RACK LTA DISCHARGE AIR TEMPERATURE AND DEFROST PARAMETERS

				DISCHARGE AIR TEMP SETTINGS FOR CASES/ RETURN AIR TEMP SETTING FOR WALK IN BOXES			DEFROST					DEFROST SCHEDULE			
CIRCUIT #	APPLICATION	MODEL NUMBER	MFR	LOWER LIMIT (°F)	TARGET (°F)	UPPER LIMIT (°F)	FREQUENCY PER DAY	PUMP OUT TIME (MIN)	MAX DURATION (MIN)	TERMINATION TEMP (°F)	DRIP TIME (MIN)	Defrost 1	Defrost 2	Defrost 3	Defrost 4
A1.1	Bakery Freezer W.I.	LLE170C	BOHN	ETR	ETR	ETR	4	0	45	55	5	0:00	6:00	12:00	18:00
A1.2	Deli Freezer W.I.	SME130B	BOHN	ETR	ETR	ETR	4	0	45	55	5	0:50	6:50	12:50	18:50
A2	Reach-in Frozen Seafood	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	2:45			
A3	I.C. Freezer W.I.	BML250C	BOHN	ETR	ETR	ETR	4	0	60	--	5	1:47	7:47	13:47	19:47
A4	Dual Temp Coffin Island	LWU13/LW	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	3:46			
A5	Dual Temp Coffin End	LWU13	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	4:49			
A6.1	Reach-in I.C.	ONRZH (RD3000.142)	HILL-PHOENIX	-12	-10	-8	1	0	46	60	15	5:52			
A6.2	Reach-in I.C.	ONRZH (RD3000.142)	HILL-PHOENIX	-12	-10	-8	1	0	46	60	15	6:53			
A7	Dual Temp Coffin Island	LWU13	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	10:45			
A8	Dual Temp Coffin End	LWU13	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	9:30			

Information included in this schedule is taken from manufacturer's submittals.
Parameters above are to be used in programming new/replaced cases/coils only.
Contractor to verify information against latest submittals available at time cases/coils are delivered.
Sub-MNCD for existing controller is 1 (max draw 32.2 Amps).
Sub-MNCD for new controller is 1 (max draw 34.6 Amps).

RACK LTB DISCHARGE AIR TEMPERATURE AND DEFROST PARAMETERS

				DISCHARGE AIR TEMP SETTINGS FOR CASES/ RETURN AIR TEMP SETTING FOR WALK IN BOXES			DEFROST					DEFROST SCHEDULE			
CIRCUIT #	APPLICATION	MODEL NUMBER	MFR	LOWER LIMIT (°F)	TARGET (°F)	UPPER LIMIT (°F)	FREQUENCY PER DAY	PUMP OUT TIME (MIN)	MAX DURATION (MIN)	TERMINATION TEMP (°F)	DRIP TIME (MIN)	Defrost 1	Defrost 2	Defrost 3	Defrost 4
B1.1	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	0:00			
B1.2	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	1:01			
B1.3	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	9:09			
B1.4	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	3:03			
B2.1	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	4:04			
B2.2	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	5:05			
B2.3	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	6:06			
B2.4	Reach-in F.F.	ONRZH (RD3000.242)	HILL-PHOENIX	-5	-3	-1	1	0	46	60	15	7:07			
B4	Grocery Freezer W.I.	(2) BME190C	BOHN	ETR	ETR	ETR	4	0	45	55	5	8:08	14:08	20:08	2:08

Information included in this schedule is taken from manufacturer's submittals.
Parameters above are to be used in programming new/replaced cases/coils only.
Contractor to verify information against latest submittals available at time cases/coils are delivered.
Sub-MNCD for existing controller is 1 (Max draw is 32.0 Amps.)
Sub-MNCD for new controller is 1 (Max draw is 30.3 Amps.)

