

**RADIANT PIPING SECTIONS**

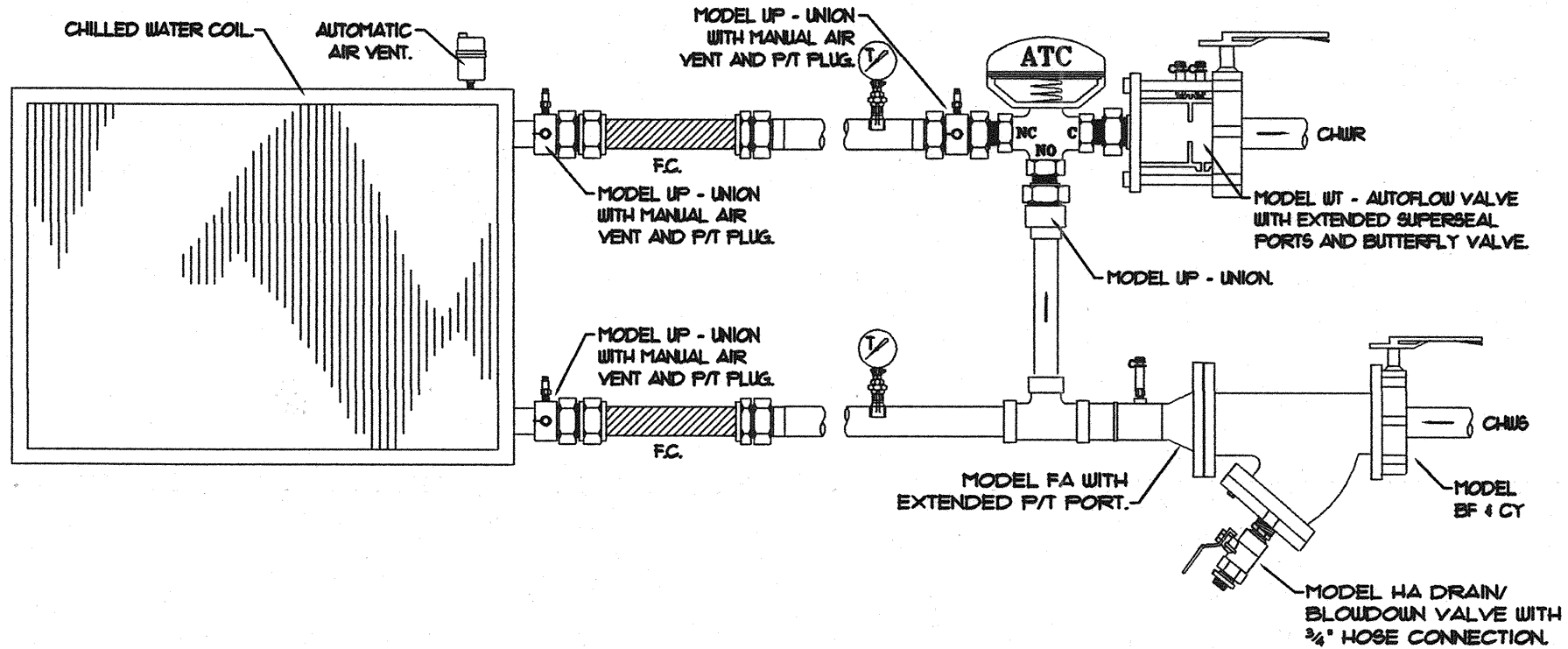
NTS  
NOTE - SEE ARCHITECTURAL & STRUCTURAL DRAWINGS FOR SLAB DETAILS.

**RADIANT FLOOR MANIFOLD COMPONENT LIST:**

- ◆ PIPING TO RADIANT FLOOR PUMPING VALVE STATION
- ◆ MANIFOLD BODY - FINISHED IN PINE MANUFACTURED SECTIONS OF 2 & 3 SECTIONS. MAXIMUM NUMBER OF CIRCUITS PER MANIFOLD SHALL NOT EXCEED 10. BUSINESS TO PIPING SIZE.
- ◆ CIRCUIT ISOLATION VALVE (INTEGRAL TO MANIFOLD).
- ◆ CIRCUIT BALANCING VALVE (INTEGRAL TO MANIFOLD).
- ◆ ACTUATED CIRCUIT ZONE VALVE (PROVIDE AS REQUIRED).
- ◆ RADIANT FLOOR TUBING.
- ◆ BARBED TUBING INSERT WITH COMPRESSION RINGS AND NUT (TYPICAL EACH CONNECTION TO MANIFOLD).
- ◆ END CAP WITH KEYED MANUAL AIR VENT AND MANIFOLD DRAIN WITH BARBED HOSE CONNECTION.

