATE	MAX WPD				
AS-1	262	5.0	12	3"	3"	–

PUMP SCHEDULE

MARK	SERVICE	TYPE	SIZE	PERFORMANCE DATA				ELECTRICAL DATA				REMARKS
				CAPACITY GPM	HEAD FT. (H_2O)	MAXIMUM SPEED – RPM	MINIMUM EFFICIENCY (%)	MAXIMUM MOTOR – H.P.	VOLTS	PHASE	HERTZ	
CWP-1,2	CONDENSER WATER	ESF	2.5"x1.5"	262	95	1760	52	7.5	208	3	60	–

NOTES:
PUMP SHALL BE NON OVER LOADING THROUGHOUT THE ENTIRE PUMP CURVE.
ALL PUMPS SHALL HAVE HIGH EFFICIENT TEFC MOTORS.

SUCTION AND DISCHARGE SIZES ARE THE MINIMUM ACCEPTABLE.

PROVIDE STAINLESS STEEL DRAIN PANS ON ALL BASE MOUNTED PUMPS. PIPE DRAINS TO FLOOR DRAIN.

PUMPS TO BE PROVIDED WITH MECHANICAL SEAL UNLESS NOTED OTHERWISE.

ESF – END SUCTION, FRAME MOUNTED CENTRIFUGAL PUMP
IL – IN-LINE

FAN SCHEDULE

MARK	LOCATION	TYPE	DRIVE	PERFORMANCE DATA				ELECTRICAL				CONTROL	NOTES
				AIR FLOW CFM	E.S.P. IN. H_2O	MAX. RPM	MAX. SONES	MAX. HP/WATTS	VOLTS	PHASE	Hz		
EF-1	ELEC. ROOM ROOF	DB	DD	350	0.3	1541	7.2	1/20 HP	120	1	60	INTERLOCK W/ WALL MOUNT THERMOSTAT	3,4

FAN SCHEDULE LEGEND

DD – DIRECT DRIVE
BD – BELT DRIVE
EF – EXHAUST FAN
DB – DOWNBLAST ROOF EXHAUST FAN
ESP – EXTERNAL STATIC PRESSURE

FAN NOTES

1. ALL EXHAUST FANS SHALL BE INSTALLED WITH FLEXIBLE DUCT CONNECTION, VIBRATION ISOLATORS AND FLEXIBLE CONDUIT. FAN SHALL NOT BE IN CONTACT WITH ANY OTHER DUCT, PIPING, CONDUIT OR STRUCTURAL MEMBERS.
2. THE FANS SHALL BE PROVIDED WITH BACKDRAFT DAMPERS.
3. THE ROOF MOUNTED FANS SHALL BE PROVIDED WITH PREFABRICATED ROOF CURBS AND BACKDRAFT DAMPER.
4. ALL DIRECT DRIVE FANS WITH MOTORS LESS THEN 1/2 HP SHALL BE PROVIDED WITH AN ADJUSTABLE ELECTRONIC SPEED CONTROLLER.
5. PROVIDE WITH TIME DELAY SWITCH

ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	LOCATION	TYPE	PERFORMANCE DATA																												NOTES
			MAXIMUM EXHAUST CFM	E.S.P. IN. H_2O	MAX. FAN HP	ELECTRICAL			MAX. OA CFM	MIN. OA CFM	E.S.P. IN. H_2O	MAX. FAN HP	ELECTRICAL			EXHAUST AIR				OUTSIDE AIR				ERV DISCHARGE AIR				OA COOLING LOAD REDUCTION (BTU/HR)	OA HEATING LOAD REDUCTION (BTU/HR)	ELECTRICAL					
						VOLTS	PHASE	Hz					VOLTS	PHASE	Hz	SUMMER		WINTER		SUMMER		WINTER		SUMMER		WINTER				UNIT MCA	UNIT MOCP	VOLTS	PHASE	Hz	
																°F DB	°F WB	°F DB	°F WB	°F DB	°F WB	°F DB	°F WB	°F DB	°F WB	°F DB	°F WB							
ERV-1	MECH RM	TOTAL ENTHALPY WHEEL	3315	0.8	1.5	208	3	60	3900	650	0.5	2	208	3	60	75	62	70	56	93	81	28	23.6	79.8	68.2	58.9	47.5	212,400	131,235	17.5	25	208	3	60	PROVIDE VFD FOR BOTH FANS
ERV-2	MECH RM	TOTAL ENTHALPY WHEEL	1200	0.8	1.5	208	3	60	1870	1870	0.5	2	208	3	60	75	62	70	56	93	81	28	23.6	81.5	70.1	54.8	44.8	73,680	45,529	17.5	25	208	3	60	PROVIDE INTEGRAL DISCONNECT
ERV-3	MECH RM	TOTAL ENTHALPY WHEEL	2915	0.5	2	208	3	60	3430	560	0.3	3	208	3	60	75	62	70	56	93	81	28	23.6	80.3	68.8	57.6	46.8	179,040	110,564	22.3	30	208	3	60	PROVIDE VFD FOR BOTH FANS
ERV-4	MECH RM	TOTAL ENTHALPY WHEEL	2100	0.5	1.5	208	3	60	2525	2525	0.3	1.5	208	3	60	75	62	70	56	93	81	28	23.6	80.4	68.9	57.4	46.6	130,680	80,841	16.4	20	208	3	60	PROVIDE INTEGRAL DISCONNECT

