

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: Mechanical Equipment Change Only
 Change in Use: Yes _____ No Mixed Occupancy: Yes _____ No _____
 Special Use and Occupancy (e.g. High Rise, Covered Mall): _____
- B. Seismic Design Category: _____ Design Wind Speed: _____ mph
- C. Type of Construction (circle one):
 I/A I/B II/A II/B III/A III/B IV/HT V/A V/B
- D. Fire Resistance Rating Requirements for the Exterior Walls based on the fire separation distance (in hours):
 North: _____ South: _____ East: _____ West: _____
- E. Mixed Occupancies: _____ Nonseparated Uses: _____
- F. Sprinklers:
 Required: _____ Provided: _____ Type of Sprinkler System: _____
- G. Number of Stories: _____ Building Height: _____
- H. Actual Area per Floor (square feet): _____
- I. Tabular Area: _____
- J. Area Modifications:
 a) $A_a = A_t + \left[\frac{A_t I_f}{100} \right] + \left[\frac{A_t I_s}{100} \right]$ $I_f = 100 \left[\frac{F}{P} - 0.25 \right] \frac{W}{30}$
 b) Sum of the Ratio Calculations for Mixed Occupancies:
 $\frac{\text{Actual Area}}{\text{Allowable Area}} \leq 1$
 c) Total Allowable Area for:
 1) One Story: _____
 2) Two Story: $A_a(2)$ _____
 3) Three Story: $A_a(3)$ _____
 d) Unlimited Area Building: Yes _____ No _____ Code Section: _____
- K. Fire Resistance Rating Requirements for Building Elements (hours).

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: _____
 Exit Width Required: _____ Exit Width Provided: _____
- M. Minimum Number of Required Plumbing Facilities:
 a) Water Closets - Required (m) _____ (f) _____ Provided (m) _____ (f) _____
 b) Lavatories - Required (m) _____ (f) _____ Provided (m) _____ (f) _____
 c) Bath Tubs or Showers: _____
 d) Drinking Fountains: _____ Service Sinks: _____

- FOOTNOTES:
 1) 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.
 2) Additional Code Information shall be provided at the discretion of the Building Official for Complex Buildings. Including, but not limited to:
 a) High Rise Requirements.
 b) Atriums.
 c) Performance Based Criteria.
 d) Means or Egress Analysis.
 e) Fire Assembly Locator Sheet.
 f) Exterior and Interior Accessibility Route.
 g) Fire Stopping, Including Tested Design Number.

CUCF MECHANICAL UPGRADES -HEAT EXCHANGERS- DFCM# 08181110



State of Utah—Department of Administrative Services
**DIVISION OF FACILITIES CONSTRUCTION
 AND MANAGEMENT**
 4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018



DRAWING INDEX:

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- MG001 GENERAL MECHANICAL NOTES AND LEGEND
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- MD-102 MECHANICAL ROOM DEMOLITION PLAN-PLANT MAINTENANCE BUILDING
- MD-103 MECHANICAL ROOM DEMOLITION PLAN-BOULDERS BUILDING
- ME-101 MECHANICAL ROOM PLAN-HENRYS BUILDING
- ME-102 MECHANICAL ROOM PLAN-PLANT MAINTENANCE BUILDING
- ME-103 MECHANICAL ROOM PLAN-BOULDERS BUILDING
- ME-501 MECHANICAL DETAILS AND SCHEDULES

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PROJECT NAME & ADDRESS

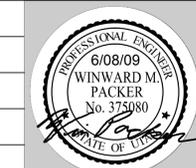
**CUCF MECHANICAL
UPGRADES - HEAT
EXCHANGERS**

DFCM No. 08181110

Gunnison, Utah

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SLW
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06/08/09
WHW JOB NO.:
08055

