

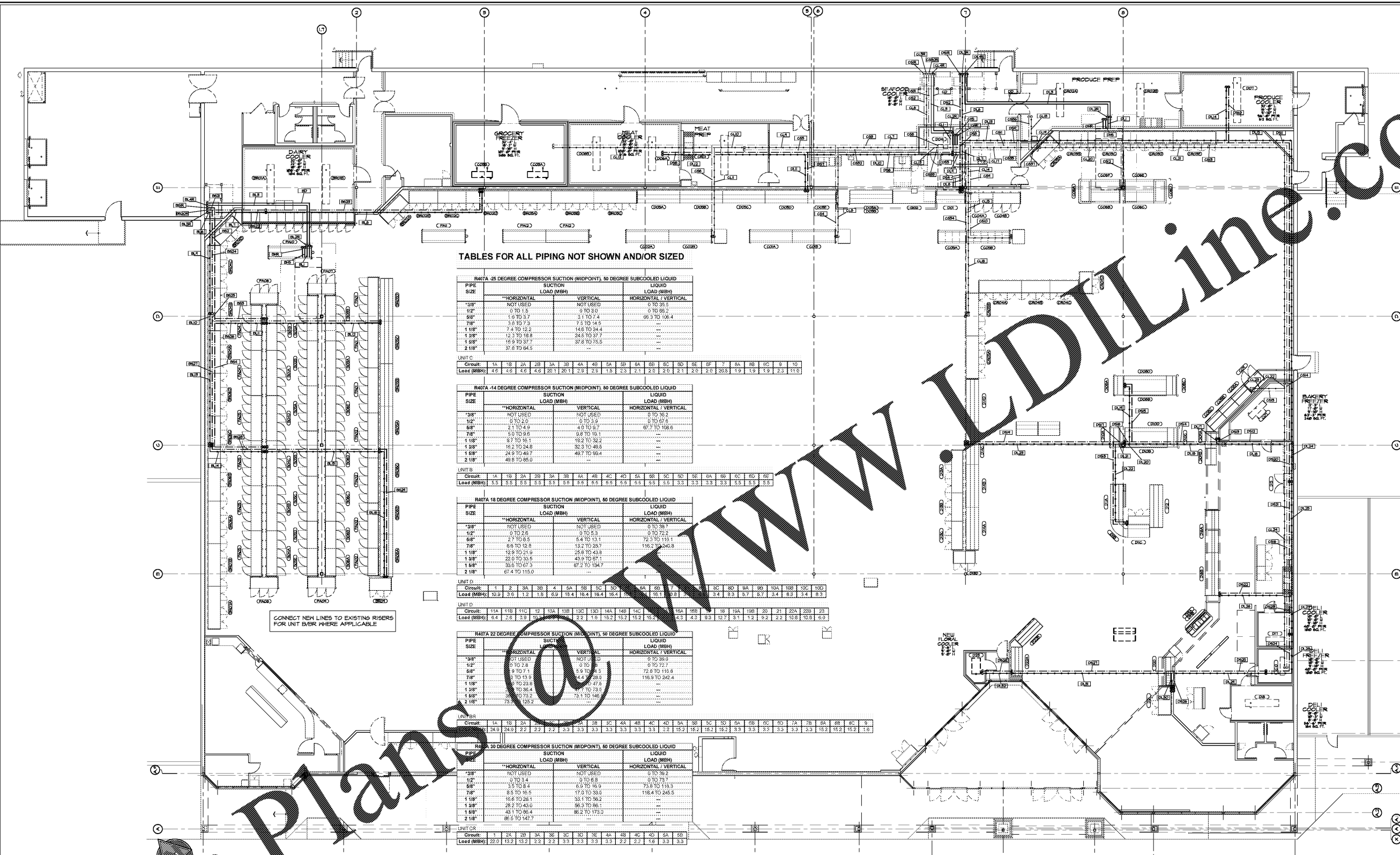


NO. REVISIONS


Legend symbols for piping and equipment.