ENERGY RECOVERY VENTILATOR SCHEDULE NOTES:
PROVIDE VIBRATION ISOLATION. PROVIDE MERV 7 FILTER UPSTREAM OF ERV. PROVIDE DRAIN PAN, ROUTE CONDENSATE TO FLOOR DRAIN. PROVIDE ROTATION DETECTOR. CONTRACTOR SHALL PROVIDE INTERNAL FILTER AND ALLOW 0.2 INCHES W.C. EXTRA STATIC PRESSURE DROP FOR DIRTY FILTERS.

WATER SOURCE HEAT PUMP UNITS SCHEDULE

MARK	AIR DATA			WATER DATA		COOLING DATA							HEATING DATA				FILTER			ELECTRICAL DATA								FLOW CONTROL VALVE	NOTE
	TOTAL CFM	OA CFM	ESP	FLOW RATE (GPM)	MAXIMUM WPD (PSI)	COIL ENT DB	COIL ENT WB	MAX FACE VEL FPM	ENT. WATER °F	TOTAL MBTU/HR	SENSIBLE MBTU/HR	HEAT OF REJECTION MBTU/HR	COIL ENT DB	ENT. WATER °F	TOTAL MBTU/HR	HEAT OF ABSORPTION MBTU/HR	TYPE	MAX FACE VEL FPM	FILTER	BLOWER QTY/FLA	COMP QTY/RLA	VOLTS	PHASE	Hz	MIN EER	MIN COP			
WSHP-1A, 1B	8000	1950	0.50	45.0	5.0	80	67	500	80.0	237.7	170.7	276.5	70	60	253.3	212.0	T-AWAY	350	MERV 13	2/6.2	2/30.1	208	3	60	20.9	6.1	AUTOMATIC	DUAL, HGR
WSHP-2	2800	410	0.50	18.0	5.0	80	67	500	80.0	95.1	68.0	114.7	70	60	102.0	80.8	T-AWAY	350	MERV 13	2/4.8	2/13.6	208	3	60	16.6	4.8	AUTOMATIC	DUAL, HGR
WSHP-3	700	190	0.50	4.5	5.0	80	67	500	80.0	23.3	16.4	27.3	70	60	27.3	22.7	T-AWAY	350	MERV 13	1/1.2	1/9.0	208	1	60	19.6	5.8	AUTOMATIC	SINGLE, NO HGR
WSHP-4	1980	455	0.50	12.0	5.0	80	67	500	80.0	68.9	47.0	83.5	70	60	66.7	52.2	T-AWAY	350	MERV 13	1/7.0	1/17.6	208	3	60	14.5	4.6	AUTOMATIC	DUAL, HGR
WSHP-5	4000	650	0.50	22.0	5.0	80	67	500	80.0	119.1	88.9	147.1	70	60	125.4	96.8	T-AWAY	350	MERV 13	2/6.2	2/15.9	208	3	60	14.5	4.4	AUTOMATIC	DUAL, HGR
WSHP-6	600	65	0.50	4.0	5.0	80	67	500	80.0	17.5	11.6	21.1	70	60	19.4	14.8	T-AWAY	350	MERV 13	1/1.1	1/8.4	208	1	60	16.7	4.1	AUTOMATIC	SINGLE, NO HGR
WSHP-7	1800	100	0.50	12.0	5.0	80	67	500	80.0	68.9	47.0	83.5	70	60	66.7	52.2	T-AWAY	350	MERV 13	1/7.0	1/17.6	208	3	60	14.5	4.6	AUTOMATIC	DUAL, HGR
WSHP-8A, 8B	6000	1710	0.50	34.0	5.0	80	67	500	80.0	165.1	119.9	204.5	70	60	172.3	132.7	T-AWAY	350	MERV 13	2/4.8	2/23.2	208	3	60	14.3	4.3	AUTOMATIC	DUAL, HGR
WSHP-9	2500	620	0.50	16.0	5.0	80	67	500	80.0	82.2	59.3	99.2	70	60	83.7	65.6	T-AWAY	350	MERV 13	1/3.6	2/10.4	208	3	60	16.5	4.6	AUTOMATIC	DUAL, HGR
WSHP-10	6000	1530	0.50	34.0	5.0	80	67	500	80.0	165.1	119.9	204.5	70	60	172.3	132.7	T-AWAY	350	MERV 13	2/4.8	2/23.2	208	3	60	14.3	4.3	AUTOMATIC	DUAL, HGR
WSHP-11	1600	300	0.50	7.0	5.0	80	67	500	80.0	35.8	26.8	41.2	70	60	35.9	28.6	T-AWAY	350	MERV 13	1/4.0	1/11.1	208	3	60	22.2	4.9	AUTOMATIC	DUAL, HGR
WSHP-12	750	75	0.50	4.0	5.0	80	67	500	80.0	23.3	16.4	27.3	70	60	27.3	22.7	T-AWAY	350	MERV 13	1/1.2	1/9.0	208	1	60	19.6	5.8	AUTOMATIC	SINGLE, HGR
WSHP-13	600	100	0.50	4.0	5.0	80	67	500	80.0	17.5	11.6	21.1	70	60	19.4	14.8	T-AWAY	350	MERV 13	1/1.1	1/8.4	208	1	60	16.7	4.1	AUTOMATIC	SINGLE, HGR