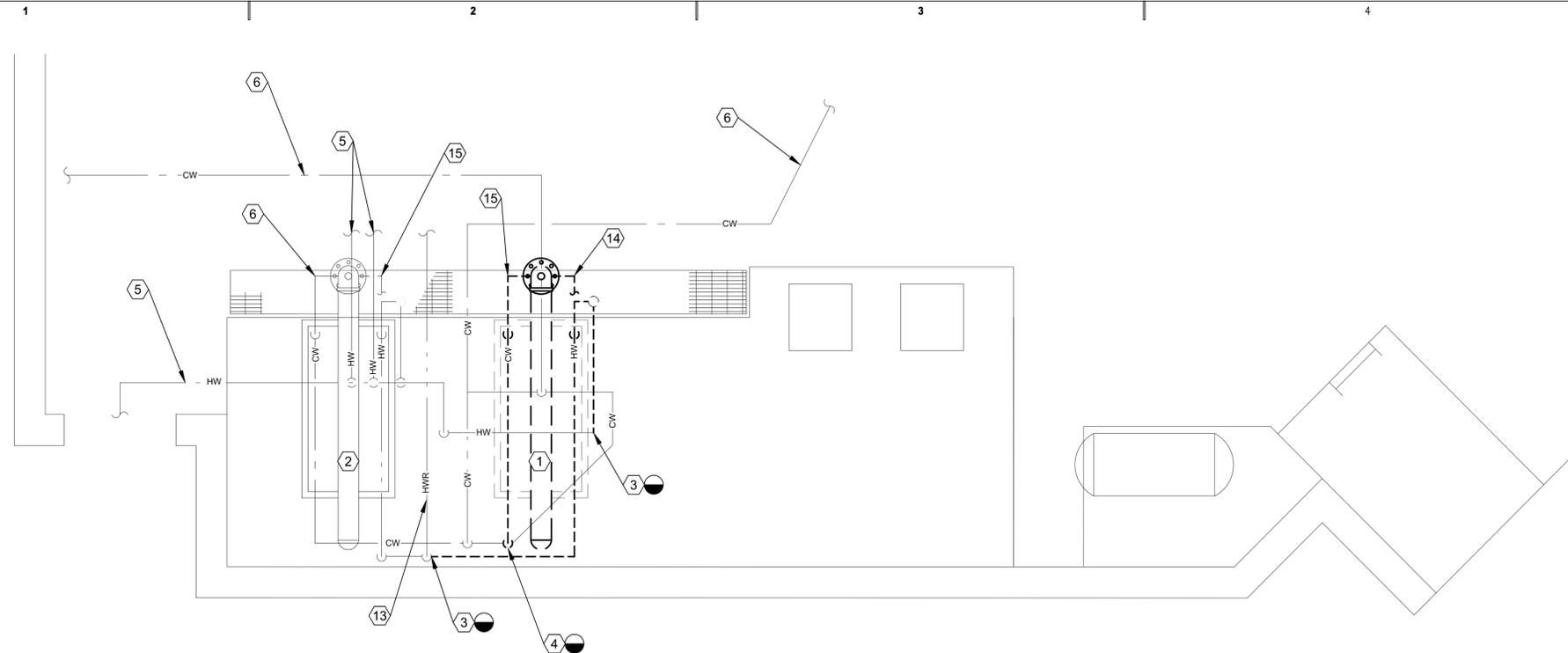


SHEET TITLE

**MECHANICAL ROOM
DEMOLITION PLAN**

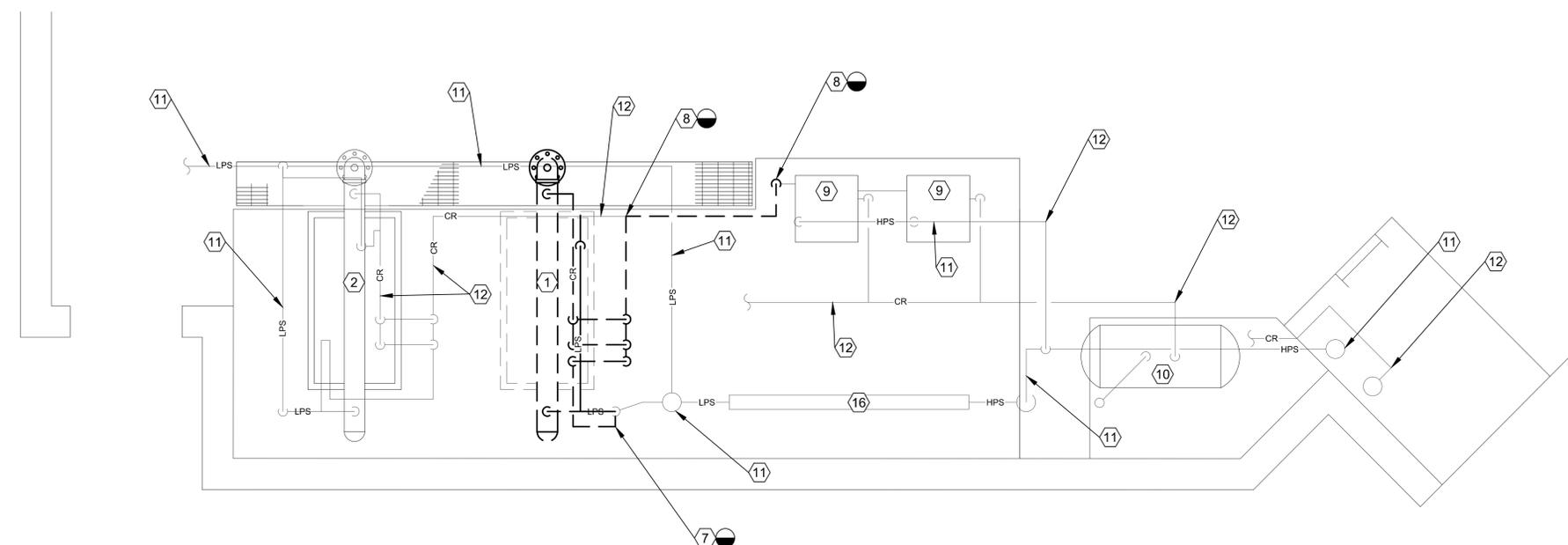
SHEET NO.

MD101



MECHANICAL ROOM DEMOLITION COLD AND HOT WATER PLAN

SCALE: 1/2" = 1'-0"



MECHANICAL ROOM DEMOLITION STEAM AND CONDENSATE PLAN

SCALE: 1/2" = 1'-0"

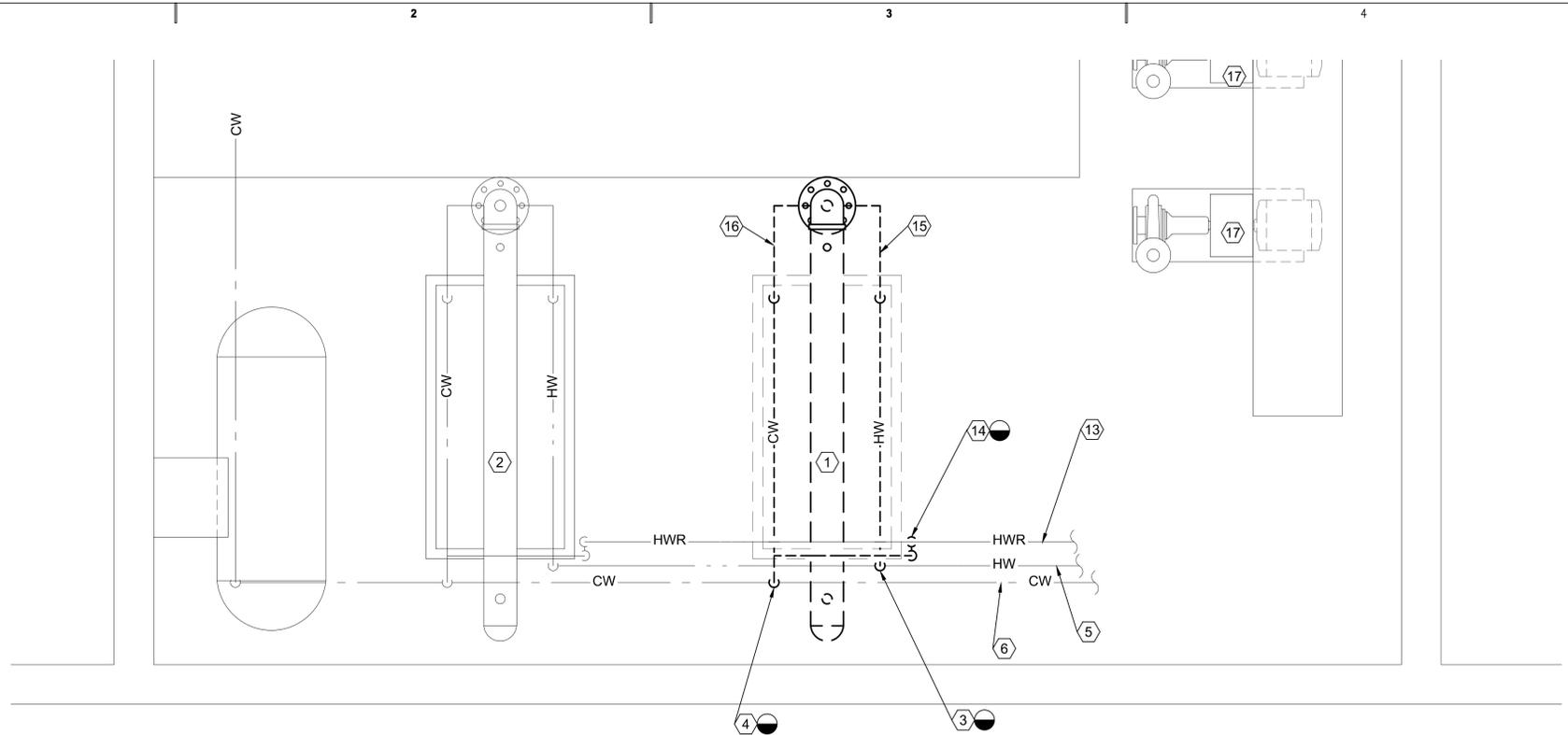


SHEET NOTES:

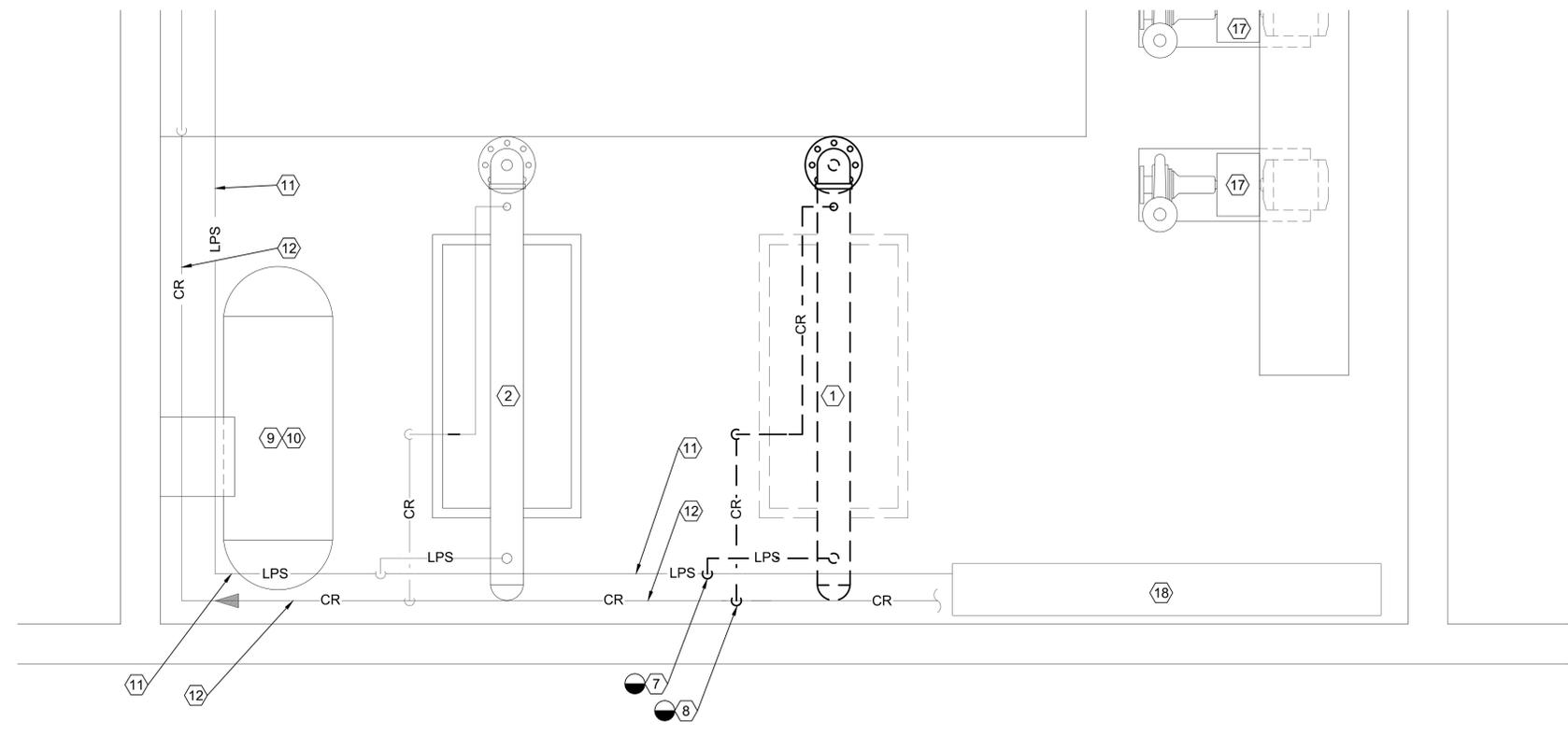
- ① REMOVE EXISTING HEAT EXCHANGERS AND ALL ASSOCIATED PIPING, SUPPORT FRAME, STEAM TRAPS, ETC. AS SHOWN. CONTRACTOR SHALL RETURN THE REMOVED EXCHANGERS TO CUCF.
- ② EXISTING HEAT EXCHANGERS AND ALL ASSOCIATED STEAM, CONDENSATE, HOT AND COLD WATER PIPING, CONTROLS ETC. SHALL REMAIN.
- ③ REMOVE HOT WATER PIPING FROM THIS POINT UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
- ④ REMOVE COLD WATER PIPING FROM THIS POINT UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
- ⑤ EXISTING HOT WATER SUPPLY PIPING SHALL REMAIN.
- ⑥ EXISTING COLD SOFT WATER SUPPLY PIPING SHALL REMAIN.
- ⑦ REMOVE STEAM PIPING FROM THIS APPROXIMATE LOCATION UP TO HEAT EXCHANGER. FIELD VERIFY LOCATION.
- ⑧ REMOVE CONDENSATE PIPING FROM THIS APPROXIMATE LOCATION UP TO HEAT EXCHANGER. FIELD VERIFY LOCATION.
- ⑨ EXISTING CONDENSATE PUMPS AND ASSOCIATED EQUIPMENT SHALL REMAIN.
- ⑩ EXISTING RECEIVER TANK AND ASSOCIATED EQUIPMENT SHALL REMAIN.
- ⑪ EXISTING STEAM PIPING SHALL REMAIN.
- ⑫ EXISTING CONDENSATE PIPING SHALL REMAIN.
- ⑬ EXISTING HOT WATER RECIRCULATION PIPING AND ASSOCIATED EQUIPMENT SHALL REMAIN.
- ⑭ REMOVE HOT WATER PIPING FROM UPPER AND LOWER HEAT EXCHANGERS.
- ⑮ REMOVE COLD WATER SUPPLY PIPING FROM UPPER AND LOWER HEAT EXCHANGERS.
- ⑯ EXISTING STEAM PRV HEADER, VALVES, PIPING, GAUGES, ETC. SHALL REMAIN.

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. COORDINATE SYSTEM SHUT DOWN FOR NEW TIE-INS AND CAPPING EXISTING BRANCHES WITH OWNER. SYSTEM SHUT DOWN SHALL OCCUR AFTER HOURS AND OVERNIGHT. CONTRACTOR SHALL GIVE OWNER A MINIMUM OF 5 DAYS NOTICE PRIOR TO SHUT DOWN. CONTRACTOR SHALL MAINTAIN HOT WATER TO SYSTEM THROUGHOUT PROJECT.



MECHANICAL ROOM DEMOLITION COLD AND HOT WATER PLAN
SCALE: 3/4" = 1'-0"



MECHANICAL ROOM DEMOLITION STEAM AND CONDENSATE PLAN
SCALE: 3/4" = 1'-0"

- SHEET NOTES:**
- ① REMOVE EXISTING HEAT EXCHANGERS AND ALL ASSOCIATED PIPING, SUPPORT FRAME, STEAM TRAPS, ETC. AS SHOWN. CONTRACTOR SHALL RETURN THE REMOVED EXCHANGERS TO CUCF.
 - ② EXISTING HEAT EXCHANGER AND ALL ASSOCIATED STEAM, CONDENSATE, HOT AND COLD WATER PIPING, CONTROLS ETC. SHALL REMAIN.
 - ③ REMOVE HOT WATER PIPING FROM THIS POINT UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
 - ④ REMOVE COLD WATER PIPING FROM THIS POINT UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
 - ⑤ EXISTING HOT WATER SUPPLY PIPING SHALL REMAIN.
 - ⑥ EXISTING COLD WATER SUPPLY PIPING SHALL REMAIN.
 - ⑦ REMOVE STEAM PIPING FROM THIS APPROXIMATE LOCATION UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
 - ⑧ REMOVE CONDENSATE PIPING FROM THIS APPROXIMATE LOCATION UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
 - ⑨ EXISTING COMPRESSOR AND ASSOCIATED EQUIPMENT SHALL REMAIN.
 - ⑩ EXISTING AIR TANK AND ASSOCIATED EQUIPMENT SHALL REMAIN.
 - ⑪ EXISTING STEAM PIPING SHALL REMAIN.
 - ⑫ EXISTING CONDENSATE PIPING SHALL REMAIN.
 - ⑬ EXISTING HOT WATER RECIRCULATION PIPING AND ASSOCIATED EQUIPMENT SHALL REMAIN.
 - ⑭ DISCONNECT HOT WATER RECIRCULATION PIPING AT THIS APPROXIMATE LOCATION. RECIRCULATION PUMP, CHECK VALVE AND ISOLATION VALVES SHALL REMAIN. FIELD VERIFY EXACT LOCATION.
 - ⑮ REMOVE HOT WATER PIPING FROM UPPER AND LOWER HEAT EXCHANGERS.
 - ⑯ REMOVE COLD WATER SUPPLY PIPING FROM UPPER AND LOWER HEAT EXCHANGERS.
 - ⑰ EXISTING RECIRCULATION PUMPS SHALL REMAIN.
 - ⑱ EXISTING STEAM PRV HEADER, VALVES, PIPING, GAUGES, ETC. SHALL REMAIN.

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
2. COORDINATE SYSTEM SHUT DOWN FOR NEW TIE-INS AND CAPPING EXISTING BRANCHES WITH OWNER. SYSTEM SHUT DOWN SHALL OCCUR AFTER HOURS AND OVERNIGHT. CONTRACTOR SHALL GIVE OWNER A MINIMUM OF 5 DAYS NOTICE PRIOR TO SHUT DOWN. CONTRACTOR SHALL MAINTAIN HOT WATER TO SYSTEM THROUGHOUT PROJECT.