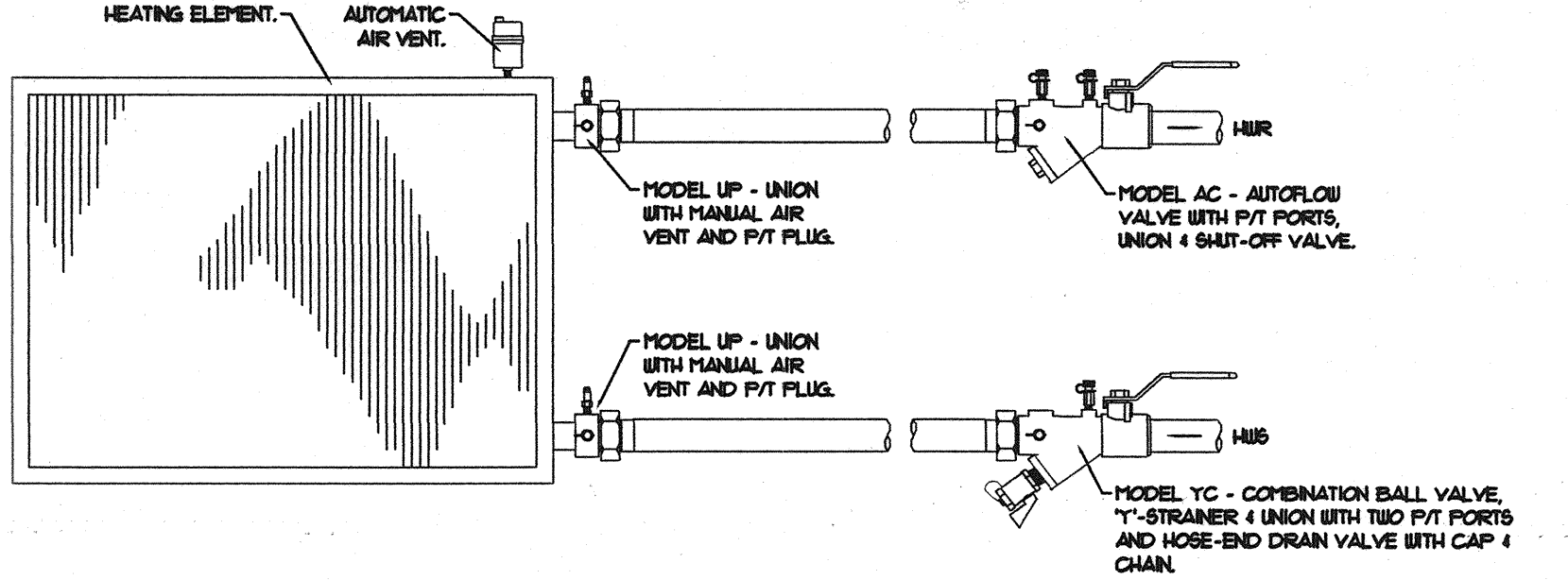
**RADIANT FLOOR MANIFOLD**

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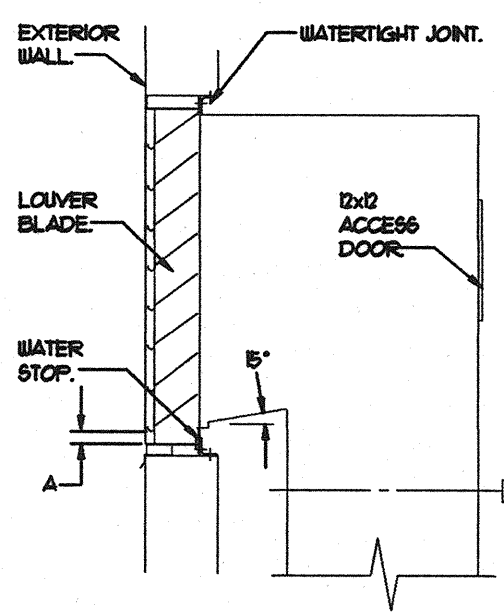
**AUTOFLOW VALVE PIPING SCHEMATIC w/ 3-WAY VALVE**

NTS  
NOTE - MODEL NUMBERS BASED ON FLOW DESIGN INC. FOR PIPE SIZES 2-1/2" AND LARGER.  
NOTE - DETAIL APPLIES TO ERY UNIT 1 AND 2 CHILLED WATER COILS ONLY.



