

9/8/2021	10/6/2021	28	14209.73	\$ 14,444
Annual Total		364	198,364	\$ 203,342

SUPPORTING ANNUAL USE DATA - Natural Gas				
Start Date	End Date	Days	Natural Gas Use (therms)	Natural Gas Cost (\$)
10/6/2021	11/2/2021	27	14351.91	\$ 14,584
11/2/2021	12/1/2021	29	21279.72	\$ 21,367
12/1/2021	1/5/2022	35	24718.82	\$ 24,740
1/5/2022	2/2/2022	28	18110.23	\$ 18,267
2/2/2022	3/9/2022	35	19565.54	\$ 19,693
3/9/2022	4/6/2022	28	15545.67	\$ 15,756
4/6/2022	5/4/2022	28	15548.35	\$ 15,758
5/4/2022	6/8/2022	35	17105.6	\$ 17,283
6/8/2022	7/6/2022	28	11773.93	\$ 12,341
7/6/2022	8/3/2022	28	12038.17	\$ 12,606
8/3/2022	9/1/2022	29	12698.09	\$ 13,268
9/1/2022	10/5/2022	34	16335.69	\$ 16,941
Annual Total		364	199,072	\$ 202,605

SUPPORTING ANNUAL USE DATA - Natural Gas				
Start Date	End Date	Days	Natural Gas Use (therms)	Natural Gas Cost (\$)
10/5/2022	11/3/2022	29	17526.77	\$ 18,137
11/3/2022	12/1/2022	28	17329.6	\$ 17,939
12/1/2022	1/4/2023	34	22466.78	\$ 23,098
1/4/2023	1/31/2023	27	16483.24	\$ 17,089

1/31/2023	3/2/2023	30	19709.06	\$ 20,329
3/2/2023	4/5/2023	34	21605.66	\$ 22,233
4/5/2023	5/3/2023	28	16594.56	\$ 17,201
5/3/2023	5/31/2023	28	14479.3	\$ 15,077
5/31/2023	7/5/2023	35	17159.25	\$ 18,285
7/5/2023	8/2/2023	28	12443.24	\$ 13,407
8/2/2023	8/30/2023	28	12252.78	\$ 13,210
8/30/2023	10/4/2023	35	17654.19	\$ 18,797
Annual Total		364	198,364	\$ 203,342

**Utility #2: Definition**

Units	therms
kBtu/unit	100.00

## Utility rate schedules

Electricity:

**HEA Rate Schedule (effective October 1, 2023)**

HEA offers four different rates to its members, depending on the classification of the service provided. Our rates are regulated by the [Regulatory Commission of Alaska](#).

SERVICE TYPE	MONTHLY CUSTOMER CHARGE (A)	ENERGY CHARGE PER KWH (H)	SYSTEM DELIVERY CHARGE (B)	DEMAND CHARGE PER KW (I)	MINIMUM DEMAND CHARGE (C)	COST OF POWER ADJUSTMENT PER KWH (D)	REGULATORY COST CHARGE (G)
Residential	\$20.00	\$0.16640	\$24.96	N/A	N/A	\$0.08868	\$0.001028
General Service (E)	\$20.00	\$0.17320	\$25.98	N/A	N/A	\$0.08868	\$0.001028
<b>Large General Service (F)</b>	<b>\$50.00</b>	<b>\$0.10883</b>	<b>\$0</b>	<b>\$22.387</b>	<b>\$447.74</b>	<b>\$0.08868</b>	<b>\$0.001028</b>
Industrial Service	For more information contact Member Services.						
Outdoor Lighting	175 watt lamp: \$30.64; 250 watt lamp: \$36.17; 360 watt lamp: \$43.95; 400 watt lamp: \$48.60; 55 watt LED: \$29.99; 93 watt LED: \$33.44; 160 watt LED: \$42.76 per lamp per month						

It should be noted that residential rates are increasing in 2024:

HEA Residential Rates	Current *effective April 1, 2020	New Rate *effective January 1, 2024
Energy Charge per kWh	\$0.16077	\$0.16640
Cost of Power Adjustment	\$0.08191	\$0.08868

Gas:

**Rates & Regulatory Information**

ENSTAR is regulated by the [Regulatory Commission of Alaska](#) (RCA), an entity that ensures public utilities and pipeline companies provide safe and adequate service at reasonable rates.

When a public utility (electric, natural gas, wastewater, etc.) wants to raise or lower rates, it has to request the change through the RCA, which publishes notices of proposed changes to allow comments for 30 days before making a decision.

ENSTAR has four rate classes for Gas Sales Service, based on the capacity of the gas meter required to serve the home or business. Each rate consists of four parts:

- **Customer Charge:** A flat fee that is determined by the meter size (G1, G2, G3, or G4) on the account. The customer charge recovers a portion of the utility's costs such as meter-reading, record-keeping, billing, collections, and costs associated with service lines and meters.

- **Service Charge (Base):** A volumetric charge that covers system maintenance costs and is determined by the meter size (G1, G2, G3, or G4) on the account. This charge recovers system maintenance costs.
- **RCC:** The "Regulatory Cost Charge" is a volumetric charge provided for by Alaska Statutes. This charge helps fund the Regulatory Commission of Alaska (RCA).
- **GCA:** The "Supplier Gas Cost Charge" is a volumetric charge that reflects the price ENSTAR customers pay for gas based on gas supply agreements previously approved by the RCA. The GCA is adjusted annually in July.

### Current Rates: Effective July 1, 2023

#### G1 Rates

<b>Customer Charge</b>	\$16.25 per account
<b>Service Charge (Base)</b>	\$0.14980 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

#### G2 Rates

<b>Customer Charge</b>	\$35.50 per account
<b>Service Charge (Base)</b>	\$0.09600 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

#### G3 Rates

<b>Customer Charge</b>	\$112.00 per account
<b>Service Charge (Base)</b>	\$0.09448 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

#### G4 Rates

<b>Customer Charge</b>	\$538.00 per account
<b>Service Charge (Base)</b>	\$0.06580 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

View ENSTAR's complete tariff [here](#).

Basis for savings and cost estimates

## Lighting and equipment inventory tables

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
HWCP-1	No additional information in record info	1974	P	DHW Circulator	Mech Room 139 Serves Core area		-40
HWCP-2	No additional information in record info	1974	P	High temp DHW Circ			-40
HC-1	--	1974	AHU-8	Heating Coil	Serves AC-1	Critical	-30
A-6	--	1983	S1	Duplex Condensate Recovery	Boiler Room 109		-26
A-7	--	1983	S1	Duplex Condensate Recovery	Mech 139	Fair	-26
A-8	--	1983	S1	Duplex Condensate Recovery	Mech 120	Fair	-26
HF-1	--	1974	AHU-8	HEPA Filter	Serves AC-1	Critical	-25
HF-2	--	1974	AHU-8	HEPA Filter	Serves AC-1	Critical	-25
HF-5	--	1974	V3	HEPA Filter	Serves HV-1	Critical	-25
HV-1	--	1974	V3	Heat Coil + Fan?	Serves HV-1	Critical	-25
MPF-1	--	1974	AHU-8	Medium Pre filter	Serves AC-1	Critical	-25
A-1	--	1983	H1	Main HW Pump	Boiler Room 109	Fair	-21
A-2	--	1983	H1	Main HW Pump (stand-by)	Boiler Room 109	Fair	-21
EF-10	--	1983	AHU-7	both Floors East Toilet EF	Interlocked with SF-4	Critical	-21
EF-11	PENN FUME-X / NO.9RL	1983		Power Roof Exhauster	Serves Sterilizer Hood	Critical	-21
EF-12	PENN FUME-X / NO.9RL	1983		Power Roof Exhauster	Hot Lab Hood	Critical	-21
EF-8	--	1983	AHU-4	2nd floor West Toilet EF	Interlocked with SF-1	Critical	-21
EF-9	--	1983	AHU-5	1st Floor West Toilet EF	Interlocked with SF-2	Critical	-21
HC-1	--	1983	AHU-4	Heating Coil	Serves SF-1	Critical	-21
HC-2	--	1983	AHU-5	Heating Coil	Serves SF-2	Critical	-21
HC-3	--	1983	AHU-6	Heating Coil	Serves SF-3	Critical	-21
HC-4	--	1983	AHU-7	Heating Coil	Serves SF-4	Critical	-21
HU-10	ARMSTRONG / --	1983	AHU-7	Humidifier	Serves SF-4	Critical	-18
HU-17	ARMSTRONG / --	1983	AHU-7	Humidifier	Serves SF-4	Critical	-18
HU-7	ARMSTRONG / --	1983	AHU-4	Humidifier	Serves SF-1	Critical	-18
HU-8	ARMSTRONG / --	1983	AHU-5	Humidifier	Serves SF-2	Critical	-18

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
HU-9	ARMSTRONG / --	1983	AHU-6	Humidifier	Server SF-3	Critical	-18
CV-1A	PATTERSON- KELLY CO./ --	1983	H	U Tube Heat Exchanger	Whole Building Heating except 2006 & 2009 Additions	Fair	-17
CV-1B	PATTERSON- KELLY CO./ --	1983	H	U Tube Heat Exchanger	Whole Building Heating except 2006 & 2009 Additions	Fair	-17
AS-1	B&G / R-6 Rolairtrol	1983	H	Air Separator		Fair	-16
BCS-1	--	1983	P	Blowdown Cooling Sump	Not accessable	Poor	-16
HWG- 1	RECO / R8213	1983				Fair	-16
IHWG- 1	AERCO / SWIA-04	1983	P	Steam HW Generator	For high temp laundry water	Fair	-16
AC-1	--	1974	AHU-8	Supply Fan	Serves AC-1	Critical	-15.3
RF-1	--	1974	AHU-8	Return Fan	Serves AC-1	Critical	-15.3
HGS- 1A	GRUNDFOS / UPS 40-160/F	1999	AHU-1	Hot P.G. to AHU- 1 HC	Serving AHU-1	Critical	-15
HGS- 1B	GRUNDFOS / UPS 40-160/F	1999	AHU-1	Hot P.G. to AHU- 1 HC	Serving AHU-1	Critical	-15
HWF- 1A	GRUNDFOS / UPS 40-160/F	1999	AHU-1	HW to AHU-1 HX	Serving AHU-1	Critical	-15
HWF- 1B	GRUNDFOS / UPS 40-160/F	1999	AHU-1	HW to AHU-1 HX	Serving AHU-1	Critical	-15
P-1 : P-40	TACO / 00X	1999	H2	Various terminal unit Pumps	Throughout LTC area	?	-15
P42A	LITTLE GIANT / 5 ASP-FS	1999	P	Elevator Shaft Sump Pumps	ELEV. b/t 149 & 125	?	-15
P42B	LITTLE GIANT / 5 ASP-FS	1999	P	Elevator Shaft Sump Pumps	ELEV. b/t 149 & 125	?	-15
P-43	TACO / 006	1999	P2	Domestic HW Circ.	Mech 139	Fair	-15
P-4	GRUNDFOS / UP 26-96BF	2006	P3	Domestic HW Circ.	Boiler Room 109	Good	-8
EF-4	--	1983	AHU-4	Return Air Fan	Serves SF-1	Critical	-6
EF-5	--	1983	AHU-5	Return Air Fan	Serves SF-2	Critical	-6
EF-6	--	1983	AHU-6	Return Air Fan	Serves SF-3	Critical	-6
EF-7	--	1983	AHU-7	Return Air Fan	Serves SF-4	Critical	-6
SF-2	--	1983	AHU-5	Supply Air Fan	SF-2	Critical	-6
SF-3	--	1983	AHU-6	Supply Air Fan	SF-3	Critical	-6
SF-4	--	1983	AHU-7	Supply Air Fan	SF-4	Critical	-6

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
BP-1	SHURFLO / 2088-594-154	2009	P3	Distilled Water Boost. Pump	East Mechanical	?	-5
P-1	STANCOR / SE40	2009	P	Elevator Sump Pump	ELEV Near ELEV Lobby 115	?	-5
P-41 A	TACO / FE2008	1999	H2	LTC Main Loop pumps	*Don't see on MP Scan*	Poor	-5
P-41 B	TACO / FE2008	1999	H2	LTC Main Loop Pumps	*Don't see on MP Scan*	Poor	-5
REF-1	GREENHECK / GB-140-5	1999		Roof Top EF	1999 Exhaust serving toilets	Fair	-5
CRU-1	B&G 23CB22-20	2006	S1	Duplex Condensate Receiver	Boiler Room 112	Poor	-3
ACU-1	LIEBERT / MMD60E	2009		Cooling IDU	Equip. Room 2674 : connected to CU-1	Fair	0
AHU-1	GOVERNAIR / --	1999	AHU-1	Roof Top AHU	AHU-1	Fair	0
CU-1	LIEBERT / PFH067	2009		Cooling ODU	Roof Connected to ACU-1	Fair	0
HC-1	--	1999	AHU-1	Heat Coil	Serving AHU-1	Fair	0
RF-1	--	1999	AHU-1	Return Fan	Serving AHU-1	Fair	0
T-1	CEMLINE / V560SWH	1999	P	Hot Water Generator	(I think installed was a AERCO)	Fair	0
HC-1	--	2010	AHU-10	Electric Heating Coil		Fair	1
RHC-1	--	2010	AHU-10	Electric Reheat Coil	MRI Room	Fair	1
RHC-2	--	2010	AHU-10	Electric Reheat Coil	Control Room	Fair	1
RHC-3	--	2010	AHU-10	Electric Reheat Coil	Waiting Room	Fair	1
RTU-1	McQUAY / MPS005BYDM	2010	AHU-10	Roof top unit	Serves MRI, All electric heating	Fair	1
C-1	TRANE / RAUC C304B	2006	AHU-2	Condensing Unit	Serving AHU-2 DX Coil	Good	2
CC-1	--	2006	AHU-2	Cooling Coil	Serving AHU-2	Good	2
EF-11	COOK / ACEB 60C3B	2006		Downblast Centr. Roof	Shredder	Fair	2
EF-7	COOK / ACEB 135C3B	2006	EF-7	Downblast Centr. Roof	Varies	Fair	2
EF-8	COOK / ACEB 80C3B	2006	EF-8	Downblast Centr. Roof	Typ. Toilet Rooms	Fair	2
HC-1	--	2006	AHU-2	Heating Coil	Serving AHU-2	Good	2
P-1A	PACO / 91892693	2006	H4	Glycol for east expansion	Boiler Room 112	Good	2

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
P-1B	PACO / 91892693	2006	H4	Glycol for east expansion	Boiler Room 112	Good	2
P-2A	PACO / 91890089	2006	H5	HW for east expansion T.U.	Boiler Room 112	Fair	2
P-2B	PACO / 91890089	2006	H5	HW for east expansion T.U.	Boiler Room 112	Fair	2
P-3	GOULD / J5S	2006	H4	Glycol Makeup Pump	Boiler Room 112	Good	2
CP-1A&B	GRUNDFOS / UPS 40-240	2017	AHU-9/-8/V3	Heating glycol pump	central Mech.	Good	3
CP-2AB	ARCTICHILL	2017	V1	Provided with CH-1	Roof?	?	3
CP-2AB	ARCTICHILL	2017	AHU-9	Provided with CH-1	Roof @ CH-1	Good	3
CC-2	--	2009	AHU-3	Cooling Coil	Serving AHU-3	Good	5
EF-10	COOK / ACEB 180C4B	2009		Downblast Centr. Roof	General Lab	Good	5
EF-12	COOK / ACEB 60C3B	2009		Downblast Centr. Roof	Hydrotherapy	Good	5
EF-14	PENNBARRY / FUMEX FX30B	2009		Upblast Centr. Roof	Kitchen Hood Exhaust Fan	Good	5
EF-15	COOK / ACEB 120C2B	2009		Downblast Centr. Roof	Gas Cabinet Exhaust	Good	5
EF-16	GREENHECK / VEKTOR H-9	2009		Lab Exhaust System	IV Glove Box Exhaust	Good	5
EF-17	GREENHECK / VEKTOR H-9	2009		Lab Exhaust System	Microlab Exhaust	Good	5
EF-2	COOK / ACEB 180C5B	2009	EF-2	Downblast Centr. Roof	Loading Dock	Good	5
EF-3	COOK / ACEB 80C3B	2009	EF-3	Downblast Centr. Roof	Patient Bathrooms	Good	5
EF-4	COOK / ACEB 80C3B	2009	EF-4	Downblast Centr. Roof	Patient Bathrooms	Good	5
EF-9	COOK / ACEB 70C3B	2009	EF-9	Downblast Centr. Roof	Typ. Toilet Rooms	Good	5
HC-2	--	2009	AHU-3	Heating Coil	Serving AHU-3	Good	5
BFWP-1	GRUNDFOS / CR3-17K-FGJ-A-E-HQQE	2020	S1	Boiler Feed Water B-1	Boiler Room 109	Good	6
CC-1	--	2010	AHU-10			Fair	6
CP-1	GRUNDFOS / UP 26-99 BF	2020		DHW recirc east wing	central mech.	Fair	6
CP-3	GRUNDFOS / UP 15-42SF	2020		DHW recirc Kitchen	central mech	Fair	6

