

CODE ANALYSIS

APPLICABLE CODES

	Year		Year
International Building Code	2006	National Electrical Code	2008
International Mechanical Code	2006	Uniform Code for Building Conservation	
International Plumbing Code	2006	ADA Accessibility Guidelines	
International Fire Code	2006		
International Energy Conservation Code	2006		

A. Occupancy and Group: EXISTING BUILDING
 Change in Use: Yes No Mixed Occupancy: Yes No
 Special Use and Occupancy (e.g. High Rise, Covered Mall): N/A

B. Seismic Design Category: N/A Design Wind Speed: N/A mph

C. Type of Construction (circle one): N/A EXISTING BUILDING

I I II II III III IV V V
A B A B A B HT A B

D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours): N/A
 North: _____ South: _____ East: _____ West: _____

E. Mixed Occupancies: N/A Nonseparated Uses: N/A

F. Sprinklers:
 Required: Provided: Type of Sprinkler System: WET PIPE

G. Number of Stories: TWO Building Height: _____

H. Actual Area per Floor (square feet): N/A

I. Tabular Area: N/A

J. Area Modifications: N/A MECHANICAL CHANGES ONLY

$$a) A_a = A_t + \left[\frac{A_t I_t}{100} \right] + \left[\frac{A_t I_s}{100} \right] \quad I_t = 100 \left[\frac{F}{P} - 0.25 \right] \frac{W}{30}$$

b) Sum of the Ratio Calculations for Mixed Occupancies:

$$\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$$

c) Total Allowable Area for:

- One Story: _____
- Two Story: $A_a(2)$ _____
- Three Story: $A_a(3)$ _____

d) Unlimited Area Building: Yes No Code Section: _____

K. Fire Resistance Rating Requirements for Building Elements (hours). N/A

Element	Hours	Assembly Listing	Element	Hours	Assembly Listing
Exterior Bearing Walls			Floors - Ceiling Floors		
Interior Bearing Walls			Roofs - Ceiling Roofs		
Exterior Non-Bearing Walls			Exterior Doors and Windows		
Structural Frame			Shaft Enclosures		
Partitions - Permanent			Fire Walls		
Fire Barriers			Fire Partitions		
			Smoke Partitions		

L. Design Occupant Load: N/A

Exit Width Required: N/A Exit Width Provided: N/A

M. Minimum Number of Required Plumbing Facilities:

- Water Closets - Required (m) _____ (f) _____ Provided (m) 30 (f) _____
- Lavatories - Required (m) _____ (f) _____ Provided (m) 26 (f) _____
- Bath Tubs or Showers: 20
- Drinking Fountains: _____ Service Sinks: 2

FOOTNOTES:

- In case of conflict with the U.S. Department of Justice Federal Registers Parts I through V - ADA Guidelines and specific reference to the International Building Code Accessibility Chapters, the more restrictive requirement shall govern.
- Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:
 - High Rise Requirements.
 - Atriums.
 - Performance Based Criteria.
 - Means or Egress Analysis.
 - Fire Assembly Locator Sheet.
 - Exterior and Interior Accessibility Route.
 - Fire Stopping. Including Tested Design Number.

NOTE: THIS PROJECT SUMMARY INCLUDES THE REMOVAL AND REPLACEMENT OF ALL THE EXISTING HOT WATER PIPING, CONVERTER, AND THE REMAINING VAV BOXES THAT WERE NOT REMOVED AND REPLACED DURING THE UPGRADE. BUILDING OCCUPANCY AND USAGE REMAINS THE SAME. THE ORIGINAL BUILDING WAS CONSTRUCTED IN 1983 WITH A MECHANICAL UPGRADE IN _____.

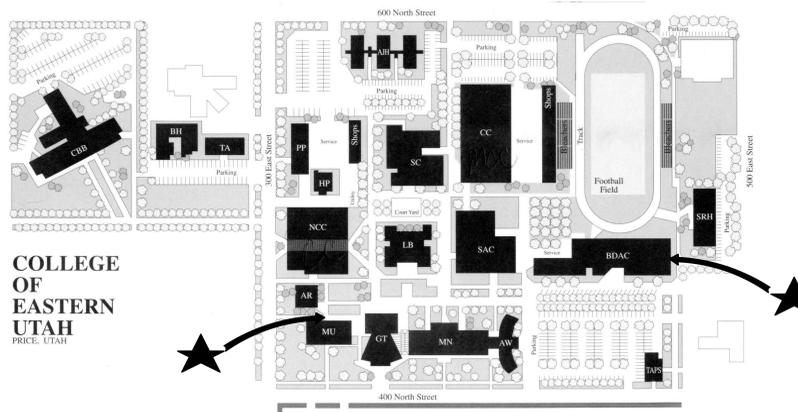
COLLEGE OF EASTERN UTAH BUNNELL/DMITRICH ATHLETIC CENTER MECHANICAL RETROFIT DFCM #09092610



State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018



COLLEGE
 OF
 EASTERN
 UTAH
 PRICE, UTAH

DRAWING INDEX:

- M000-- TITLE SHEET
- MG001- MECHANICAL GENERAL NOTES AND LEGEND
- MD101- MAIN FLOOR MECHANICAL AND PIPING DEMOLITION PLAN
- MD102- UPPER FLOOR MECHANICAL AND PIPING DEMOLITION PLAN
- MD103- GYMNASIUM MECHANICAL AND PIPING DEMOLITION PLAN
- MD401- MECHANICAL ROOM DEMOLITION PLAN
- MD402- DEMOLITIONS PHOTOGRAPHS
- ME101- MAIN FLOOR MECHANICAL AND PIPING PLAN
- ME102- UPPER FLOOR MECHANICAL AND PIPING PLAN
- ME103- GYMNASIUM MECHANICAL AND PIPING PLAN
- ME401- LARGE SCALE MECHANICAL ROOM PLAN AND ELEVATION
- ME402- MUSIC BLDG. DEMO AND NEW PHOTOGRAPHS
- ME501- MECHANICAL DETAILS
- ME502- MECHANICAL DETAILS
- ME503- MUSIC BLDG. MECHANICAL DETAILS AND SCHEDULE
- ME601- MECHANICAL SCHEDULES
- ME701- MECHANICAL FLOW DIAGRAM



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CONSULTANTS



GENERAL NOTES:

G-1 MECHANICAL INFORMATION IS NOT LIMITED TO THE MECHANICAL DRAWINGS. CONTRACTOR SHALL BE RESPONSIBLE FOR INFORMATION OF THE EXISTING BUILDING AND SITE CONDITIONS, EXISTING PIPING, EXISTING ELECTRICAL, AND EXISTING SUPPORTS.

A - EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.

B - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.

C - THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.

D - THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.

E - ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.

G-2 ANY AND ALL ALTERATIONS TO THE SYSTEM SHOWN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CHANGES FOR APPROVAL. CONTRACTOR SHALL NOT START ANY CHANGES UNTIL NOTIFIED IN WRITING. IF CHANGES ARE MADE PRIOR TO APPROVAL, CONTRACTOR SHALL TAKE ALL RESPONSIBILITY FOR THE CHANGES MADE AND ALL COSTS RELATING TO FAILURE OR REPLACEMENT OF ALTERATIONS.

G-3 CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATIONS.

G-4 THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS.

G-5 THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.

G-6 SHEET METAL DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA DIMENSIONS.

G-7 PROVIDE TURNING VANES IN ALL NEW ELBOWS OF RECTANGULAR DUCT.

G-8 C.F.M. LISTED IS ACTUAL AIR.

G-9 SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.

G-10 CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.

G-11 ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2006 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS AND LOCAL AUTHORITY REQUIREMENTS.

G-12 THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF ALL SYSTEMS NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN RE-FILLING THE SYSTEM.

G-13 THIS CONTRACTOR SHALL CONTRACT WITH A DESIGN BUILD ELECTRICAL CONTRACTOR FOR THE DESIGN AND CONSTRUCTION OF THE ELECTRICAL PORTION OF THIS PROJECT. ELECTRICAL INSTALLATION AND DESIGN SHALL BE PER 2008 NEC, DFCM, AND CEU STANDARDS. DESIGN BUILD ELECTRICAL CONTRACTOR SHALL COMPLY WITH ELECTRICAL SPECIFICATIONS.

MECHANICAL LEGEND

SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION
GENERAL TERMINOLOGY			AIR SIDE			WET SIDE			WET SIDE CONT		
		SECTION LETTER DESIGNATION			EXISTING AIR DUCT TO BE REMOVED			PUMP			PITCH DOWN
		SECTION DRAWN ON THIS SHEET			NEW AIR DUCT			PUMP SUCTION DIFFUSER			ELBOW UP
		DETAIL NUMBER DESIGNATION CORRESPONDING WITH GRID LOCATION			RECT. TO RECT. AIR DUCT TAKE-OFF			UNION			ELBOW DOWN
		MECHANICAL EQUIPMENT DESIGNATION			RECT. TO RND. AIR DUCT TAKE-OFF			MANUAL ACTUATOR (BALL, BUTTERFLY, NEEDLE, ETC. VALVES)			TEE UP
		EQUIPMENT ITEM DESIGNATION			RND. TO RND. AIR DUCT TAKE-OFF			MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)			TEE DOWN
		REGISTER, GRILL OR DIFFUSER DESIGNATION WITH BALANCING CFM LISTED BELOW			RECT. TAKE-OFF AT END OF MAIN			MANUAL ACTUATOR (GATE, GLOBE, S&D, OS&Y, ETC. VALVES)			EXISTING PIPING TO BE REMOVED
		GRILLE, OR LOUVER DESIGNATION WHERE BALANCING NOT REQUIRE			BURIED OR UNDER FLOOR DUCT			ELECTRIC MOTOR ACTUATOR			EXISTING PIPING TO REMAIN
		REVISION DESIGNATOR AND NUMBER			FLEXIBLE AIR DUCT			SOLENOID ACTUATOR			NEW PIPING
		KEY NOTE DESIGNATOR AND NUMBER			LINED DUCT			THREADED OR SWEAT VALVE CONNECTION			PIPE CAP OR PLUG
		POINT OF CONNECTION			VANED ELBOW			FLANGED OR VALVE CONNECTION			CONCENTRIC REDUCER
		POINT OF REMOVAL			RADIUS ELBOW			FLANGED VALVE CONNECTION			ECCENTRIC REDUCER
AFF		ABOVE FINISHED FLOOR			CONCENTRIC DUCT TRANSITION			BUTTERFLY VALVE			FLEXIBLE CONNECTION
AP		ACCESS PANEL			ECCENTRIC DUCT TRANSITION			GATE VALVE			NATURAL GAS PIPING
EL		CENTER LINE ELEVATION	AFF		FLEXIBLE AIR DUCT			MOTORIZED 2-WAY CONTROL VALVE			CHEMICAL FEED LINE
INV. ELEV.		INVERT ELEVATION	AP		VOLUME DAMPER			MOTORIZED 3-WAY CONTROL VALVE			MAKE-UP WATER LINE
GC		GENERAL CONTRACTOR	EL		SUPPLY AIR DIFFUSER			CHECK VALVE			CULINARY COLD WATER
MC		MECHANICAL CONTRACTOR	INV. ELEV.		RETURN AIR, FRESH AIR, AND TRANSFER AIR			PRESSURE REDUCING VALVE			CULINARY HOT WATER
CC		CONTROL CONTRACTOR	GC		CEILING MOUNTED EXHAUST FAN OR EXHAUST GRILLE			FLANGED GLOBE VALVE			RECIRCULATED CULINARY HOT WATER
EC		ELECTRICAL CONTRACTOR	MC		RETURN OR OUTSIDE AIR DUCT UP			CIRCUIT BALANCING VALVE			EQUIPMENT AND PIPING DRAIN
NIC		NOT IN CONTRACT	CC		SUPPLY DUCT UP			BALL VALVE			HEATING WATER SUPPLY
NTS		NOT TO SCALE	EC		EXHAUST AIR INTAKE UP			PRESSURE RELIEF VALVE			HEATING WATER RETURN
C		COMMON	NIC		RETURN OR OUTSIDE AIR DUCT DOWN			NEEDLE VALVE			HIGH PRESSURE STEAM
NC		NORMALLY CLOSED	NTS		SUPPLY DUCT DOWN			AUTOMATIC AIR VENT			HIGH PRESSURE STEAM RETURN
NO		NORMALLY OPEN	C		EXHAUST DUCT DOWN			MANUAL AIR VENT			PUMPED CONDENSATE
			NC		ROUND DUCT UP			STRAINER			HEAT RECOVERY SYSTEM
			NO		LOWER DUCT DOWN			STRAINER W/ PLUGGED BLOW OFF			
					FLEXIBLE DUCT CONNECTION			VTI VENTURI			
					COIL						
					AP ACCESS PANEL			PRESSURE GAUGE AND GAUGE COCK - WATER			
					EXISTING EQUIPMENT TO BE REMOVED			PRESSURE GAUGE AND GAUGE COCK - STEAM			
					EXISTING EQUIPMENT TO REMAIN						
					NEW EQUIPMENT			THERMOMETER AND THERMOWELL			
					T-STAT WALL MOUNTED THERMOSTAT						
					SA SUPPLY AIR			WATER TEMPERATURE SENSOR AND THERMOWELL			
					RA RETURN AIR						
					EA EXHAUST AIR			FLOW SWITCH			
					OA OUTSIDE AIR						
					MA MIXED AIR			PRESSURE SWITCH			
					FA FRESH AIR						
					RF RELIEF AIR			TW THERMOWELL			
								PRESSURE AND TEMPERATURE TAP			
								INVERTED BUCKET STEAM TRAP			
								FLOAT & THERMOSTATIC STEAM TRAP			
								DIRECTION OF FLOW			

PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit

DFCM #09092610

Price, Utah

MARK DATE REVISION

PROJECT MANAGER:

WP

DRAWN BY:

LGD

CHECKED BY:

SLW

DATE:

10/19/09

WHW JOB NO.:

09008

SHEET TITLE



MECHANICAL GENERAL
NOTES AND LEGEND

SHEET NO.