RACK MTC DISCHARGE AIR TEMPERATURE AND DEFROST PARAMETERS

				DISCHARGE AIR TEMP SETTINGS FOR CASES/ RETURN AIR TEMP SETTING FOR WALK IN BOXES			DEFROST					DEFROST SCHEDULE											
CIRCUIT #	APPLICATION	MODEL NUMBER	MFR	LOWER LIMIT (°F)	TARGET (°F)	UPPER LIMIT (°F)	FREQUENCY PER DAY	PUMP OUT TIME (MIN)	MAX DURATION (MIN)	TERMINATION TEMP (°F)	DRIP TIME (MIN)	Defrost 1	Defrost 2	Defrost 3	Defrost 4	Defrost 5	Defrost 6	Defrost 7	Defrost 8	Defrost 9	Defrost 10	Defrost 11	Defrost 12
C1	Deli Promo Island	ON3UM	HILL PHOENIX	ETR	ETR	ETR	4	0	40	47	0	0:40	6:40	12:40	18:40								
C2	M.D. Deli	DX6XN (RD4018.052)	KYSOR/WARREN	31	33	35	12	0	25	47	0	1:37	3:37	5:37	7:37	9:37	11:37	13:37	15:37	17:37	[illegible]	[illegible]	22:02
C3	Service Deli	SMBT (RD2006.642)	HUSSMANN	22	24	26	2	0	90	43	0	9:53	21:53										
C4	M.D. Cake	B3A3	KYSOR/WARREN	ETR	ETR	ETR	4	0	40	55	0	2:20	8:20	14:20	20:20								
C5	M.D. Meat	MX5XG (RD4038.352)	KYSOR/WARREN	25	27	29	8	0	30	47	2	3:00	6:00	9:00	12:00	15:00	18:00	21:00	0:00				
C6	M.D. Meat	MX5XG (RD4038.352)	KYSOR/WARREN	25	27	29	8	0	30	47	2	3:45	6:45	9:45	12:45	15:45	18:45	21:45	0:45				
C7	M.D. Meat	MX5XG (RD4038.352)	KYSOR/WARREN	25	27	29	8	0	30	47	2	4:30	7:30	10:30	13:30	16:30	19:30	[illegible]	[illegible]				
C8.1	M.D. Deli	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	5:15	13:15	21:15									
C8.2	M.D. Deli	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	6:15	14:15	22:15									
C8.3	M.D. Deli	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	7:15	15:15	23:15									
C9	Meat/Deli Cooler W.I.	(2) WKE270B	BOHN	ETR	ETR	ETR	3	0	40	55	5	0:07	8:07	16:07									
C10	M.T. Coffin w/ Ends	LWU138	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	19:22											
C11	M.T. Coffin w/ Ends	LWU138	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	13:11											
C12	M.T. Coffin w/ Ends	LWU90	HUSSMANN	ETR	ETR	ETR	1	0	60	55	3	14:14											
C13	M.D. Seafood	MX5XG (RD4038.352)	KYSOR/WARREN	25	27	29	8	0	30	47	[illegible]	8:15	[illegible]	[illegible]	[illegible]	[illegible]	23:15	[illegible]	5:15				
C14	M.T. Coffin w/ Ends	FW / FWE	HUSSMANN	ETR	ETR	ETR	2	0	60	48	3	[illegible]	[illegible]										
C15	M.D. Deli	ON5DMX-NRG (RD4043.042)	HILL PHOENIX	29	31	33	6	0	40	[illegible]	0	[illegible]	4:00	[illegible]	[illegible]	16:00	20:00						

Information included in this schedule is taken from manufacturer's submittals.
Parameters above are to be used in programming new/replaced cases/coils only.
Contractor to verify information against latest submittals available at time cases/coils are delivered.
Sub-MNCD for existing controller is 2 (max draw 86.4 mps).
Sub-MNCD for new controller is 0.