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
HX-1A	ARMSTRONG / WS-104-4-1	2006	S1/V4/V6	U-Tube steam HX	Glycol Heating System	Good	6
HX-2A	ARMSTRONG / WS-105-2-1	2006	S1/H1	U-Tube Steam HX	Water heating System	Good	6
AHU-1	HAAKON / --	2006	AHU-2	Roof top AHU	AHU-2	Good	7
AS-1	B&G / ROLAIRTRROL R-4	2006	H	Air Separator	Glycol Heating System	Good	7
AS-2	B&G / ROLAIRTRROL R-6	2006	H	Air Separator	Water Heating System	Good	7
DT-1	SIMPLEX / SST 150	2006	P	Fuel Oil Day Tank		Fair	7
EF-1	COOK / GN-720	2006		Inline Cabinet (in gas storage)	Oxygen Generator	Fair	7
EF-12	Not Used	2006		--		--	7
EF-13	COOK / GN-184	2006		Inline Cabinet (in Gas Storage)	Decon, serves wash down	Fair	7
ET-1	B&G / Model D- 120V	2006	H	Expansion Tank	Glycol Heating System	Fair	7
ET-2	B&G / Model D- 240V	2006	H	Expansion Tank	Water heating System	Fiar	7
ET-3	AMTROL / ST-60- VC	2006	P	Expansion Tank	DHW	Fair	7
F-3	--	2006	V5	Filter	AHU-4	Fair	7
FP-1A	ROPER / 26 AM 02	2006	F1	Fuel Pump	Exterior Adjacent to tank	?	7
FP-1B	ROPER / 26 AM 02	2006	F1	Fuel Pump	Exterior Adjacent to tank	?	7
HWG- 1	A.O. SMITH / HWG1000V GOAM080	2006	P	Domestic Hot Water Generator	Steam to Water	Good	7
OG-1	OGSI / OGS-175	2006	P	Medical Oxygen Generator		?	7
RF-1	--	2006	AHU-2	Return Fan	Serving AHU-2	Good	7
SF-1	--	2006	AHU-2	Supply Fan	Serving AHU-2	Good	7
T-2	A.O. SMITH / VD- 20-100	2006	P	Waste Holding Tank	Decontamination Shower	?	7
WH-1	IN-SINK-ERATOR / GN	2006	P	Point of Use DHW Dispenser		?	7
BDS-1	HURST / 071714 BDS	2007	P	Blowdown Separator		Fair	8
S-2	DRI-STEAM / '--	2009	AHU-3	Humidification	Serving AHU-3	Good	8
H-1	DRI-STEAM	2010	AHU-10			Fair	9
AHU-2	HAAKON / --	2009	AHU-3	Air Handler Unit	AHU-3	Good	10
C-2	TRANE / RAUC C404B	2009	AHU-3	Scroll Condensing Unit	Serving AHU-3DX	Good	10

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
EF-18	COOK / 60SQN-B	2009		Square Inline	Glove Boox Room Exhaust	Good	10
EF-5	COOK / GN-720	2009		Inline Cabinet	Varies	Good	10
EF-6	COOK / 135SQN17D	2009		Square Inline	Patient Isolation	Good	10
ET-4	WELL-MATE / WM-6	2009	P	Expansion tnk	Distilled Water	Fair	10
RF-2	HAAKON / --	2009	AHU-3	Return Fan	Serving AHU-3	Good	10
SF-2	HAAKON / --	2009	AHU-3	Supply Fan	Serving AHU-3	Good	10
WH-1	IN-SINK-ERATOR / GN	2009	P	Point of Use DHW Dispenser		?	10
B-1	MIURA / EX-100 SGO	2006	S1	Steam Boiler Min 85% Eff. Fuel to Steam	Steam Boiler	Good	12
B-2	MIURA / EX-100 SGO	2006	S1	Steam Boiler Min 85% Eff. Fuel to Steam	Steam Boiler	Good	12
CC-1	DAIKIN / 5WL1212C	2017	AHU-9	Cooling Coil	Serves AC-2	Good	13
CP- 1A&B	GRUNDFOS / UPS 40-240	2017	V1/V2/V3	Heating glycol pump	central Mech.	Good	13
HC-1	DAIKIN / 5WQ0801C	2017	AHU-9	Heat Coil	Serves AC-2	Good	13
B-3	MIURA / EX-100 SGO	2009	S1	Steam Boiler Min 85% Eff. Fuel to Steam	Steam Boiler	Good	15
BFWP- 2	GRUNDFOS / CR3- 15K-FGJ-A-E- HQQE	2020	S1	Boiler Feed Water B-2	Boiler Room 109	Good	16
BFWP- 3	GRUNDFOS / CR3- 15K-FGJ-A-E- HQQE	2020	S1	Boiler Feed Water B-3	Boiler Room 109	Good	16
BFWP- 4	GRUNDFOS / CR3- 15K-FGJ-A-E- HQQE	2020	S1	Boiler Feed Water Spare	Boiler Room 109	Good	16
CFP-1	--	2020	P	Chemical Feed Pump & Mixing Tank		Good	16
CFP-2	--	2020	P	Chemical Feed Pump & Mixing Tank		Good	16
CFP-3	--	2020	P	Chemical Feed Pump & Mixing Tank		Good	16

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
CP-2	GRUNDFOS / UP 26-99 BF	2020		DHW recirc west wing	central Mech.	Fair	16
AHU-3	TRANE / MCCB	2006	V5	Boiler Room AHU	For combustion air	Fair	17
AC-2	Energy Labs / C7260-FCH-L	2017	AHU-9	Air Handler	serves surgery and Xray	Good	18
AS-1	SPIROTHERM / VDN200	2017	AHU-9/- 8/V3	Heating Air Separator		Good	18
AS-2	SPIROTHERM / VDN250	2017	AHU-9	Cooling Air Separator	Cooling for AC-2	Good	18
CH-1	ARCTICHILL / ACVMV0300D4- MM-DS	2017	AHU-9	Scroll Chiller	Serves CC-1 (AC- 2)	Good	18
ET-1	AMTROL / SX-90V	2017	AHU-9	Expansion tnk	Serves AC-2 and HV-1 and AC-1 Likely (conflicting docs)	Good	18
ET-2	ARCTICHILL	2017	AHU-9	Expansion tnk, chiller package	Serves CH-1	Good	18
HX-1	KELVION / FG10X20-120	2017	AHU-9/- 8/V3	AC-2 Heating Coil HX	Serves AC-2 and HV-1 and AC-1 Likely (conflicting docs)	Good	18
RF- 2A,B	GREENHECK / SQ- 160-A	2017	AHU-9	Inline Fan	Serves AC-2	Good	18
SF-1	--	2017	AHU-9	Supply Fan Array(2x Plug fan)	Serves AC-2	Good	18
DA-1	HURST / 1900061DA	2020	S1	DA tank		Good	21
SF-1	Q-PAC / FA1700069	2023	AHU-1	Supply Fan	Serving AHU-1	Fiar	24
SF-1	Q-PAC / FA1700069	2023	AHU-4	Supply Air Fan	SF-1	Good	34

## Essential Electrical System, Capacity, and Effectiveness

There are very limited options for higher ampacity loads on the central and west end of the facility. The majority of the larger switchboards and panels with capacity are in the main electrical rooms near the generator room. There are few 480V panels as well on the central and plan west site of the facility.

Many items are mis-labeled, often differing as well between feeder breaker, source panel schedule, panel cover, and local panel schedule.

The critical and equipment branches of the power distribution system have loads mixed on them and so they are not compliant with NEC 517.

Some items have remained and are lightly used in terms of loads served or loads of items connected. The exception being that the west mechanical motor control center is at full load capacity and no additional loads can be added to the existing MCC's. Some of the older switchgear and panels have a very large footprint for the capacity and ampacity they provide. Replacement of these can provide newer equipment, reduce physical footprint of space and improve items for system coordination, short circuit, and arc flash.

## Studies Recommended

We highly suggest that a coordination study be done with any major additions or changes to the power distribution system. This would identify systems weaknesses and help create settings and features which would limit power disruptions to the entire facility, major sections of the facility, or critical parts of the facility when there is a fault at any given point in the power distribution system. Being a critical and important part of the community (including as an evacuation center), having power at this facility is extremely important. Having something such as a fan circuit or similar trip the entire HEA service would be extremely disruptive and impactful. Having a coordinated system with a combination of fuses or electric trip breakers on the main feeders will allow for settings and delays to be adjusted to minimize this risk. In addition, an arc flash study would be very helpful for staff and personnel working on electrical equipment. The study would calculate the incident energy which through added labels would provide a quick indication of how much PPE gear to wear and how safe it is working on that equipment. OSHA provides workplace guidance about electrical safety related work practices and requires arc flash labeling. NFPA 70E 2024 requires arc flash labels per an arc flash hazard analysis and the associated calculations. According to NFPA 70E, labeling is required for any piece of electrical equipment that may need examination, adjustment, service or maintenance while energized.

## Communications

### Rooms and Spaces

The main server room is sufficient for current use but has limited room for growth. This room would be difficult to expand and there is not much room for additional racks and cabinets in the existing space. Adjacent spaces that would need to be removed for expansion are restrooms, an office area, or a hallway. The built and existing racks and spaces have some room for additional cabling and equipment but it is limited. A major addition or a high increase of communication cabling or equipment could fully utilize the available spaces in the racks.

The communication system has limited distributed telecom rooms and some of the spaces used are extremely tight. Nearly all of the distributed telecom rooms are on the lower floor. Some are nearly impossible to get to the back of the room. One room upstairs was being built out as an additional telecom room but there were no conduit or cable tray pathways to this room from other telecom rooms built out yet. Most of the distributed telecom rooms and racks are nearing being full. Some of the distributed telecom rooms have some capacity for

additional cabling or equipment. The two newest comm rooms have space for additional racks, cabling, and equipment.

### Pathways Between Telecom Rooms

There are very limited cable tray and conduit pathways between these telecom rooms and in parts of the hallways which limit flexibility to support the facility. Most cabling is currently run loose or in j-hooks above ceilings, through halls between telecom rooms. There are a few sections of cable tray and raceways but the central and west end of this facility are very lacking in telecom infrastructure and pathways. Many of the sections of cable tray and conduits that do exist are very full and have limited capacity for additional cabling.

## lighting

### Interior Lighting

In general, the facility has older fluorescent and incandescent lamp style lighting fixtures that have been retrofitted with LED lamps/ light sources. A few fluorescent and incandescent lamps remain in various locations throughout the facility, but most of the fixtures have already been retrofitted with LED lamps. Some recent remodel projects have installed LED type fixtures, but the extent is fairly limited to the most recent remodeled project areas. Replacing aging light sources with LED lamps can result in reduced O&M costs. As LED type fixtures are becoming more and more efficient, there is potential for additional O&M savings by replacing the existing fixtures with fixtures with built in LED arrays and boards.

### Exterior Lighting

The existing facility has a few different types of building mounted fixtures, in addition to pole mounted parking lot lights and site/pathway light fixtures. Many of the pole fixtures have been retrofitted with LED lamps, but various fixtures that have metal-halide light sources remain in use.

### Egress Lighting and Exit Signage

Various styles of exit signs were observed throughout the facility, a majority being powered illuminated LED type signs with green and red lettering.

Egress lighting consists of a mix of generator-backed general lighting fixtures, with a few standalone emergency lighting units located in various places. Record drawings and limited site investigation implies that the general lighting fixtures used to illuminate the path of egress along corridors are in fact powered from the Life Safety distribution branch. There are a few fixtures located in restrooms and utility spaces that are also connected to the Life Safety distribution branch. Since these fixtures are not located along the dedicated egress paths, they should be re-fed from the critical or normal branch as appropriate in accordance with NEC 517.

### Controls

Exterior light fixtures are controlled automatically via multiple lighting contactors located within the building. Most of the interior general-illumination fixtures are manually controlled. Where general-illumination fixtures are used to illuminate the means of egress, those fixtures are un-switched 'night-lights' that are always on. A few spaces have been retrofitted with occupancy controls, such as single occupancy restrooms, but the extent of occupancy controls throughout the Facility is limited.

## POWER AND COMMUNICATIONS

DEFICIENCY ID	TITLE	PRIORITY CODE	DEFICIENCY CODE
E1	Generator Annunciator	0	2,3
E2	Generator Age	3	9,19
E3	Generator Room Clearance	2	2,3
E4	Age of Electrical Switchgear	3	3,5,19
E5	Age of Electrical panels	3	2,3,19
E6	Age of Electrical Motor Control Centers	3	3,19
E7	Age of Transformers	3	3,8,19
E8	Clearance in Main Electrical room	3	2,3
E9	Mislabeled and inconsistent labels for equipment and breakers	2	3
E10	Loads and equipment on incorrect branch of power distribution system	1	2,3
E11	Power capacity limitations at west and central areas	4	9
E12	Lack of telecom rooms for full SPH coverage	2	5
E13	Lack of pathways between telecom rooms	4	5
E14	Lack of cable tray through SPH halls	5	5

## LIGHTING

DEFICIENCY ID	TITLE	PRIORITY CODE	DEFICIENCY CODE
L1	Fixtures with bad ballasts	1	19
L2	Broken Light Switch	1	3,19
L3	Failed Lamps	1	19
L4	Inconsistent Egress Signage	5	3
L5	Inefficient Light Source(s)	5	8
L6	Elevator cab lighting power source	5	2
L7	Lighting fed from Life Safety branch distribution	3	2
L8	Manually controlled egress lighting	0	2

Deficiency ID	Title	Priority Code	Deficiency Code
E1	Generator Annunciator	0	2,3
E10	Loads and equipment on incorrect branch of power distribution system	1	2,3
E3	Generator Room Clearance	2	2,3
E9	Mislabeled and inconsistent labels for equipment and breakers	2	3
E12	Lack of telecom rooms for full SPH coverage	2	5
E2	Generator Age	3	9,19
E4	Age of Electrical Switchgear	3	3,5,19
E5	Age of Electrical panels	3	2,3,19
E6	Age of Electrical Motor Control Centers	3	3,19
E7	Age of Transformers	3	3,8,19
E8	Clearance in Main Electrical room	3	2,3
E11	Power capacity limitations at west and central areas	4	9
E13	Lack of pathways between telecom rooms	4	5
E14	Lack of cable tray through SPH halls	5	5

Legend	
Priority Year Code	Deficiency Code
0	Emergency or address soon
1	Address within 12 months
2	Address within 2 years
3	Address within 3 years
4	Address within 4 years
5	Address within 5 years
1	Patient Care
2	Life Safety Compliance
3	General Safety
4	Environmental Compliance
5	Program Deficiencies
6	Unmet Supportable Space Needs
7	Handicapped Compliance
8	Energy Conservation
9	Plant Management
10-16	Architectural Maintenance & Repair
17	Structural Maintenance & Repair
18	Mechanical Maintenance & Repair
19	Electrical Maintenance & Repair
20	Utilities Maintenance & Repair
21	Grounds Maintenance & Repair
22	Painting Maintenance & Repair
23	Roof Maintenance & Repair
24	Seismic Mitigation
25	Other

Deficiency ID	Title	Priority Code	Deficiency Code
L8	Manually controlled egress lighting	0	2
L1	Fixtures with bad ballasts	1	19
L2	Broken Light Switch	1	3, 19
L3	Failed Lamps	1	19
L7	Lighting fed from Life Safety branch distribution	3	2
L4	Inconsistent Egress Signage	5	3
L5	Inefficient Light Source(s)	5	8
L6	Elevator cab lighting power source	5	2

Legend	
Priority Year Code	Deficiency Code
0	Emergency or address soon
1	Address within 12 months
2	Address within 2 years
3	Address within 3 years
4	Address within 4 years
5	Address within 5 years
1	Patient Care
2	Life Safety Compliance
3	General Safety
4	Environmental Compliance
5	Program Deficiencies
6	Unmet Supportable Space Needs
7	Handicapped Compliance
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19	Electrical Maintenance & Repair
20	Utilities Maintenance & Repair
21	Grounds Maintenance & Repair
22	Painting Maintenance & Repair
23	Roof Maintenance & Repair
24	Seismic Mitigation
25	Other

Deficiency ID	Title	Priority Code	Deficiency Code
L8	Manually controlled egress lighting	0	2
L1	Fixtures with bad ballasts	1	19
L2	Broken Light Switch	1	3, 19
L3	Failed Lamps	1	19
L7	Lighting fed from Life Safety branch distribution	3	2
L4	Inconsistent Egress Signage	5	3
L5	Inefficient Light Source(s)	5	8
L6	Elevator cab lighting power source	5	2

Legend			
Priority Year Code		Deficiency Code	
0	Emergency or address soon	1	Patient Care
1	Address within 12 months	2	Life Safety Compliance
2	Address within 2 years	3	General Safety
3	Address within 3 years	4	Environmental Compliance
4	Address within 4 years	5	Program Deficiencies
5	Address within 5 years	6	Unmet Supportable Space Needs
		7	Handicapped Compliance
		8	Energy Conservation
		9	Plant Management
		10-16	Architectural Maintenance & Repair
		17	Structural Maintenance & Repair
		18	Mechanical Maintenance & Repair
		19	Electrical Maintenance & Repair
		20	Utilities Maintenance & Repair
		21	Grounds Maintenance & Repair
		22	Painting Maintenance & Repair
		23	Roof Maintenance & Repair
		24	Seismic Mitigation
		25	Other

**L1 Fixtures with bad ballasts**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

Priority Code: 1

Deficiency Code:

19



Room Number	Room Name	SQFT of Area (if Applicable)
	Conference Room/HR Entry Vestibule	
	Dining Room	

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Entry - Recessed downlight reported to have bad ballast per Maintenance personnel. Fixture was observed 'off' for duration of site visit.  
 Dining - Recessed downlight observed flickering while on site.