EACH OF THE UNITS SHALL BE PROVIDED WITH BALANCING VALVE WITH AN OPERATING PRESSURE OF 2 PSI MINIMUMI AND 10 PSI MAXIMUM.

PROVIDE WITH OVERFLOW SWITCH IN PRIMARY DRAIN LINE.

PROVIDE MERV 13 FILTERS.

PROVIDE WITH 36" FLEXIBLE HOSE KIT, Y-STRAINER WITH BLOWDOWN VALVE, HOSE CONNECTOR AND P/T PORT

EACH UNIT SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTAT

PROVIDE WITH FACTORY ISOLATION SPRING OR PAD

HGR – HOT GAS REHEAT

ELECTRIC UNIT HEATER SCHEDULE

MARK	HEATING CAPACITY KW RATING	CFM	TYPE OF DISCHARGE	LOUVERS	MOTOR DATA		MAX. AMP RATING	ELECTRICAL DATA			REMARKS
					HP	RPM		VOLTS	PHASE	Hz	
UH-1,2,3	3	350	HORIZONTAL	ADJUSTABLE	1/100	1600	24	208	3	60	--

NOTE:
HEATER SHALL BE A PROPELLER FAN UNIT, COMPLETELY FACTORY ASSEMBLED, AND WIRED. UNIT SHALL BE PROVIDED WITH 24 VOLT WALL MOUNTED THERMOSTAT. UNIT SHALL COME WITH TRANSFORMER, RELAYS, AND SAFETIES.

MINI-SPLIT AIR HANDLING UNIT SCHEDULE

MARK	FAN DATA				DIRECT EXPANSION COIL DATA				ELECTRICAL DATA			
	TOTAL AIR CFM	OUTSIDE AIR CFM	EXTERNAL STATIC PRESSURE INCHES H_2O	FAN MOTOR (WATTS)	TOT. COOLING CAP. MBTU/HR	SENSIBLE HEAT RATIO	TOT. HEATING CAP. MBTU/HR	MINIMUM SEER	UNIT MCA	VOLTS	PHASE	HERTZ
DAC-1	775	50	0.2	120	24	0.7	26	13	1	208	1	60

MINI-SPLIT AIR HANDLING UNIT SCHEDULE NOTES:
PROVIDE CONDENSATE PUMP & PIPE FROM UNITS TO EXTERIOR.

PROVIDE SPLASH GUARD OUTSIDE FOR CONDENSATE DISPOSAL.