RACK MTD DISCHARGE AIR TEMPERATURE AND DEFROST PARAMETERS

				DISCHARGE AIR TEMP SETTINGS FOR CASES/ RETURN AIR TEMP SETTING FOR WALK IN BOXES			DEFROST					DEFROST SCHEDULE											
CIRCUIT #	APPLICATION	MODEL NUMBER	MFR	LOWER LIMIT (°F)	TARGET (°F)	UPPER LIMIT (°F)	FREQUENCY PER DAY	PUMP OUT TIME (MIN)	MAX DURATION (MIN)	TERMINATION TEMP (°F)	DRIP TIME (MIN)	Defrost 1	Defrost 2	Defrost 3	Defrost 4	Defrost 5	Defrost 6	Defrost 7	Defrost 8	Defrost 9	Defrost 10	Defrost 11	Defrost 12
D1.1	M.D. Produce	[illegible]	KYSOR/WARREN	30	32	34	12	0	25	47	0	0:25	2:25	4:25	6:25	8:25	10:25	12:25	14:25	16:25	18:25	20:25	20:50
D1.2	M.D. Produce	[illegible]	KYSOR/WARREN	30	32	34	12	0	25	47	0	1:00	3:00	5:00	7:00	9:00	11:00	13:00	15:00	17:00	19:00	21:00	21:25
D2.1	Bakery Cooler W.I.	WK130A	BOHN	ETR	ETR	ETR	3	0	40	55	0	1:55	9:55	17:55									
D2.2	Deli Cooler W.I.	SM108A	BOHN	ETR	ETR	ETR	3	0	40	55	0	2:35	10:35	18:35									
D3	Produce Cooler W.I.	WK210A	BOHN	ETR	ETR	ETR	3	0	40	50	0	3:15	11:15	19:15									
D5	Meat Prep	WK130A	BOHN	ETR	ETR	ETR	0	0	0	--	0	0:00											
D6.1	M.D. Dairy	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	3:55	11:55	19:55									
D6.2	M.D. Dairy	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	4:30	12:30	20:30									
D7.1	M.D. Dairy	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	5:05	13:05	21:05									
D7.2	M.D. Dairy	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	5:40	13:40	21:40									
D8	Dairy Cooler W.I.	(3) ADT260A	BOHN	ETR	ETR	ETR	3	0	45	50	0	6:20	14:20	22:20									
D9.1	M.D. Beer	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	7:00	15:00	23:00									
D9.2	M.D. Beer	DX6LD (RD3007.042)	KYSOR/WARREN	34	36	38	3	0	35	47	0	7:35	15:35	23:35									
D11	M.D. Beer Retrofitted w/ Doors	O5DM-NRG (RD4000.408)	HILL PHOENIX	35	37	39	6	0	40	42	0	1:15	5:15	9:15	13:15	17:15	21:15						

Information included in this schedule is taken from manufacturer's submittals.
Parameters above are to be used in programming new/replaced cases/coils only.
Contractor to verify information against latest submittals available at time cases/coils are delivered.
Sub-MNCD for existing controller is 0.
Sub-MNCD for new controller is 0.

GENERAL NOTES

REFER TO SHEET REM1 FOR GENERAL NOTES PERTAINING TO THIS SHEET.

CIM-A1 SCHEDULE (E)		
1	LTA-1.1	(SENSOR)(E)
2	LTA-1.2	(SENSOR)(E)
3	SPARE	
4	LTA-3	(SENSOR)(E)
5	LTA-5a	(SENSOR)(E)
6	LTA-5b	(SENSOR)(E)
7	SPARE	(E)
8	SPARE	(E)
AUX	LTA-5	(SWITCH)(E)

CIM-A3 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	SPARE	
7	SPARE	
8	SPARE	(E)
AUX	SPARE	(E)

CIM-B1 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	SPARE	
7	SPARE	(E)
8	SPARE	(E)
AUX	SPARE	(E)

CIM-B2 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	SPARE	
7	SPARE	(E)
8	SPARE	(E)
AUX	SPARE	(E)

CIM-B3 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	SPARE	
7	SPARE	(E)
8	SPARE	(E)
AUX	SPARE	(E)

CIM-B4 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	SPARE	
7	LTB-4a	(SENSOR)(E)
8	LTB-4b	(SENSOR)(E)
AUX	SPARE	(E)

CIM-C1 SCHEDULE (E)		
1	SPARE	(E)
2	SPARE	
3	SPARE	
4	MTC-1a	(SENSOR)(E)
5	MTC-1b	(SENSOR)(E)
6	MTC-1c	(SENSOR)(E)
7	MTC-1d	(SENSOR)(E)
8	SPARE	(E)
AUX	SPARE	(E)

CIM-C2 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	MTC-4a	(SENSOR)(E)
6	MTC-4b	(SENSOR)(E)
7	SPARE	
8	SPARE	
AUX	SPARE	(E)

CIM-C3 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	(E)
5	SPARE	
6	SPARE	
7	SPARE	
8	SPARE	(E)
AUX	SPARE	(E)

CIM-C4 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	MTC-9a	(SENSOR)(E)
7	MTC-9b	(SENSOR)(E)
8	SPARE	(E)
AUX	SPARE	(E)