**Narrative Description of Correction / Resolution:**

Replace entire fixture with LED type luminaire.

**Remarks**

Record drawings indicate that the fixture with bad ballast in the entry way is the only fixture in that space fed from the Life Safety branch. As is, upon loss of normal power, there would be no illumination within the Entryway. See related deficiency L8.

**L2 Broken Light Switch**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

Priority Code: 1

Deficiency Code: 3, 19



Room Number	Room Name	SQFT of Area (if Applicable)
	Surgery Suite Corridor	

**Department or Area**  
 Surgery

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Light switch in corridor was not operable at the time of the site visit.

**Narrative Description of Correction / Resolution:**

Replace lighting control switch.

**Remarks**

**L3 Failed Lamps**

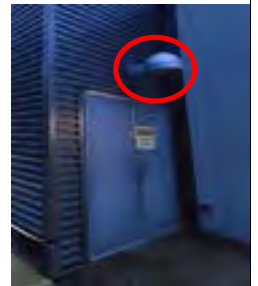
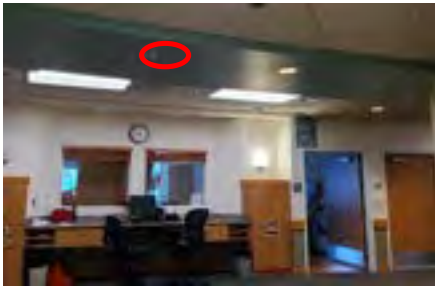
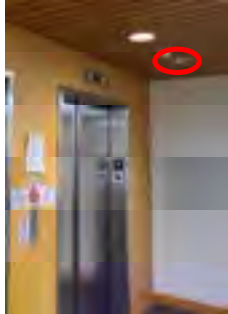
**Electrical**

**Observed Deficiency and Proposed Correction**

Priority Code: 1

Deficiency Code:

19



Room Number	Room Name	SQFT of Area (if Applicable)
	SPH - Main Facility	

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Numerous fixtures observed with lamps that have failed or reached end of life. Fixtures were observed 'off' during site visit.  
 1st Floor - Recessed 2x4 in Corridor outside Electrical Room  
 2nd Floor - Recessed downlights at: Reception in ER lobby, Corridor outside Elevator A, Corridor outside Acute care patient room, and Corridor outside Imaging Suite. Linear fixtures in ER entryway.  
 3rd Floor - Recessed 2x4 in Elevator lobby  
 Exterior - Linear strip fixture at ER entry, recessed MH downlight at southwest LTC entrance, wall-mounted fixture above doorway on north side.

**Narrative Description of Correction / Resolution:**

Interim: Provide new lamps in existing fixtures.  
 Long Term: Replace entire fixture with LED type luminaire.

**Remarks**

**L4 Inconsistent Egress Signage**

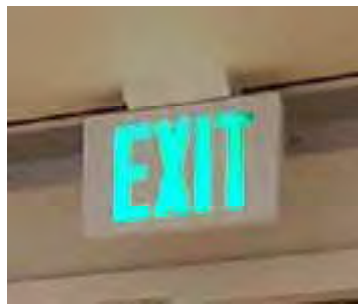
Electrical

Observed Deficiency and Proposed Correction

Priority Code: 5

Deficiency Code:

3



Room Number	Room Name	SQFT of Area (if Applicable)
	SPH - Main Facility	

**Department or Area**  
 Entire Facility

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Multiple types of exit signs were observed throughout the Facility with the following variations:  
 Types: Non-illuminated (powered) and illuminated (powered)  
 Housing Colors: White, Black, Aluminum  
 Housing Materials: Plastic, Aluminum  
 Lettering Colors: Red and Green  
 Accessories: With and without emergency lighting units (bug-eyes)

**Narrative Description of Correction / Resolution:**

Standardize style of exit signs throughout building.

**Remarks**

**L5                    Inefficient Light Source(s)**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

**Priority Code: 5**

**Deficiency Code:**

**8**



Room Number	Room Name	SQFT of Area (if Applicable)
	SPH - Main Facility	

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

There are a mix of light sources present throughout the facility. Though most of the fluorescent type fixtures have been retrofitted with LED lamps, there are still fixtures with fluorescent, incandescent, and metal halide light sources.

While retrofitting existing fixtures with LED lamps helps reduce the lighting loads, the fixtures themselves are not as efficient as the equivalent LED fixture types.

**Narrative Description of Correction / Resolution:**

Replace existing fixtures with LED types.

**Remarks**

**L6 Elevator cab lighting power source**

**Electrical**

**Observed Deficiency and Proposed Correction**

Priority Code: 5

Deficiency Code:

2



Room Number	Room Name	SQFT of Area (if Applicable)
	Elevators	

**Department or Area**  
 Elevators

**Priority Year**

**Narrative Description of Deficiency / Problem:**

The elevator cab lighting is powered from the Critical and Equipment branch distribution systems.  
 NEC 517 .33 The Life-Safety branch shall supply power as follows:  
 NEC 517.33 (G): Elevator cab lighting, control, communications, and signal systems

Elevator car lights in photo above are fed from Panel 1CLC, circuit # 9.

**Narrative Description of Correction / Resolution:**

Provide power to elevator cab lighting from Life Safety distribution equipment.

**Remarks**

L7 Lighting fed from Life Safety branch distribution

Electrical

Observed Deficiency and Proposed Correction

Priority Code: 3

Deficiency Code:

2



Room Number	Room Name	SQFT of Area (if Applicable)
	Various	

Department or Area

Priority Year

**Narrative Description of Deficiency / Problem:**

Various lights within bathrooms and utility spaces are powered from Life Safety branch.  
 NEC 517.33 Life Safety Branch - No functions other than those listed in 517.33(A)-(H) shall be connected to the life safety branch.  
 517.33(A) Illumination of Means of Egress: Illumination of means of egress, such as lighting required for corridors, passageways, stairways, and landings at exit doors, and all necessary ways of approach to exits.  
 Where not required by code to illuminate means of egress, fixtures shall be powered from the Critical or Normal branch distribution systems in accordance with NEC 517.

**Narrative Description of Correction / Resolution:**

Provide power to fixtures from Critical or Equipment branch distribution equipment.

**Remarks**

Fixtures in photo above are fed from Life Safety Panel 1XA, circuit # 12 and manually controlled on/off via wall switch (not shown).

**L8 Manually controlled egress lighting**

**Electrical**

**Observed Deficiency and Proposed Correction**

**Priority Code: 0**

**Deficiency Code:**

**2**



Room Number	Room Name	SQFT of Area (if Applicable)
	Conference Room/HR Entryway and Vestibule	

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

There are 3 fixtures within the entryway and vestibule that are controlled via manual on/off wall switch, and powered from the Life Safety branch. It appears that these fixtures are intended to provide illumination along egress path through the entry and vestibule.

If these fixtures are not switched 'on' manually, upon loss of normal power, there is no illumination throughout the vestibule, and entryway which is designated as a path of egress.

NFPA 101 7.8.1.2: Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use, unless otherwise provided in 7.8.1.2.2.

**Narrative Description of Correction / Resolution:**

Remove manual controller and provide un-switched power from Life Safety branch equipment.

Alternatively, replace manual controller with an automatic control device complying with NFPA 101 7.8.1.2.2.

**Remarks**

Record drawings indicate that the fixture with bad ballast in the entry way (not shown in picture above) is the only fixture in that space fed from the Life Safety branch. As is, upon loss of normal power, there would be no illumination within the Entryway.

See related deficiency L1.

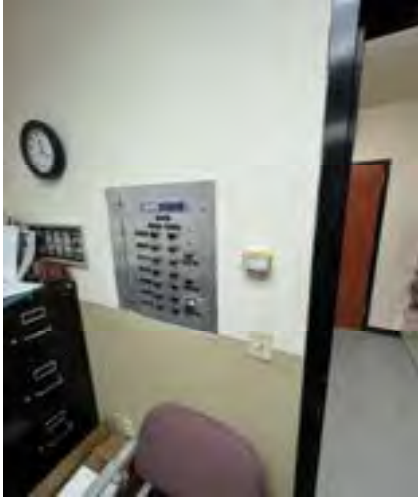
Deficiency ID	Title	Priority Code	Deficiency Code
E1	Generator Annunciator	0	2,3
E10	Loads and equipment on incorrect branch of power distribution system	1	2,3
E3	Generator Room Clearance	2	2,3
E9	Mislabeled and inconsistent labels for equipment and breakers	2	3
E12	Lack of telecom rooms for full SPH coverage	2	5
E2	Generator Age	3	9,19
E4	Age of Electrical Switchgear	3	3,5,19
E5	Age of Electrical panels	3	2,3,19
E6	Age of Electrical Motor Control Centers	3	3,19
E7	Age of Transformers	3	3,8,19
E8	Clearance in Main Electrical room	3	2,3
E11	Power capacity limitations at west and central areas	4	9
E13	Lack of pathways between telecom rooms	4	5
E14	Lack of cable tray through SPH halls	5	5

Legend			
Priority Year Code		Deficiency Code	
0	Emergency or address soon	1	Patient Care
1	Address within 12 months	2	Life Safety Compliance
2	Address within 2 years	3	General Safety
3	Address within 3 years	4	Environmental Compliance
4	Address within 4 years	5	Program Deficiencies
5	Address within 5 years	6	Unmet Supportable Space Needs
		7	Handicapped Compliance
		8	Energy Conservation
		9	Plant Management
		10-16	Architectural Maintenance & Repair
		17	Structural Maintenance & Repair
		18	Mechanical Maintenance & Repair
		19	Electrical Maintenance & Repair
		20	Utilities Maintenance & Repair
		21	Grounds Maintenance & Repair
		22	Painting Maintenance & Repair
		23	Roof Maintenance & Repair
		24	Seismic Mitigation
		25	Other

**E1 Generator Annunciator**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

Priority Code: 0

Deficiency Code: 2,3



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Generator is not monitoring and reporting required alarms at the annunciator panels. The annunciator points and reporting means are not compliant with current code requirements including NFPA and State of Alaska. The annunciator panel upstairs in the acute care nurse office is associated with this comment as well (no photo).

**Narrative Description of Correction / Resolution:**

Replace generator monitoring and annunciator equipment.

**Remarks**

E2 Generator Age  
 Electrical  
 Observed Deficiency and Proposed Correction

Priority Code: 3

Deficiency Code: 9,19



Room Number	Room Name	SQFT of Area (if Applicable)

Department or Area

Priority Year

**Narrative Description of Deficiency / Problem:**

Generator 1 (plan north) was replaced about 2005 and generator 2 (plan south) was replaced in 1983. Generator 2 is quite old and in fair to poor condition.

**Narrative Description of Correction / Resolution:**

Replace generator 2. Consider relocating and replacing both generators.

**Remarks**

**E3 Generator Room Clearance**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

Priority Code: 2

Deficiency Code: 2,3



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

NEC required front and/or top equipment clearance is not always met in this room. This room is very full.

**Narrative Description of Correction / Resolution:**

Relocate some equipment or replace with smaller footprint enclosures and relayout to provide code required clearances. Reroute pipes, ducts, conduits, and items from above panels that are not permitted in equipment clearance areas.

**Remarks**

**E4 Age of Electrical Switchgear**  
 Electrical  
 Observed Deficiency and Proposed Correction

Priority Code: 3

Deficiency Code: 3,5,19



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Main sections of switchgear in the main electrical rooms are quite old. Some of the switchgear is from 1974 (MDP and HMDP). Some of the switchgear (CDP4, EQDP6, Sub MDP, and CMDP) were installed in 1983. Some of the switchboards (EQDP8, CDP6, and NMDP) were installed in 1999. There are some lower ampacity distribuion panels that were installed in the late 70's and early 80's in the central mech room and plan north of the main conference room. Parts and components to maintain and repair these will becoming increasingly hard to find.

**Narrative Description of Correction / Resolution:**

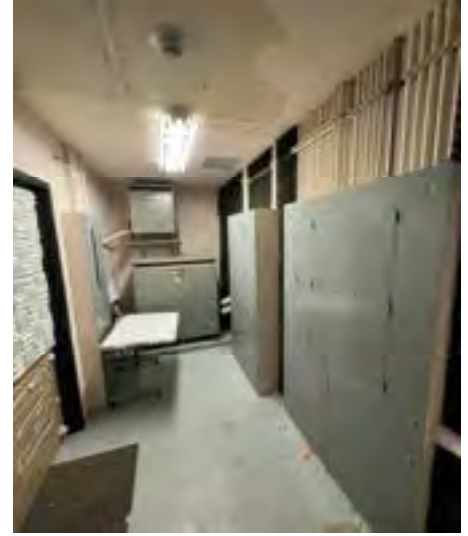
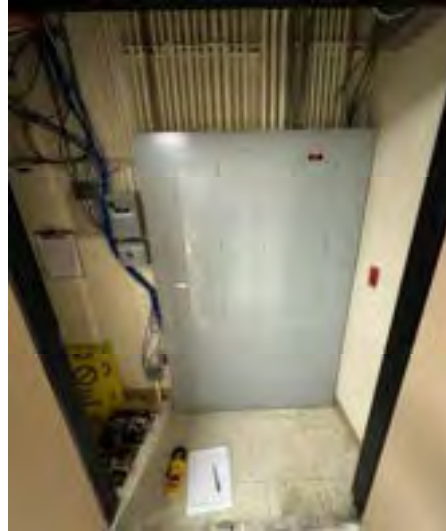
Replace main switchgear with smaller footprint equipment and include electronic trip breakers for coordination requirements.

**Remarks**

**E5 Age of Electrical panels**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

**Priority Code: 3**

**Deficiency Code: 2,3,19**



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Many panels are from the late 70's and early 80's. Many other panels are from 1999. There are a few panels that have been installed more recently as well. Parts and components to maintain and repair these will becoming increasingly hard to find.

**Narrative Description of Correction / Resolution:**

Replace panels. Provide electronic trip breakers for coordination.

