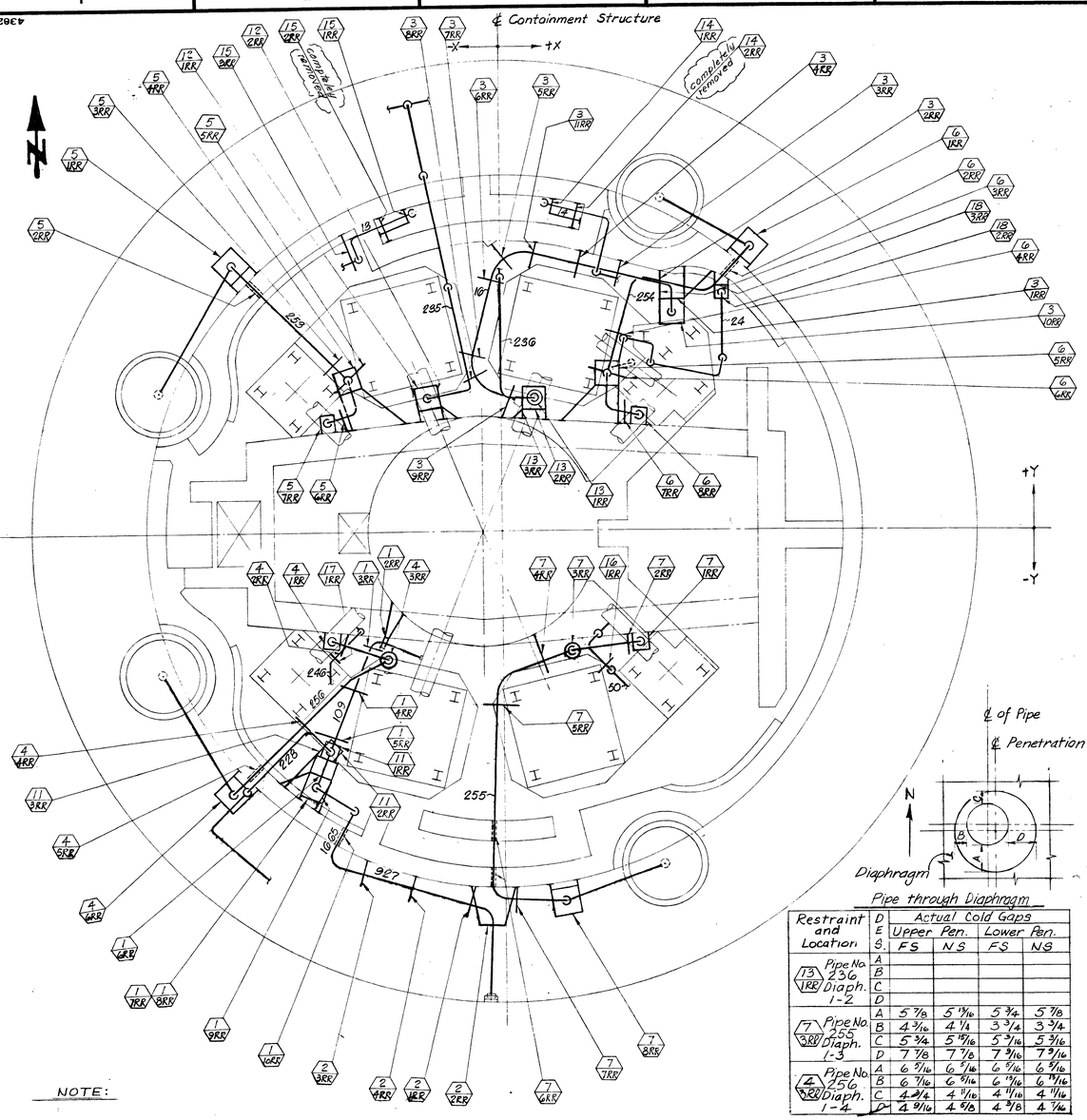


NOTE:

All systems have been evaluated only major rupture restraints below elevation 120'-0" are shown. Refer to section 3.68-1 for complete systems evaluated.