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PROJECT NAME & ADDRESS

**CUCF MECHANICAL
UPGRADES - HEAT
EXCHANGERS**

DFCM No. 08181110

Gunnison, Utah

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**PLANT MAINTENANCE
BUILDING MECHANICAL ROOM
DEMOLITION PLAN**

SHEET NO. **MD102**

CONSULTANTS



PROJECT NAME & ADDRESS

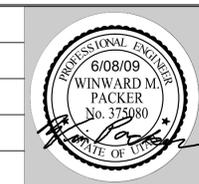
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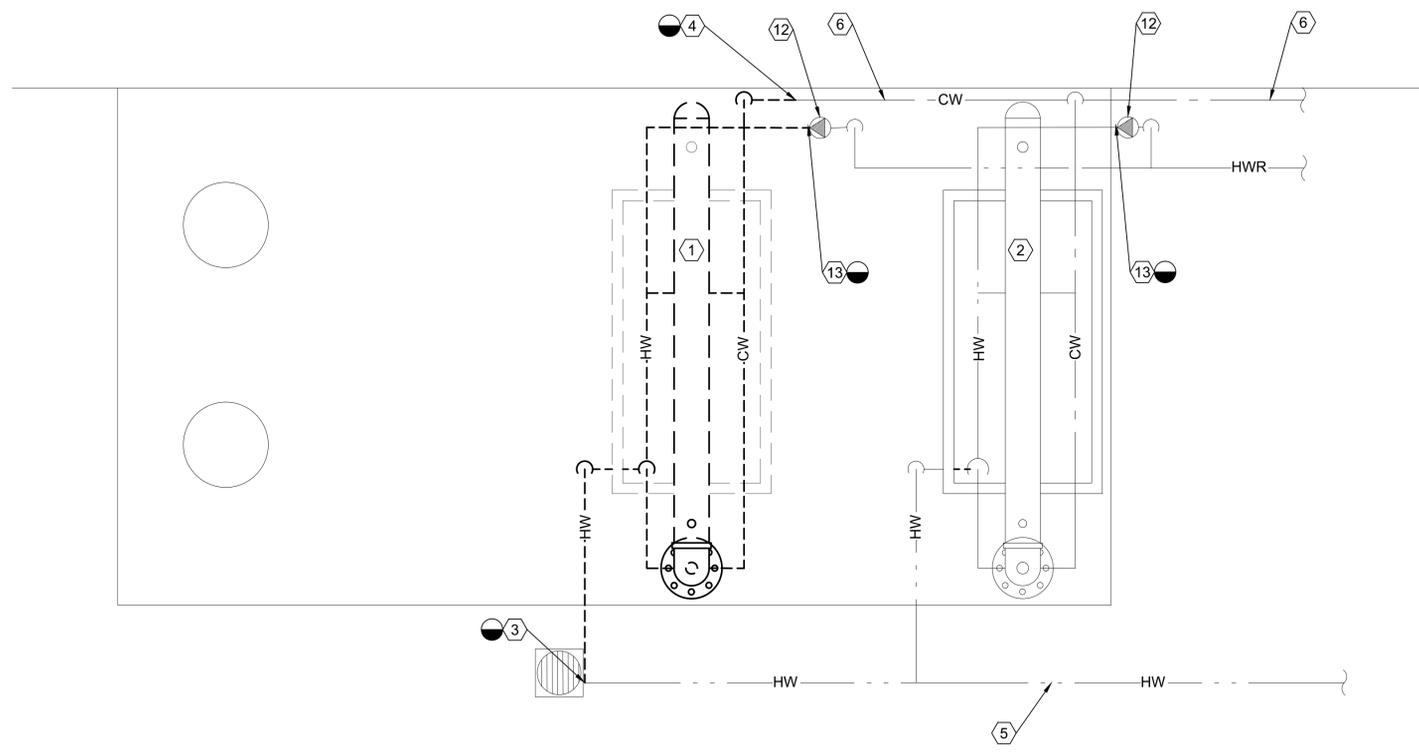
SHEET TITLE
BOULDERS BUILDING MECHANICAL ROOM DEMOLITION PLAN

SHEET NO.
MD103

- SHEET NOTES:**
- ① REMOVE EXISTING HEAT EXCHANGERS AND ALL ASSOCIATED PIPING, SUPPORT FRAME, STEAM TRAPS, ETC. AS SHOWN. CONTRACTOR SHALL RETURN THE REMOVED EXCHANGER TO CUCF.
 - ② EXISTING HEAT EXCHANGER AND ALL ASSOCIATED STEAM, CONDENSATE, HOT AND COLD WATER PIPING, CONTROLS ETC. SHALL REMAIN.
 - ③ REMOVE HOT WATER PIPING FROM THIS POINT UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
 - ④ REMOVE COLD WATER PIPING FROM THIS POINT UP TO HEAT EXCHANGER. FIELD VERIFY EXACT LOCATION.
 - ⑤ EXISTING HOT WATER SUPPLY PIPING SHALL REMAIN.
 - ⑥ EXISTING COLD SOFT WATER SUPPLY PIPING SHALL REMAIN.
 - ⑦ REMOVE STEAM PIPING FROM THIS APPROXIMATE LOCATION UP TO HEAT EXCHANGER. FIELD VERIFY LOCATION.
 - ⑧ REMOVE CONDENSATE PIPING FROM THIS APPROXIMATE LOCATION UP TO HEAT EXCHANGER. FIELD VERIFY LOCATION.
 - ⑨ EXISTING CONDENSATE PUMPS AND ASSOCIATED EQUIPMENT SHALL REMAIN.
 - ⑩ EXISTING STEAM PIPING SHALL REMAIN.
 - ⑪ EXISTING CONDENSATE PIPING SHALL REMAIN.
 - ⑫ PROTECT RECIRCULATION PUMP AND ASSOCIATED VALVES FOR REINSTALLATION.
 - ⑬ DISCONNECT HOT WATER RECIRCULATION PIPING AT THIS APPROXIMATE LOCATION. RECIRCULATION PUMP, CHECK VALVE AND ISOLATION VALVES SHALL REMAIN. FIELD VERIFY EXACT LOCATION.
 - ⑭ REMOVE HOT WATER PIPING FROM UPPER AND LOWER HEAT EXCHANGERS.
 - ⑮ REMOVE COLD WATER SUPPLY PIPING FROM UPPER AND LOWER HEAT EXCHANGERS.
 - ⑯ REMOVE CONDENSATE PIPING AND ASSOCIATED TRAPS ROUTED UNDERNEATH HEAT EXCHANGERS.

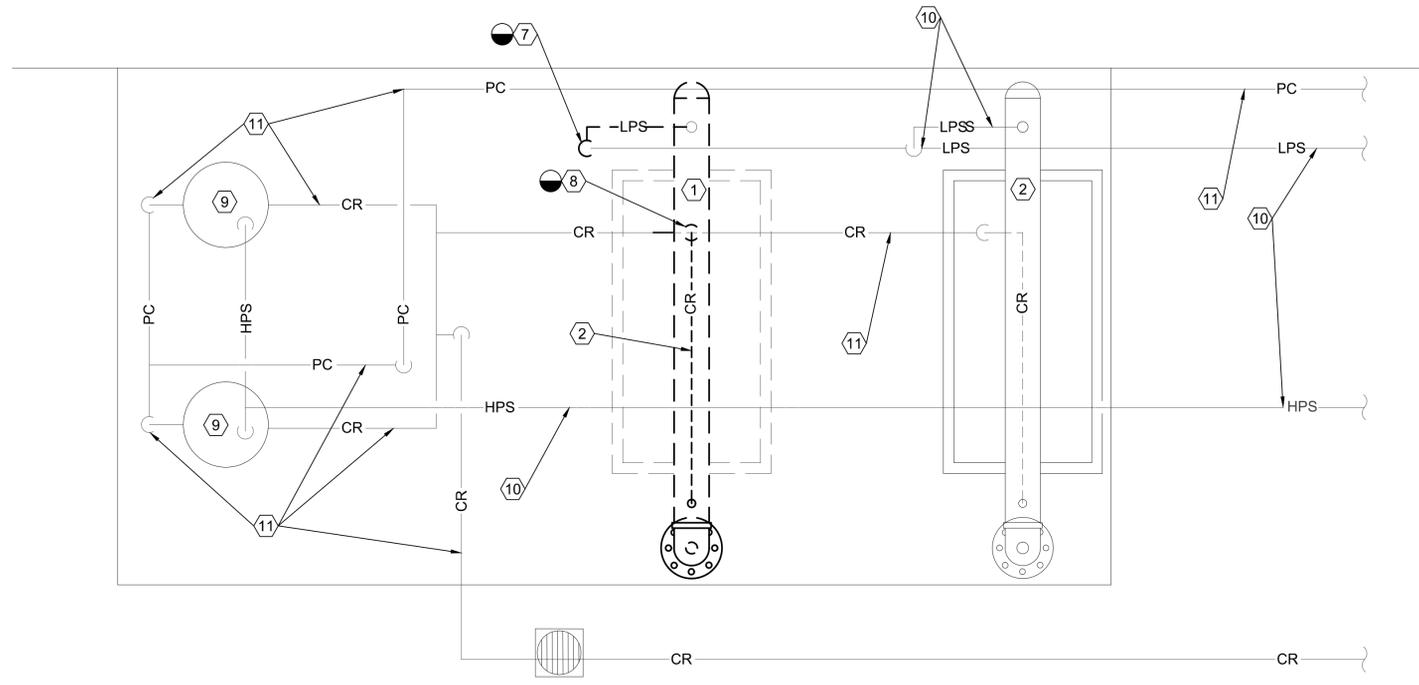
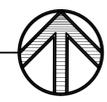
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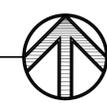
MECHANICAL ROOM DEMOLITION COLD AND HOT WATER PLAN