**Remarks**

**E6 Age of Electrical Motor Control Centers**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

Priority Code: 3

Deficiency Code: 3,19



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

The 2 motor control centers in the west mechanical room are quite old (installed in 1983).

**Narrative Description of Correction / Resolution:**

Replace MCC's with new MCC's or panels and local starter/disconnects or VFD's.

**Remarks**

**E7 Age of Transformers**  
**Electrical**  
**Observed Deficiency and Proposed Correction**

Priority Code: 3

Deficiency Code: 3,8,19



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Many transformers were installed in the late 70's and early 80's. These were not energy efficient like transformers manufactured today. These are nearing their end of expected useful life.

**Narrative Description of Correction / Resolution:**

Replace old transformers and associated feeders.

**Remarks**

**E8 Clearance in Main Electrical room**  
 Electrical  
 Observed Deficiency and Proposed Correction

Priority Code: 3

Deficiency Code: 2,3



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Electrical rooms do not have the full code required clearance (front and top). The exterior doors on both main elec rooms were somewhat stiff to open. Current code also requires doors swing out and have panic hardware.

**Narrative Description of Correction / Resolution:**

Replace equipment with smaller footprint enclosures. Revise layout and obstructoins above and in clearance spaces to be code compliant. Replace door hardware and swing on one door.

**Remarks**

**E9 Mislabeled and inconsistent labels for equipment and breakers**

Electrical

Observed Deficiency and Proposed Correction

Priority Code: 2

Deficiency Code: 3



Room Number	Room Name	SQFT of Area (if Applicable)
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**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Switchboards, panels, ATS's, transformers, breakers on feeders and panel schedules were often mislabeled and inconsistently labeled. Labels on equipment covers were often different than labels on panel schedules or feeder breakers. Label on one transfer switch indicated it was a manual switch when it is an automatic transfer switch.

**Narrative Description of Correction / Resolution:**

Clarify branches of power distribution system, ATS's, and downstream loads. Relabel items on covers, feeder breakers, and panel schedules. Ideally any renamed panels would have branch circuits relabeled as well. Three switchgear items are labeled with reference to main distribution.

**Remarks**

**E10 Loads and equipment on incorrect branch of power distribution system**  
Electrical  
**Observed Deficiency and Proposed Correction**

**Priority Code: 1**

**Deficiency Code: 2,3**



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

Labels on items were also misleading on what equipment branch it is fed from. Various projects over the years have had different naming systems and names of those panels when refed or changed have not always been updated or aligned with branch panel or equipment is actually connected to. Examples from life safety branch include "EPS" and "ELS". Examples from the critical branch include "LA", "LB", "LK", "PA", "PB", "1NA", "2NA", "SDP", "PK-1", "KK-1", "1NH", "RP". Examples from the equipment branch include "MCC-C1", "1NB", "2ND", "1NHA", "2NLA", "2NLB", "1A".

**Narrative Description of Correction / Resolution:**

Relabel panels, switchboards, and equipment for the branch that it is connected to and served from with a consistent convention for the SPH facility. Revise branch circuits for loads to be on the correct branch of the essential electrical system (ie life safety, critical, equipment, or normal) per specified requirements of the National Electrical Code article 517.

**Remarks**

Initial focus on code alignment might be just on the life safety branch. Or Life safety and critical branches to start.

**E11 Power capacity limitations at west and central areas**

Electrical

Observed Deficiency and Proposed Correction



Priority Code: 4

Deficiency Code: 9



Room Number	Room Name	SQFT of Area (if Applicable)
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Department or Area

Priority Year

**Narrative Description of Deficiency / Problem:**

Switchboards and panels rated more than 250A are primarily located in the main electrical room areas in the plan southeast area of the SPH facility. Switchboards and panels at 480Y/277V are also primarily located in this same area. Most distributed panels around SPH are 225A or smaller and typically 208Y/120V. This limits power capacity for additional equipment and loads without bringing feeders to a project area on that project.

**Narrative Description of Correction / Resolution:**

Create 480V distribution infrastructure on the essential electrical system (EES) throughout areas at SPH. Ideally this would be on both floors but one floor could possibly be served from either above or below. Having 480V EES infrastructure at SPH and on both floors would minimize impacts on other departments during remodels. To save space in ceiling bus ducts could be considered. The 480V feeders and infrastructure would be for 4 branches: Life Safety, Critical, Equipment, and Normal.

**Remarks**

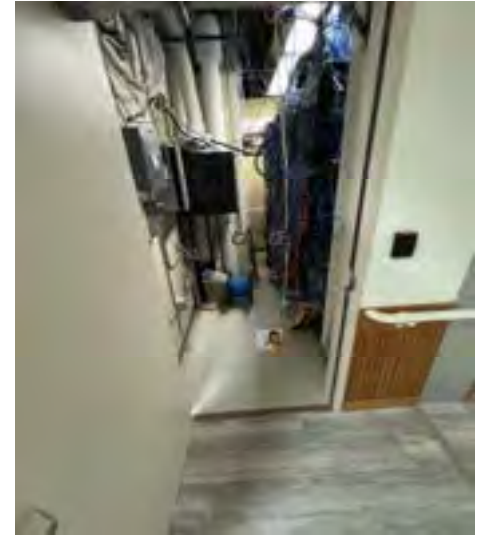
**E12 Lack of telecom rooms for full SPH coverage**

Electrical

Observed Deficiency and Proposed Correction

Priority Code: 2

Deficiency Code: 5



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

There are some telecom rooms but not enough rooms and the existing rooms are not large enough to properly cover SPH entire facility. The majority of the telecom rooms are on the lower floor and some are a closet or space in a nurses area. Most of the available space for additional comm cabling and equipment is in the newer rooms and the main server room. Some of the existing telecom spaces are too small and do not have proper room and equipment access clearances. UTP copper network cabling is limited to 290 feet to pass standard tests for cable bandwidths. With limited rooms and capacity, cabling would be too long to pass cable tests without building additional telecommunication infrastructure.

**Narrative Description of Correction / Resolution:**

Provide 2-3 additional telecom rooms with racks and dedicated front and rear rack and equipment access. Rooms would be sized and laid out per BISC standards and recommendations.

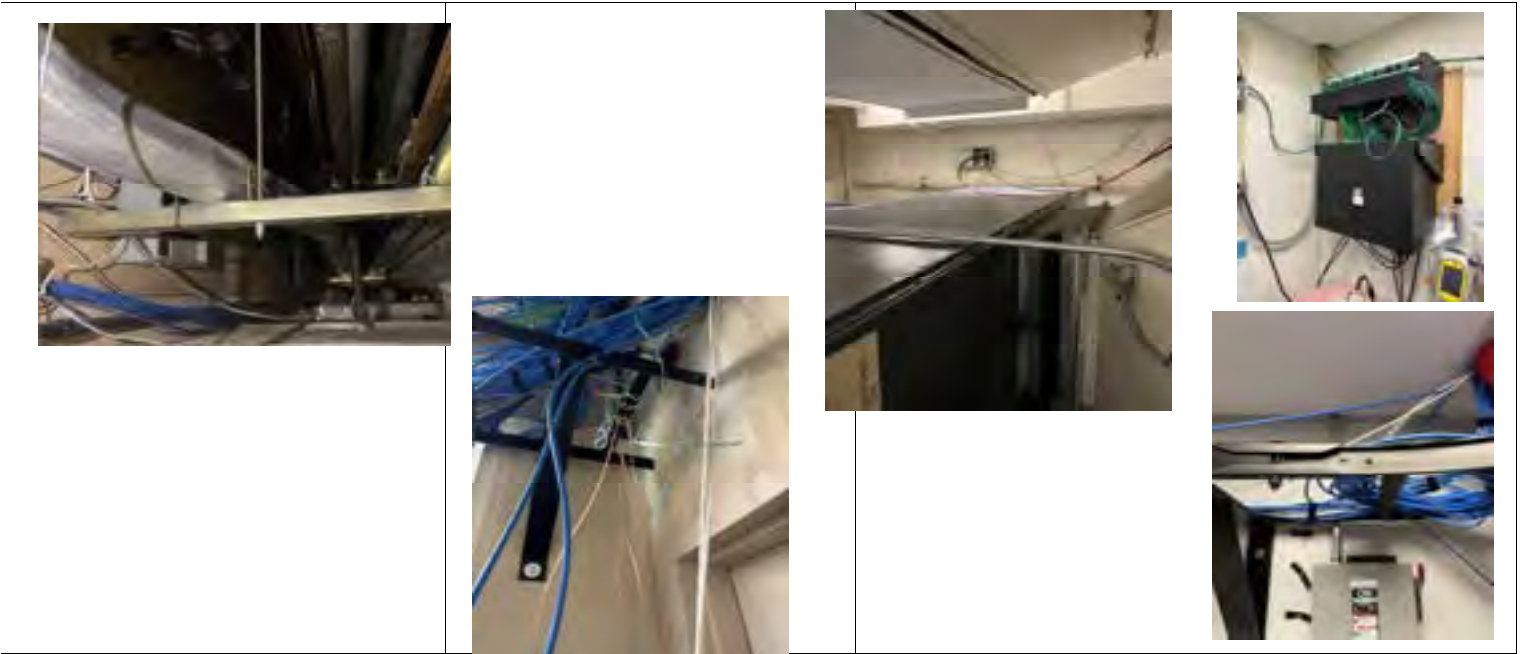
**Remarks**

**E13 Lack of pathways between telecom rooms**

Electrical

Observed Deficiency and Proposed Correction

**Priority Code: 4 Deficiency Code: 5**



Room Number	Room Name	SQFT of Area (if Applicable)

**Department or Area**

**Priority Year**

**Narrative Description of Deficiency / Problem:**

There are very limited conduits and cable tray pathways between the existing telecom rooms, closets, and cabinets added in nurse spaces. There are some sections of raceways and cable tray but many of the backbone cables are routed in accessible ceiling spaces and sometimes supported by j-hooks.

**Narrative Description of Correction / Resolution:**

Provide conduit and cable tray pathways between telecom rooms. Ideally there would be multiple conduits between each and each conduit pathway would have multiple innerducts which would allow for flexibility and ease during moves, revisions, updates, and remodels.

**Remarks**

E14 Lack of cable tray through SPH halls

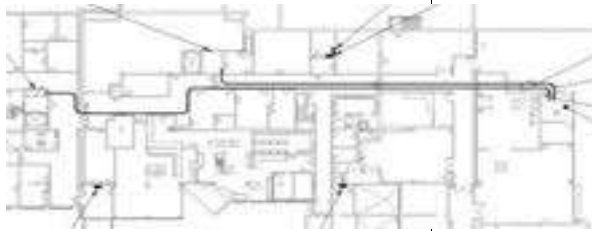
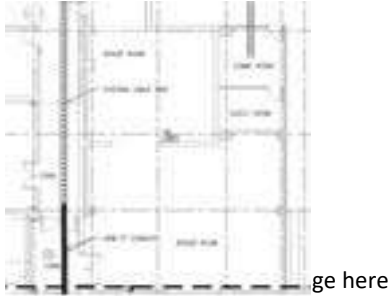
Electrical

Observed Deficiency and Proposed Correction



Priority Code: 5

Deficiency Code: 5



Room Number	Room Name	SQFT of Area (if Applicable)

Department or Area

Priority Year

**Narrative Description of Deficiency / Problem:**

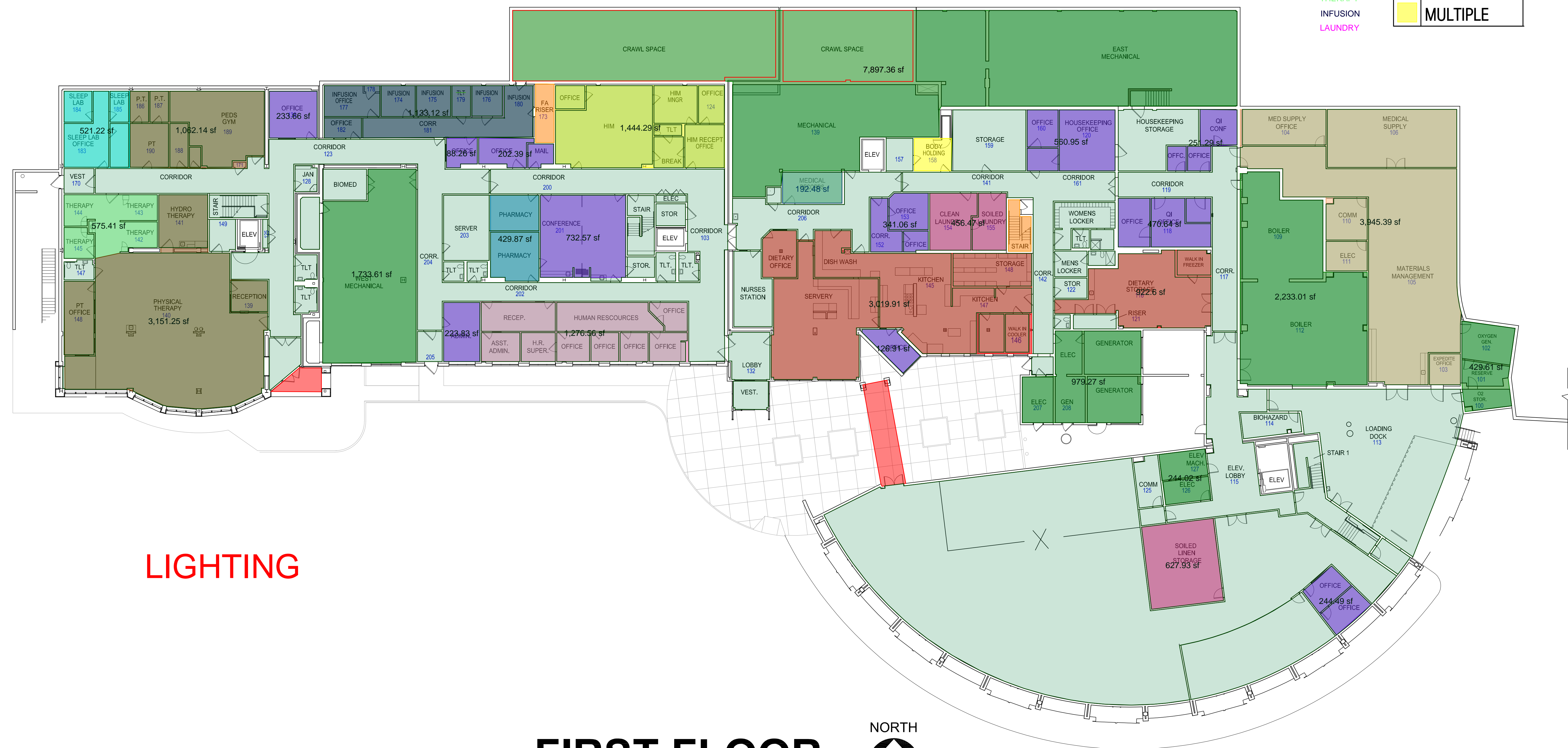
There is limited cable tray in hallways and accessible spaces at SPH. Sections that do exist are generally very full. The limited locations and cable tray capacity limit the ability in remodel projects to utilize existing infrastructure. This was especially true in the long term care addition.

**Narrative Description of Correction / Resolution:**

Provide conduit and cable tray pathways through SPH hallways for use during project remodels.