MINI-SPLIT HEAT PUMP CONDENSING UNIT SCHEDULE

MARK	COOLING CAPACITY MBTU/HR	DESIGN AMBIENT TEMP. °Fdb	HEATING CAPACITY MBTU/HR	DESIGN AMBIENT TEMP. °Fdb	LOW AMBIENT TEMPERATURE °F	REFRIGERANT TYPE	NUMBER OF REF CIRCUITS	UNIT MCA	MINIMUM SEER	ELECTRICAL DATA		
										VOLTS	PHASE	HERTZ
DCU-1	24	95	26	47	0	R410A	1	18	13	208	1	60

MINI-SPLIT AIR COOLED CONDENSING SCHEDULE NOTES:
PROVIDE HOUSE KEEPING EQUIPMENT PAD.

CLOSED CIRCUIT COOLING TOWER SCHEDULE

MARK	TYPE	NUMBER OF CELLS	PERFORMANCE DATA				FAN PERFORMANCE DATA				SPRAY PUMP PERFORMANCE DATA			ELECTRICAL DATA				SOUND DATA	MANUFACTURER/ MODEL
			ENT. AIR TEMP.-WB	CONDENSER WATER FLOW – GPM	WATER TEMP.		TYPE	NUMBER OF SPEEDS EACH FAN	NUMBER OF MOTORS EACH CELL	MAX. FAN HP EACH	FLOW GPM	PUMP HP	NUMBER OF MOTORS EACH CELL	HEATER CAPACITY EACH CELL	VOLTS	PHASE	Hz	MAX. SOUND LEVEL 5 FT FROM AIR INLET	
					ENTERING	LEAVING													
CT-1	IDCF	1	80'F	262	103'F	85'F	DIRECT	1	1	20	800	5	1	30 KW	208	3	60	86 dBA	–

CLOSED CIRCUIT COOLING TOWER SCHEDULE NOTES

IDCF – INDUCED DRAFT COUNTER FLOW
TEFC – TOTALLY ENCLOSED FAN COOLED

CONNECT VIBRATION LIMIT SWITCH TO SHUT DOWN FAN.

LOW WATER LEVEL CONTROL SHALL BE INTERLOCKED WITH SPRAY PUMP TO SHUT-DOWN IN EVENT OF LOW LEVEL.

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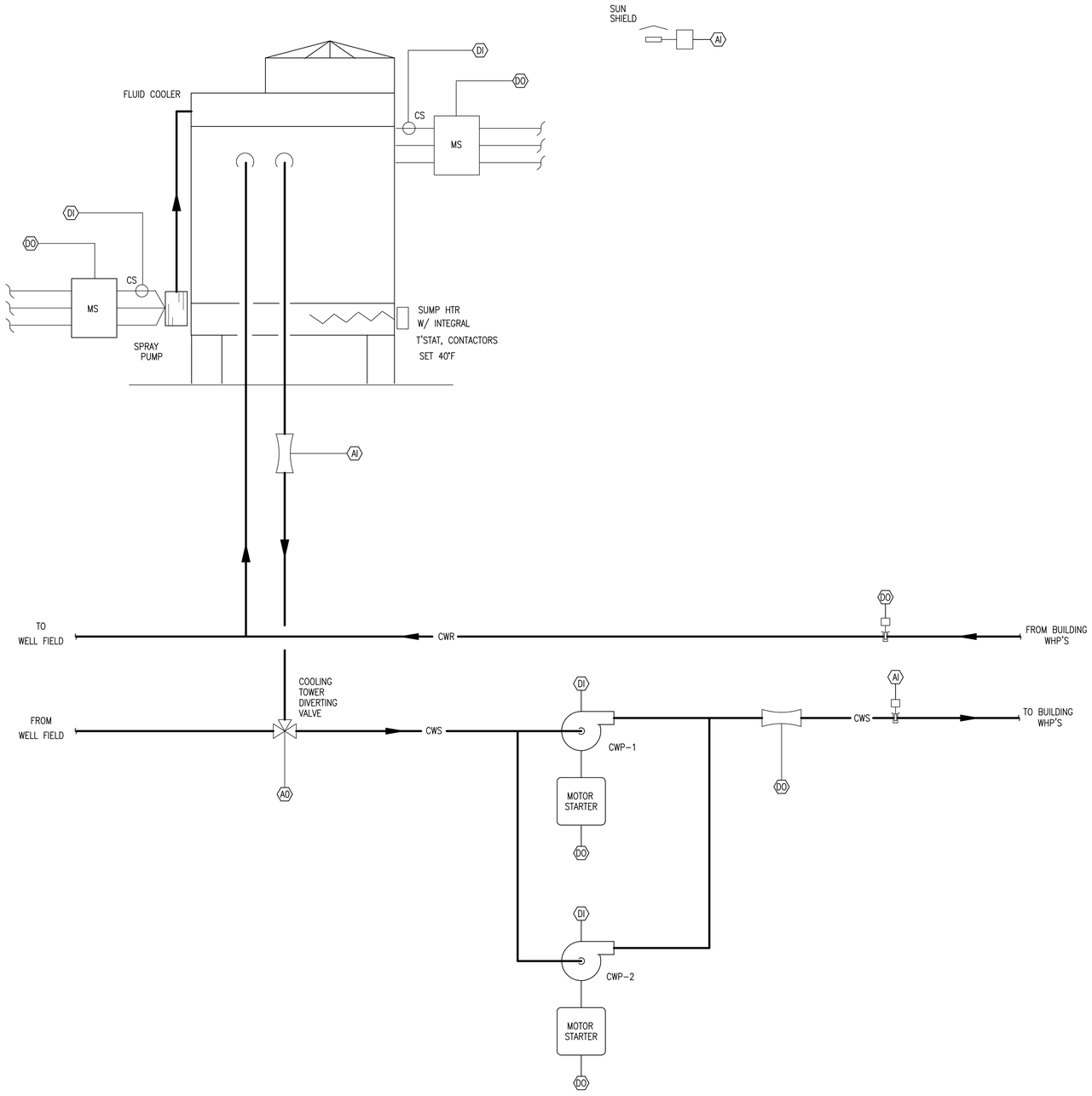
PROJECT:
Gulf Breeze Community Center
800 Shoreline Drive
Gulf Breeze, Fl 32561