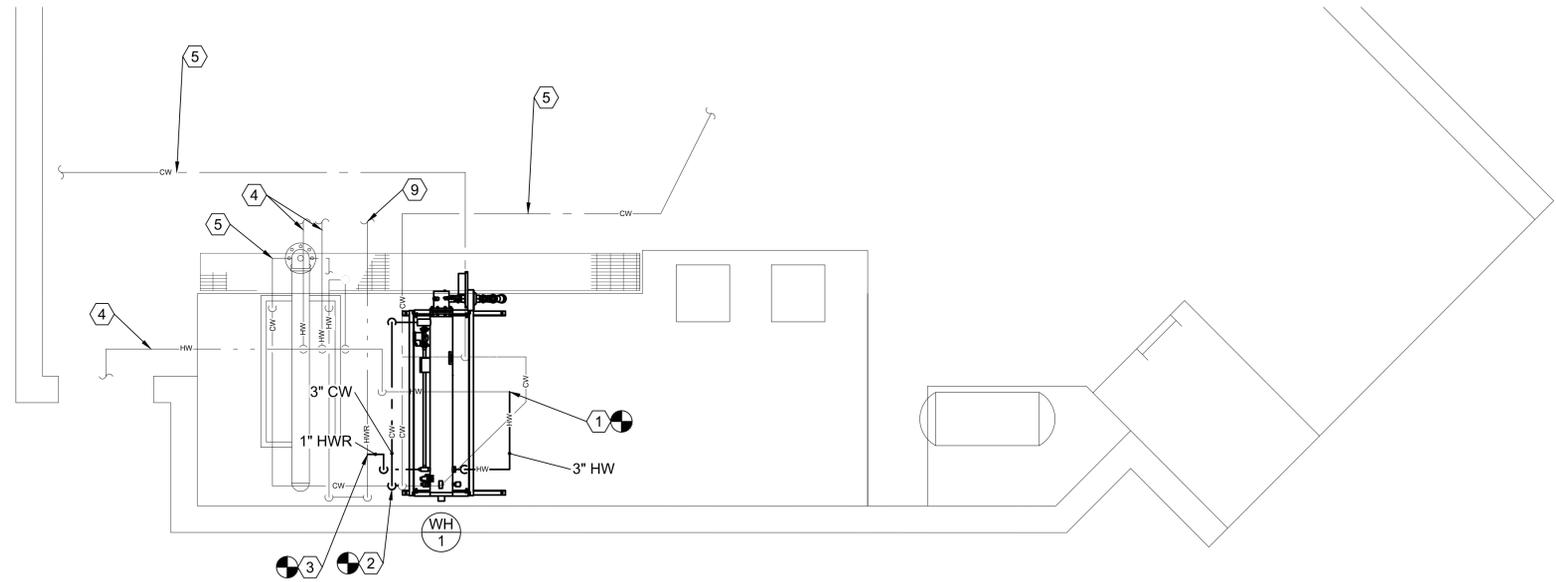
SCALE: 3/4" = 1'-0"



MECHANICAL ROOM DEMOLITION STEAM AND CONDENSATE PLAN

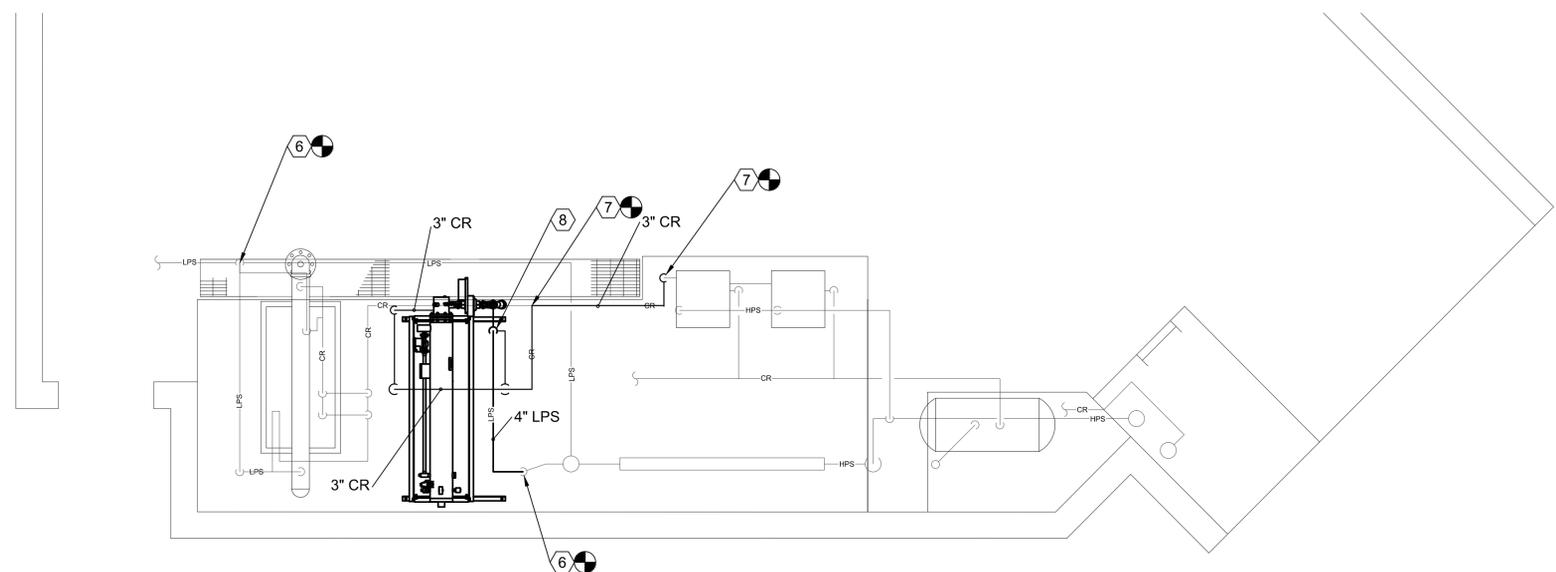
SCALE: 3/4" = 1'-0"





MECHANICAL ROOM COLD AND HOT WATER PLAN

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



MECHANICAL ROOM STEAM AND CONDENSATE

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

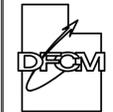


SHEET NOTES:

- ① CONNECT NEW HOT WATER PIPING TO EXISTING IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
- ② CONNECT NEW COLD WATER SUPPLY PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
- ③ CONNECT NEW HOT WATER RECIRCULATION PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
- ④ EXISTING HOT WATER PIPING SHALL REMAIN.
- ⑤ EXISTING COLD WATER PIPING SHALL REMAIN.
- ⑥ CONNECT NEW STEAM PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY FOR EXACT LOCATION.
- ⑦ CONNECT NEW CONDENSATE PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY FOR EXACT LOCATION.
- ⑧ PROVIDE AUXILIARY STEAM TRAP CIRCUIT AND DRIP LEG AT THIS APPROXIMATE LOCATION. FIELD VERIFY. SEE SHEET ME 501 FOR DETAILS.
- ⑨ EXISTING HOT WATER RETURN PIPING SHALL REMAIN.