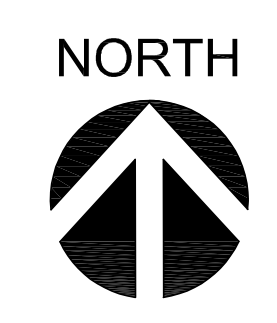
**Remarks**

MECHANICAL / ELECTRICAL		LIGHT SOURCE(S)	
MATERIAL MANAGEMENT	FLUORESCENT	PHYSICAL THERAPY	LED (YELLOW)
ADMIN	LED	PHYSICAL THERAPY	LED RETROFIT
NUTRITION SERVICES	METAL HALIDE	PHARMACY	MULTIPLE
HEALTH INFORMATION MANAGEMENT		SLEEP THERAPY	
PHYSICAL THERAPY		THERAPY	
HUMAN RESOURCES		INFUSION	
PHARMACY		LAUNDRY	
SLEEP THERAPY			
THERAPY			
INFUSION			
LAUNDRY			



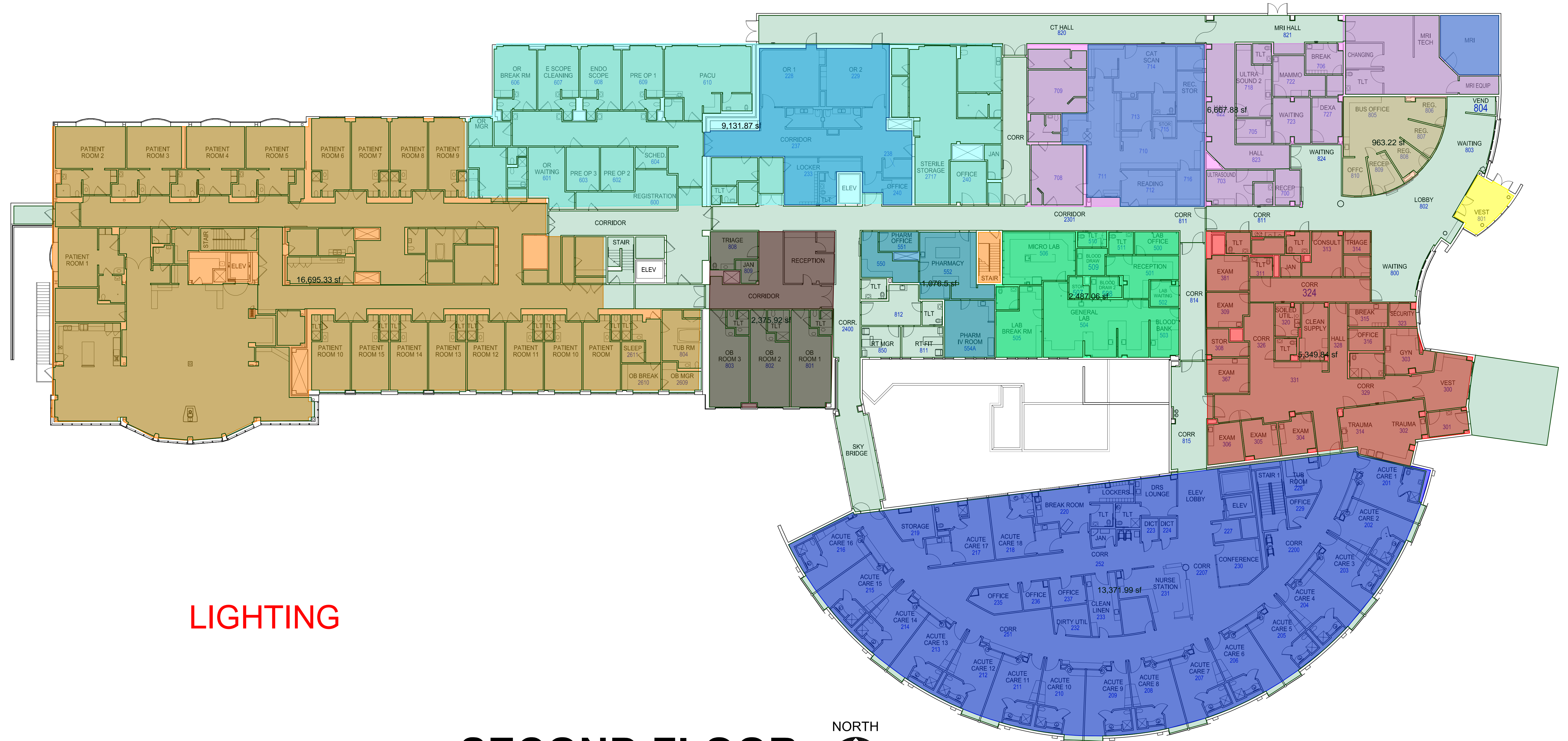
# LIGHTING

# FIRST FLOOR



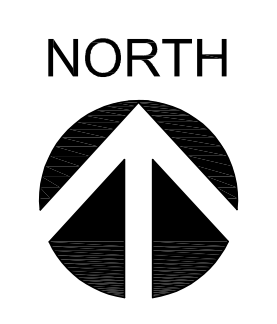
- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

LIGHT SOURCE(S)	
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<span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black;"></span>	LED RETROFIT
<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black;"></span>	MULTIPLE