MG001

- SHEET NOTES:**
- ① REMOVE EXISTING HWS AND HWR PIPING INCLUDING VALVES, FITTINGS, CONTROL VALVES, UNIONS, HANGERS, SUPPORTS, AND ALL VAV CONNECTIONS.
 - ② REMOVE EXISTING VAV BOXES AND ALL ASSOCIATED ITEMS.
 - ③ EXISTING VAV BOXES SHALL REMAIN.
 - ④ EXISTING THERMOSTATS SHALL REMAIN.
 - ⑤ REMOVE EXISTING HWS AND HWR PIPING DROPS. SEE SHEET MD101 FOR CONTINUATION.
 - ⑥ EXISTING FAN COIL UNITS SHALL REMAIN.
 - ⑦ SEE SHEET MD103 FOR CONTINUATION.
 - ⑧ ROUTED TO NEW VAV BOX 206 IN CEILING OF MAIN FLOOR BELOW.
 - ⑨ ROUTED TO NEW VAV BOX 207 IN CEILING OF MAIN FLOOR BELOW.

CONSULTANTS



PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit
DFCM #09092610

Price, Utah

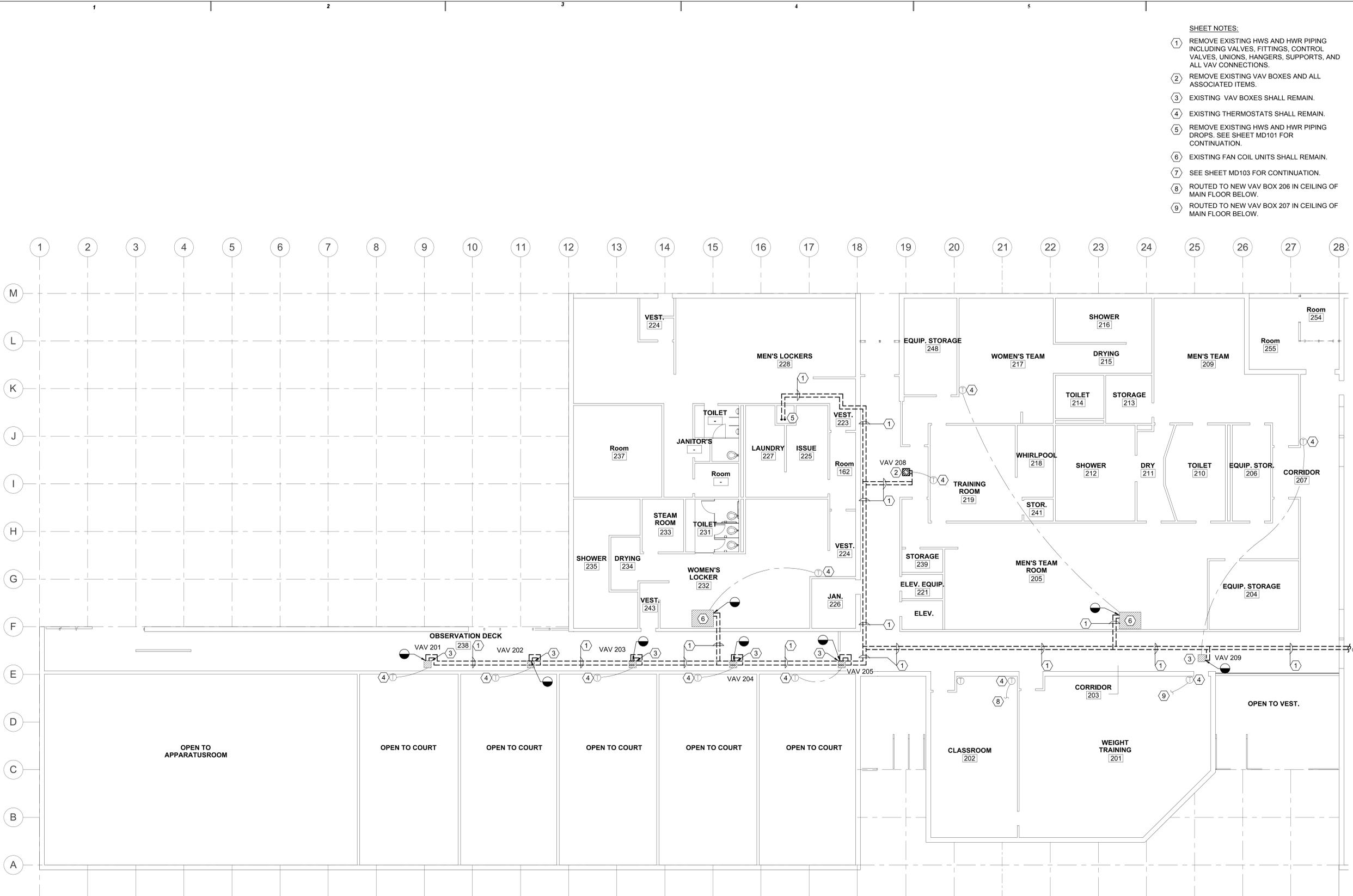
MARK	DATE	REVISION

PROJECT MANAGER:	WP
DRAWN BY:	LGD
CHECKED BY:	SLW
DATE:	10/19/09
WHW JOB NO.:	09008
SHEET TITLE:	



UPPER FLOOR
MECHANICAL & PIPING
DEMOLITION PLAN

SHEET NO.
MD102



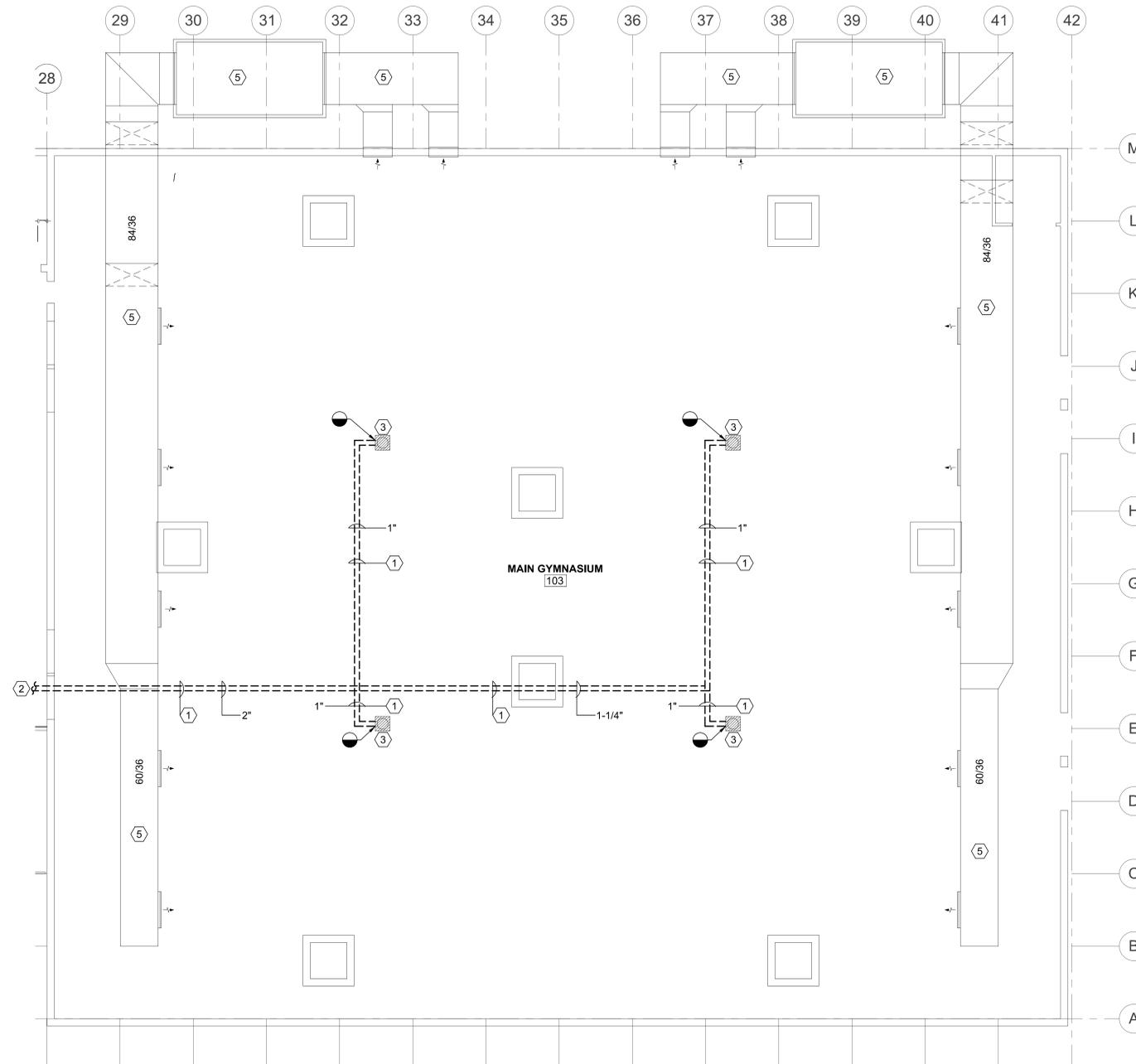
UPPER FLOOR MECHANICAL & PIPING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"



- SHEET NOTES:**
- ① REMOVE EXISTING HWS AND HWR PIPING INCLUDING VALVES, FITTINGS, CONTROL VALVES, UNIONS, HANGERS, SUPPORTS, AND ALL CONNECTIONS TO UNIT HEATERS. PIPING IS LOCATED AT JOISTS.
 - ② SEE SHEET MD102 FOR CONTINUATION OF HWS AND HWR PIPING REMOVAL.
 - ③ EXISTING UNIT HEATERS SHALL REMAIN.
 - ④ EXISTING DUCT SHALL REMAIN.
 - ⑤ EXISTING AIR HANDLING UNITS, DUCTWORK, DIFFUSERS ETC. SHALL REMAIN.

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GYMNASIUM MECHANICAL & PIPING DEMOLITION PLAN

SCALE: 1/8" = 1'-0"



PROJECT NAME & ADDRESS

**CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit**

DFCM #09092610

Price, Utah

MARK	DATE	REVISION

PROJECT MANAGER: WP
DRAWN BY: LGD
CHECKED BY: SLW
DATE: 10/19/09
WHW JOB NO.: 09008



SHEET TITLE
GYMNASIUM MECHANICAL & PIPING DEMOLITION PLAN

SHEET NO.
MD103

CONSULTANTS



PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit

DFCM #09092610

Price, Utah

MARK	DATE	REVISION

PROJECT MANAGER: WP
DRAWN BY: LGD
CHECKED BY: SLW
DATE: 10/19/09
WHW JOB NO.: 09008
SHEET TITLE



MECHANICAL ROOM
DEMOLITION PLAN

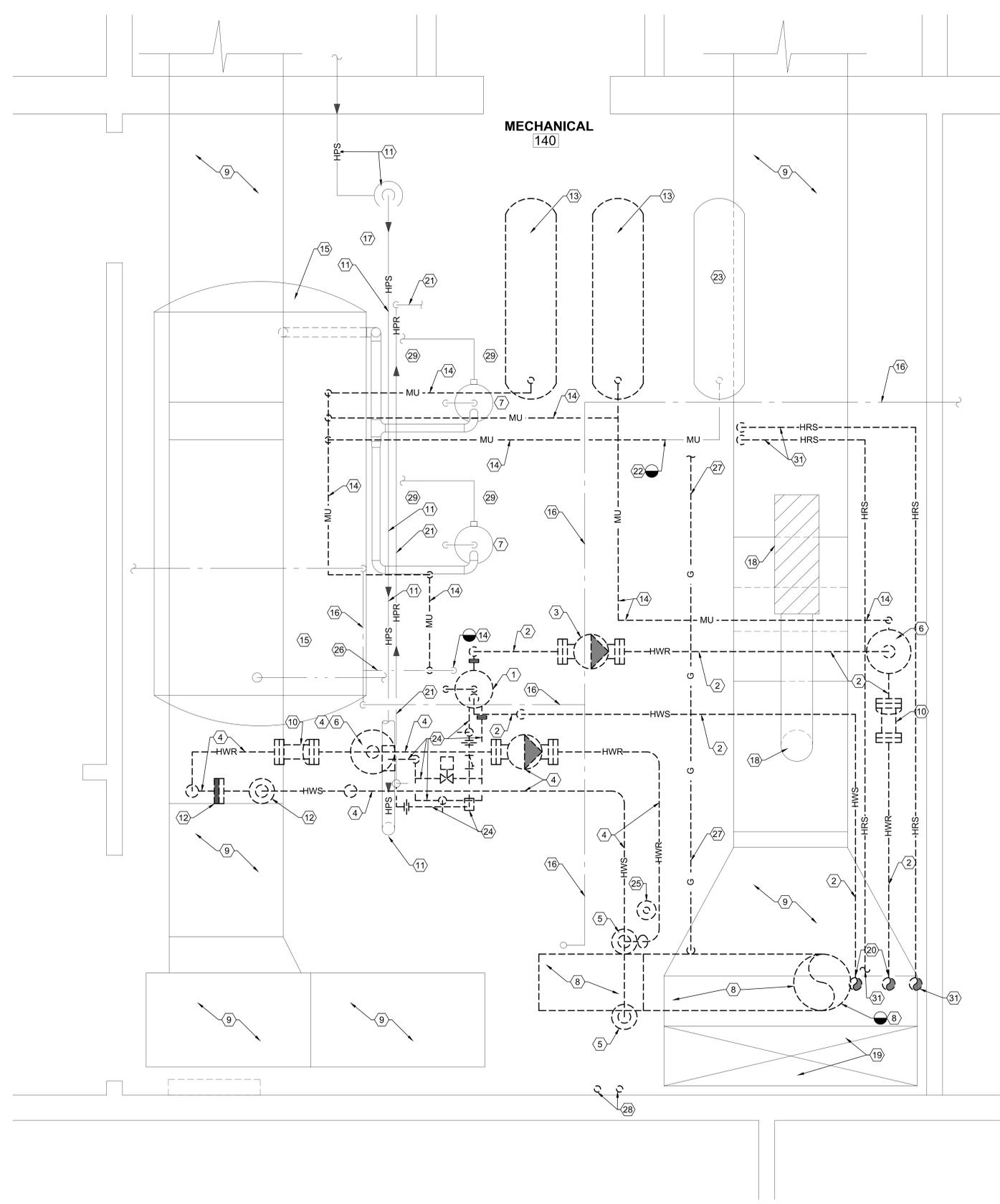
SHEET NO.
MD401

SHEET NOTES:

- ① REMOVE EXISTING STEAM TO HOT WATER CONVERTER AND ALL ASSOCIATED PIPING, VALVES, SUPPORTS, CONTROLS ETC.
- ② REMOVE EXISTING HWS AND HWR PIPING, VALVES, FITTINGS, CONTROLS, HANGERS, SEISMIC CABLING, ETC.
- ③ REMOVE EXISTING HOT WATER CIRCULATING INLINE PUMP AND ALL ASSOCIATED CONTROLS, SUPPORTS, ELECTRICAL ETC.
- ④ REMOVE EXISTING BOILER SUPPLY AND RETURN PIPING, SUPPORTS, INLINE CIRCULATING PUMP, AIR ELIMINATOR, CONTROLS, ELECTRICAL, ETC.
- ⑤ REMOVE EXISTING BALL VALVES AT BOTTOM OF DROPS.
- ⑥ REMOVE EXISTING AIR ELIMINATOR, SUPPORTS, PIPING ETC.
- ⑦ EXISTING CULINARY HOT WATER HEAT CONVERTORS SHALL REMAIN INCLUDING STEAM PIPING, HOT WATER PIPING, CONDENSATE PIPING ETC.
- ⑧ REMOVE EXISTING BOILER STACK TO CEILING PENETRATION. PROVIDE SHEET METAL COVER OVER 19"Ø STACK AT CEILING PENETRATION.
- ⑨ EXISTING DUCTWORK SHALL REMAIN.
- ⑩ REMOVE EXISTING STRAINERS.
- ⑪ EXISTING HPS HEADER SHALL REMAIN.
- ⑫ PROVIDE BLIND FLANGES TO MATCH INLET AND OUTLET CONNECTIONS ON STORAGE TANK HEATER.
- ⑬ REMOVE EXISTING OVERHEAD EXPANSION TANKS, SUPPORTS, PIPING, VALVES ETC.
- ⑭ REMOVE EXISTING MAKE-UP WATER PIPING, BACKFLOW PREVENTER, ETC.
- ⑮ CULINARY HOT WATER STORAGE TANK SHALL REMAIN.
- ⑯ EXISTING CULINARY WATER PIPING SHALL REMAIN.
- ⑰ EXISTING STEAM POWERED PUMP AND TANK LOCATED IN THIS AREA SHALL REMAIN.
- ⑱ EXISTING VAV BOX AND HIGH AND LOW PRESSURE DUCT SHALL REMAIN.
- ⑲ SUPPLY AIR DUCT UP SHALL REMAIN.
- ⑳ REMOVE HWS AND HWR RISERS. SEE SHEET MD101 FOR CONTINUATION.
- ㉑ EXISTING HPR HEADER SHALL REMAIN.
- ㉒ REMOVE MU WATER TO LOCATION OF NEW MAKE-UP WATER. TIE-IN FROM NEW SYSTEM. SEE SHEET ME401.
- ㉓ EXISTING EXPANSION TANK AND PIPING EXCEPT FOR THAT SHOWN SHALL REMAIN.
- ㉔ REMOVE ALL STEAM AND CONDENSATE PIPING, TRAPS, STRAINERS, VALVES, CONTROLS ETC. SERVING HEAT EXCHANGER HX-2.
- ㉕ REMOVE EXISTING CHEMICAL POT FEEDER AND ALL PIPING, VALVES, HANGERS, SUPPORTS, ETC.
- ㉖ EXISTING MU WATER SOURCE SHALL REMAIN TO BOTTOM OF DROP.
- ㉗ REMOVE EXISTING GAS PIPING, FITTINGS, VALVES, HANGERS ETC. INSIDE EQUIPMENT ROOM. CAP PIPING AT ROOM ENTRANCE.
- ㉘ CUT PIPING EVEN WITH FLOOR AND GRIND SMOOTH. COVER WITH CONCRETE EVEN WITH FLOOR.
- ㉙ EXISTING STEAM, CONDENSATE, COLD WATER IN HOT WATER OUT PIPING SERVING CULINARY HEAT EXCHANGERS (HX-1) SHALL REMAIN.
- ㉚ EXISTING WATER SUPPLY PIPING FOR MAKE-UP WATER SHALL REMAIN TO BOTTOM OF DROP.
- ㉛ REMOVE THE TOTAL HEAT RECOVERY SYSTEM INCLUDING PIPING, EQUIPMENT, VALVES, CONTROLS, HANGERS, SEISMIC RESTRAINT, ETC. THROUGHOUT THE BUILDING.

GENERAL NOTES:

1. ALL PIPING, EQUIPMENT, HANGERS NOT BEING RE-USED IN THE NEW CONSTRUCTION SHALL BE REMOVED FROM THE SITE.
2. CONTRACTOR SHALL COORDINATE WITH CEU ON ITEMS CEU MIGHT WANT TO KEEP. CONTRACTOR SHALL DELIVER THESE ITEMS TO THE LOCATION ON CAMPUS DESIRED BY CEU.
3. REMOVE ALL REMAINING PIPING INSULATION AND RE-INSULATE ALL PIPING AND COVER WITH METAL JACKET.



MECHANICAL ROOM DEMOLITION PLAN

SCALE: 3/4" = 1'-0"



CONSULTANTS



SHEET NOTES:

- ① REMOVE EXISTING HEATING STEAM TO HOT WATER EXCHANGER HX-2 AND ALL ASSOCIATED PIPING, CONTROLS, VALVES, SUPPORTS, ETC.
- ② EXISTING CULINARY STEAM TO HOT WATER EXCHANGER HX-1 SHALL REMAIN. TWO HX-1'S.
- ③ REMOVE ALL STEAM AND CONDENSATE PIPING, VALVES, HANGERS, INSULATION, ETC. SERVING HX-2
- ④ REMOVE ALL HEATING HOT WATER PIPING, VALVES, HANGERS, INSULATION, ETC. SERVING HX-2 THROUGH-OUT THE BUILDING.
- ⑤ REMOVE EXISTING BACKFLOW PREVENTION VALVE AND ALL MAKE-UP WATER PIPING, COMPLETE WITH PIPING, VALVES, FITTINGS, SUPPORTS, HANGERS, ETC.
- ⑥ EXISTING CULINARY HOT WATER STORAGE TANK SHALL REMAIN.
- ⑦ HOT WATER RETURN PIPING FROM STORAGE TANK TO THE TWO HX-1'S SHALL REMAIN. REMOVE ALL EXISTING AND REMAINING INSULATION FOR REPLACEMENT BY INSULATION CONTRACTOR.
- ⑧ EXISTING STEAM AND CONDENSATE PIPING SHALL REMAIN.
- ⑨ REMOVE EXISTING HOT WATER HEATING RETURN PIPING, VALVES, HANGERS, SUPPORTS, INSULATION ETC.
- ⑩ EXISTING CONDENSATE RETURN HEADER PIPING SHALL REMAIN. CAP THE CONDENSATE LINE AT THE HEADER CONNECTION FOR HX-2 AND REMOVE PIPING, TRAP, VALVES ETC. FROM CAP TO HX-2. REMOVE ALL EXISTING AND REMAINING CONDENSATE PIPING INSULATION FOR REPLACEMENT BY INSULATION CONTRACTOR.
- ⑪ EXISTING 4" - 50 PSIG STEAM SUPPLY TO MECHANICAL ROOM.
- ⑫ EXISTING COLD WATER PIPING SOURCE FOR MAKE-UP WATER MU SHALL REMAIN TO BOTTOM OF DROP.
- ⑬ REMOVE EXISTING HEATING HOT WATER SUPPLY PIPING INCLUDING VALVES, HANGERS, SUPPORTS, ETC. PROVIDE BLIND FLANGES AT STORAGE TANK EXCHANGER CONNECTIONS.
- ⑭ REMOVE EXISTING AIR SEPARATOR, SUPPORTS, PIPING ETC.
- ⑮ EXISTING HOT WATER UNIT HEATERS IN GYMNASIUM SHALL REMAIN. TOTAL OF FOUR(4) UNITS.
- ⑯ REMOVE EXISTING HOT WATER HEATING SUPPLY PIPING, VALVES, HANGERS, SUPPORTS, INSULATION ETC.
- ⑰ HIGH PRESSURE DUCT TO VAV BOX IN MECHANICAL ROOM SHALL REMAIN.
- ⑱ REMOVE EXISTING HEAT RECOVERY PIPING THROUGHOUT BUILDING.
- ⑲ REMOVE DRAIN PIPING NOT BEING RE-USED.
- ⑳ STEAM CONTROL VALVES FOR HX-1'S SHALL REMAIN. REMOVE AND REPLACE INSULATION.
- ㉑ EXISTING STEAM POWERED CONDENSATE PUMP AND PIPING SHALL REMAIN. CONTRACTOR SHALL PROVIDE METAL JACKET COVER OVER EXISTING INSULATION ON TANK AND PIPING.
- ㉒ EXISTING CULINARY HOT WATER SUPPLY TO STORAGE TANK SHALL REMAIN. REMOVE AND REPLACE ALL REMAINING INSULATION.



D1 EXISTING MECHANICAL ROOM LOOKING SOUTHEAST
SCALE: NONE



D3 EXISTING MECHANICAL ROOM LOOKING SOUTHWEST
SCALE: NONE



D4 EXISTING MECHANICAL ROOM LOOKING NORTHWEST
SCALE: NONE



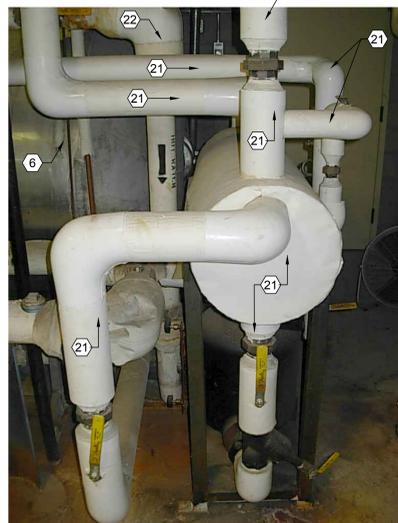
B2 EXISTING STEAM ENTRANCE INTO EQUIP. ROOM LOOKING NORTHWEST
SCALE: NONE



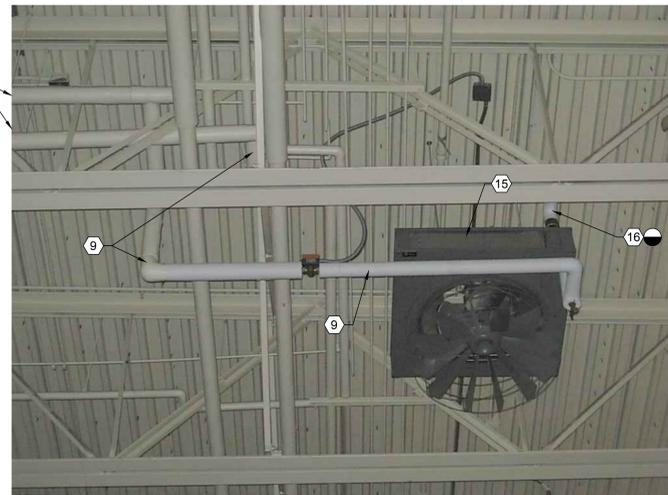
B3 EXISTING CULINARY HOT WATER HEAT EXCHANGERS LOOKING SOUTHWEST
SCALE: NONE



A1 EXISTING PIPING LOOKING WEST
SCALE: NONE



A3 EXISTING STEAM DRIVEN PUMP LOOKING WEST
SCALE: NONE



A4 LOOKING UP AT CEILING IN GYMNASIUM
SCALE: NONE

PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit
DFCM #09092610

Price, Utah

MARK	DATE	REVISION

PROJECT MANAGER: WP
DRAWN BY: LGD
CHECKED BY: SLW
DATE: 10/19/09
WHW JOB NO.: 09008
SHEET TITLE



DEMOLITION PHOTOGRAPHS

SHEET NO.

