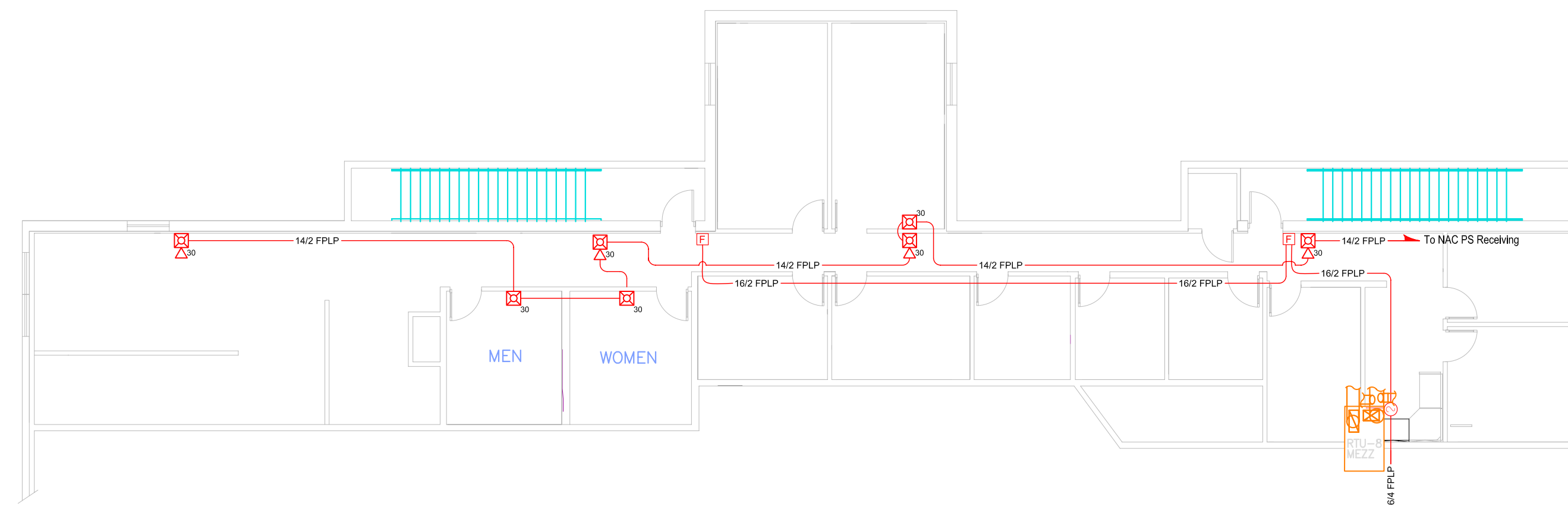


BOSCH D9412GV3 Standby Battery Calculations				
Regulated Load in Standby				
Device Type	Number of Devices	Current (Amps)		Total Current (Amps)
D9412GV3 PANEL	1	X	225	= 225
D925	1	X	420	= 420
D1500	4	X	105	= 420
D125	1	X	106	= 106
PCP400-0114	1	X	400	= 400
D8125	2	X	60	= 120
D8125	2	X	60	= 120
D8120	1	X	880	= 880
D8120	3	X	267	= 801
D113	2	X	431	= 862
D917U	34	X	8008	= 27227
FMA4-463	28	X	8008	= 224224
1S-300	1	X	6025	= 6025
D125	1	X	106	= 106
FMA4	2	X	105	= 210
Regulated Load in Standby				1,029
Regulated Load in ALARM				
Device Type	Number of Devices	Current (Amps)		Total Current (Amps)
D9412GV3 PANEL	1	X	300	= 300
D925	1	X	420	= 420
D1500	4	X	105	= 420
D125	1	X	212	= 212
PCP400-0114	1	X	400	= 400
D8125	2	X	60	= 120
D8120	1	X	884	= 884
D8120	3	X	267	= 801
D113	2	X	431	= 862
D917U	34	X	8008	= 27227
FMA4-463	28	X	8008	= 224224
1S-300	1	X	6025	= 6025
D125	1	X	212	= 212
FMA4	2	X	105	= 210
Regulated Load in Alarm				1,583
Battery Calculation Total				
Standby Current Load (Amps)	1,029	X	24 Hours	= 24,696 Ah
Alarm Current Load (Amps)	1,583	X	0.084 (1 Min)	= 0.133 Ah
Total Current Load				24,829 Ah
Multiply by Design Factor 1.2				29,795 Ah
Total Ampere Hours Required				29,795 Ah