A With-in-the-Walls Remodel for:  
**KROGER STORE #GA-414**  
4355 WASHINGTON ROAD, EVANS, GEORGIA 30809

**REFRIGERATION EQUIPMENT LAYOUT**



TABLES FOR ALL PIPING NOT SHOWN AND/OR SIZED

TABLE 1: RA7A 25 DEGREE COMPRESSOR SUCTION (MIDPOINT), 50 DEGREE SUBCOOLED LIQUID

PIPE SIZE	SUCTION LOAD (MBH)		LIQUID LOAD (MBH)	
	HORIZONTAL	VERTICAL	HORIZONTAL / VERTICAL	HORIZONTAL / VERTICAL
3/8"	NOT USED	NOT USED	0 TO 35.5	0 TO 95.2
1/2"	0 TO 1.5	0 TO 3.0	3.1 TO 7.4	6.3 TO 106.4
5/8"	1.9 TO 3.7	3.8 TO 7.6	7.3 TO 14.5	14.6 TO 24.4
7/8"	3.9 TO 7.3	7.7 TO 15.4	14.6 TO 24.4	24.5 TO 37.7
1 1/8"	7.4 TO 14.5	14.6 TO 24.4	24.5 TO 37.7	37.8 TO 75.5
1 3/8"	12.3 TO 18.8	24.5 TO 37.7	37.8 TO 75.5	75.6 TO 151.0
1 5/8"	16.9 TO 24.4	24.5 TO 37.7	37.8 TO 75.5	75.6 TO 151.0
2 1/8"	31.8 TO 49.2	49.3 TO 73.7	73.8 TO 110.7	110.8 TO 166.2

UNIT C

Circuit:	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	9	10	
Load (MBH):	4.0	4.0	4.0	4.0	20.1	20.1	2.9	2.9	1.3	2.3	2.1	2.0	2.0	2.0	20.5	1.9	1.9	2.3	11.0

TABLE 2: RA7A 14 DEGREE COMPRESSOR SUCTION (MIDPOINT), 50 DEGREE SUBCOOLED LIQUID

PIPE SIZE	SUCTION LOAD (MBH)		LIQUID LOAD (MBH)	
	HORIZONTAL	VERTICAL	HORIZONTAL / VERTICAL	HORIZONTAL / VERTICAL
3/8"	NOT USED	NOT USED	0 TO 35.2	0 TO 95.6
1/2"	0 TO 1.5	0 TO 3.0	3.1 TO 7.4	6.3 TO 106.4
5/8"	1.1 TO 4.9	4.0 TO 8.7	6.7 TO 106.8	106.9 TO 166.3
7/8"	3.0 TO 9.6	9.8 TO 19.1	19.2 TO 28.5	28.6 TO 47.8
1 1/8"	8.7 TO 16.1	16.2 TO 25.2	25.3 TO 34.6	34.7 TO 53.9
1 3/8"	16.3 TO 24.6	24.7 TO 33.7	33.8 TO 43.1	43.2 TO 62.4
1 5/8"	24.9 TO 43.7	43.8 TO 62.4	62.5 TO 81.1	81.2 TO 100.4
2 1/8"	49.8 TO 86.0	86.1 TO 127.2	127.3 TO 168.4	168.5 TO 209.6

UNIT B

Circuit:	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	9	10
Load (MBH):	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5