MD402

CONSULTANTS

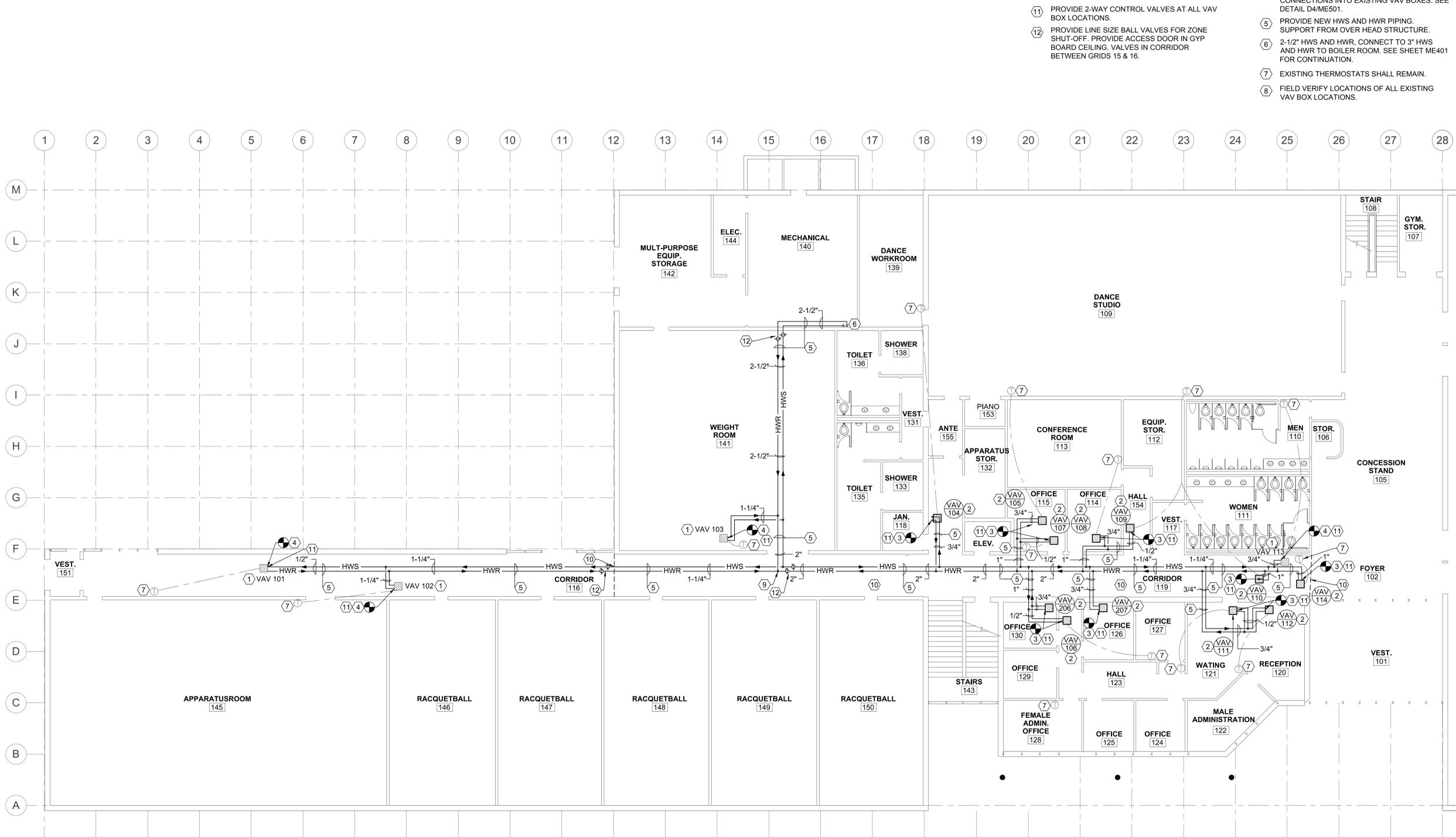


SHEET NOTES:

- ⑨ MAKE CONNECTION IN THE HWR PIPING IN THIS LOCATION SO A BULL HEAD CONNECTION IS NOT CREATED.
- ⑩ THE CEILING IN THE CORRIDOR BETWEEN GRIDS 12 AND 26 CONSISTS OF A LAY-IN AND A GYP-BOARD CEILING. CONTRACTOR SHALL DETERMINE HOW TO INSTALL THE NEW PIPING IN THIS AREA. FIRE CAULK ALL PIPING PENETRATIONS THRU GYP-BOARD.
- ⑪ PROVIDE 2-WAY CONTROL VALVES AT ALL VAV BOX LOCATIONS.
- ⑫ PROVIDE LINE SIZE BALL VALVES FOR ZONE SHUT-OFF. PROVIDE ACCESS DOOR IN GYP BOARD CEILING. VALVES IN CORRIDOR BETWEEN GRIDS 15 & 16.

SHEET NOTES:

- ① EXISTING VAV BOXES SHALL REMAIN.
- ② PROVIDE NEW VAV BOX. SEE SCHEDULE. CONNECT INTO EXISTING DUCTWORK.
- ③ PROVIDE NEW HWS AND HWR PIPING CONNECTIONS TO NEW VAV BOXES. SEE DETAIL D4/ME501.
- ④ PROVIDE NEW HWS AND HWR PIPING CONNECTIONS INTO EXISTING VAV BOXES. SEE DETAIL D4/ME501.
- ⑤ PROVIDE NEW HWS AND HWR PIPING. SUPPORT FROM OVER HEAD STRUCTURE.
- ⑥ 2-1/2" HWS AND HWR. CONNECT TO 3" HWS AND HWR TO BOILER ROOM. SEE SHEET ME401 FOR CONTINUATION.
- ⑦ EXISTING THERMOSTATS SHALL REMAIN.
- ⑧ FIELD VERIFY LOCATIONS OF ALL EXISTING VAV BOX LOCATIONS.



MAIN FLOOR MECHANICAL & PIPING PLAN

SCALE: 1/8" = 1'-0"



PROJECT NAME & ADDRESS

CEU
Bunnell/Dmitrich
Athletic Center
Mechanical
Retrofit

DFCM #09092610

Price, Utah

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PROJECT MANAGER:

WP

DRAWN BY:

LGD

CHECKED BY:

SLW

DATE:

10/19/09

WHW JOB NO.:

09008

SHEET TITLE

MAIN FLOOR MECHANICAL & PIPING PLAN

SHEET NO.

ME101



CONSULTANTS

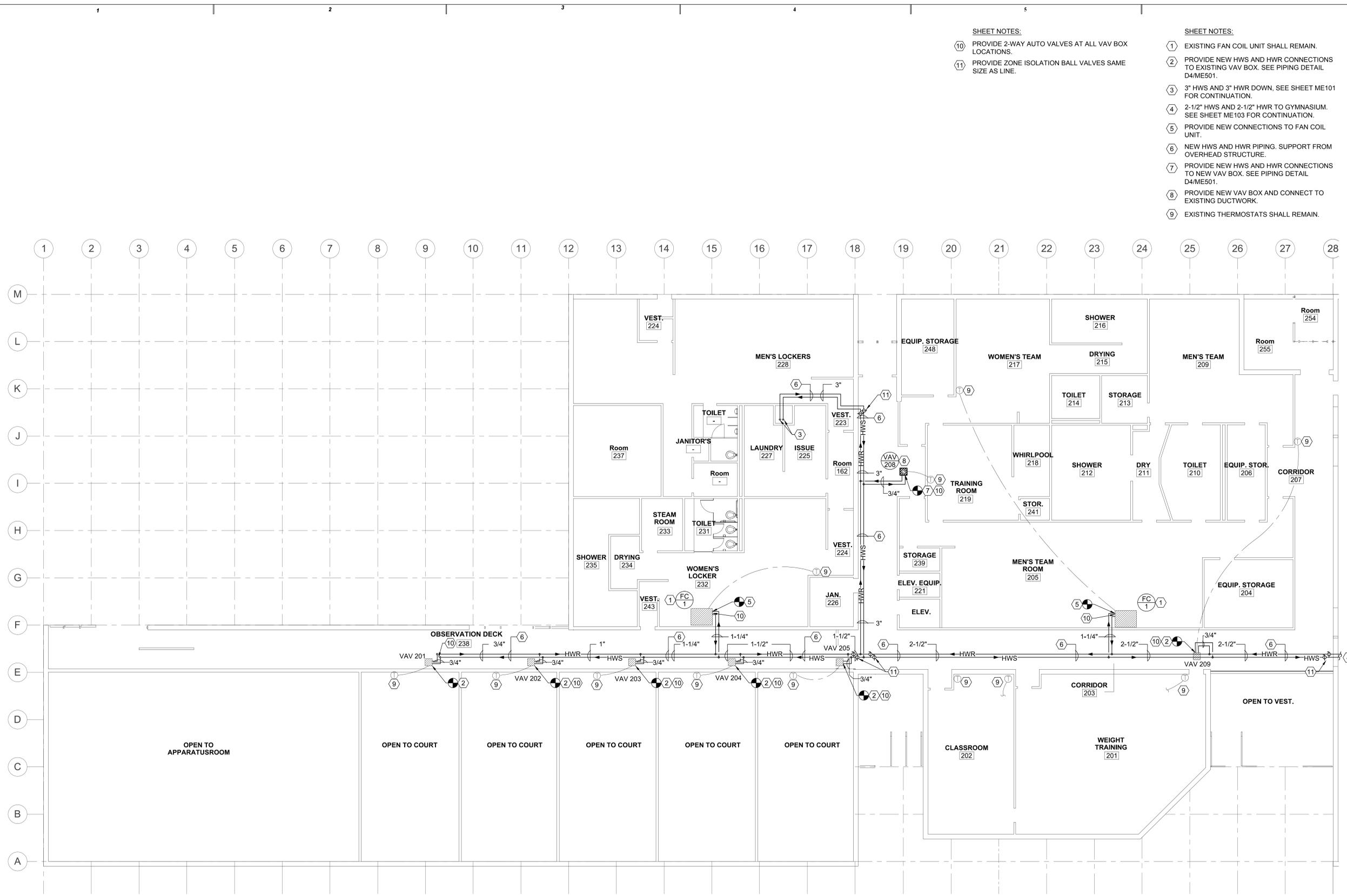


SHEET NOTES:

- (10) PROVIDE 2-WAY AUTO VALVES AT ALL VAV BOX LOCATIONS.
- (11) PROVIDE ZONE ISOLATION BALL VALVES SAME SIZE AS LINE.

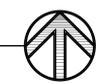
SHEET NOTES:

- (1) EXISTING FAN COIL UNIT SHALL REMAIN.
- (2) PROVIDE NEW HWS AND HWR CONNECTIONS TO EXISTING VAV BOX. SEE PIPING DETAIL D4/ME501.
- (3) 3" HWS AND 3" HWR DOWN. SEE SHEET ME101 FOR CONTINUATION.
- (4) 2-1/2" HWS AND 2-1/2" HWR TO GYMNASIUM. SEE SHEET ME103 FOR CONTINUATION.
- (5) PROVIDE NEW CONNECTIONS TO FAN COIL UNIT.
- (6) NEW HWS AND HWR PIPING. SUPPORT FROM OVERHEAD STRUCTURE.
- (7) PROVIDE NEW HWS AND HWR CONNECTIONS TO NEW VAV BOX. SEE PIPING DETAIL D4/ME501.
- (8) PROVIDE NEW VAV BOX AND CONNECT TO EXISTING DUCTWORK.
- (9) EXISTING THERMOSTATS SHALL REMAIN.