SHEET TITLE:
MECHANICAL SCHEDULES

PROJECT NO: 2413
FILE NO:
DATE: 06.01.2011
REVISION:

SHEET
M601



CONDENSER WATER PUMP CONTROL

SEQUENCE OF OPERATION

UPON SYSTEM STARTUP, THE DDC SYSTEM SHALL START THE LEAD CONDENSER WATER PUMP. THE LEAD CONDENSER WATER PUMP SHALL ALTERNATE BETWEEN CWP-1 AND CWP-2 ON A WEEKLY BASIS TO MAINTAIN EQUAL RUN TIME ON EACH PUMP. ALL WATER FLOW SHALL BE THROUGH THE GEOTHERMAL LOOP FIELD UPON STARTUP. AS THE CONDENSER WATER TEMPERATURE RISES ABOVE THE CONDENSER WATER SUPPLY SETPOINT OF 80 DEGF (ADJUSTABLE), THE DDC CONTROL SYSTEM SHALL STAGE ON THE SECOND PUMP. AS THE CONDENSER WATER TEMPERATURE RISES ABOVE THE DDC SYSTEM SHALL POST AN ALARM IF THE PUMP IS ENABLED AND NOT OPERATING. ONCE THE SECOND PUMP IS RUNNING, IF THE CONDENSER WATER TEMPERATURE CONTINUES TO RISE ABOVE 85 DEGF (ADJUSTABLE), THE COOLING TOWER DIVERTING VALVE SHALL MODULATE OPEN TO THE TOWER, START THE TOWER FAN, AND START THE SPRAY PUMP TO MAINTAIN THE CONDENSER WATER SUPPLY TEMPERATURE BELOW 85 DEGF. THE DDC CONTROL SYSTEM SHALL POST AN ALARM ANYTIME THE CONDENSER WATER TEMPERATURE RISES ABOVE 90 DEGF. AS THE CONDENSER WATER SUPPLY TEMPERATURE DROPS BELOW 80 DEGF, THE COOLING TOWER DIVERTING VALVE SHALL MODULATE CLOSED TO THE TOWER AND THE SECOND CONDENSER WATER PUMP STAGED OFF. THE CONDENSER WATER SYSTEM SHALL DIVERT WATER TO THE COOLING TOWER AND RUN EXCLUSIVELY OFF OF THE TOWER ONE DAY PER WEEK.

DDC CONTROL SYSTEM GENERAL NOTES

THE DDC SYSTEM FRONT END SHALL BE WEB BASED AND ALL CONTROLLERS COMMUNICATE VIA OPEN PROTOCOL LON OR BACNET. THE DDC CONTROL SYSTEM SHALL MONITOR THE BUILDING ELECTRICITY, GAS, AND WATER USAGE ON BOTH AN MONTHLY AND ANNUAL BASIS. THE DDC CONTROL SYSTEM SHALL MONITOR THE POWER CONSUMPTION OF THE LIGHTING. THE DDC CONTROL SYSTEM SHALL COMMUNICATE WITH THE LIGHTING CONTROL PANEL VIA OPEN PROTOCOL.