NOTES:

- 1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. MODIFY EXISTING PIPING, IF REQUIRED, TO MATCH NEW EXCHANGER CONNECTIONS.
- 2. COORDINATE SYSTEM SHUT DOWN FOR NEW TIE-INS AND CAPPING EXISTING BRANCHES WITH OWNER. SYSTEM SHUT DOWN SHALL OCCUR AFTER HOURS AND OVERNIGHT. CONTRACTOR SHALL GIVE OWNER A MINIMUM OF 5 DAYS NOTICE PRIOR TO SHUT DOWN. CONTRACTOR SHALL MAINTAIN HOT WATER TO SYSTEM THROUGHOUT PROJECT.



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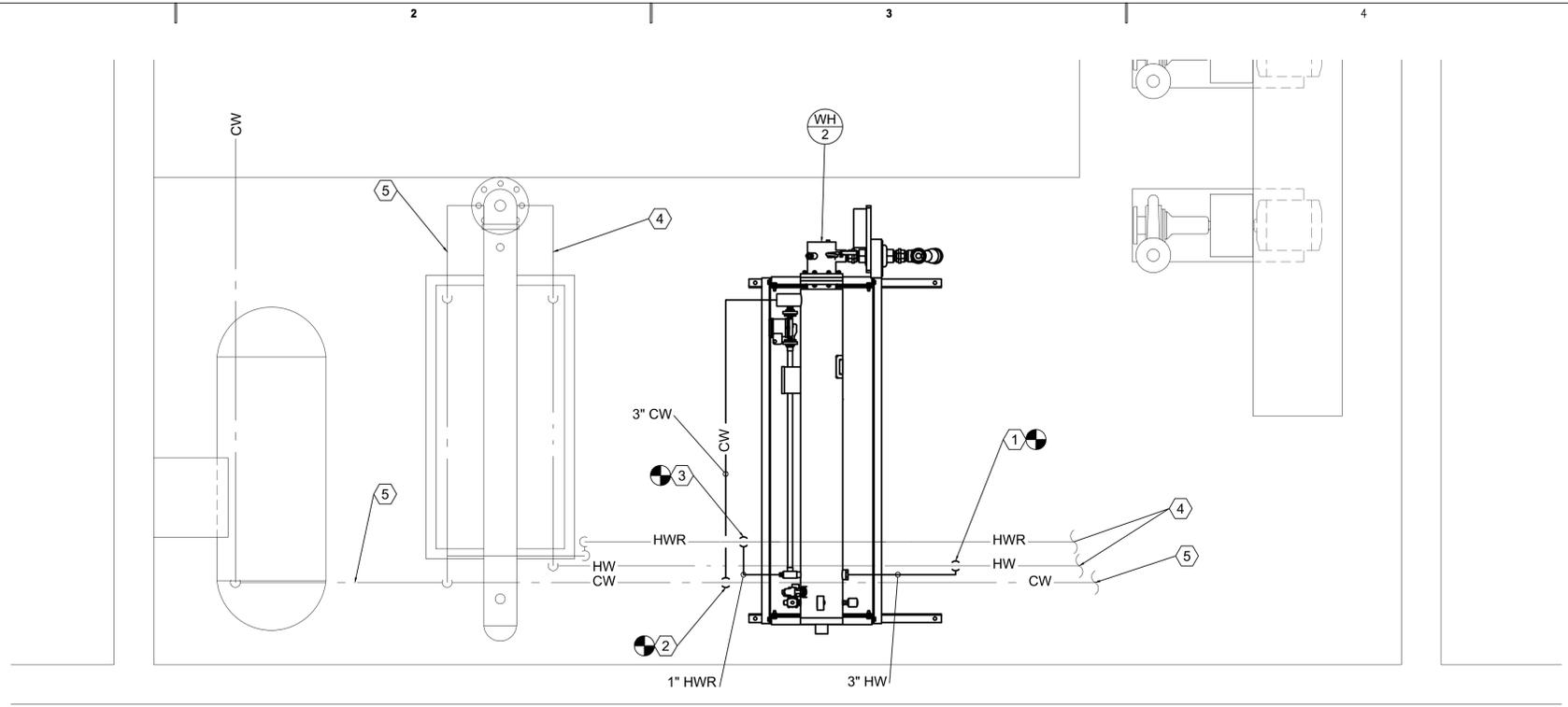
SHEET TITLE

**HENRY'S BUILDING
MECHANICAL ROOM PLAN**

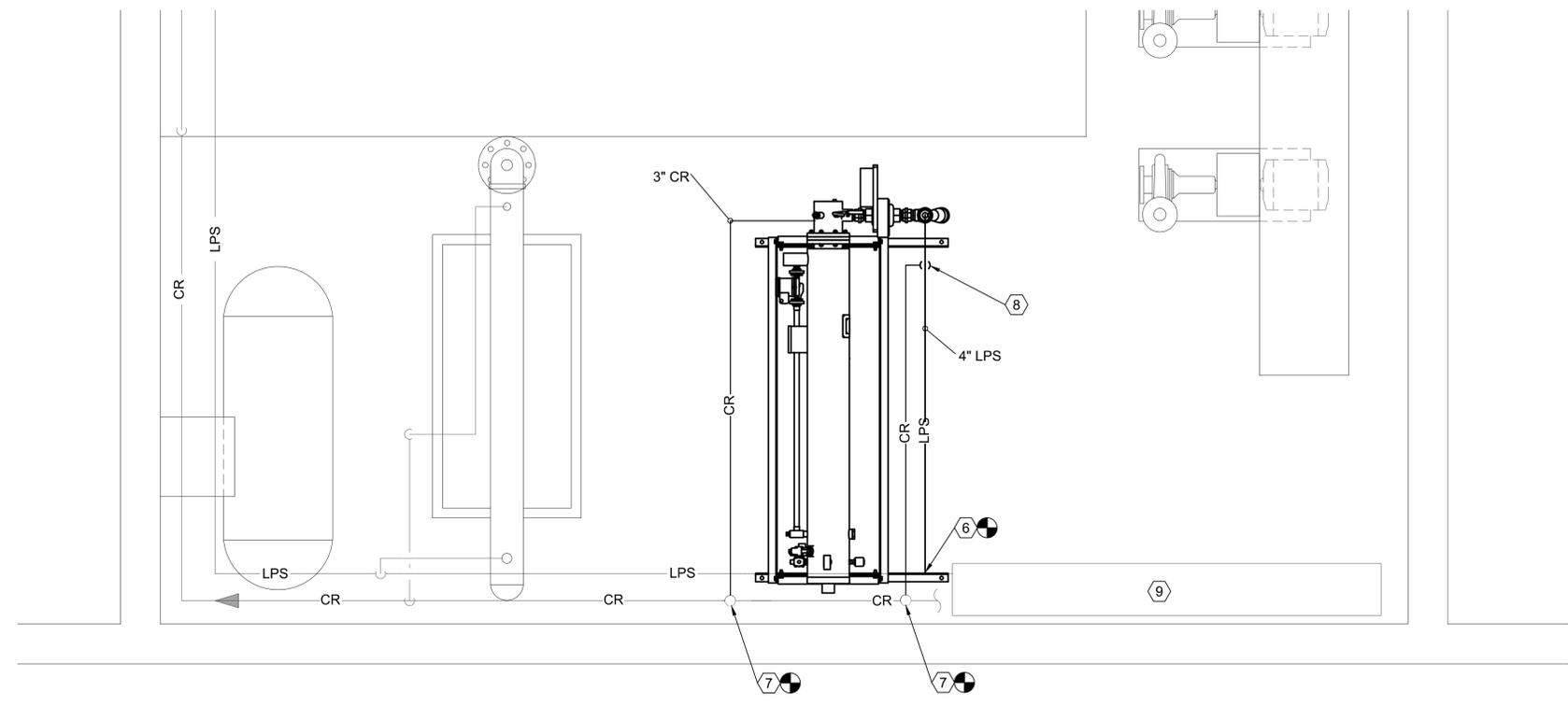
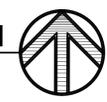
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ME101





MECHANICAL ROOM COLD AND HOT WATER PLAN
SCALE: 3/4" = 1'-0"



MECHANICAL ROOM STEAM AND CONDENSATE PLAN
SCALE: 3/4" = 1'-0"



- SHEET NOTES:**
- ① CONNECT NEW HOT WATER PIPING TO EXISTING IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
 - ② CONNECT NEW COLD WATER SUPPLY PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
 - ③ CONNECT NEW HOT WATER RECIRCULATION PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
 - ④ EXISTING HOT WATER PIPING SHALL REMAIN.
 - ⑤ EXISTING COLD WATER PIPING SHALL REMAIN.
 - ⑥ CONNECT NEW STEAM PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY FOR EXACT LOCATION.
 - ⑦ CONNECT NEW CONDENSATE PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY FOR EXACT LOCATION.
 - ⑧ PROVIDE AUXILIARY STEAM TRAP CIRCUIT AND DRIP LEG AT THIS APPROXIMATE LOCATION. FIELD VERIFY. SEE SHEET ME 501 FOR DETAILS.
 - ⑨ EXISTING STEAM PRV AND HEADER FOR LPS STEAM SUPPLY SHALL REMAIN.