UPPER FLOOR MECHANICAL & PIPING PLAN

SCALE: 1/8" = 1'-0"



PROJECT NAME & ADDRESS

CEU
Bunnell/Dmitrich
Athletic Center
Mechanical
Retrofit
DFCM #09092610

MARK	DATE	REVISION

PROJECT MANAGER:	WP
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CHECKED BY:	SLW
DATE:	10/19/09
WHW JOB NO.:	09008



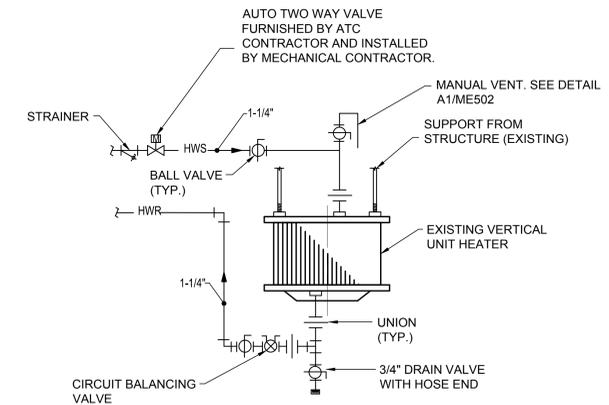
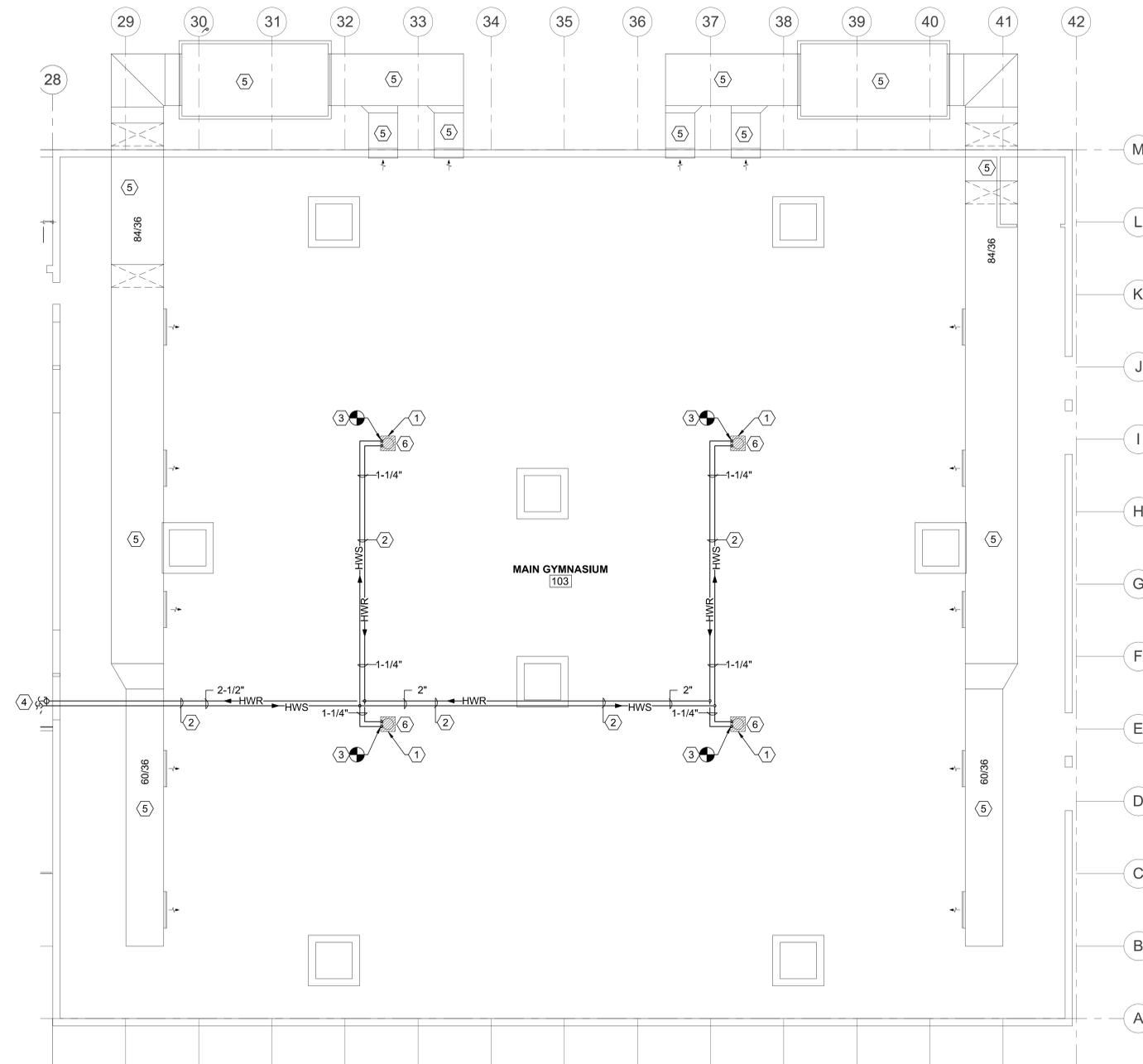
UPPER FLOOR
MECHANICAL & PIPING
PLAN

SHEET NO.
ME102

SHEET NOTES:

- ① EXISTING HOT WATER UNIT HEATER SHALL REMAIN.
- ② NEW HWS AND HWR PIPING. SUPPORT FROM OVERHEAD STRUCTURE WITH SINGLE CLEVIS TYPE HANGERS OR TRAPEZE TYPE HANGERS.
- ③ CONNECT NEW HWS AND HWR PIPING INTO EXISTING UNIT HEATERS. SEE PIPING DETAIL C5/ME103 THIS SHEET.
- ④ SEE SHEET ME102 FOR CONTINUATION.
- ⑤ EXISTING AIR HANDLING UNITS AND DUCTWORK SHALL REMAIN.
- ⑥ PROVIDE 2-WAY CONTROL VALVES AT ALL UNIT HEATER LOCATIONS.

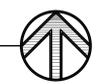
CONSULTANTS



C5 VERTICAL UNIT HEATER PIPING DETAIL
SCALE: NONE

GYMNASIUM MECHANICAL & PIPING PLAN

SCALE: 1/8" = 1'-0"



PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit
DFCM #09092610

Price, Utah

MARK	DATE	REVISION

PROJECT MANAGER:

WP

DRAWN BY:

LGD

CHECKED BY:

SLW

DATE:

10/19/09

WHW JOB NO.:

09008

SHEET TITLE

GYMNASIUM MECHANICAL & PIPING PLAN

SHEET NO.

ME103



CONSULTANTS



PROJECT NAME & ADDRESS

**CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit**

DFCM #09092610

Price, Utah

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PROJECT MANAGER:	WP
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DATE:	10/19/09
WHW JOB NO.:	09008



**LARGE SCALE MECHANICAL
ROOM PLAN AND
ELEVATION**

SHEET NO.

ME401

SHEET NOTES:

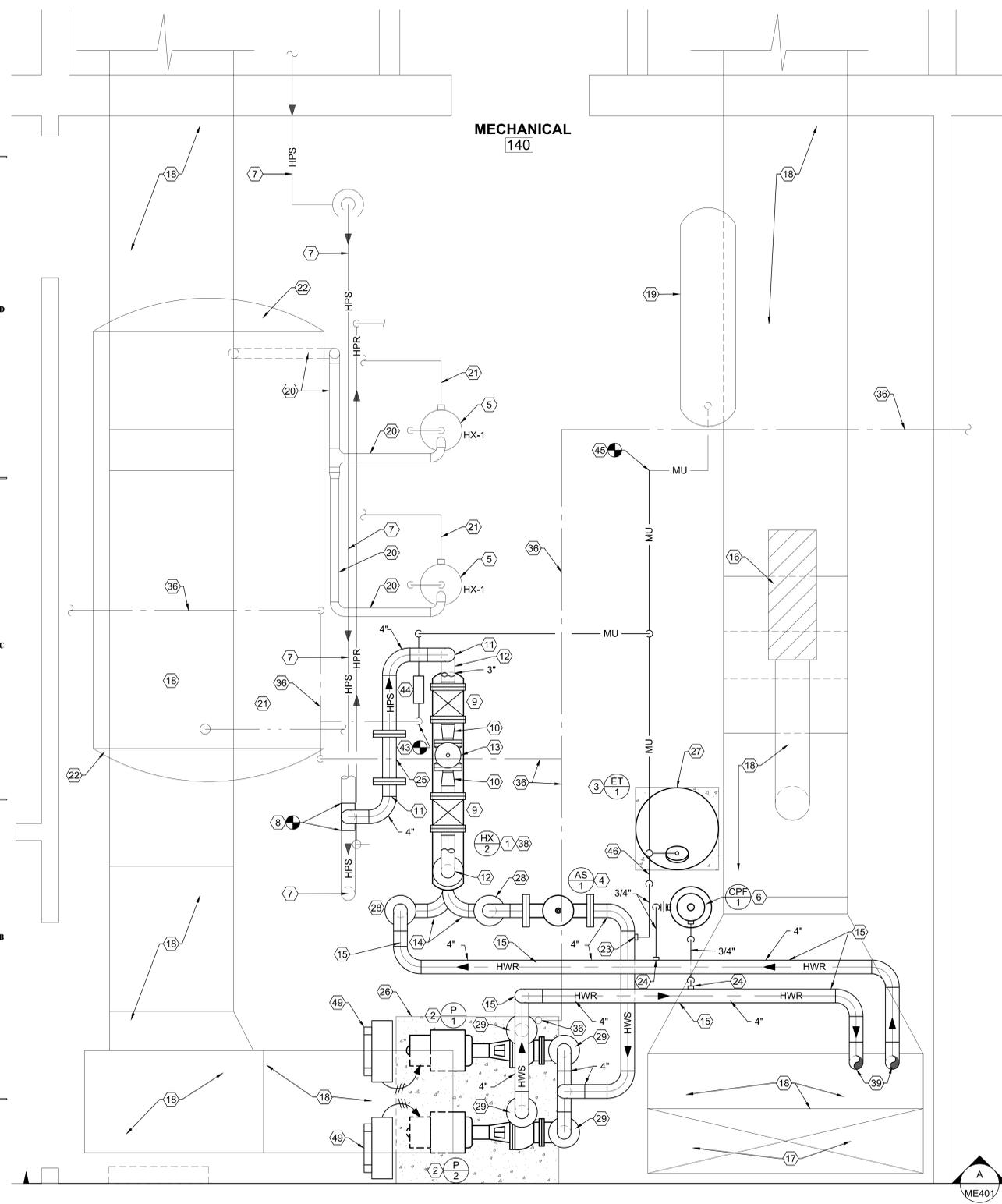
- 32 3" SYSTEM TO 2-1/2" PUMP CONNECTION - 150# FLANGED SUCTION DIFFUSER.
- 33 3" - 150# WAFER TYPE CHECK VALVE.
- 34 PRESSURE GAUGE WITH SHUT-OFF VALVE 4-1/2" DIA.
- 35 THERMOMETER - 9" LONG - 0° TO 225°F.
- 36 EXISTING WATER SUPPLY.
- 37 PROVIDE VIBRATION PAD THICK ENOUGH SO PUMP HEAD DOES NOT HIT CONCRETE PAD.
- 38 STEAM TO HOT WATER CONVERTOR STRUCTURAL SUPPORT. SEE DETAIL A3/ME501.
- 39 4" HWS AND HWR RISERS. SEE SHEET ME101 FOR CONTINUATION.
- 40 3" - 300# GLOBE VALVE.
- 41 4" - 150# FLANGELESS BUTTERFLY VALVE WITH COMPANION FLANGES.
- 42 ALL 90° ELLS SHALL BE LONG RADIUS.
- 43 CONNECT NEW 3/4" MAKE-UP WATER LINE TO BOTTOM OF EXISTING DROP.
- 44 NEW HOT WATER SYSTEM MAKE-UP PRV STATION. SEE DETAIL D3/ME501.
- 45 CONNECT NEW MAKE-UP WATER INTO EXISTING IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT TIE-IN LOCATION. MATCH ELEVATION OF EXISTING MAKE-UP PIPING FOR ROUTING OF NEW PIPING.
- 46 SEE DETAIL B3/ME502 FOR MAKE-UP WATER CONNECTION OF FLOW SHEET ME701.
- 47 ALL PIPING IN MECHANICAL ROOM SHALL BE FITTED WITH A METAL JACKET OVER THE NEW AND EXISTING INSULATION EXCEPT FOR WATER PIPING AND PIPING UNDER 1"
- 48 REPLACE ALL EXISTING INSULATION EXCEPT AT THE STEAM CONDENSATE TANK WHICH IS IN GOOD CONDITION.
- 49 VFD'S FOR PUMPS P-1 AND P-2. MOUNT ON UNISTRUT FRAME BOLTED TO FLOOR. PROVIDE TWO VERTICAL AND TWO HORIZONTAL STRUTS PER DRIVE.

SHEET NOTES:

- 14 PROVIDE NEW 3"x4" REDUCING ELBOWS.
- 15 PROVIDE AND INSTALL NEW HWS AND HWR PIPING AS HIGH AS POSSIBLE. FIELD VERIFY ROUTING OF PIPING.
- 16 EXISTING VAV BOX SHALL REMAIN.
- 17 EXISTING SA DUCT RISER TO UPPER FLOORS SHALL REMAIN.
- 18 EXISTING DUCT WORK SHALL REMAIN.
- 19 EXISTING EXPANSION TANK FOR CULINARY HOT WATER SHALL REMAIN.
- 20 EXISTING CULINARY HOT WATER PIPING SHALL REMAIN.
- 21 EXISTING CULINARY HOT WATER RETURN FROM TANK SHALL REMAIN.
- 22 EXISTING CULINARY HOT WATER STORAGE TANK SHALL REMAIN.
- 23 3/4" THRED-O-LETS INTO 4" PIPING FOR MAKE-UP AND EXPANSION TANK.
- 24 3/4" THRED-O-LETS INTO 4" PIPING FOR CHEMICAL POT FEEDER.
- 25 PROVIDE NEW 4" 300# FLANGED STRAINER.
- 26 PROVIDE NEW HOUSE KEEPING PAD FOR NEW BASE MOUNTED CLOSE COUPLED PUMPS. SEE DETAIL D5/ME502.
- 27 PROVIDE NEW HOUSE KEEPING PAD FOR NEW BASE MOUNTED EXPANSION TANK. SEE DETAIL D5/ME502 AND B3/ME502.
- 28 4" - 150# ACCESS BREAK-A-WAY FLANGES FOR ACCESS TO PULL TUBES.
- 29 3" - 150# FLANGELESS BUTTERFLY VALVE WITH COMPANION FLANGE.
- 30 3" - 150# BALANCING VALVE.
- 31 3" - 150# 9" LONG FLEXIBLE CONNECTIONS.