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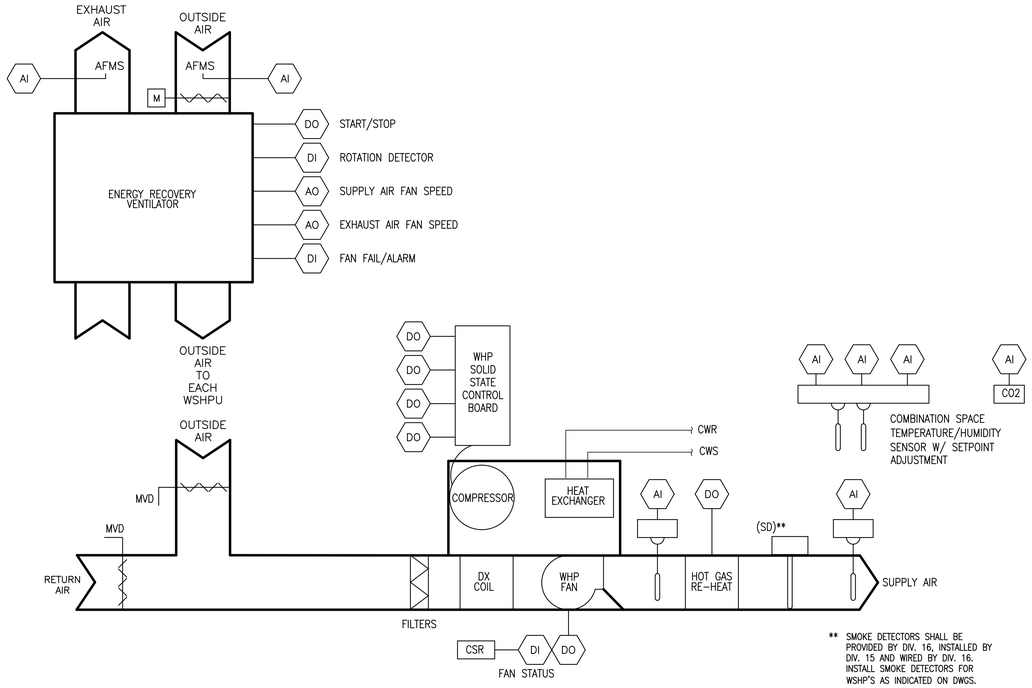
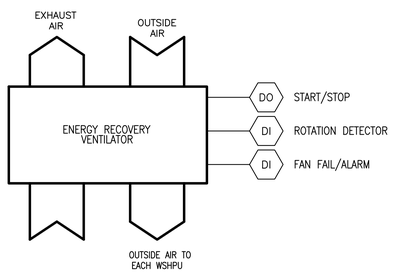


WATER SOURCE HEAT PUMP UNIT 1A,1B,8A, AND 8B CONTROL

SEQUENCE OF OPERATION

THE INDOOR UNIT FAN AND ENERGY RECOVERY VENTILATOR SHALL BE STARTED BY THE DDC CONTROLS ACCORDING TO ITS' OCCUPIED/UNOCCUPIED SCHEDULE. WHEN ROOM TEMPERATURE RISES ABOVE THE COOLING SET POINT THE WATER SOURCE HEAT PUMP UNIT REVERSING VALVE AND EACH STAGE OF DX COOLING SHALL BE CYCLED AS NEEDED TO SATISFY SPACE COOLING REQUIREMENTS. WHEN ROOM TEMPERATURE FALLS BELOW THE HEATING SET POINT THE OUTDOOR UNIT REVERSING VALVE AND EACH STAGE OF COMPRESSOR HEATING SHALL BE CYCLED AS NEEDED TO SATISFY SPACE HEATING REQUIREMENTS. IF THE SPACE HUMIDITY RISES ABOVE THE SETPOINT, THE WATER SOURCE HEAT PUMP UNIT CONTROLS SHALL LOCK THE COMPRESSOR ON IN COOLING AND CYCLE THE HOT GAS REHEAT TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT AND PREVENT OVERCOOLING. DURING UNOCCUPIED MODE, WHEN THE ROOM TEMPERATURE RISES ABOVE 85'F (ADJUSTABLE), DROPS BELOW 55' (ADJUSTABLE), OR THE ROOM HUMIDITY RISES ABOVE 65% RH THE DDC CONTROLS SHALL START THE WSHPU ONLY AND FOLLOW THE OCCUPIED SEQUENCE OF OPERATION. ONCE THE ROOM SETPOINT IS SATISFIED, THE SYSTEM SHALL SHUT BACK DOWN. EACH THERMOSTAT SHALL BE PROVIDED WITH A PUSH BUTTON OVERRIDE SET FOR 3 HOURS OF OCCUPIED OPERATION WHEN ACTIVATED.