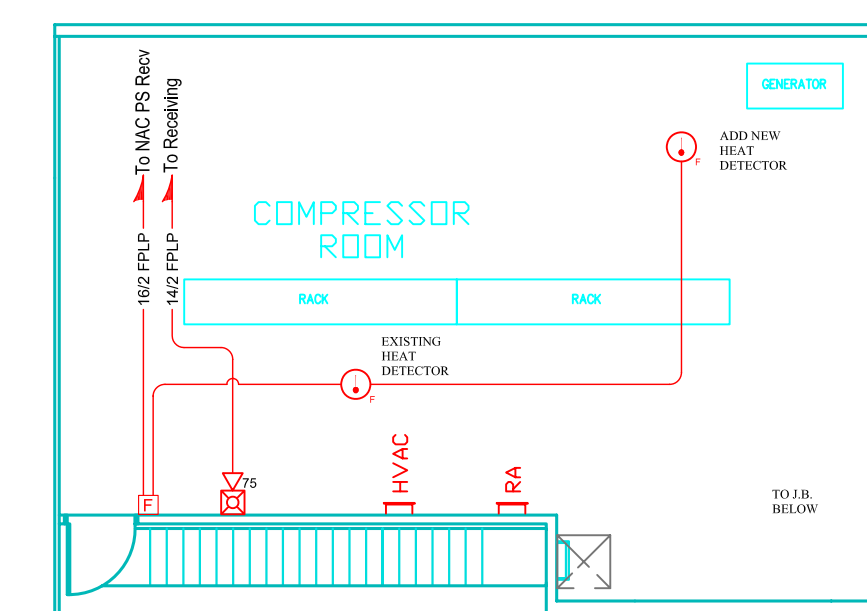
Note: System not yet approved by AHJ. Existing Fire System includes tenant spaces which will be part of new fire system.



Circuit Devices and Current Draw														
Ckt. No.	Device Type	Capacity	Device Setting	Current	Ckt. No.	Device Type	Capacity	Device Setting	Current	Ckt. No.	Device Type			
1	Genex GEC-3	30	0.68	0.68	8	Genex GCC-24	95	243	243	9	Genex GEC-3	30	0.68	0.68
	Genex GEC-3	30	0.68	0.68		Genex GEC-3	30	0.68	0.68		Genex GEC-3	30	0.68	0.68
	Genex WGE24-75	75	144	144		Genex GEC-24	95	243	243		Genex GEC-3	30	0.68	0.68
	Genex WGE24-25	25	144	144		Genex GEC-24	95	243	243		Genex GEC-3	30	0.68	0.68
	Genex GEC-3	30	0.68	0.68		Genex GEC-24	95	243	243		Genex GEC-3	30	0.68	0.68
NOTE: All NAC Cals based on worst case 20.4 Vdc, Nominal NAC is 26.6 Vdc														