SHEET NOTES:

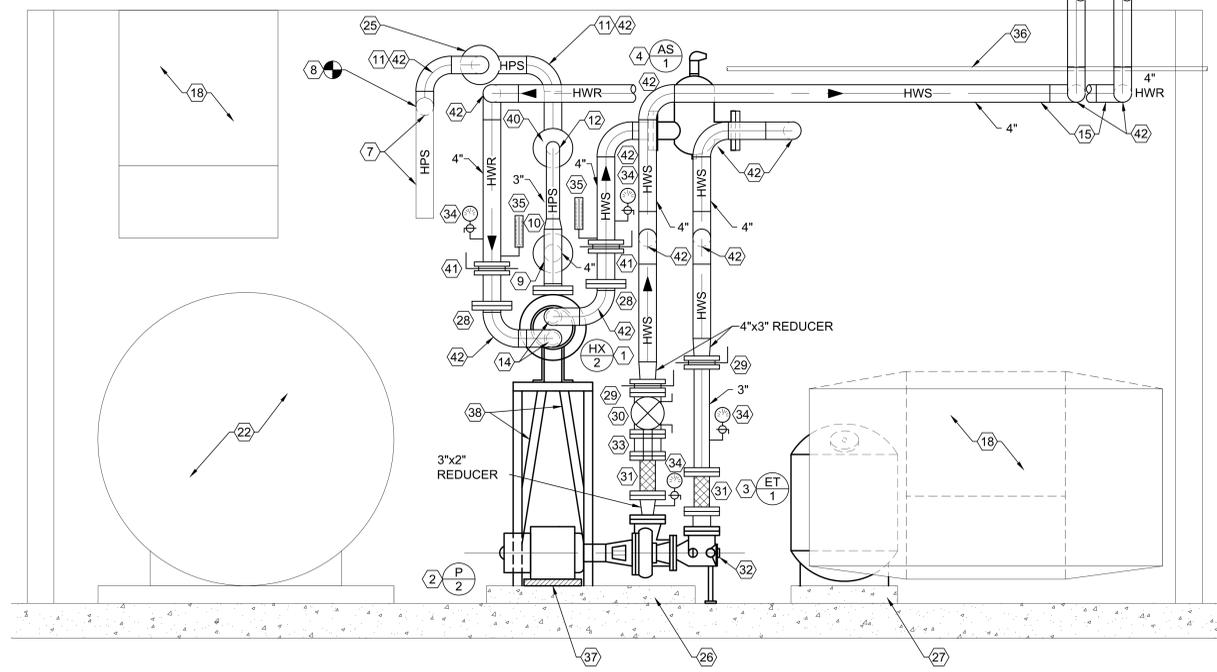
- 1 NEW STEAM TO HOT WATER CONVERTOR HX-2. SEE SCHEDULE SHEET ME601, SUPPORT DETAIL A3/ME501, AND FLOW SHEET ME701.
- 2 PROVIDE NEW BASE MOUNTED CLOSE COUPLED PUMPS P-1 & P-2. SEE SCHEDULE SHEET ME601, PUMP DETAIL D1/ME502, AND FLOW SHEET ME701.
- 3 PROVIDE NEW BASE MOUNTED EXPANSION TANK. SEE SCHEDULE SHEET ME601, EXPANSION TANK DETAIL B3/ME502, AND FLOW SHEET ME701.
- 4 PROVIDE NEW AIR SEPARATOR. SEE SCHEDULE ME601, AIR SEPARATOR DETAIL B1/ME502, AND FLOW SHEET ME701.
- 5 EXISTING CULINARY WATER STEAM TO HOT WATER CONVERTORS SHALL REMAIN.
- 6 PROVIDE NEW 5 GAL. CHEMICAL POT FEEDER. SEE SCHEDULE ME601. DETAIL C3/ME501, AND FLOW SHEET ME701.
- 7 EXISTING 4" HPS HEADER, CONDENSATE PIPING, AND TRAP SHALL REMAIN.
- 8 REMOVE EXISTING 3" STEAM CONNECTION AND REPLACE. IN THE SAME LOCATION, A NEW 4"x4" TEE. TAKE-OFF FROM TOP OF HEADER.
- 9 PROVIDE NEW 300# GATE VALVE.
- 10 4"x3" REDUCER - SCH. 80. BOTH ENDS OF BY-PASS.
- 11 PROVIDE NEW SCH. 80 STEAM PIPING TO NEW CONVERTOR.
- 12 PROVIDE NEW 3" BY-PASS WITH 3" - 300# GLOBE VALVE.
- 13 PROVIDE NEW 3" - 300# FLANGED STEAM CONTROL VALVE. VALVE SHALL BE ABLE TO PASS 3025 #/HR OF 50 PSIG STEAM. VALVE SHALL BE PROVIDED BY CONTROLS CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR.



LARGE SCALE MECHANICAL ROOM PLAN

SCALE: 3/4" = 1'-0"

A
ME401

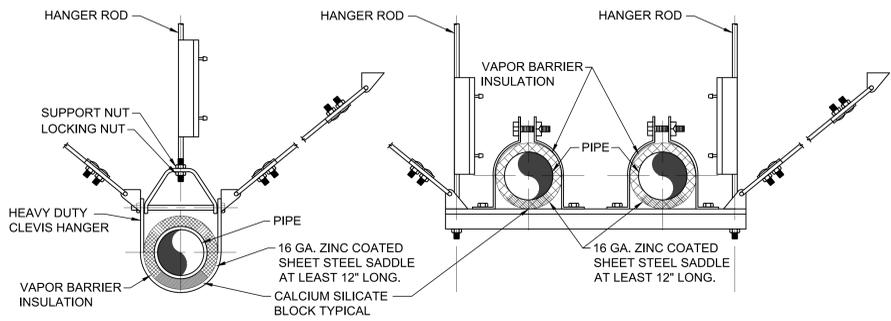


LARGE SCALE MECHANICAL ELEVATION PLAN

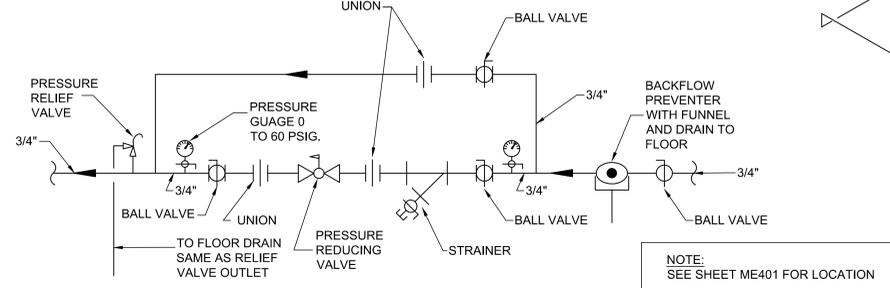
SCALE: 3/4" = 1'-0"

A
ME401

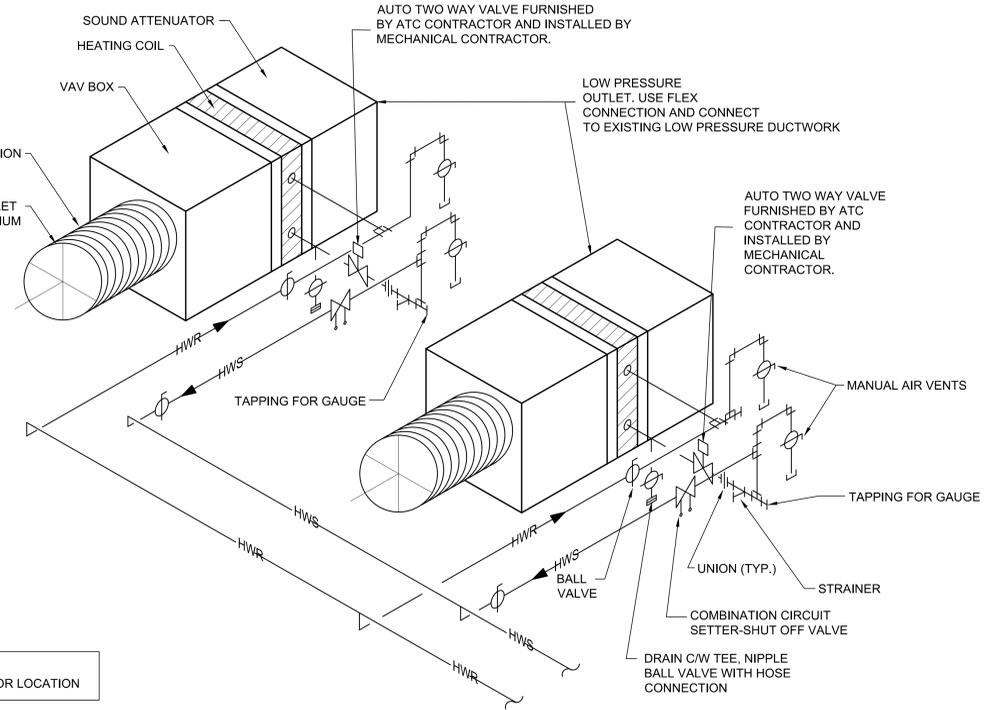
CONSULTANTS



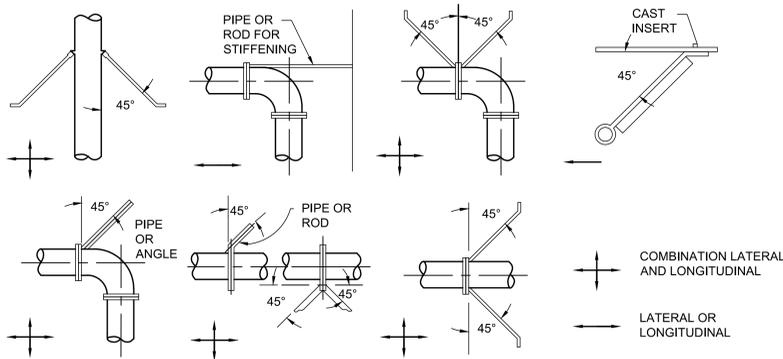
D1 SEISMIC SWAY BRACING DETAILS
SCALE: NONE



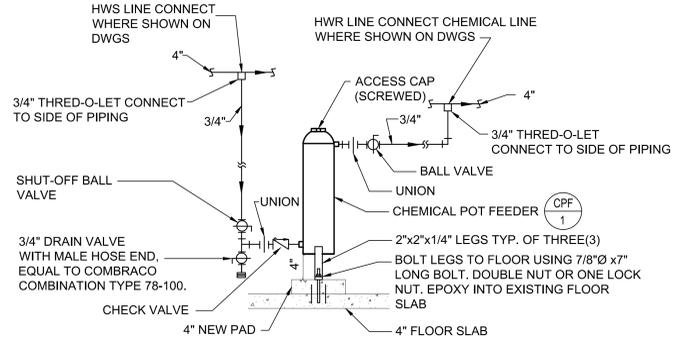
D3 HOT WATER MAKE-UP WATER PRV STATION DETAIL
SCALE: NONE



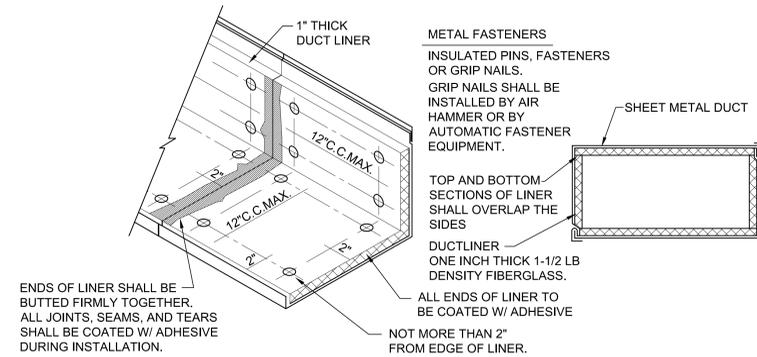
D4 VAV BOX (W/ HEATING COIL) HOT WATER PIPING DETAIL
SCALE: NONE



C1 SEISMIC SWAY BRACING DETAILS
SCALE: NONE



C3 CHEMICAL POT FEEDER AND PIPING DETAIL
SCALE: NONE

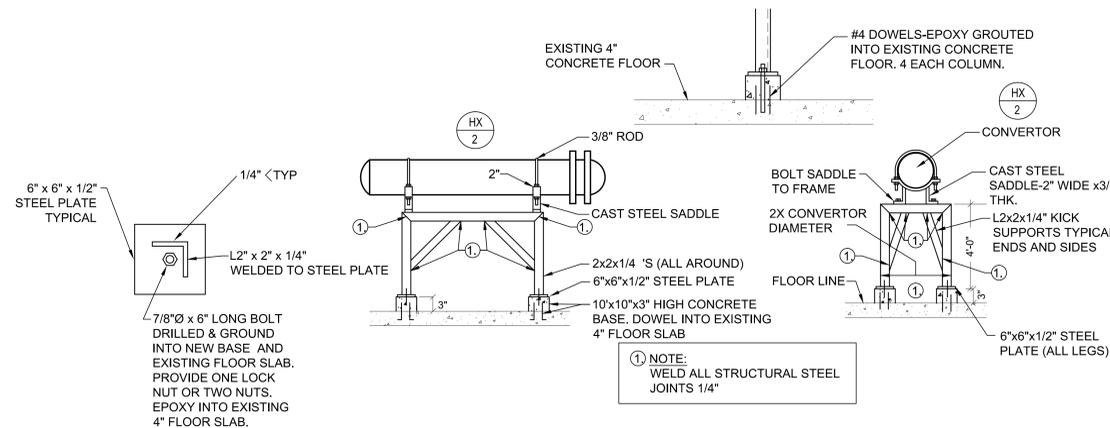


C5 DUCT LINER DETAIL
SCALE: NONE

DIMENSION OF LONGEST SIDE, INCHES	SHEET METAL GAGE (ALL FOUR SIDES)	MINIMUM REINFORCING ANGLE SIZE AND MAXIMUM LONGITUDINAL SPACING BETWEEN TRANSVERSE JOINTS &/OR INTERMEDIATE REINFORCING	TRANSVERSE REINFORCING (1)				
			MIN. H. IN.	DRIVE SLIP PLAIN S SLIP	HEMME S SLIP	ALTERN'T BAR SLIP	REIN-FORCED BAR SLIP
UP THRU 12	26	NONE REQUIRED	1	26	26	24	24
13 - 18	24	NONE REQUIRED	1	24	24	24	24
19 - 30	24	1"X1"X1/8" @ 60 IN	1	-	24	24	24
31 - 36	22	1"X1"X1/8" @ 60 IN	1	-	-	22	22

1. TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLIED.

A1 DUCT CONSTRUCTION DETAIL
SCALE: NONE



A3 HEAT EXCHANGER SUPPORT DETAIL
SCALE: NONE

LOW PRESSURE ROUND DUCT CONSTRUCTION SCHEDULE

DUCT DIAMETER IN INCHES	MAXIMUM 2" W.G. STATIC POSITIVE		MAXIMUM 2" W.G. STATIC NEGATIVE	
	SPIRAL SEAM GAUGE	LONGITUDINAL SEAM GAUGE	SPIRAL SEAM GAUGE	LONGITUDINAL SEAM GAUGE
3 thru 8	28	28	28	24
9 thru 14	28	26	26	24
15 thru 26	26	24	24	22
27 thru 36	24	22	22	20
37 thru 50	22	20	20	18

A5 LOW PRESSURE ROUND DUCT CONSTRUCTION DETAIL
SCALE: NONE

PROJECT NAME & ADDRESS

CEU
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Retrofit

DFCM #09092610

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WHW JOB NO.: **09008**
SHEET TITLE



MECHANICAL DETAILS

SHEET NO.
ME501

CONSULTANTS



PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit

DFCM #09092610

Price, Utah

MARK DATE REVISION

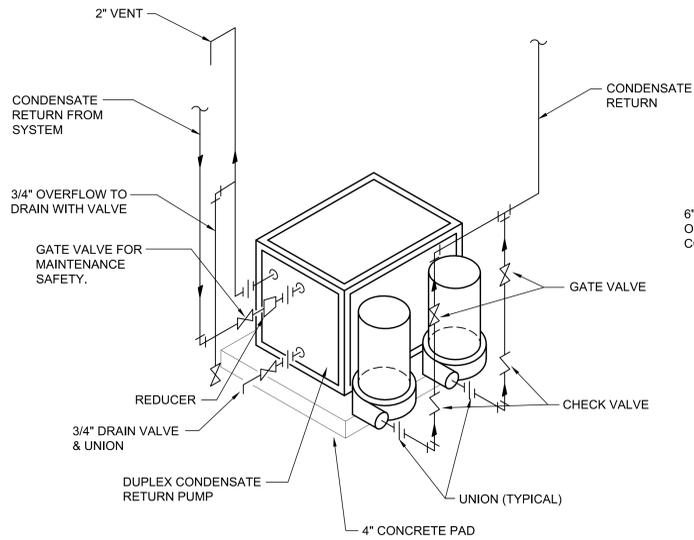
PROJECT MANAGER:
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DATE:
10/19/09
WHW JOB NO.:
09008
SHEET TITLE



MUSIC BUILDING DETAILS

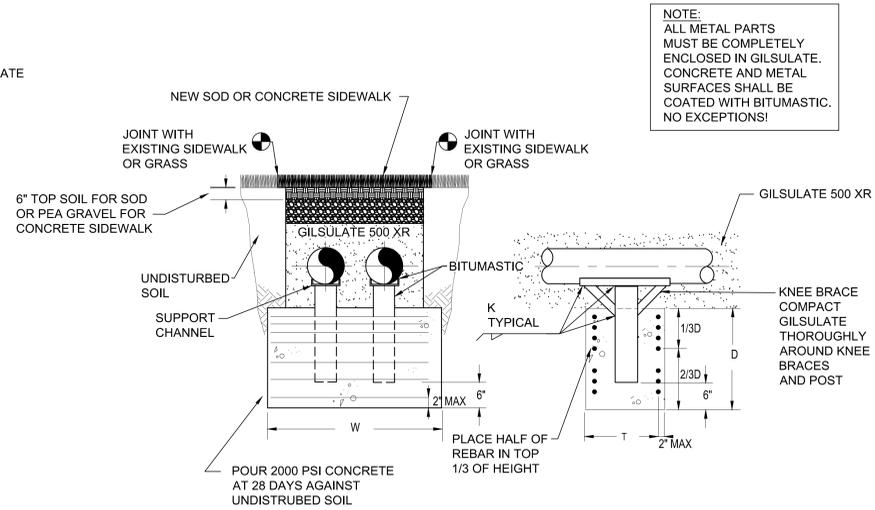
SHEET NO.

ME503



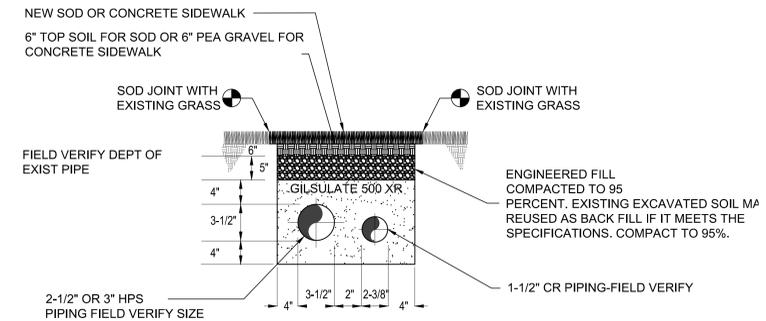
D1 DUPLEX CONDENSATE PUMP DETAIL

SCALE: NONE



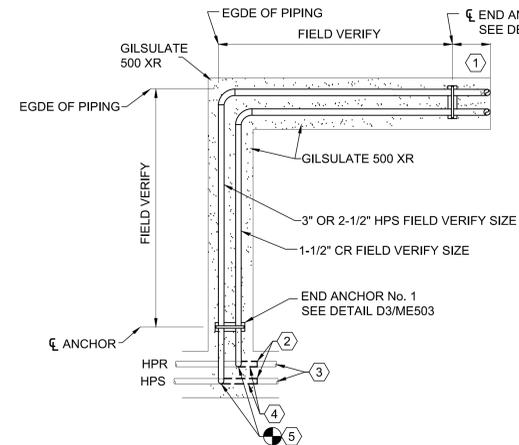
D3 DIRECT BURIED PIPING ANCHOR DETAIL

SCALE: NONE



D5 TYPICAL GILSULATE INSTALLATION WITHOUT CUSHION DETAIL

SCALE: NONE



B4 NEW UNDERGROUND STEAM AND CONDENSATE PIPING DETAIL

SCALE: NONE

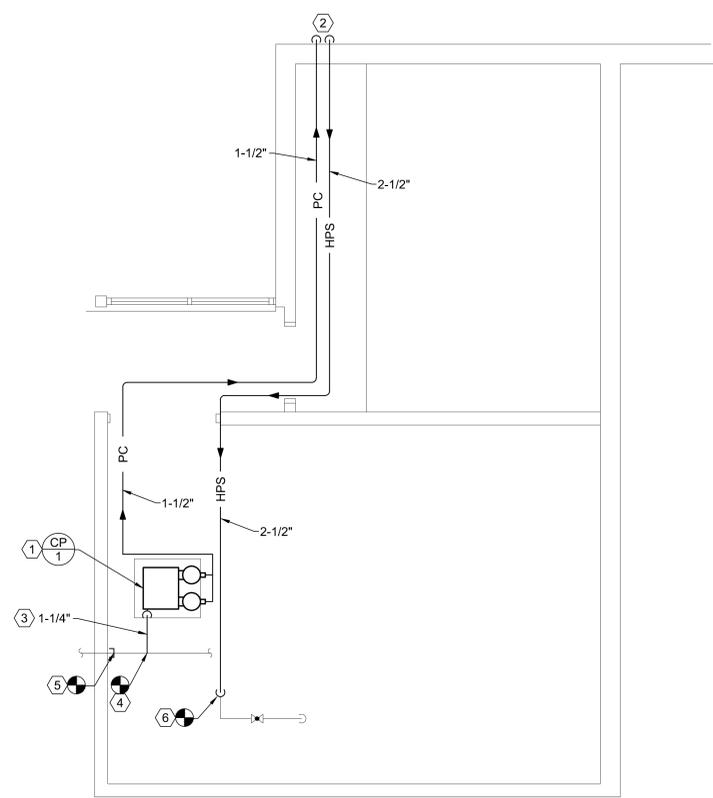
- NOTES:
- CONTRACTOR SHALL, DURING EXCAVATION, VERIFY THE LOCATION OF ROOF DRAIN AND WATER PIPING LOCATED IN THIS AREA. COORDINATE AND MAKE ANY PIPING CHANGES AS REQUIRED.
 - CAP EXISTING STEAM AND CONDENSATE PIPING.
 - EXISTING STEAM AND CONDENSATE PIPING SHALL BE CAPPED AND ABANDONED IN PLACE.
 - REMOVE THIS SECTION OF PIPING BETWEEN NEW TIE-IN AND CAPS.
 - NEW CONNECTION INTO EXISTING STEAM AND CONDENSATE RETURN PIPING. NEW PIPING SHALL BE SCHEDULE 80 PIPING.
 - END ANCHOR SEE DETAIL D3/ME503.

ANCHOR SCHEDULE						
ANCHOR NUMBER	MAX. UNBALANCED PIPE SURFACE AREA SQ. FT.	W (INCHES)	D (INCHES)	T (INCHES)	NO. OF REBARS EA SIDE	SIZE OF REBARS NO.
1	60	28	16	10	4	3
2	60	28	16	10	4	3

END ANCHOR SCHEDULE					
PIPE SIZE	SUPPORT CHANNEL		ANCHOR POST I BEAM	KNEE BRACE	FILLET K INCHES
	CHANNEL	L (INCHES)			
1-1/2 TO 2"	NR		5 I 10.0	NR	1/4"
3"	NR		5 I 14.75	NR	1/4"

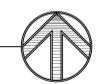
NR = NOT REQUIRED

- NOTES:
- NEW CONDENSATE RECEIVER TANK AND PUMP SET. SEE DETAIL D1/ME503.
 - 2-1/2" STEAM 1-1/2" CONDENSATE SEE SHEET ME402 FOR CONTINUATION.
 - NEW 1-1/2" CONDENSATE RETURN TO NEW CP-1. FIELD VERIFY PIPE SIZE.
 - NEW CONNECTION INTO EXISTING CONDENSATE RETURN PIPE. FIELD VERIFY PIPE SIZE.
 - CAP EXISTING CONDENSATE PIPING AT WALL AND REMOVE THE SECTION OF PIPE BETWEEN CAP AND NEW TIE-IN. FIELD VERIFY PIPE SIZE.
 - CONNECT NEW 2-1/2" HPS TO EXISTING HPS STEAM TEE IN THIS APPROXIMATE LOCATION. SEE SHEET A3, C3, AND C4 FOR DETAILS.



A2 NEW CONDENSATE SYSTEM

SCALE: 3/8" = 1'-0"



CONSULTANTS



VAV BOX SCHEDULE														
SYMBOL	SERVES	INLET DIA. (INCHES)	COOLING		HEATING (60° DELTA T)							MAX NC LEVEL	MANUF. MODEL #	SCHEDULE NOTES
			MAX CFM	MX APD (IN)	COIL EAT	COIL LAT	COIL BTUH	FLOW GPM	EWT DEG. F	LWT DEG. F	ROWS			
VAV 104	RMS: 132, 135, 139	9"Ø	850	.31	55	100	55,500	3.7	180	150	2	25	PRICE SDV	
VAV 105	RMS: 109	12"Ø	1350	.36	55	100	44,700	2.3	180	150	2	25	PRICE SDV	
VAV 106	RMS: 123, 126, 127, 129, 130	9"Ø	750	.28	55	100	24,200	1.6	180	150	2	25	PRICE SDV	
VAV 107	RMS: 114, 115	6"Ø	400	.4	55	100	14,200	.95	180	150	2	25	PRICE SDV	
VAV 108	RMS: 113	10"Ø	900	.37	55	100	20,600	1.4	180	150	2	25	PRICE SDV	
VAV 109	RMS: 109	14"Ø	2000	.4	55	100	63,500	4.3	180	150	2	25	PRICE SDV	
VAV 110	RMS: 109	14"Ø	2000	.4	55	100	63,500	4.3	180	150	2	25	PRICE SDV	
VAV 111	RMS: 122, 124, 125, 128	8"Ø	655	.35	55	100	26,800	1.8	180	150	2	25	PRICE SDV	
VAV 112	RMS: 120	7"Ø	450	.24	55	100	24,000	1.6	180	150	2	25	PRICE SDV	
VAV 114	RMS: 102, 108	12"Ø	1050	.30	55	100	77,600	5.2	180	150	2	25	PRICE SDV	
VAV 206	RMS: 143, 202	9"Ø	865	.32	55	100	44,500	3	180	150	2	25	PRICE SDV	
VAV 207	RMS: 201	12"Ø	1500	.47	55	100	66,700	4.5	180	150	2	25	PRICE SDV	

1.