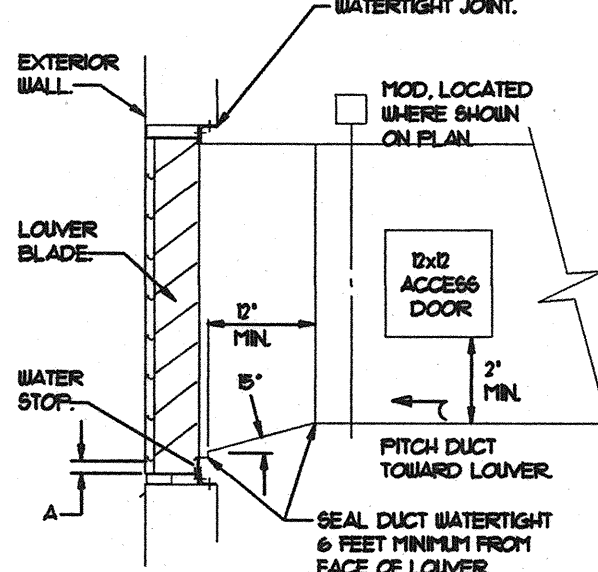
**AUTOFLOW VALVE PIPING SCHEMATIC w/ NO VALVE CONTROL**

NTS  
NOTE - MODEL NUMBERS BASED ON FLOW DESIGN INC. FOR PIPE SIZES 2" AND SMALLER.  
NOTE - DETAIL APPLIES TO UNIT HEATERS AND CABINET UNIT HEATERS.



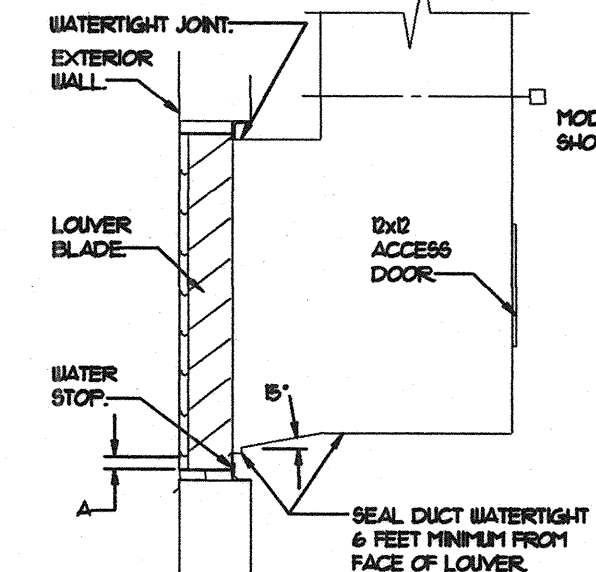
**LOUVER DETAIL WITH DUCT FROM BELOW**

NTS  
NOTE: IF DIMENSION 'A' IS LESS THAN 1 INCH SEE MODIFIED LOUVER DETAIL THIS SHEET.