TABLE 3: RA7A 18 DEGREE COMPRESSOR SUCTION (MIDPOINT), 50 DEGREE SUBCOOLED LIQUID

PIPE SIZE	SUCTION LOAD (MBH)		LIQUID LOAD (MBH)	
	HORIZONTAL	VERTICAL	HORIZONTAL / VERTICAL	HORIZONTAL / VERTICAL
3/8"	NOT USED	NOT USED	0 TO 38.7	0 TO 103.2
1/2"	0 TO 2.6	0 TO 5.3	0 TO 73.2	73.3 TO 116.8
5/8"	2.7 TO 6.5	6.6 TO 13.1	13.2 TO 20.7	20.8 TO 34.8
7/8"	6.6 TO 12.8	12.9 TO 20.7	20.8 TO 28.7	28.8 TO 47.8
1 1/8"	12.9 TO 21.9	22.0 TO 33.5	33.6 TO 47.8	47.9 TO 62.1
1 3/8"	22.0 TO 33.5	33.6 TO 47.8	47.9 TO 62.1	62.2 TO 76.4
1 5/8"	33.6 TO 47.8	47.9 TO 62.1	62.2 TO 76.4	76.5 TO 90.7
2 1/8"	67.4 TO 115.0	115.1 TO 163.2	163.3 TO 211.4	211.5 TO 259.6

UNIT D

Circuit:	1	2	3A	3B	4	5A	5B	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Load (MBH):	10.9	3.6	1.2	1.8	6.9	19.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4

UNIT E

Circuit:	11A	11B	11C	12	13A	13B	13C	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Load (MBH):	9.4	2.9	3.9	1.9	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	

TABLE 4: RA7A 22 DEGREE COMPRESSOR SUCTION (MIDPOINT), 50 DEGREE SUBCOOLED LIQUID

PIPE SIZE	SUCTION LOAD (MBH)		LIQUID LOAD (MBH)	
	HORIZONTAL	VERTICAL	HORIZONTAL / VERTICAL	HORIZONTAL / VERTICAL
3/8"	NOT USED	NOT USED	0 TO 39.0	0 TO 103.5
1/2"	0 TO 2.8	0 TO 5.6	0 TO 73.7	73.8 TO 117.3
5/8"	2.9 TO 7.1	7.2 TO 14.3	14.4 TO 21.5	21.6 TO 34.9
7/8"	7.2 TO 13.9	14.0 TO 21.1	21.2 TO 28.3	28.4 TO 47.7
1 1/8"	13.9 TO 23.8	23.9 TO 35.0	35.1 TO 47.7	47.8 TO 62.2
1 3/8"	23.9 TO 35.0	35.1 TO 47.7	47.8 TO 62.2	62.3 TO 76.6
1 5/8"	35.1 TO 47.7	47.8 TO 62.2	62.3 TO 76.6	76.7 TO 91.0
2 1/8"	70.2 TO 121.2	121.3 TO 172.4	172.5 TO 223.5	223.6 TO 274.6

UNIT F

Circuit:	1A	1B	2A	2B	3A	3B	4	5A	5B	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Load (MBH):	24.9	24.9	2.7	2.7	2.7	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	

TABLE 5: RA7A 30 DEGREE COMPRESSOR SUCTION (MIDPOINT), 50 DEGREE SUBCOOLED LIQUID

PIPE SIZE	SUCTION LOAD (MBH)		LIQUID LOAD (MBH)	
	HORIZONTAL	VERTICAL	HORIZONTAL / VERTICAL	HORIZONTAL / VERTICAL
3/8"	NOT USED	NOT USED	0 TO 39.2	0 TO 103.7
1/2"	0 TO 2.9	0 TO 5.8	0 TO 74.0	74.1 TO 117.6
5/8"	3.0 TO 7.3	7.4 TO 14.7	14.8 TO 22.1	22.2 TO 35.6
7/8"	7.4 TO 14.7	14.8 TO 22.1	22.2 TO 29.5	29.6 TO 48.0
1 1/8"	14.7 TO 24.8	24.9 TO 37.3	37.4 TO 48.0	48.1 TO 62.4
1 3/8"	24.8 TO 37.3	37.4 TO 48.0	48.1 TO 62.4	62.5 TO 76.9
1 5/8"	37.4 TO 48.0	48.1 TO 62.4	62.5 TO 76.9	77.0 TO 91.4
2 1/8"	74.8 TO 121.6	121.7 TO 173.4	173.5 TO 225.1	225.2 TO 276.8

UNIT G

Circuit:	1	2A	2B	3A	3B	3C	3D	4	5A	5B	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Load (MBH):	22.0	13.2	13.2	2.2	2.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	

UNIT H

Circuit:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Load (MBH):	10.9	3.6	1.2	1.8	6.9	19.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4	

SYSTEM A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

System	Loop	Segment	Index	Pipe Size	Notes
SYSTEM A	1A1	1A1	1A1	1/2"	...
SYSTEM B	1B1	1B1	1B1	1/2"	...
SYSTEM C	1C1	1C1	1C1	1/2"	...
SYSTEM D	1D1	1D1	1D1	1/2"	...