Pipe through Diaphragm

Restraint and Location	DESIGN	Actual Cold Gaps Upper Pen. FS	Upper Pen. NS	Lower Pen. FS	Lower Pen. NS
13 1RR Pipe No. 236 Diaph. 1-2	A				
	B				
	C				
	D				
7 3RR Pipe No. 255 Diaph. 1-3	A	5 7/8	5 15/16	5 3/4	5 7/8
	B	4 3/16	4 1/4	3 3/4	3 3/4
	C	5 3/4	5 15/16	5 3/16	5 3/16
	D	7 7/8	7 7/8	7 9/16	7 9/16
4 2RR Pipe No. 256 Diaph. 1-4	A	6 5/16	6 5/16	6 5/16	6 5/16
	B	6 7/16	6 5/16	6 13/16	6 11/16
	C	4 3/4	4 11/16	4 11/16	4 11/16
	D	4 9/16	4 5/8	4 3/8	4 7/16

Line Description	RESTRAINT No.	Pipe No.	Pipe Size	Dynamic Force (k)	Detail Show on Dwg. No.	Remarks
Residual Heat Removal Supply	1/1RR					Combined with 1/2RR
	1/2RR	109	14ϕ	265	447247	** Abandoned (Per DCI-EC-37724 RI)
	1/3RR	"	"	"	"	** Abandoned
	1/4RR	"	"	"	"	** Abandoned
	1/5RR	"	"	"	"	** Abandoned
	1/6RR	"	"	"	447248	** Abandoned
	1/7RR	"	"	"	"	** Abandoned
	1/8RR	"	"	"	"	
	1/9RR	"	"	"	"	** Abandoned per DCI-EC-37724 RI
Loop 4 Hot Leg after Valve 8702	1/10RR	1665	"	53.1	447249	Mechanical Pipe Sleeve-dwg. 500056
Loop 4 Hot Leg to Res. Ht. Rem. PP.	2/1RR	927	14ϕ	71.6	447249	** Abandoned (Per DCI-EC-37724 RI)
	2/2RR	"	"	"	"	** Abandoned
	2/3RR	"	"	"	"	** Abandoned
	2/4RR	"	"	"	"	** Abandoned
Pressurizer Surge Line	3/1RR	16	14ϕ	280	439574	
	3/2RR	"	"	"	"	
	3/3RR	"	"	"	439569	
	3/4RR	"	"	"	"	
	3/5RR	"	"	"	"	
	3/6RR	"	"	"	"	
	3/7RR	"	"	"	439575	
	3/8RR	"	"	"	"	
	3/9RR	"	"	"	"	
	3/10RR	"	"	"	439574	
	3/11RR	"	"	"	439569	
Accumulator Injection Loop 4	4/1RR	256	10ϕ	162	447247	
	4/2RR	"	"	"	"	
	4/3RR	"	"	54.1	"	* On Diaphragm-dwg. 439571
	4/4RR	"	"	"	"	** Abandoned per DCI-EC-37716 RI
	4/5RR	"	"	"	"	** Mechanical Pipe Sleeve-dwg. 500056
	4/6RR	"	"	"	"	** Abandoned per DCI-EC-37716 RI
Accumulator Injection Loop 1	5/1RR	253	10ϕ	54	439566	** Abandoned per DCI-EC-37711 RI
	5/2RR	"	"	"	"	Mechanical Pipe Sleeve-dwg. 500040
	5/3RR	"	"	"	"	** Abandoned per DCI-EC-37711 RI
	5/4RR	"	"	"	"	** Abandoned per DCI-EC-37711 RI
	5/5RR	"	"	"	"	** Abandoned per DCI-EC-37711 RI
	5/6RR	"	"	162	"	
	5/7RR	"	"	"	"	
Accumulator Injection Loop 2	6/1RR	254	10ϕ	54	439575	
	6/2RR	"	"	"	"	Mechanical Pipe Sleeve-dwg. 500040
	6/3RR	"	"	"	439574	
	6/4RR	"	"	"	439575	
	6/5RR	"	"	"	"	
	6/6RR	"	"	"	"	
	6/7RR	"	"	162	"	
	6/8RR	"	"	"	"	
Accumulator Injection Loop 3	7/1RR	255	10ϕ	162	447250	
	7/2RR	"	"	"	"	
	7/3RR	"	"	54.1	"	* On Diaphragm-dwg. 439571
	7/4RR	"	"	"	"	** Abandoned per DCI-EC-37714 RI
	7/5RR	"	"	"	"	** Abandoned per DCI-EC-37714 RI
	7/6RR	"	"	"	447249	Mechanical Pipe Sleeve-dwg. 500056
	7/7RR	"	"	"	"	** Abandoned per DCI-EC-37714 RI
	7/8RR	"	"	"	"	** Abandoned per DCI-EC-37714 RI
Safety Injection Loop 4	11/1RR	238	6ϕ	57.1	447248	** Abandoned per DCI-EC-37724 RI
	11/2RR	"	"	"	"	
	11/3RR	"	"	"	"	** Abandoned per DCI-EC-37724 RI
Safety Injection Loop 1	12/1RR	235	6ϕ	57.1	439566	
	12/2RR	"	"	"	"	
Safety Injection Loop 2	13/1RR	236	6ϕ	57.1	439575	* On Diaphragm-dwg. 439571
	13/2RR	"	"	"	"	
	13/3RR	"	"	"	"	
Loop 2 Pressurizer Spray Line	14/1RR	14	4ϕ	279	447251	** Abandoned per DCI-EC-39053 RI
	14/2RR	"	"	"	"	(Completely removed per DCI-EC-39053 RI)
Loop 1 Pressurizer Spray Line	15/1RR	13	4ϕ	279	"	** Abandoned per DCI-EC-39053 RI
	15/2RR	"	"	"	"	(Completely removed per DCI-EC-39053 RI)
	15/3RR	"	"	"	"	** Abandoned per DCI-EC-37619 RI
Charging Line Loop 3	16/1RR	50	3ϕ	14.62	439569	** Abandoned per DCI-EC-37697 RI
Charging Line Loop 4	17/1RR	240	3ϕ	14.62	447250 & 447252	
Let Down Line Loop 2	18/2RR	24	3ϕ	14.62	439569	
	18/3RR	"	"	"	"	