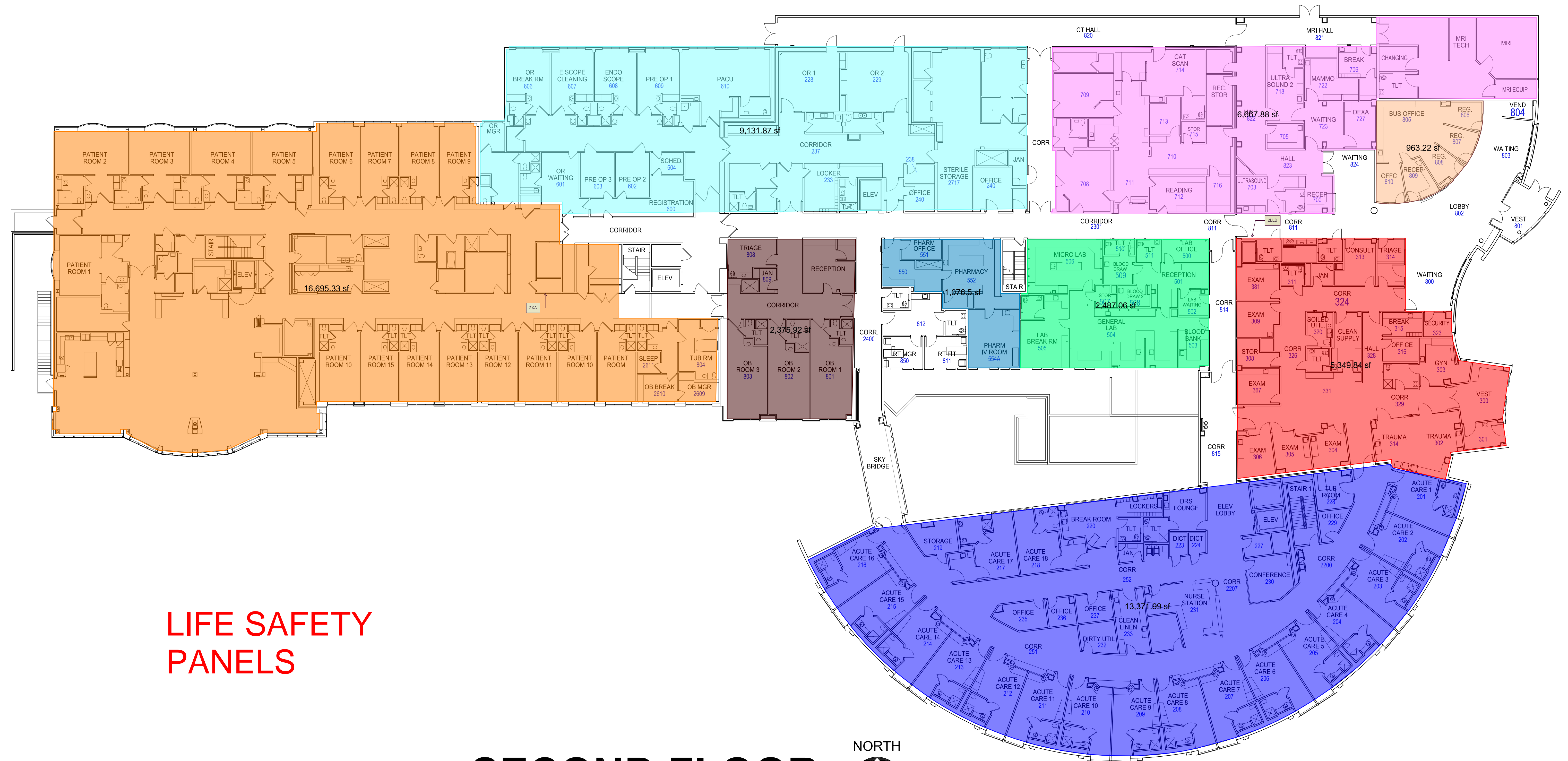
# LIGHTING

# SECOND FLOOR



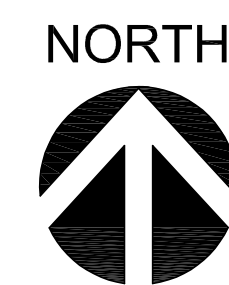


- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

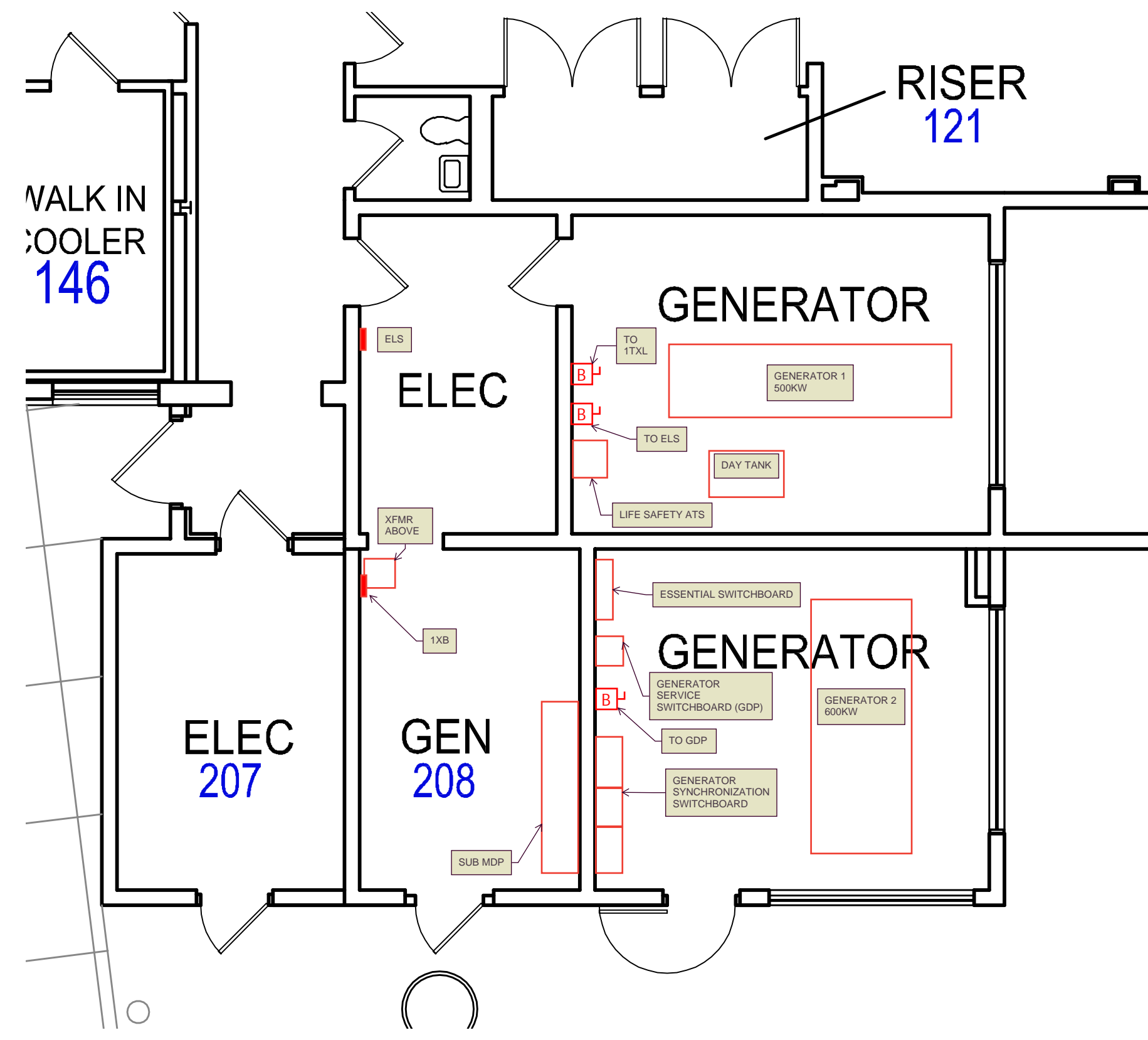


**LIFE SAFETY  
PANELS**

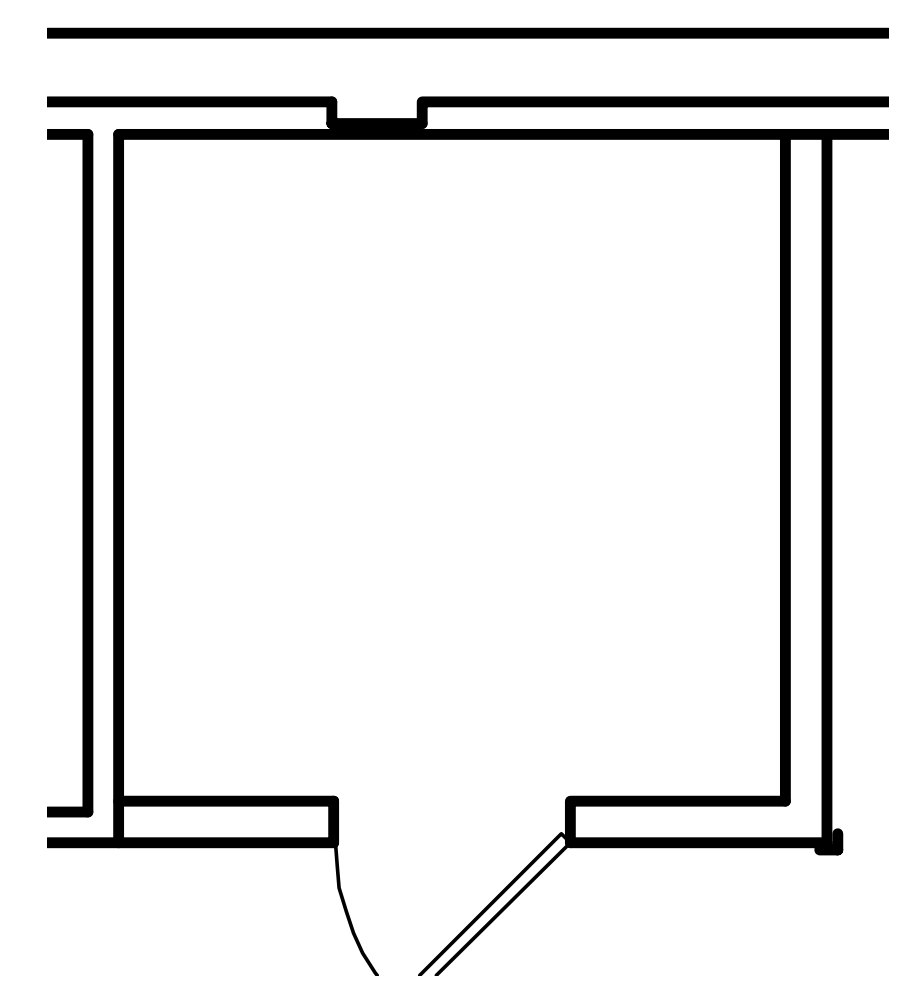
# SECOND FLOOR



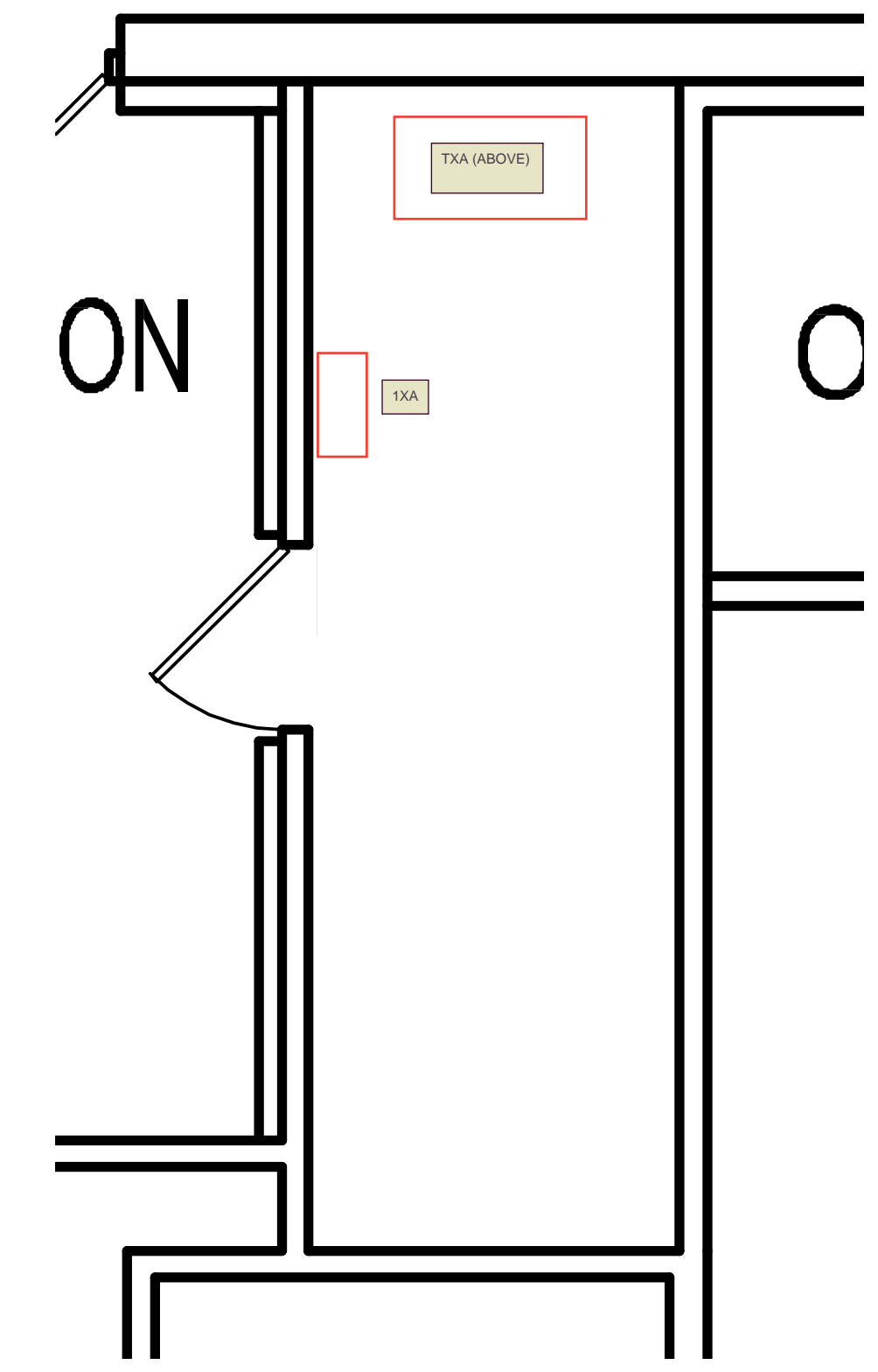
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



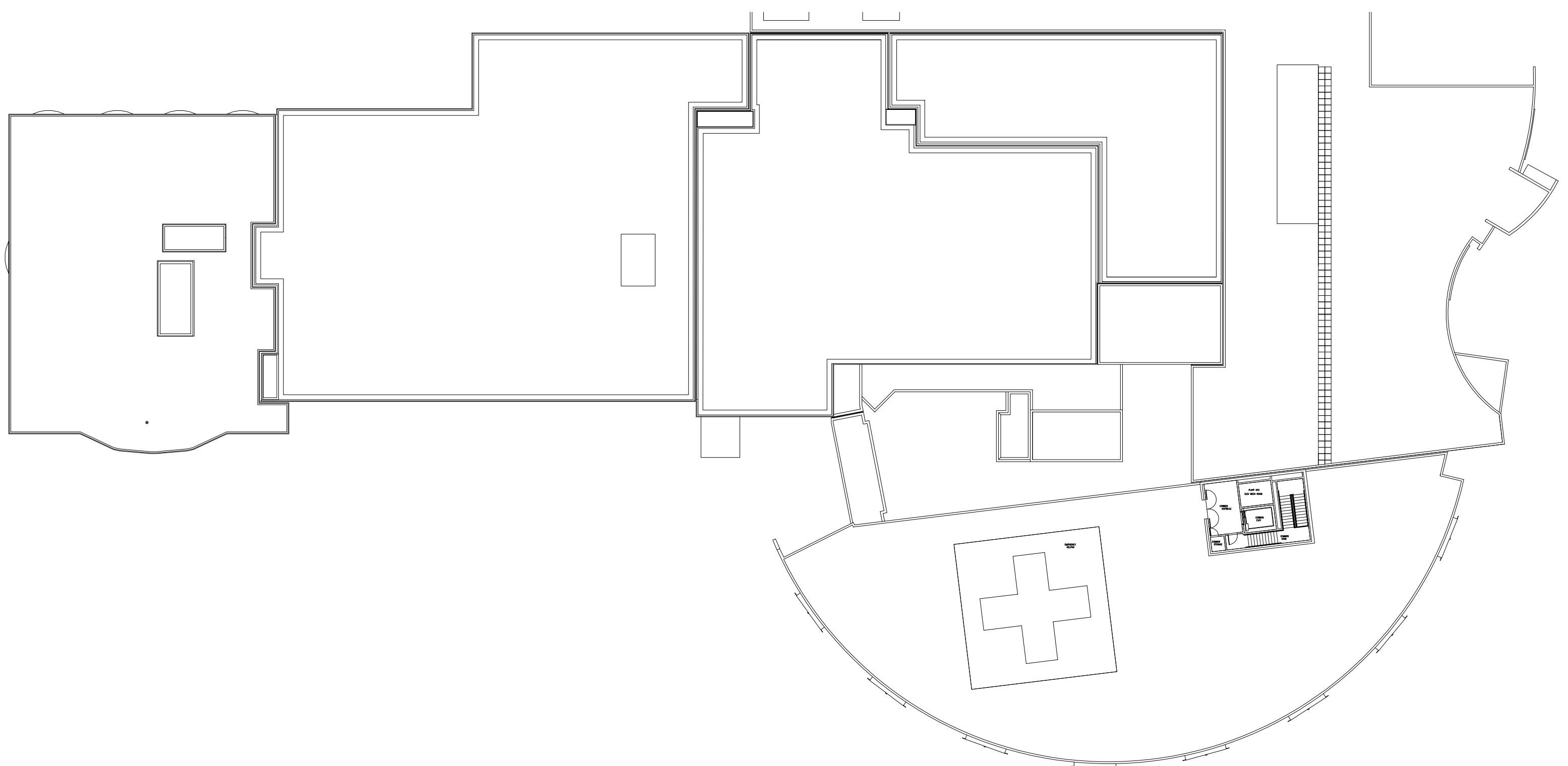
INFUSION 176 FIRST FLOOR



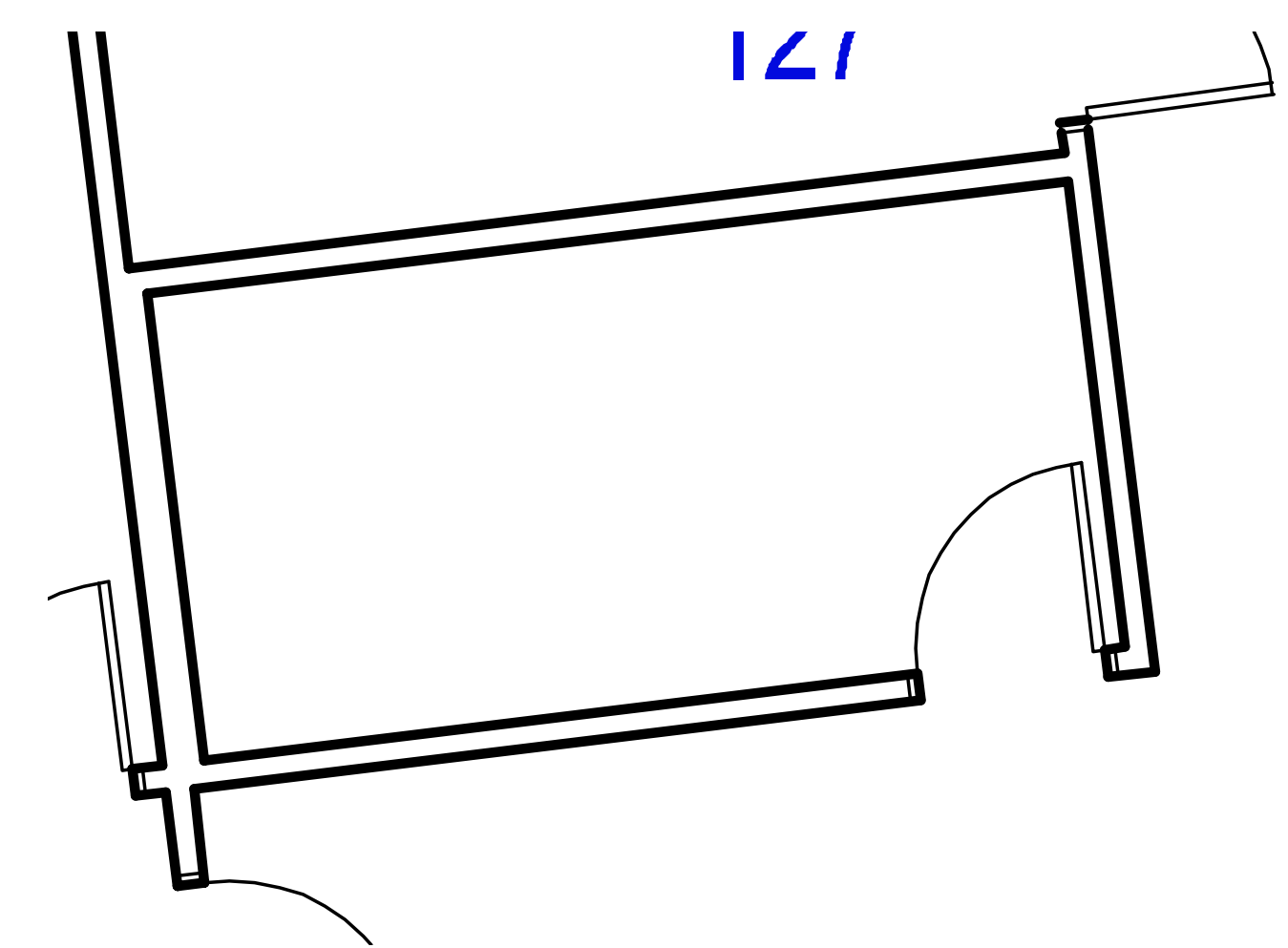
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN