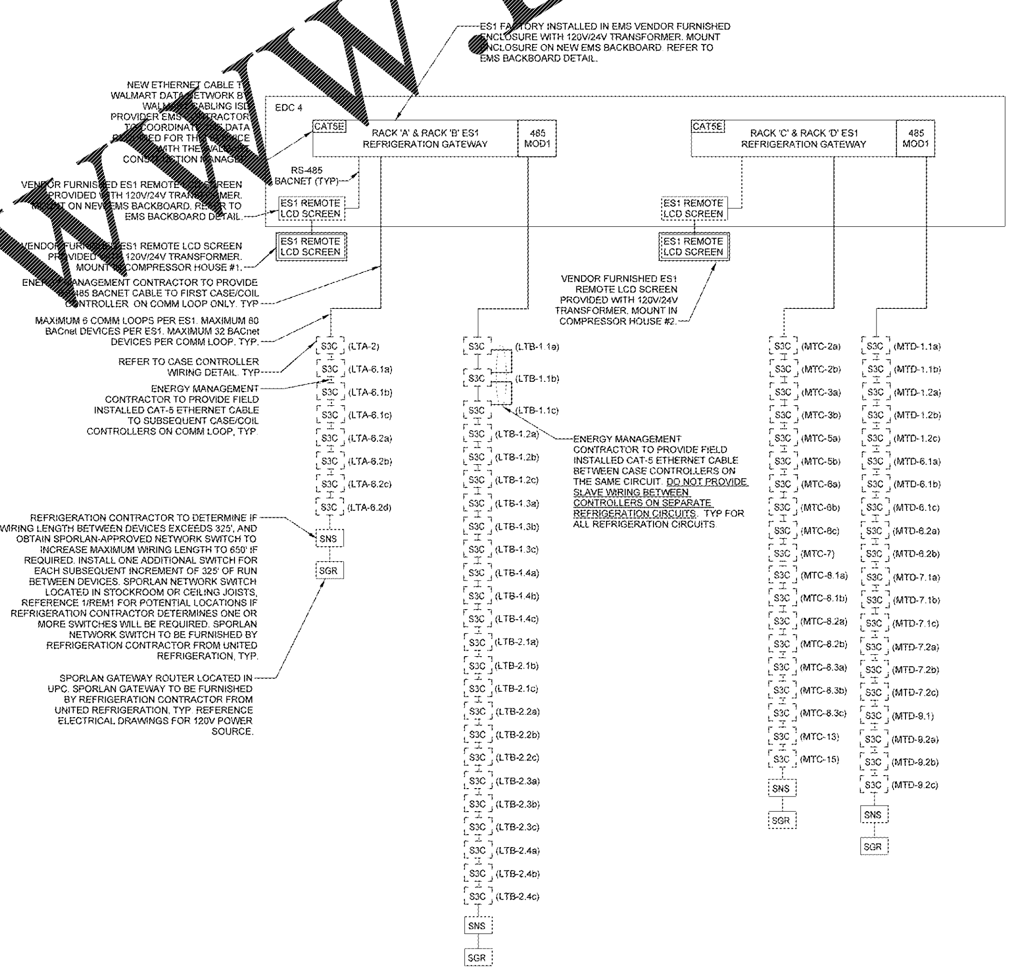
CIM-C7 SCHEDULE (E)		
1	MTC-12a	(SENSOR)(E)
2	MTC-12b	(SENSOR)(E)
3	MTC-12c	(SENSOR)(E)
4	MTC-12d	(SENSOR)(E)
5	MTC-12e	(SENSOR)(E)
6	MTC-12f	(SENSOR)(E)
7	SPARE	
8	SPARE	(E)
AUX	SPARE	(E)

CIM-D1 SCHEDULE (E)		
1	SPARE	
2	SPARE	
3	SPARE	
4	SPARE	
5	SPARE	
6	[illegible]	[illegible]
7	[illegible]	[illegible]
8	[illegible]	(SENSOR)(E)
AUX	[illegible]	(E)

CIM-D2 SCHEDULE (E)		
1	MTD-4	(SENSOR)(E)
2	SPARE	(E)
3	MTD-5	(SENSOR)(E)
4	SPARE	
5	SPARE	
6	SPARE	
7	SPARE	(E)
8	SPARE	(E)
AUX	SPARE	(E)

CIM-D3 SCHEDULE (E)		
1	SPARE	
2	BAD POINT	(E)
3	SPARE	
4	SPARE	(E)
5	SPARE	
6	SPARE	
7	MTD-11a	[illegible]
8	MTD-11b	[illegible]
AUX	SPARE	[illegible]

CIM-[illegible] SCHEDULE (E)		
1	[illegible]	
2	[illegible]	
[illegible]	SPARE	
[illegible]	MTD-8a	[illegible]
[illegible]	MTD-8b	[illegible]
6	MTD-8c	[illegible]
7	[illegible]	
8	[illegible]	
AUX	[illegible]	(E)



1 REFRIGERATION EMS ONE-LINE DIAGRAM (SPORLAN)
1/8" = 1'-0"

REFRIGERATION EMS ONE-LINE REFLECTS THE INTENDED DESIGN BASED ON NEW CASES AND EXISTING SYSTEM NUMBERS. VERIFY ALL EXISTING CONDITION AND LOCATION OF ALL EMS EQUIPMENT PRIOR TO ROUGH-IN.