Circuit Current and Voltage Drop Calculations												
Circuit Number	Circuit Name	Supply Voltage	Circuit Type	Wire Size (1000 Ft.)	Wire Length	Wire Resistance	Circuit Current	Total Voltage Drop	Wire Size (1000 Ft.)	Wire Length	Wire Resistance	
1	Restrooms, Produce Cooler Prep, Cook Prep	20.4	462	14 AWG	3.26	3007	3.56 Ohm	19.49	14 AWG	3.26	3007	3.56 Ohm
2	Produce Left	20.4	916	14 AWG	3.26	2947	3.63 Ohm	18.90	14 AWG	3.26	2947	3.63 Ohm
3	Produce Right	20.4	893	14 AWG	3.26	2257	3.53 Ohm	15.86	14 AWG	3.26	2257	3.53 Ohm
4	Customer Service, Pharmacy, Deli	20.4	706	14 AWG	3.26	1757	1.41 Ohm	19.40	14 AWG	3.26	1757	1.41 Ohm
5	Aisle 4	20.4	483	14 AWG	3.26	2227	3.47 Ohm	18.39	14 AWG	3.26	2227	3.47 Ohm
6	Aisle 8	20.4	706	14 AWG	3.26	2797	3.79 Ohm	19.13	14 AWG	3.26	2797	3.79 Ohm
7	Aisle 12	20.4	683	14 AWG	3.26	3257	3.53 Ohm	18.95	14 AWG	3.26	3257	3.53 Ohm
8	Aisle 16	20.4	706	14 AWG	3.26	3717	3.43 Ohm	18.47	14 AWG	3.26	3717	3.43 Ohm
9	Aisle 20	20.4	683	14 AWG	3.26	4277	3.53 Ohm	18.26	14 AWG	3.26	4277	3.53 Ohm
10	Meat Prep - Cooler, Rear Hall, Sausage Cooler, Deli Counter, Left Rear Restroom, Deli/Fruit, and Rear Hall	20.4	980	14 AWG	3.26	4227	2.77 Ohm	17.48	14 AWG	3.26	4227	2.77 Ohm
11	Deli Cooler, Receiving, and Compressor Room	20.4	576	14 AWG	3.26	3227	2.13 Ohm	19.17	14 AWG	3.26	3227	2.13 Ohm
12	Left Row Mezzanine	20.4	488	14 AWG	3.26	4227	2.77 Ohm	19.02	14 AWG	3.26	4227	2.77 Ohm

- LEGEND
- DUCT REMOTE
 - SMOKE DETECTOR
 - HEAT DETECTOR
 - PULL STATION
 - GATE VALVE TAMPER
 - WATER FLOW
 - FIRE COMMAND CENTER
 - ANNUNCIATOR PANEL
 - ANAL. SYSTEM CONTACT
 - COOLER HORNSTROBE
 - STROBE
 - HORNSTROBE
 - CEILING HORNSTROBE
 - CEILING STROBE
 - LOW ROOM TEMPERATURE
 - DUCT SMK REMOTE PLATE



Altronix N.A.C. Power Supply Standby Battery Calculations				
N.A.C. P.S. #1 at FACP				
Device Type	Standby Current	Alarm Current		
AL1002ULADA	90	X	0.1	90
D44P DUCT SMK	15	X	0.05	15
D255 SMOKE	0	X	0	0
Totals				Standby Current = 230 mA Alarm Current = 4192 mA