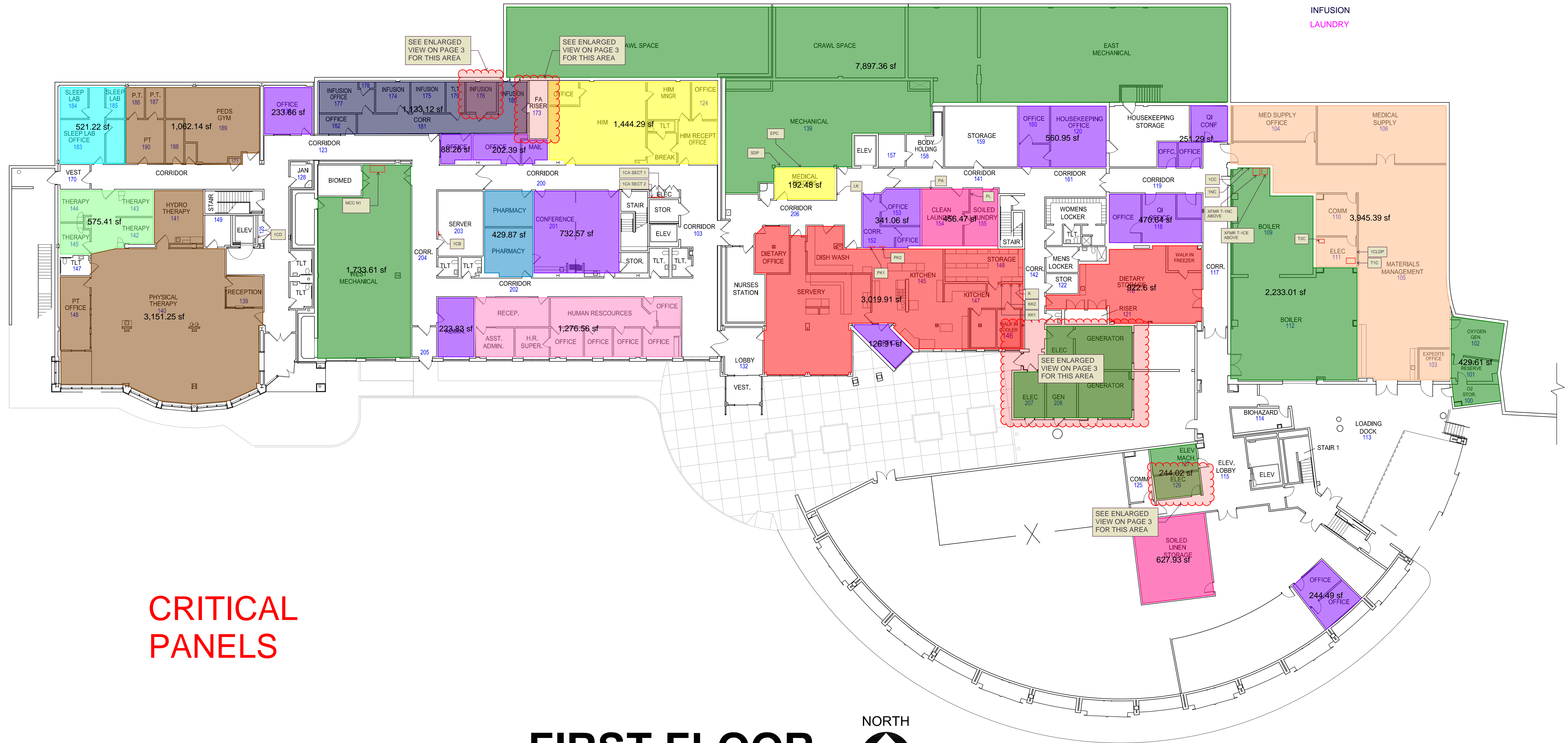


ELECTRICAL 126 FIRST FLOOR



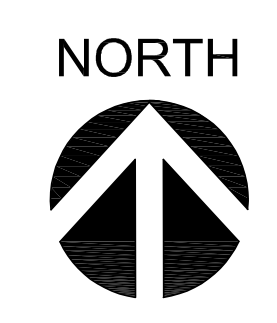
LIFE SAFETY PANELS

- MECHANICAL / ELECTRICAL
- MATERIAL MANAGEMENT
- ADMIN
- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY

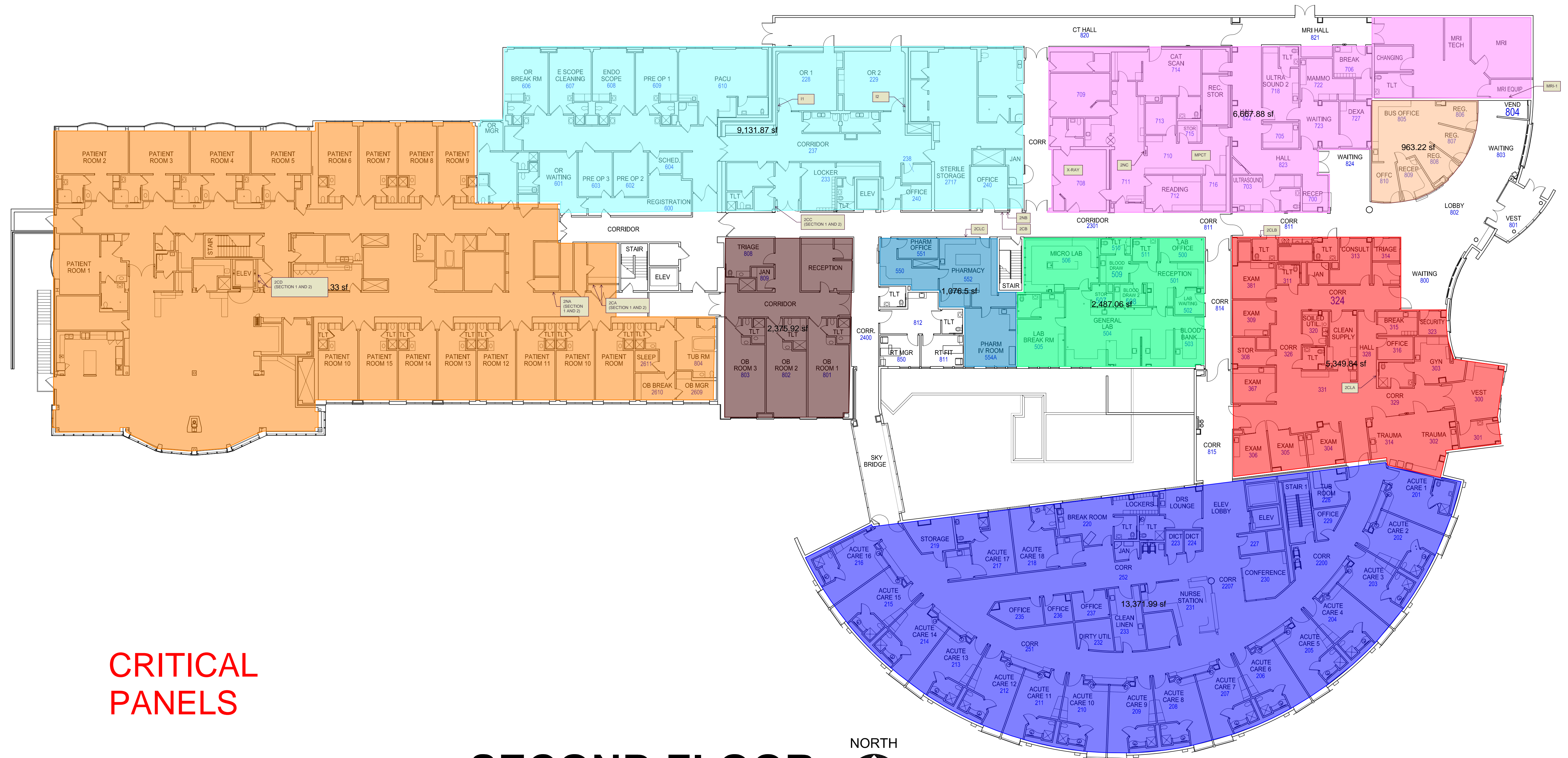


**CRITICAL  
PANELS**

**FIRST FLOOR**

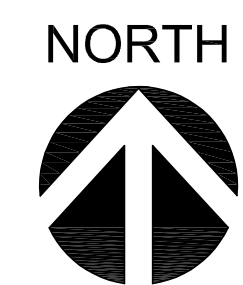


- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

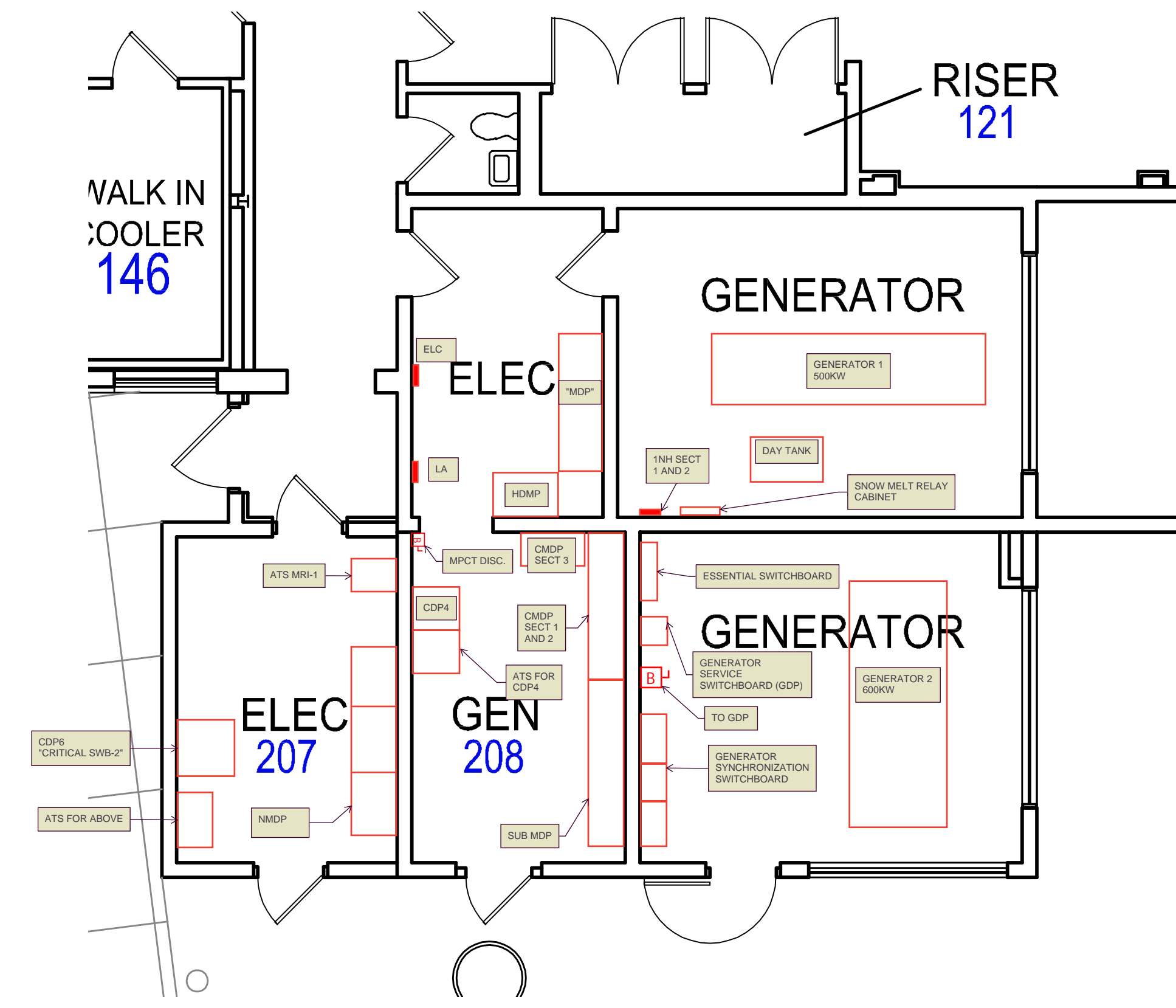


**CRITICAL  
PANELS**

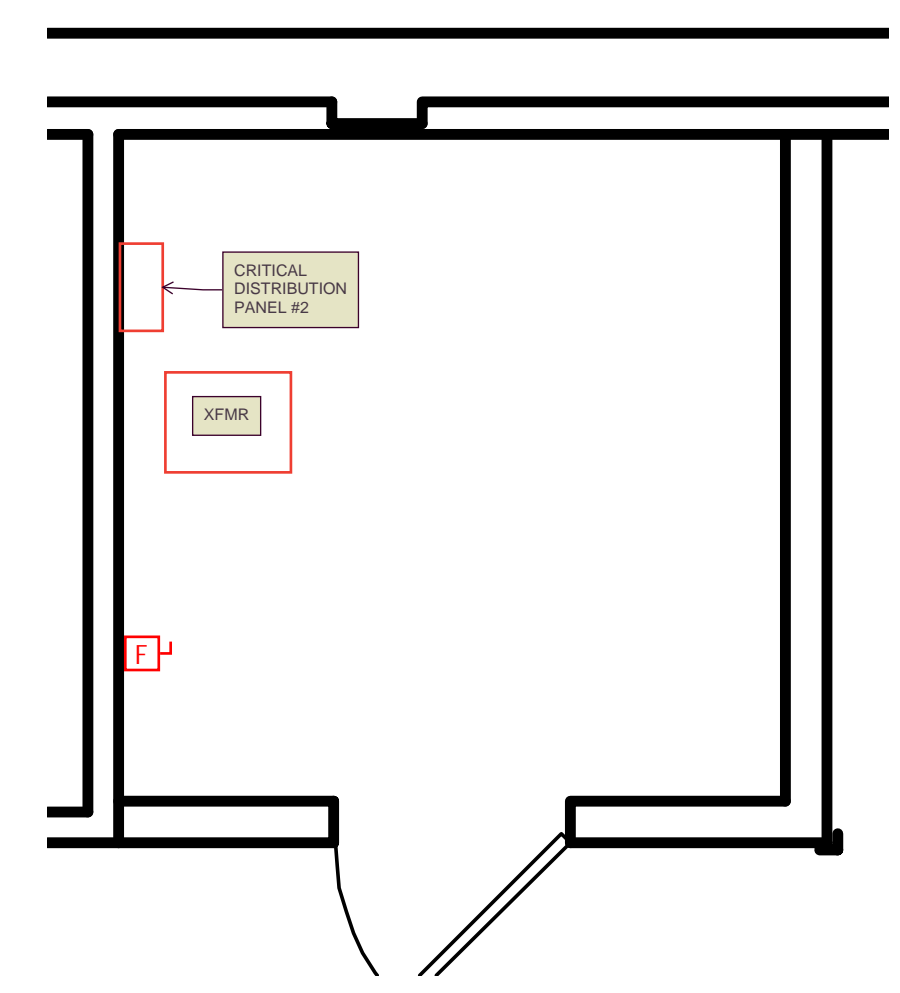
**SECOND FLOOR**



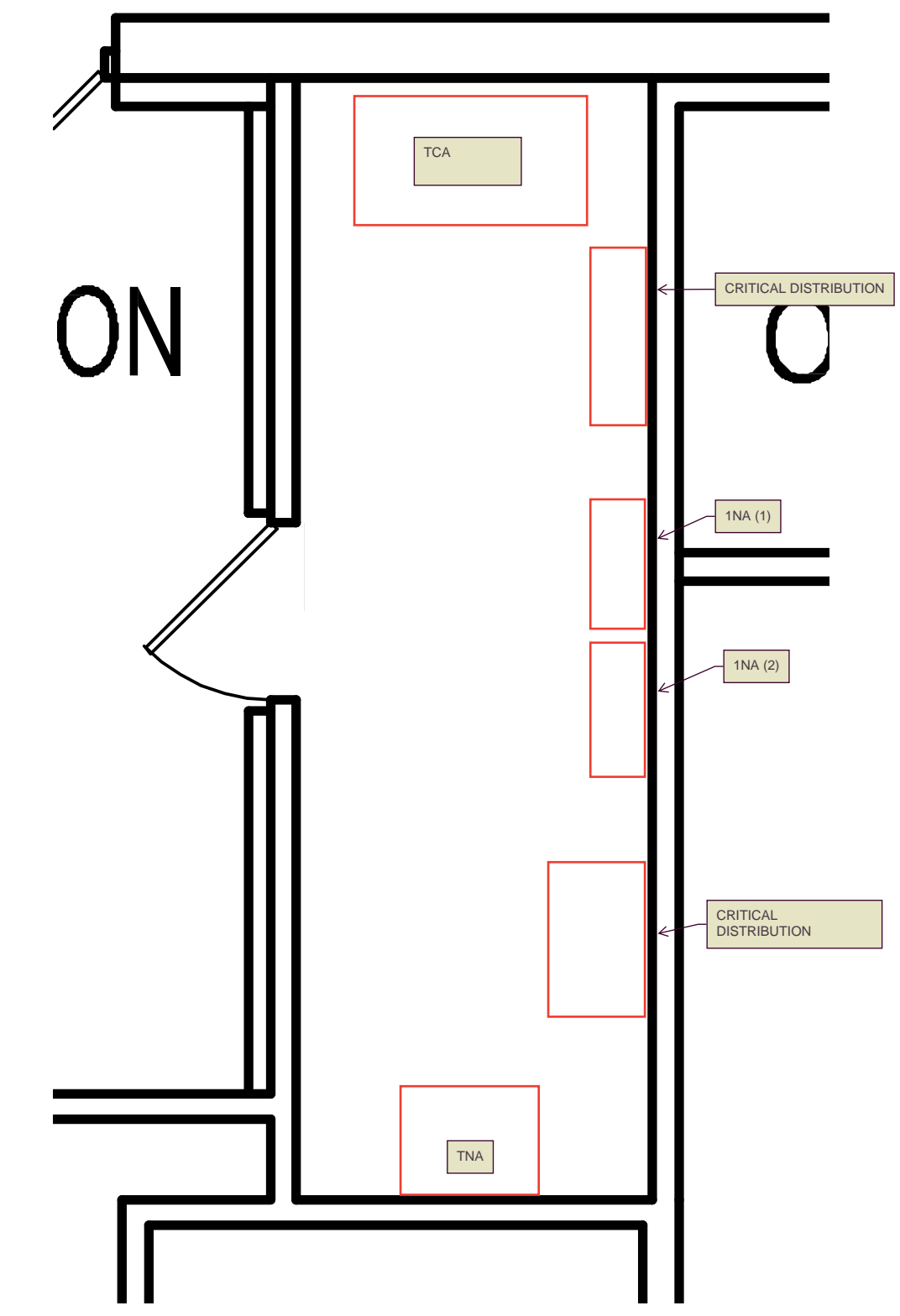
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