UNLESS NOTED OTHERWISE, DEVICES AND CABLING SHOWN IN THIS ONE-LINE DIAGRAM ARE VENDOR FURNISHED; REFRIGERATION ENERGY MANAGEMENT CONTRACTOR TO INSTALL CABLING AND DEVICES AND MAKE FINAL TERMINATIONS. REFER TO PLANS FOR DEVICE LOCATIONS.

COORDINATE WITH LEGACY EMS VENDOR (NOVAR) FOR THE REPROGRAMMING OF THEIR RACK CONTROLLER WITH THE REMOVAL OF CIRCUITS FROM THEIR CONTROL. VERIFY DEFROST SCHEDULES ARE COORDINATED BETWEEN THE EXISTING RACK CONTROLLER AND THE NEW CASE CONTROLS.

WIRE LEGEND
WIR-1010 (TAN CABLE 18-2, 20-2 TWISTED PAIR)
WIR-2020 (BLUE CABLE 22-2 TWISTED PAIR)

NOTES:
1. ALL CABLE WIR-2020 UNLESS NOTED OTHERWISE.
2. ALL WIR-1010 AND WIR-2020 CABLE FURNISHED BY OWNER FOR INSTALLATION BY CONTRACTOR.
3. ALL OTHER CABLE FURNISHED AND INSTALLED BY CONTRACTOR.

EMS ONE-LINE AND SCHEDULE NOTES		
E	------	EXISTING EMS DEVICE, SENSOR, OR WIRE FOR REUSE.
RL		EXISTING EMS DEVICE OR SENSOR TO RELOCATE AND RECONNECT. INSTALL NEW CABLE FOR RELOCATED DEVICE OR SENSOR AS NECESSARY.
RD		REDESIGNATED EMS DEVICE OR SENSOR.
RP		REPLACED EMS DEVICE OR SENSOR.
N		NEW EMS DEVICE OR SENSOR.
FI	———	NEW FIELD INSTALLED EMS DEVICE, SENSOR, OR WIRE.
FA	------	NEW FACTORY INSTALLED EMS DEVICE, SENSOR, OR WIRE.
M		EMS DEVICE OR SENSOR USED FOR MONITORING ONLY.
DI		DIGITAL INPUT.
AI		ANALOG INPUT.

ES-1	
	COMMUNICATION PORT
COM1	LCD (IF APPLICABLE) / BACNET LOOP
COM2	SPECTRUM (NOVARnet) / BACNET LOOP

COM MODULE 1	
	COMMUNICATION PORT
COM3	SPECTRUM (NOVARnet) / BACNET LOOP
COM4	SPECTRUM (NOVARnet) / BACNET LOOP

COM MODULE 2	
	COMMUNICATION PORT
COM5	SPECTRUM (NOVARnet) / BACNET LOOP
COM6	SPECTRUM (NOVARnet) / BACNET LOOP

NOTE:
1.) NOT ALL CONNECTIONS SHOWN ON THIS SCHEDULE ARE PRESENT AT EACH REFRIGERATION GATEWAY. REFER TO ONE-LINE DIAGRAM FOR CONNECTIONS SPECIFIC TO EACH REFRIGERATION GATEWAY.

EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. CONTRACTOR SHALL CAREFULLY COORDINATE NEW WORK AND DEMOLITION WITH ALL OTHER DISCIPLINES AND EXISTING CONDITIONS.

EACH SUBCONTRACTOR IS RESPONSIBLE FOR HAVING A THOROUGH KNOWLEDGE OF ALL DRAWINGS AND SPECIFICATIONS IN THEIR RELATED FIELD. THE FAILURE TO ACQUAINT THEMSELF WITH THIS KNOWLEDGE DOES NOT RELIEVE THE RESPONSIBILITY OF PERFORMING THE WORK PROPERLY. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED BECAUSE OF CONDITIONS THAT OCCUR DUE TO FAILURE TO FAMILIARIZE WORKERS WITH THIS KNOWLEDGE.

STIPULATION FOR REUSE

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DOCUMENTS THAT DO NOT HAVE THE ARCHITECT OR ENGINEER OF RECORD SEAL AND SIGNATURE SHALL BE CONSIDERED NOT FOR CONSTRUCTION

REFRIGERATION ENERGY MANAGEMENT SCHEDULES AND DETAILS

SHEET: REM2

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