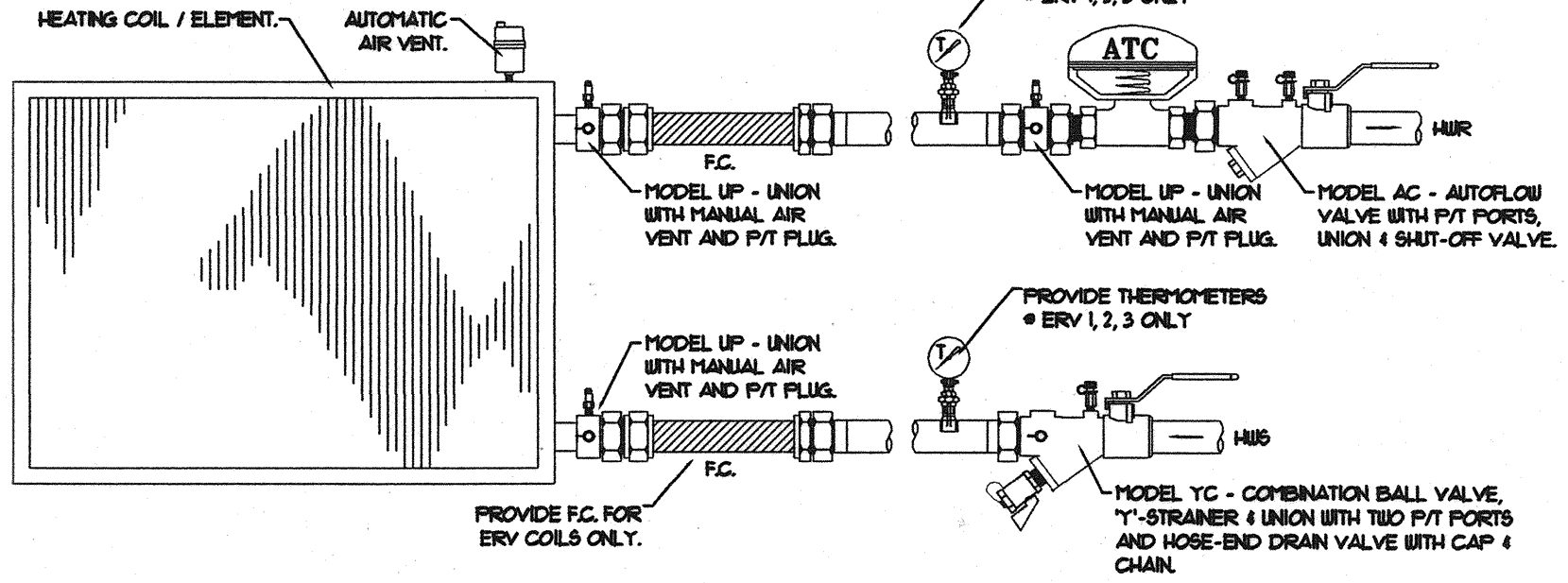
**LOUVER DETAIL WITH HORIZONTAL DUCT**

NTS  
NOTE: IF DIMENSION 'A' IS LESS THAN 1 INCH SEE MODIFIED LOUVER DETAIL THIS SHEET.



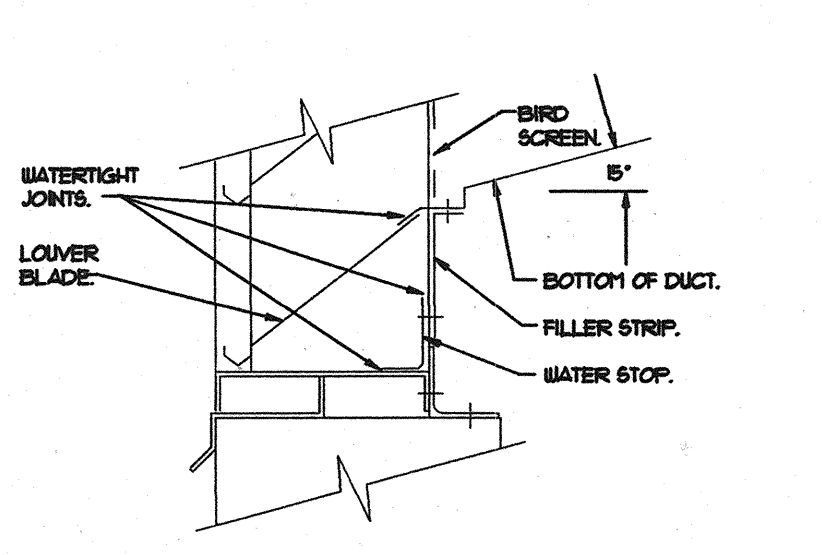
**LOUVER DETAIL WITH DUCT FROM ABOVE**

NTS  
NOTE: IF DIMENSION 'A' IS LESS THAN 1 INCH SEE MODIFIED LOUVER DETAIL THIS SHEET.