PUMP SCHEDULE												
SYMBOL	TYPE	MAKE / MODEL	GPM	FT. HEAD	SUCTION SIZE INCHES	DISCHARGE SIZE INCHES	MOTOR			WEIGHT LBS	SERVICE	SCHEDULE NOTES
							V - Ø - Hz	HP	RPM			
P 1	CLOSE COUPL'D BASE MOUNTED	B&G 1531-2BC	150	65	2-1/2"	2	460/3/60	5	1750	555	HEATING HOT WATER	1,2,3
P 2	CLOSE COUPL'D BASE MOUNTED	B&G 1531-2BC	150	65	2-1/2"	2	460/3/60	5	1750	555	HEATING HOT WATER	1,2,3
CP 1	TANK AND PUMP SET	SHIPCO 64ECC	9	45 PSI	2"	3/4"	120/1/60	1	3500		CONDENSATE RETURN	4,5

1. ALL PUMPS SHALL BE SIZED IN THE FLAT PART OF THE CURVE.
2. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.
3. VFD TO BE SUPPLIED BY DESIGN BUILD ELECTRICAL CONTRACTOR. SEE SPECIFICATIONS.
4. 15 GALLON STORAGE TANK.
5. 6000 EDR.

CHEMICAL POT FEEDER SCHEDULE							
SYMBOL	CAPACITY GALLONS	MAX PRESSURE	LENGTH	DIAMETER	OUTLET	INLET	SHIPPING WT. LBS.
CPF 1	5	300 PSI @ 200 ° F	19-3/4"	10"	3/4"	3/4"	37

1. TANK SHELL - 10 GAUGE STEEL.
2. TANK HEADS - 9 GAUGE STEEL.
3. MANUFACTURER - NEPTUNE VTF - 5 HP
4. CAST IRON CAP W/BUNA N RING

AIR SEPARATOR SCHEDULE						
SYMBOL	CAPACITY GPM	MAX PRESSURE DROP FT.	INLET / OUTLET SIZE	WEIGHT LBS	MAKE & MODEL	SCHEDULE NOTES
AS 1	170	1	4"	107	SPIROVENT VSR 400 SENIOR	1,2

1. FOR OTHER APPROVED MANUFACTURERS SEE SPECIFICATIONS.
2. DESIGN FOR 150 PSIG AND 270° F.

HEAT EXCHANGER SCHEDULE							
SYMBOL	COLD SIDE (TUBE)			STEAM HOT SIDE (SHELL)		MANUF. & MODEL #	SCHEDULE NOTES
	GPM	T IN ° F	T OUT ° F	#/HR STEAM	PRESS PSIG		
HX 2	150	150	180	3025	50	B&G SU85-2	1,2,3

1. SHIPPING WEIGHT 220 LBS.
2. HORIZONTALLY MOUNTED.
3. UNIT SIZE AT 8-5/8" DIAMETER SHELL x 5'-5-3/8" LONG.
4. MOUNT ON STRUCTURAL FRAME AS SHOWN ON DETAIL A3/ME501.

EXPANSION TANK SCHEDULE						
SYMBOL	ACCEPT TANK VOLUME GAL.	LENGTH	DIAMETER	OPERATION WEIGHT LBS	MAKE AND MODEL	SCHEDULE NOTES
ET 1	53 GALLONS	36	24	192 SHIPPING 629 100% FULL	B&G B SERIES B-200	1,2

1. FOR OTHER APPROVED MANUFACTURERS SEE SPECIFICATIONS.
2. FLOOR MOUNTED WITH CLIPS TO BOLT TO FLOOR SLAB.

PROJECT NAME & ADDRESS

CEU
Bunnell/dmitrich
Athletic Center
Mechanical
Retrofit

DFCM #09092610

Price, Utah

MARK DATE REVISION

PROJECT MANAGER:

WP

DRAWN BY:

LGD

CHECKED BY:

SLW

DATE:

10/19/09

WHW JOB NO.:

09008

SHEET TITLE

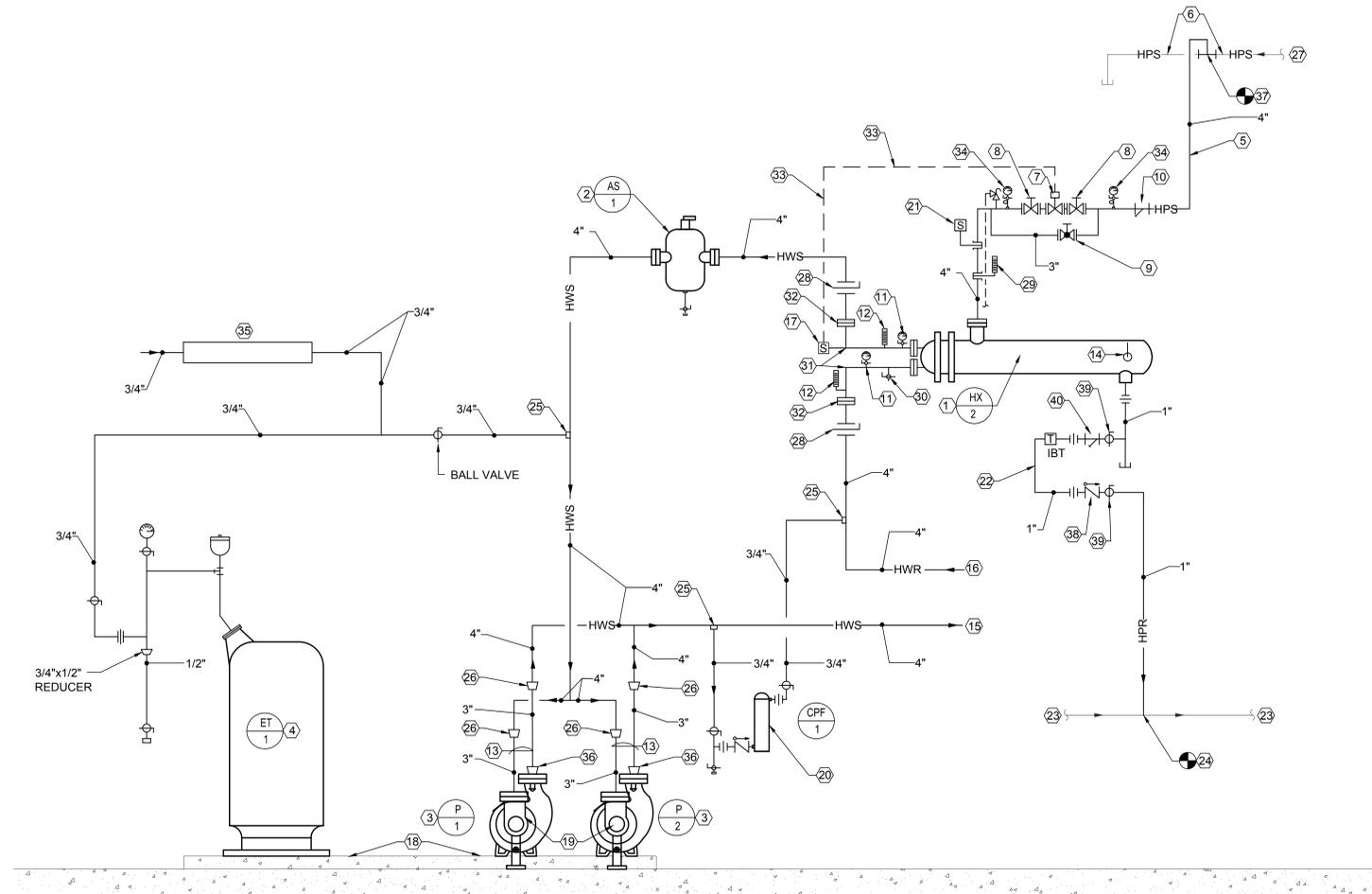
MECHANICAL SCHEDULES

SHEET NO.

ME601



CONSULTANTS



B2 STEAM TO HOT WATER FLOW DIAGRAM
SCALE: NONE

SHEET NOTES:

- 1 NEW STEAM TO HOT WATER CONVERTOR HX-2. SEE SCHEDULE SHEET ME601 AND STRUCTURAL DETAIL A3/ME501.
- 2 NEW HOT WATER AIR SEPARATOR AS-1. SEE SCHEDULE ME601 AND DETAIL B1/ME502.
- 3 NEW HOT WATER BASE MOUNTED CLOSE COUPLED PUMPS P-1 AND P-2. SEE SCHEDULE ME601 AND DETAIL D1/ME502.
- 4 NEW HOT WATER EXPANSION TANK ET-1. SEE SCHEDULE ME601 AND DETAIL B3/ME502.
- 5 HPS SUPPLY TO STEAM TO HOT WATER CONVERTOR HX-2. SEE PLAN VIEW ME401 AND DETAIL A3/ME501.
- 6 EXISTING 4"Ø STEAM HEADER.
- 7 NEW ELECTRONIC TEMPERATURE CONTROL STEAM VALVE. VALVE SHALL BE AT LEAST 1 PIPE SIZE SMALLER THAN LINE SIZE. COORDINATE WITH ATC CONTRACTOR.
- 8 300# FLANGED GATE VALVES.
- 9 300# FLANGED GLOBE VALVE IN AUTO CONTROL VALVE BY-PASS. INSTALL AT SAME ELEVATION AS MAIN LINE OR ABOVE MAIN LINE.
- 10 FLANGED STRAINER INSTALLED IN HORIZONTAL PLAIN.
- 11 PRESSURE GAGE WITH SHUT-OFF COCK. 0 PSIG-125 PSIG RANGE.
- 12 THERMOMETER. 0° TO 225° F RANGE. (HOT WATER)
- 13 SEE PUMP PIPING DETAIL D1/ME502.
- 14 VACUUM BREAKER PROVIDED BY EQUIPMENT MANUFACTURER.
- 15 4" HOT WATER SUPPLY TO SYSTEM. SEE MECHANICAL FLOOR PLANS FOR CONTINUATION.
- 16 4" HOT WATER RETURN FROM SYSTEM. SEE MECHANICAL FLOOR PLANS FOR CONTINUATION.
- 17 PROVIDE TEMPERATURE SENSOR IN ELBOW OF 4" HOT WATER SUPPLY PIPING TO SIGNAL STEAM CONTROL VALVE TO PROVIDE HOT WATER TEMPERATURE REQUIRED BY OUTDOOR TEMPERATURE.
- 18 4" THICK CONCRETE PAD TIE TO EXISTING CONCRETE FLOOR. SEE DETAIL D5/ME502.
- 19 3" SYSTEM TO 2-1/2" PUMP FLANGE SUCTION DIFFUSERS.
- 20 CHEMICAL POT FEEDER FOR HOT WATER SYSTEM. SEE DETAIL C3/ME501.
- 21 PROVIDE STEAM PRESSURE SENSOR. COORDINATE WITH CONTROLS CONTRACTOR. CONNECT TO BUILDING DDC.
- 22 BUCKET TRAP ASSEMBLY. SEE DETAIL A2/ME502.
- 23 EXISTING HIGH PRESSURE CONDENSATE RETURN HEADER TO STEAM POWERED CONDENSATE PUMP.
- 24 NEW HPR CONNECTION INTO EXISTING HPR HEADER.
- 25 3/4" THRED-O-LET.
- 26 4" x 3" REDUCER IN VERTICAL.
- 27 EXISTING 4" HPS FROM CENTRAL BOILER PLANT.
- 28 4" - 150# FLANGELESS BUTTERFLY VALVE.
- 29 THERMOMETER 0° TO 400°F RANGE (STEAM)
- 30 3/4" DRAIN CONSISTING OF THRED-O-LET, NIPPLE, AND BALL VALVE WITH HOSE CONNECTION.
- 31 4" x 3" REDUCING 90° ELL.
- 32 4" - 150# ACCESS BREAK-A-WAY FLANGES.
- 33 SENSING LINE FROM SENSOR TO STEAM CONTROL VALVE.
- 34 PRESSURE GAUGE (STEAM) WITH SHUT-OFF COCK AND SIPHON STEM. RANGE 0 TO 100 PSIG.
- 35 HOT WATER SYSTEM MAKE-UP WATER. SEE DETAIL D3/ME501 FOR MAKE-UP PRV STATION AND BACKFLOW PREVENTOR.
- 36 3" x 2" REDUCER.
- 37 PROVIDE NEW 4"x4"x4" TEE IN EXISTING 4" STEAM HEADER. FIELD VERIFY.
- 38 SCREWED 600# CHECK VALVE.
- 39 SCREWED 600# BALL VALVE.
- 40 SCREWED 600# STRAINER.

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SHEET TITLE



MECHANICAL FLOW
DIAGRAM

SHEET NO.
ME701