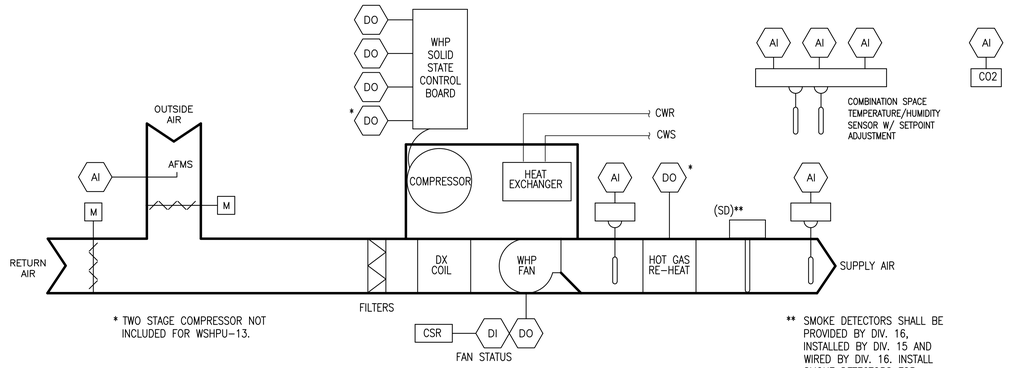
UPON STARTUP THE ENERGY RECOVERY VENTILATOR SHALL MAINTAIN THE SCHEDULED OUTSIDE AIR AND EXHAUST AIR FLOWS. THE OUTSIDE AIR FLOW SHALL BE RESET LINEARLY FROM THE MINIMUM OUTSIDE AIR FLOW TO THE MAXIMUM OUTSIDE AIR FLOW (AS SCHEDULED) AS THE SPACE CO2 RISES FROM 400ppm TO 900ppm. THE EXHAUST AIR FAN SHALL MODULATE TO MAINTAIN AN EXHAUST AIRFLOW 15% BELOW THE OUTSIDE AIR FLOW.



ERV-2 AND 4 CONTROL

SEQUENCE OF OPERATION

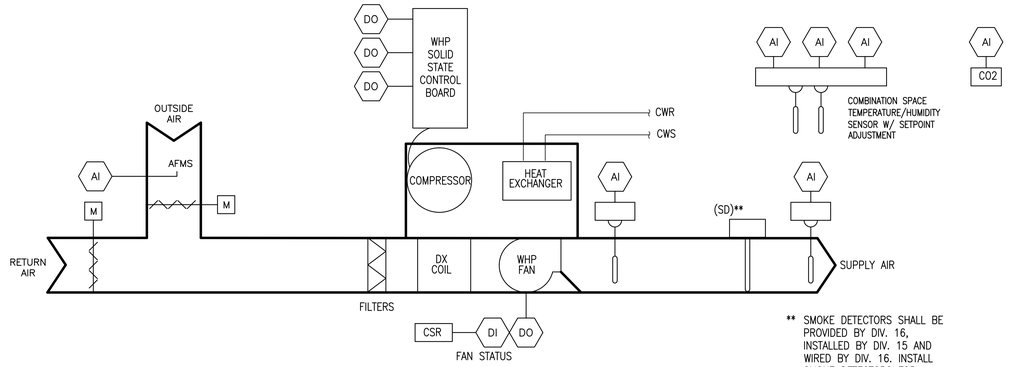
THE ENERGY RECOVERY UNIT SHALL START BASED ON THE OCCUPIED/UNOCCUPIED SCHEDULE. THE ENERGY RECOVERY UNIT SHALL REMAIN OFF DURING UNOCCUPIED TIMES. UPON STARTUP THE ENERGY RECOVERY VENTILATOR SHALL MAINTAIN THE SCHEDULED OUTSIDE AIR AND EXHAUST AIR FLOWS.