- NOTES:**
1. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS. MODIFY EXISTING PIPING, IF REQUIRED, TO MATCH NEW EXCHANGER CONNECTIONS.
 2. COORDINATE SYSTEM SHUT DOWN FOR NEW TIE-INS AND CAPPING EXISTING BRANCHES WITH OWNER. SYSTEM SHUT DOWN SHALL OCCUR AFTER HOURS AND OVERNIGHT. CONTRACTOR SHALL GIVE OWNER A MINIMUM OF 5 DAYS NOTICE PRIOR TO SHUT DOWN. CONTRACTOR SHALL MAINTAIN HOT WATER TO SYSTEM THROUGHOUT PROJECT.

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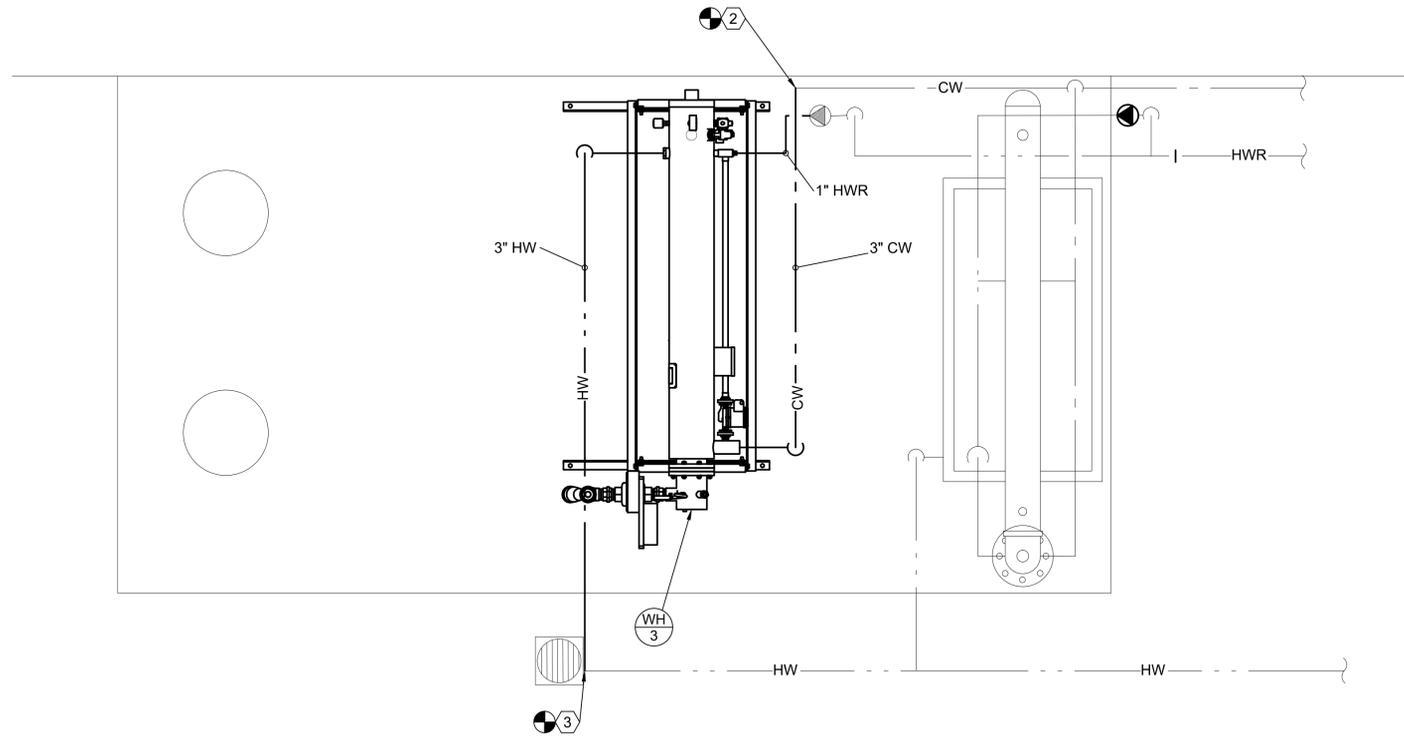
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PLANT MAINTENANCE BUILDING MECHANICAL ROOM PLAN

SHEET NO. **ME102**

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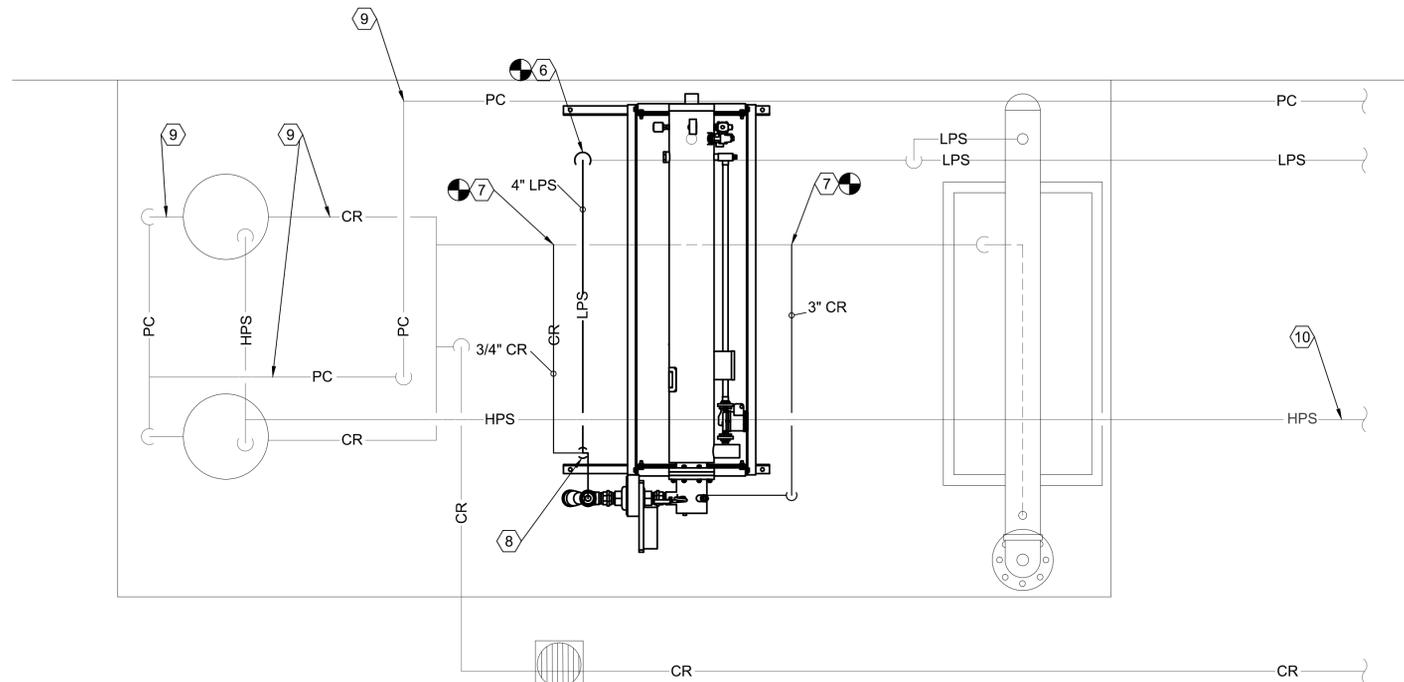