GENERAL NOTES:

Unless noted otherwise:

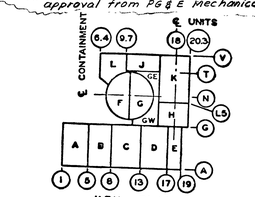
1. All steel shall be ASTM A-36.
2. All connections to be full penetration butt welds
3. All bolts and anchor rods shall be ASTM A-490 with heavy hex. nuts. No welding is permitted on bolts, rods or nuts.
4. Welded studs shall be 7/8"ϕ x 8½".
5. Use template for location of anchor rods for two or four legs restraint. Template location tolerance T_4 = 1/4"
6. Embedded steel - Spec. 8831.
   Non-embedded steel - Spec. 8833XR.
7. Provide shims @ legs, if needed, to obtain flush base ℄ to bearing ℄ connections.
8. All stiffeners shall have the same thickness as of the respective member flanges, and be full penet. butt welded to the web & flange they are attached to.
9. For shim pack and corner details, splices, and member sizes, see drawing 438289.
10. For embedded details and installation procedures of inserts or anchor rods with respect to the working point see dwg. 447253.
11. All closed sections shall have ½"ϕ vents at the lowest point.
12. For working points at El. 94'-0" see Dwg. 438272.
13. Frames shall be shop assembled as req'd to verify fit of bolted connections.
14. Do not scale from restraint drawings.
15. Provide ½"ϕ drain holes where required.
16. * - indicates actual cold gaps - see table

REFERENCE DRAWINGS

1. Concrete Pedestals For Equipment Supports	438272
2. Pipe Rupture Restraints Details — Sh. No. 1	438289
3. " " Sh. No. 2	439566
4. " " Sh. No. 3	439569
5. " " Sh. No. 4	439574
6. " " Sh. No. 5	439575
7. " " Sh. No. 6	447247
8. " " Sh. No. 7	447248
9. " " Sh. No. 8	447249
10. " " Sh. No. 9	447250
11. " " Sh. No. 10	447251
12. " " Sh. No. 11	447252
13. Pipe Rupture Restraints Embedments	447253
14. Suppliers Drawings	663235
" "	683858
" "	663379
" "	663243

GENERAL NOTES: CONT'D.

17. **Do not removed restraint frames without prior approval from PG&E mechanical Engineering.



KEY PLAN

RM INDEXED REV. 3

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