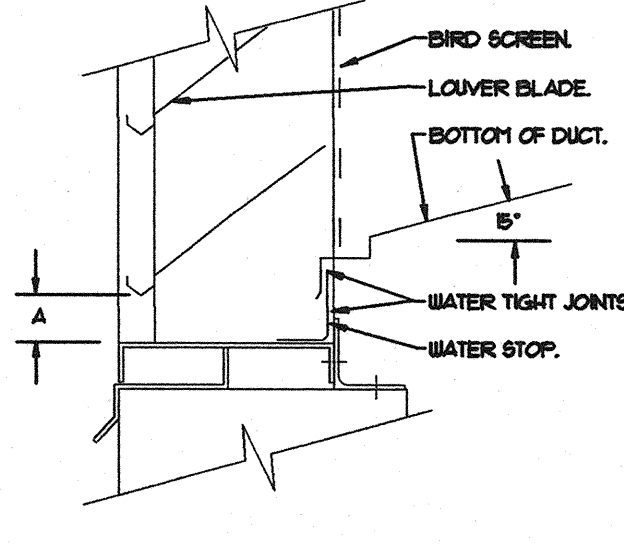
**AUTOFLOW VALVE PIPING SCHEMATIC w/ 2-WAY VALVE**

NTS  
NOTE - MODEL NUMBERS BASED ON FLOW DESIGN INC. FOR PIPE SIZES 2" AND SMALLER.  
NOTE - DETAIL APPLIES TO FURNACE, ERY 1, 2, 3 HEATING COILS & WALL HEATERS.



**MODIFIED LOUVER DETAIL**

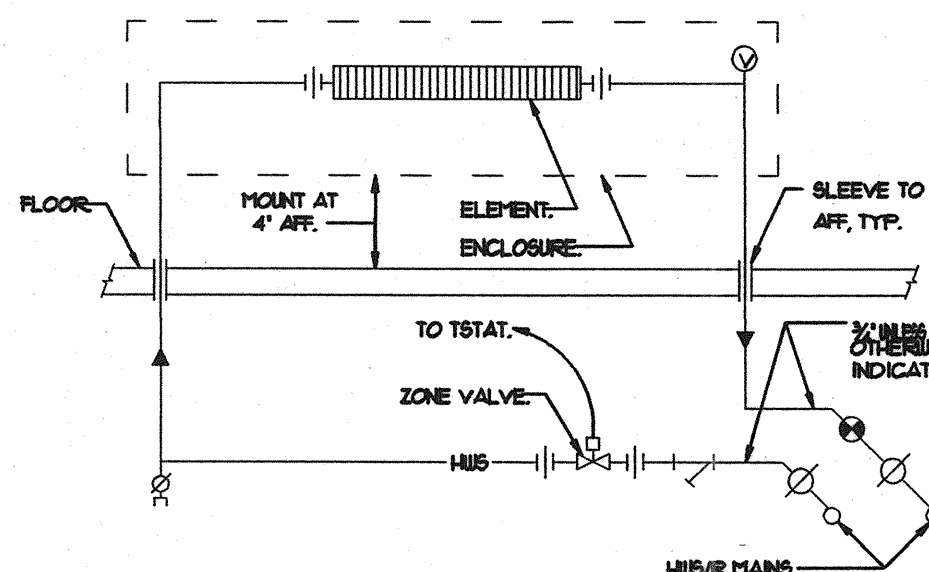
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**LOUVER CONNECTION DETAIL**

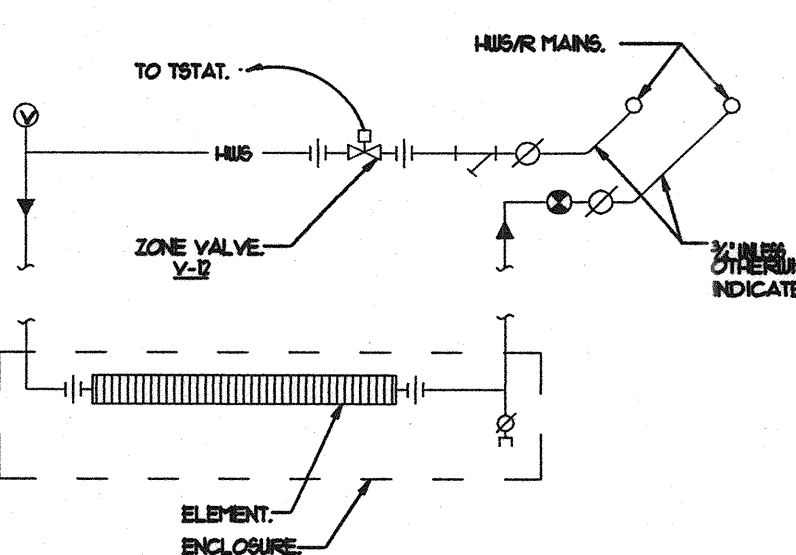
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NOTE: TYPICAL FOR LOUVERS AND BLOCK VENTS. IF DIMENSION 'A' IS LESS THAN 1 INCH SEE MODIFIED LOUVER DETAIL THIS SHEET (LOUVERS ONLY).