MECHANICAL ROOM COLD AND HOT WATER PLAN

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



B



MECHANICAL ROOM STEAM AND CONDENSATE PLAN

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



1 2 3 4

SHEET NOTES:

- ① CONNECT NEW HOT WATER PIPING TO EXISTING IN THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
- ② CONNECT NEW COLD WATER SUPPLY PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
- ③ CONNECT NEW HOT WATER RECIRCULATION PIPING AT THIS APPROXIMATE LOCATION. FIELD VERIFY EXACT LOCATION.
- ④ EXISTING HOT WATER PIPING SHALL REMAIN.
- ⑤ EXISTING COLD WATER PIPING SHALL REMAIN.
- ⑥ CONNECT NEW STEAM PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY FOR EXACT LOCATION.
- ⑦ CONNECT NEW CONDENSATE PIPING TO EXISTING AT THIS APPROXIMATE LOCATION. FIELD VERIFY FOR EXACT LOCATION.
- ⑧ PROVIDE AUXILIARY STEAM TRAP CIRCUIT AND DRIP LEG AT THIS APPROXIMATE LOCATION. FIELD VERIFY. SEE SHEET ME 501 FOR DETAILS.
- ⑨ EXISTING CONDENSATE PIPING.
- ⑩ EXISTING STEAM PIPING.

NOTES:

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State of Utah
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SHEET TITLE

BOULDERS BUILDING MECHANICAL ROOM PLAN

ME103



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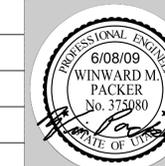
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WHW JOB NO.:
08055



SHEET TITLE
**MECHANICAL DETAILS
AND SCHEDULES**

SHEET NO.
ME501

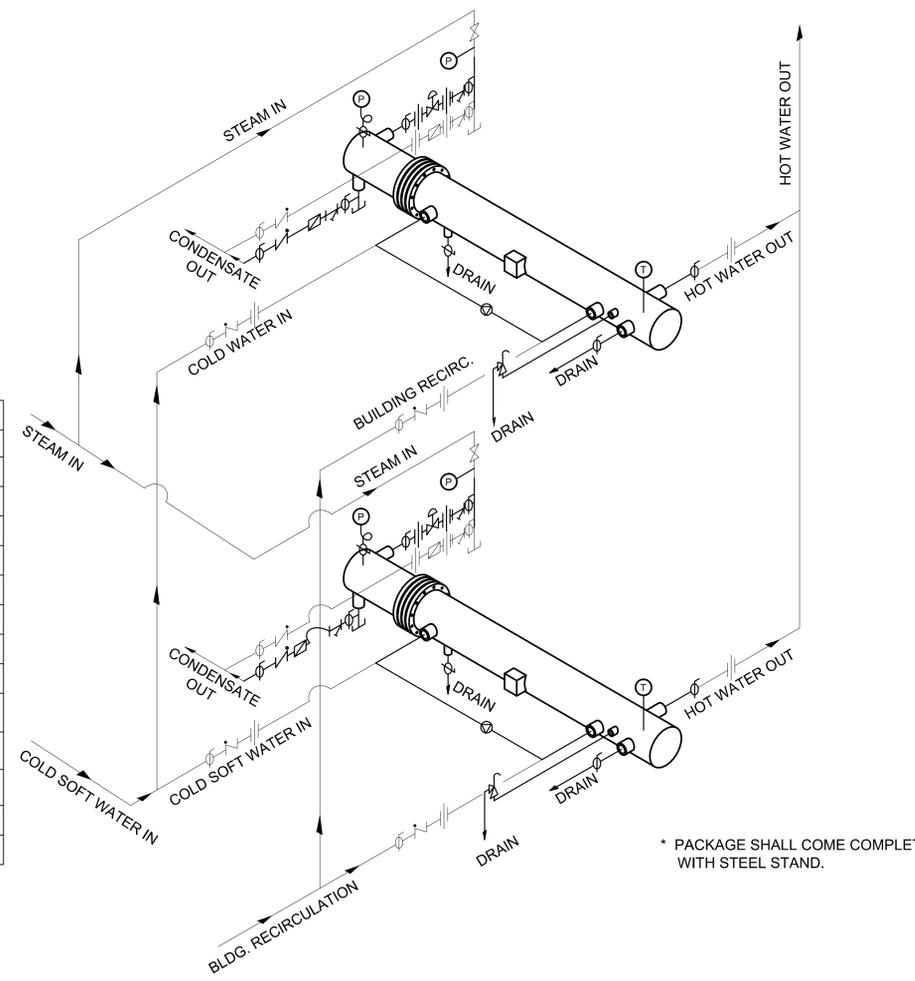
HEAT EXCHANGER SCHEDULE

SYMBOL	COLD SIDE (TUBE)			STEAM HOT SIDE (SHELL)		MANUF. & MODEL #	SCHEDULE NOTES
	GPM	T IN	T OUT	#/HR STEAM	PRESS PSIG		
⊙ WH 1	75	40	120	3025	15	ACE MINIPACK SI-H-6-DW-SE250-D	1,2,3,4
⊙ WH 2	60	40	140	3025	15	ACE MINIPACK SI-H-8-DW-SE250-D	1,2,3,4,5
⊙ WH 3	75	40	120	3025	15	ACE MINIPACK SI-H-6-DW-SE250-D	1,2,3,4

1. PROVIDE PACKAGED FACTORY PRE-PIPED UNITS WITH FACTORY SUPPLIED ELECTRONIC STEAM CONTROL VALVE, SUPPORT STAND, TRAPS, THERMOMETERS, PRESSURE GAUGES ETC. ALL ARE DUAL UNITS - TOTAL THREE (3) PACKAGES WITH SIX (6) EXCHANGERS.
2. PROVIDE WITH FACTORY SUPPLIED REMOVABLE INSULATION KIT.
3. HORIZONTALLY MOUNTED.
4. DUAL UNIT.
5. UNIT SIZED AS AN 8" SHELL FOR EXCESS CAPACITY.

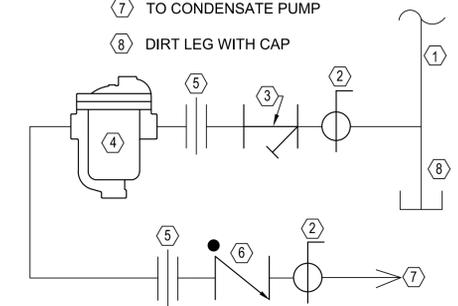
LEGEND

⊥	STRAINER
⊘	STOP
⊏	CHECK VALVE
⊗	CONTROL VALVE
⊕	RELIEF VALVE
⊖	DRAIN VALVE
+	UNION
⊕	UNION ORIFICE
⊙	TEMP. GAUGE
⊙	PRESSURE GAUGE
⊙	INTERNAL RECIRCULATOR
⊙	OVER-TEMP SOLENOID OPTION
⊙	TRAP OPTION
—	FACTORY PIPE
—	FIELD PIPE



B2 STEAM POWERED DOMESTIC WATER HEATER PIPING FLOW DIAGRAM (TYP. WH-1, 2, 3)
SCALE: NONE

- DETAIL NOTES:**
- 1 DRIP LEG-FULL SIZE
 - 2 BALL VALVE
 - 3 STRAINER
 - 4 STEAM TRAP SEE SPECIFICATIONS FOR TYPE
 - 5 UNION
 - 6 CHECK VALVE
 - 7 TO CONDENSATE PUMP
 - 8 DIRT LEG WITH CAP



A3 STEAM TRAP DETAIL
SCALE: NONE

* PACKAGE SHALL COME COMPLETE WITH STEEL STAND.