**LEGEND**

- REFRIGERATION PIPING TO SLOSH AT RISER
- REFRIGERATION PIPING TEE
- REFRIGERATION PIPE JOINT
- ISOLATION VALVE
- LIQUID PIPING
- LIQUID PIPING - SUBCOOLED
- SUCTION PIPING - FIRST SUCTION GROUP
- SUCTION PIPING - SECOND SUCTION GROUP
- SUCTION PIPING - THIRD SUCTION GROUP
- PIPE SEGMENT DESIGNATION (SEE THIS SHEET FOR PIPE SIZING SCHEDULES)
- RISE FOR RISER (OR BLANK FOR HORIZONTAL PIPING)
- SEGMENT NUMBER
- PIPING TYPE (D FOR DISCHARGE W FOR HEAT RECLAIM L FOR LIQUID, S W FOR SUCTION)
- DISTRIBUTED UNIT DESIGNATION
- HEAT RECLAIM PIPING TO BE INSTALLED RELIANT THE ROOF
- ROOFTOP UNIT LAYOUT NOT AVAILABLE AT THE TIME OF DESIGN IN/AC HEAT RECLAIM PIPING BETWEEN CONDENSERS AND HEAT RECLAIM COILS NOT SHOWN
- PIPE SIZE PER SCHEDULES THIS SHEET. REFRIGERATION INSTALLER IS RESPONSIBLE FOR INSTALLATION AND COORDINATION OF ROUTING WITH MECHANICAL DRAWINGS.
- CIRCUIT DESIGNATION (SEE SHEETS RL 4 160) FOR REFRIGERATION LAYOUT (SCHEDULE)
- CIRCUIT LETTER FOR CIRCUITS WITH MORE THAN ONE LOAD
- CIRCUIT NUMBER
- DISTRIBUTED UNIT DESIGNATION

**INSTALLATION NOTES:**

REFRIGERATION INSTALLER IS RESPONSIBLE FOR INSTALLATION OF SIZED LINES NOT SHOWN FROM SPLIT CONDENSERS AND RECLAIM COILS TO SUCTION HEADERS. SIZE PER EQUIPMENT MANUFACTURERS RECOMMENDATIONS.

HEAT RECLAIM PIPING TO BE INSTALLED RELIANT THE ROOF.

ROOFTOP UNIT LAYOUT NOT AVAILABLE AT THE TIME OF DESIGN IN/AC HEAT RECLAIM PIPING BETWEEN CONDENSERS AND HEAT RECLAIM COILS NOT SHOWN.

PIPE SIZE PER SCHEDULES THIS SHEET. REFRIGERATION INSTALLER IS RESPONSIBLE FOR INSTALLATION AND COORDINATION OF ROUTING WITH MECHANICAL DRAWINGS.

3/8" TO BE USED WHEN POSSIBLE ONLY FOR LIQUID LINES ROUTED WITHIN REFRIGERATED CASES. ALL SUCTION PIPING TO BE 1/2" MINIMUM.

HORIZONTAL PIPING CONNECTING THE FIRST CASE IN A CIRCUIT TO A MAIN RISER TO BE THE SAME SIZE AS THE MAIN RISER. ALL OTHER CASE TOP PIPING TO BE SIZED PER TABLES.

DUAL-TEMPERATURE ISLAND PIPING TO BE SIZED WITH 18 DEGREE COMPRESSOR SUCTION TABLE.