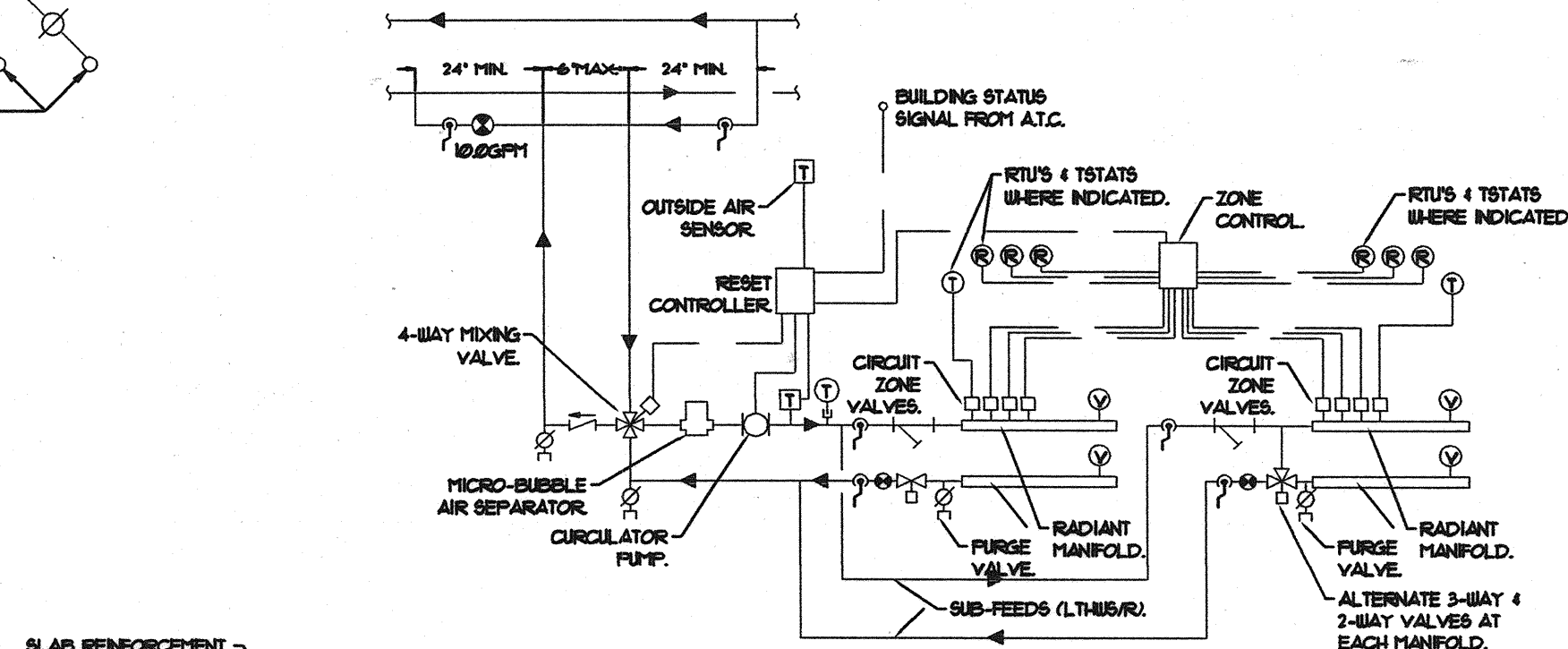
**UPFEED FIN TUBE PIPING DETAIL**

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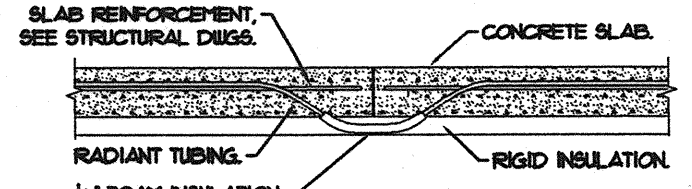
**DOWNFEED FIN TUBE PIPING DETAIL**