WATER SOURCE HEAT PUMP UNIT'S 2,4,5,9,10,11,13 CONTROL

SEQUENCE OF OPERATION

THE INDOOR UNIT FAN SHALL BE STARTED BY THE DDC CONTROLS ACCORDING TO ITS' OCCUPIED/UNOCCUPIED SCHEDULE. EACH WATER SOURCE HEAT PUMP UNIT SHALL MODULATE THE OUTSIDE AIR AND RETURN AIR DAMPERS AS REQUIRED TO MAINTAIN ITS' RESPECTIVE OUTSIDE AIR FLOW AT SETPOINT. WHEN ROOM TEMPERATURE RISES ABOVE THE COOLING SET POINT THE WATER SOURCE HEAT PUMP UNIT REVERSING VALVE AND EACH STAGE OF DX COOLING SHALL BE CYCLED AS NEEDED TO SATISFY SPACE COOLING REQUIREMENTS. WHEN ROOM TEMPERATURE FALLS BELOW THE HEATING SET POINT THE OUTDOOR UNIT REVERSING VALVE AND EACH STAGE OF COMPRESSOR HEATING SHALL BE CYCLED AS NEEDED TO SATISFY SPACE HEATING REQUIREMENTS. IF THE SPACE HUMIDITY RISES ABOVE THE SETPOINT, THE WATER SOURCE HEAT PUMP UNIT CONTROLS SHALL LOCK THE COMPRESSOR ON IN COOLING AND CYCLE THE HOT GAS REHEAT TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT AND PREVENT OVERCOOLING. THE DDC CONTROL SYSTEM SHALL MONITOR CO2 LEVELS IN DENSELY OCCUPIED SPACES AS INDICATED AND POST AN ALARM ANY TIME THE ROOM CO2 LEVEL RISES ABOVE 900PPM. DURING UNOCCUPIED MODE, WHEN THE ROOM TEMPERATURE RISES ABOVE 85'F (ADJUSTABLE), DROPS BELOW 55' (ADJUSTABLE), OR THE ROOM HUMIDITY RISES ABOVE 65% RH THE DDC CONTROLS SHALL START THE WSHPU ONLY AND FOLLOW THE OCCUPIED SEQUENCE OF OPERATION. ONCE THE ROOM SETPOINT IS SATISFIED, THE SYSTEM SHALL SHUT BACK DOWN. EACH THERMOSTAT SHALL BE PROVIDED WITH A PUSH BUTTON OVERRIDE SET FOR 3 HOURS OF OCCUPIED OPERATION WHEN ACTIVATED.



WATER SOURCE HEAT PUMP UNIT'S 3,6,12 CONTROL

SEQUENCE OF OPERATION

THE INDOOR UNIT FAN SHALL BE STARTED BY THE DDC CONTROLS ACCORDING TO ITS' OCCUPIED/UNOCCUPIED SCHEDULE. EACH WATER SOURCE HEAT PUMP UNIT SHALL MODULATE THE OUTSIDE AIR AND RETURN AIR DAMPERS AS REQUIRED TO MAINTAIN ITS' RESPECTIVE OUTSIDE AIR FLOW AT SETPOINT. WHEN ROOM TEMPERATURE RISES ABOVE THE COOLING SET POINT THE WATER SOURCE HEAT PUMP UNIT REVERSING VALVE AND EACH STAGE OF DX COOLING SHALL BE CYCLED AS NEEDED TO SATISFY SPACE COOLING REQUIREMENTS. WHEN ROOM TEMPERATURE FALLS BELOW THE HEATING SET POINT THE OUTDOOR UNIT REVERSING VALVE AND EACH STAGE OF COMPRESSOR HEATING SHALL BE CYCLED AS NEEDED TO SATISFY SPACE HEATING REQUIREMENTS. THE CONTROLS SHALL MONITOR THE ROOM HUMIDITY AND POST AN ALARM ANY TIME ROOM HUMIDITY RISES ABOVE 60% R.H. THE DDC CONTROL SYSTEM SHALL MONITOR CO2 LEVELS IN DENSELY OCCUPIED SPACES AS INDICATED AND POST AN ALARM ANY TIME THE ROOM CO2 LEVEL RISES ABOVE 900PPM. DURING UNOCCUPIED MODE, WHEN THE ROOM TEMPERATURE RISES ABOVE 85'F (ADJUSTABLE) OR DROPS BELOW 55' (ADJUSTABLE) THE DDC CONTROLS SHALL START THE WSHPU ONLY AND FOLLOW THE OCCUPIED SEQUENCE OF OPERATION. ONCE THE ROOM SETPOINT IS SATISFIED, THE SYSTEM SHALL SHUT BACK DOWN. EACH THERMOSTAT SHALL BE PROVIDED WITH A PUSH BUTTON OVERRIDE SET FOR 3 HOURS OF OCCUPIED OPERATION WHEN ACTIVATED.

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