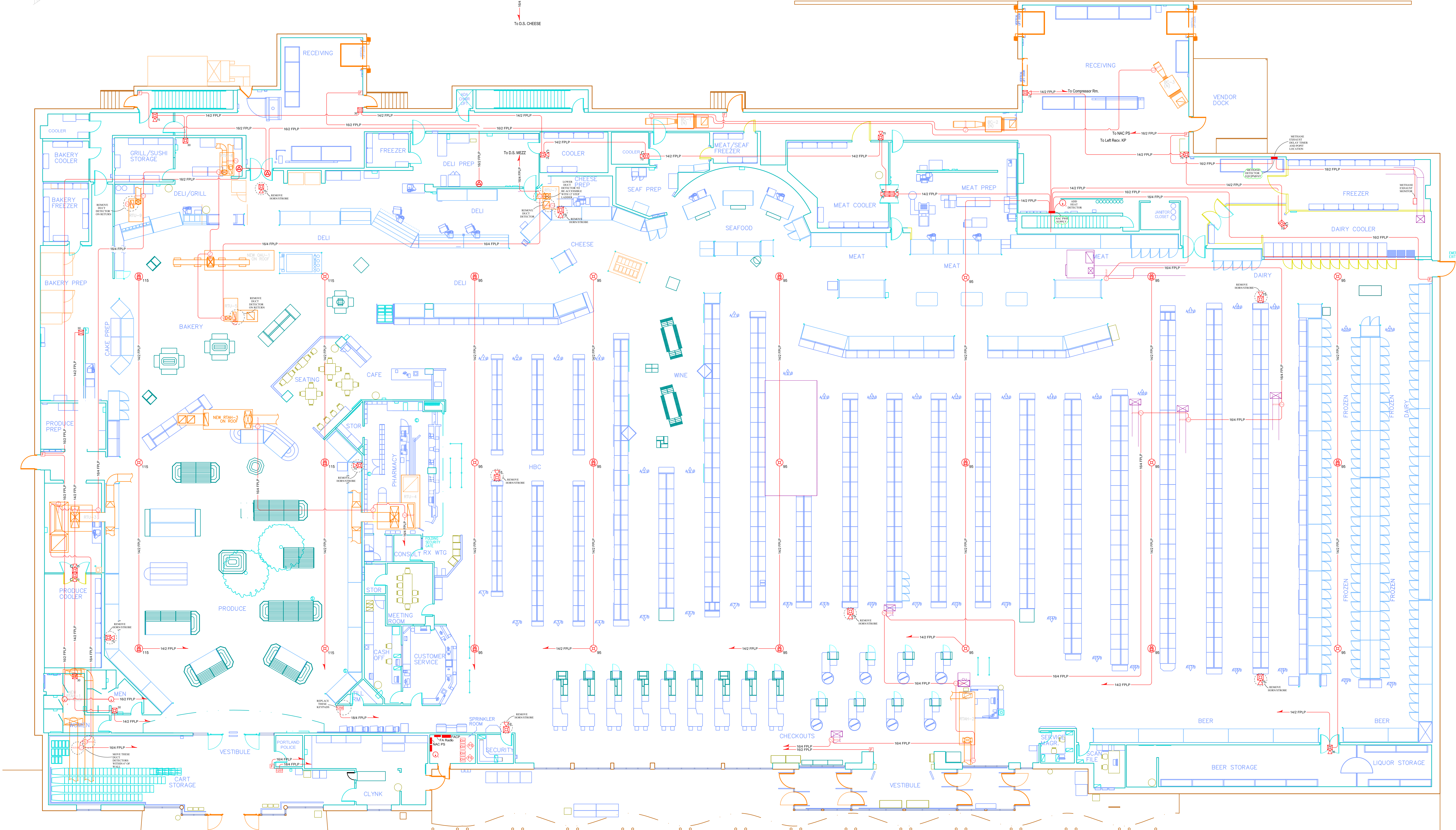
Battery Amp/ Hour Calculation				
Standby Current @ 230 A x 24 Hours	= 5520 Ah			
Alarm Current @ 4.19 A x 10 Mins.	= 792 Ah			
Subtotal = 6312 Ah				
Plus 20% = 7574 Ah				
Totally Required = 7574 Ah				

Altronix N.A.C. Power Supply Standby Battery Calculations				
N.A.C. P.S. #3 Receiving				
Device Type	Standby Current	Alarm Current		
AL1002ULADA	90	X	0.1	90
D44P DUCT SMK	15	X	0.05	15
D255 SMOKE	0	X	0	0
Totals				Standby Current = 90 mA Alarm Current = 3636 mA

Battery Amp/ Hour Calculation				
Standby Current @ 90 A x 24 Hours	= 2160 Ah			
Alarm Current @ 3.64 A x 10 Mins.	= 408 Ah			
Subtotal = 2568 Ah				
Plus 20% = 3082 Ah				
Totally Required = 3082 Ah				

Altronix N.A.C. Power Supply Standby Battery Calculations				
N.A.C. P.S. #4 Transit				
Device Type	Standby Current	Alarm Current		
AL1002ULADA	90	X	0.1	90
D44P DUCT SMK	15	X	0.05	15
D255 SMOKE	1	X	0.4	4
Totals				Standby Current = 94 mA Alarm Current = 2869 mA

Battery Amp/ Hour Calculation				
Standby Current @ 94 A x 24 Hours	= 2256 Ah			
Alarm Current @ 2.87 A x 10 Mins.	= 408 Ah			
Subtotal = 2664 Ah				
Plus 20% = 3197 Ah				
Totally Required = 3197 Ah				



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 Certification # 107989

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DATE	BY
10/21/11	SURY
10/21/11	

NO.	REVISION FOR CONSTRUCTION
1	

PROJECT TITLE: HANNAFORD SUPERMARKET & PHARMACY #851
 FOREST AVENUE
 PORTLAND, MAINE

HANNAFORD BROS. CO.
 ENGINEERING DEPARTMENT
 STORE PLANNING

SCALE	NTS
DRAWN	SURY-JK
DATE	11-18-11
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SHEET TITLE
FIRE ALARM SYSTEM PLAN

SHEET NUMBER
FS-1