NTS



**RADIANT FLOOR PIPING & CONTROL SCHEMATIC**

NTS



**SLAB CONSTRUCTION JOINT DETAIL**

NTS

NOTE - THIS DETAIL APPLIES ONLY FOR SEPARATE POUR CONSTRUCTION JOINTS, DO NOT USE FOR SAW CUT JOINTS.

**MECHANICAL & PLUMBING LEGEND**

NOTE: USE SYMBOLS AND ABBREVIATIONS AS APPLICABLE FOR THIS MECHANICAL DRAWING SET. SOME SYMBOLS AND ABBREVIATIONS IN THIS LEGEND MAY NOT APPLY.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION	SYMBOL	DESCRIPTION	ABBREVIATION	DESCRIPTION
CA	COMPRESSED AIR PIPING (CA)	AV	2 BUTTERFLY VALVES w/SINGLE ACTUATOR	AAV	AUTOMATIC AIR VENT	EXH	EXHAUST	F-P	FLUOROPOLYMER PIPING
C	CONDENSATE DRAIN PIPING (C)	AV	BUTTERFLY VALVE w/ACTUATOR	AD	ACCESS DOOR	FC	FLEXIBLE CONNECTION	FENETN	PENETRATION
CTB	COOLING TOWER RETURN PIPING (CTB)	AV	TRIPLE-DUTY VALVE	AF	ABOVE FINISHED FLOOR	FCO	FLOOR CLEANOUT	FF-F	FIDDLE FAN TAG
CTB	COOLING TOWER SUPPLY PIPING (CTB)	AV	TRIPLE-DUTY VALVE	AH	AIR HANDLING UNIT TAG	FD	FIRE DAMPER	FFSA	FLOORS PER SQUARE INCH ABSOLUTE
CH	CHILLED WATER RETURN PIPING (CH)	AV	TRIPLE-DUTY VALVE	AHS	AIRFLOW MONITORING STATION	FD	FLOOR DRAIN TAG	FFG	FLOORS PER SQUARE INCH GAGE
CH	CHILLED WATER SUPPLY PIPING (CH)	AV	TRIPLE-DUTY VALVE	AHPS	AIRFLOW MONITORING STATION	FLA	FULL LOAD AMP	FFC	FOUNDS PER SQUARE INCH GAGE
FOR	FUEL OIL RETURN PIPING (FOR)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
FOR	FUEL OIL SUPPLY PIPING (FOR)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
G	GAS PIPING (G)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
HUR	HOT WATER RETURN PIPING (HUR)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
HUS	HOT WATER SUPPLY PIPING (HUS)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
RL	REFRIGERANT LIQUID PIPING (RL)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
RG	REFRIGERANT GAS PIPING (RG)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
T	ELECTRICALLY HEAT-TRACED PIPING (T)	AV	TRIPLE-DUTY VALVE	AP	ACCESS PANEL	FLD	FLOOR DRAIN TAG	FFV	FOUNDS PER SQUARE INCH VACUUM
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STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
PROJECT NUMBER 009215.00  
PIN  
009215.00



DATE	BY	REVISION
10/05/04 <td>SP DOEL <td>DESIGN-DETAILED </td></td>	SP DOEL <td>DESIGN-DETAILED </td>	DESIGN-DETAILED
10/05/04 <td>SP DOEL <td>CHECKED-REVIEWED </td></td>	SP DOEL <td>CHECKED-REVIEWED </td>	CHECKED-REVIEWED
10/05/04 <td>SP DOEL <td>DESIGN-DETAILED </td></td>	SP DOEL <td>DESIGN-DETAILED </td>	DESIGN-DETAILED
		REVISIONS 1
		REVISIONS 2
		REVISIONS 3
		REVISIONS 4
		FIELD CHANGES

CITY OF PORTLAND  
OCEAN GATEWAY PHASE 1  
PLUMBING AND HVAC  
DETAILS AND LEGEND

PH300