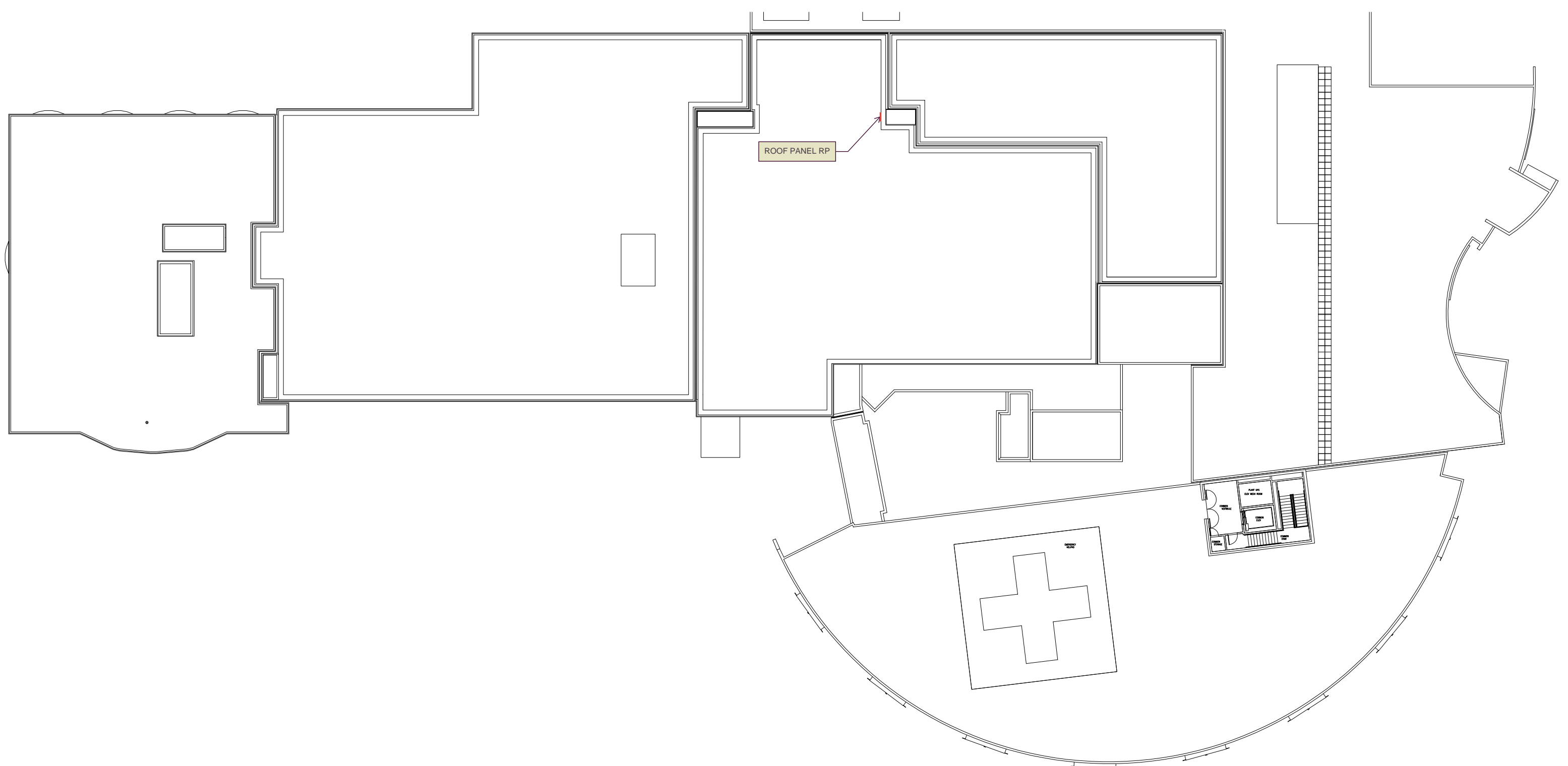
INFUSION 176 FIRST FLOOR



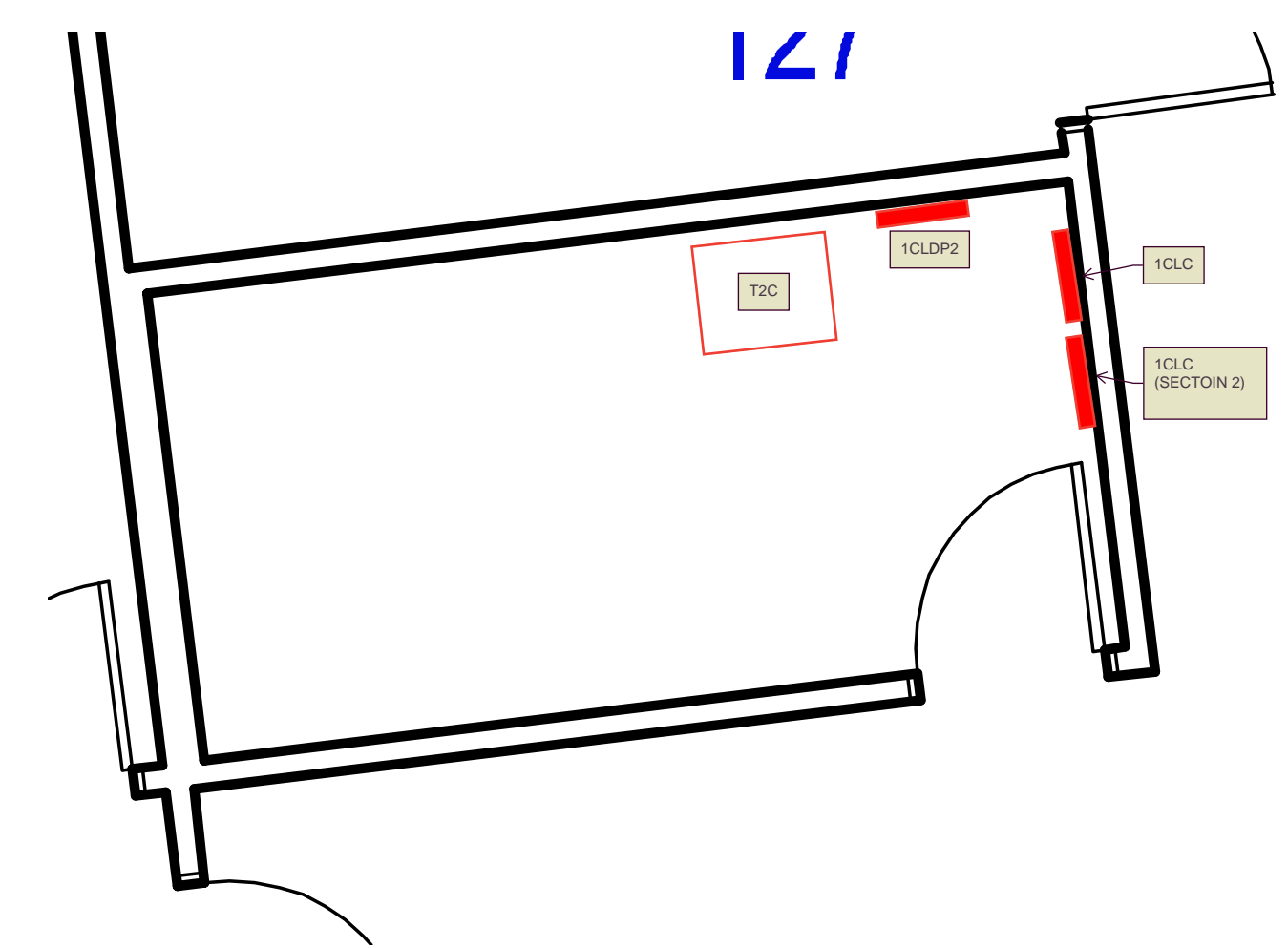
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN

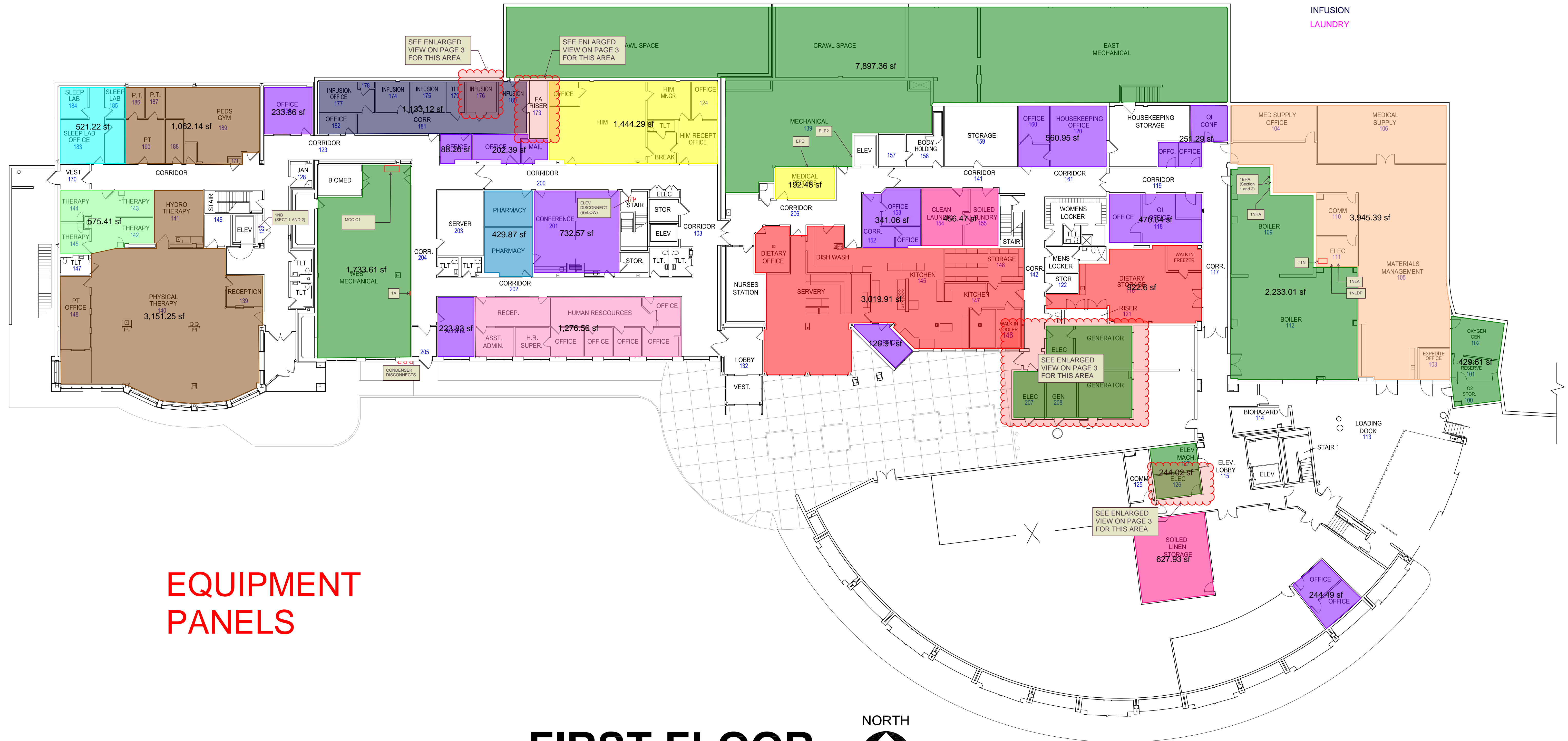


ELECTRICAL 126 FIRST FLOOR



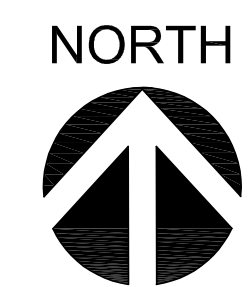
CRITICAL PANELS

- MECHANICAL / ELECTRICAL
- MATERIAL MANAGEMENT
- ADMIN
- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY

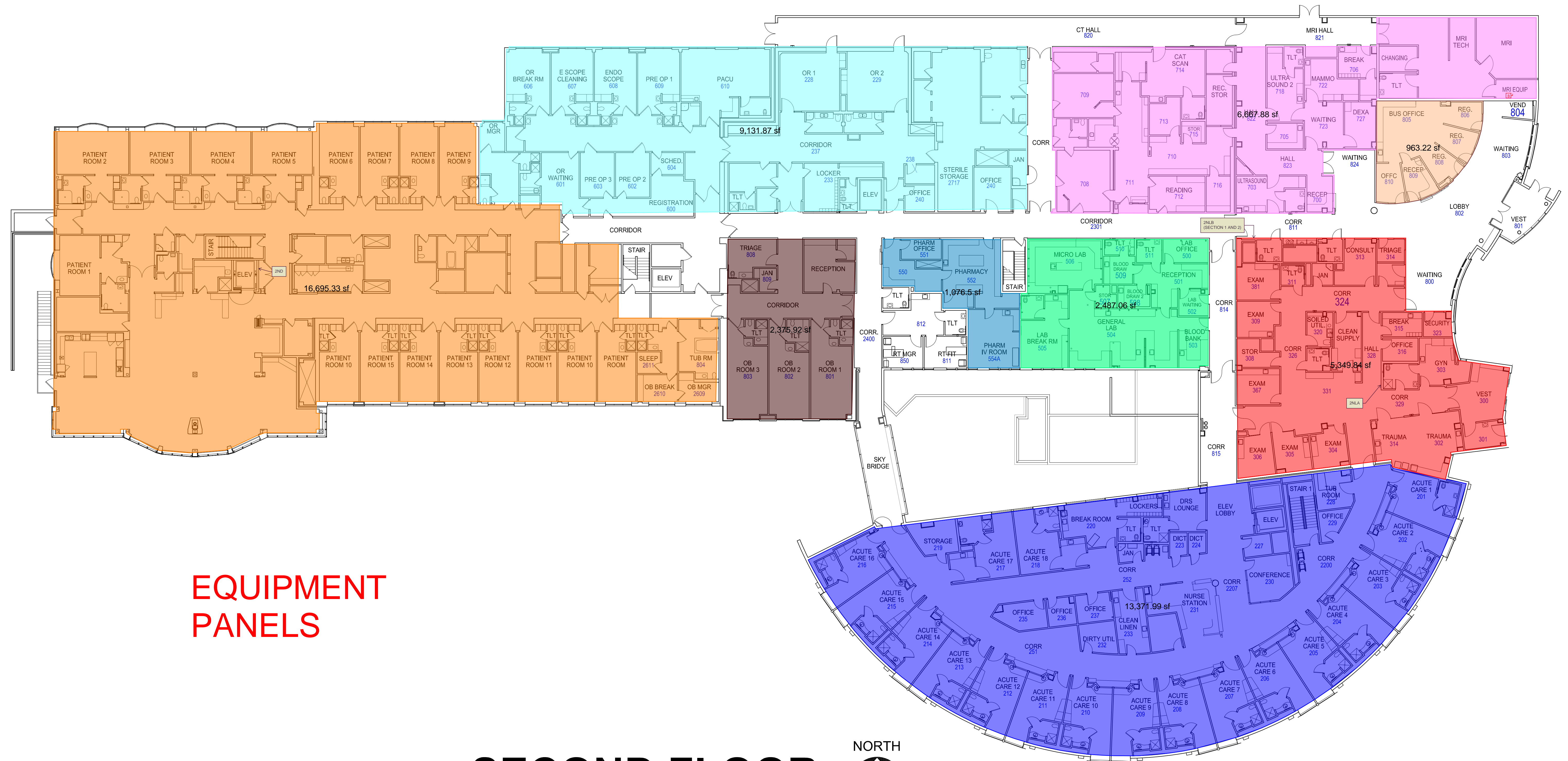


**EQUIPMENT  
PANELS**

**FIRST FLOOR**



- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

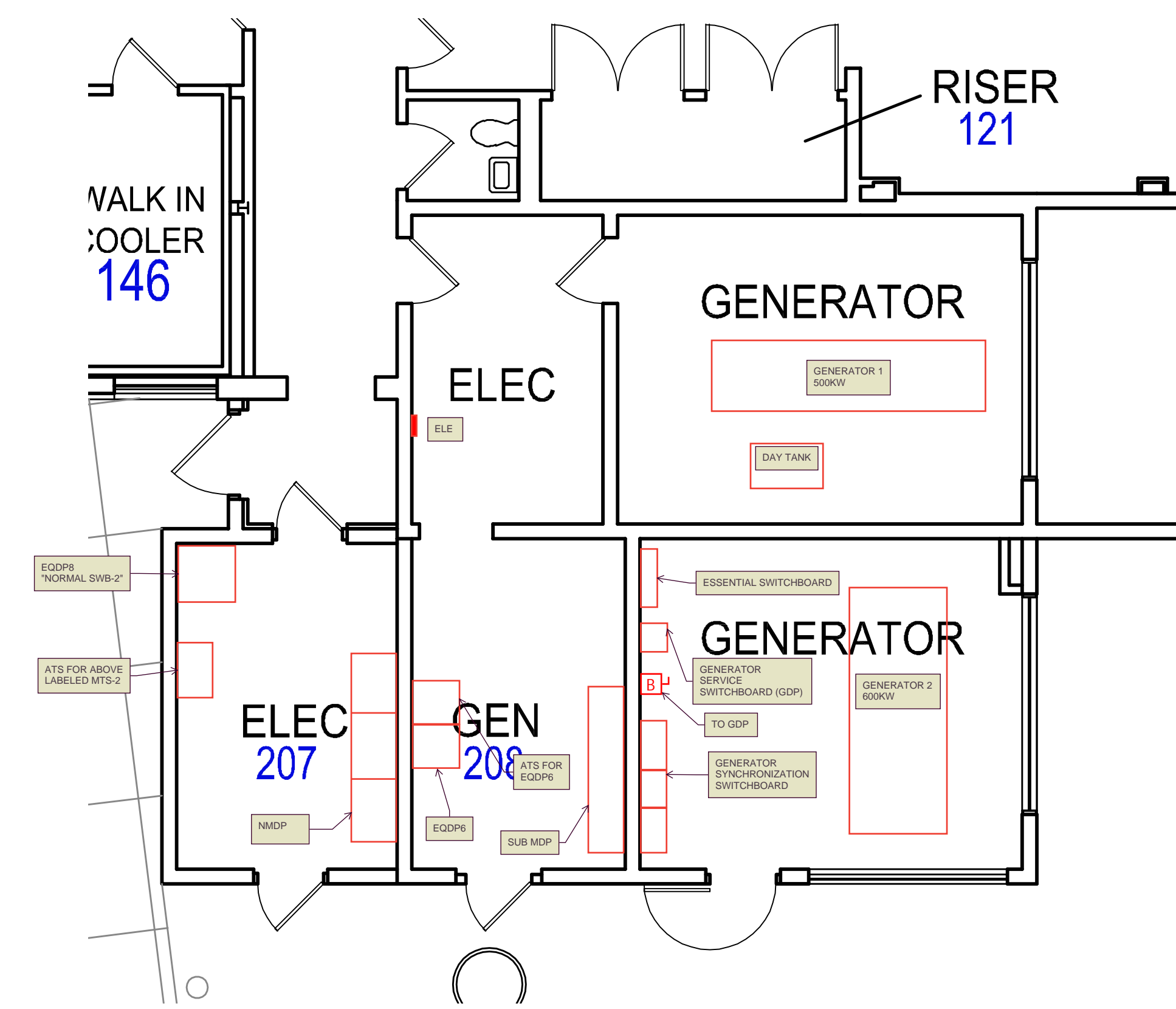


**EQUIPMENT  
PANELS**

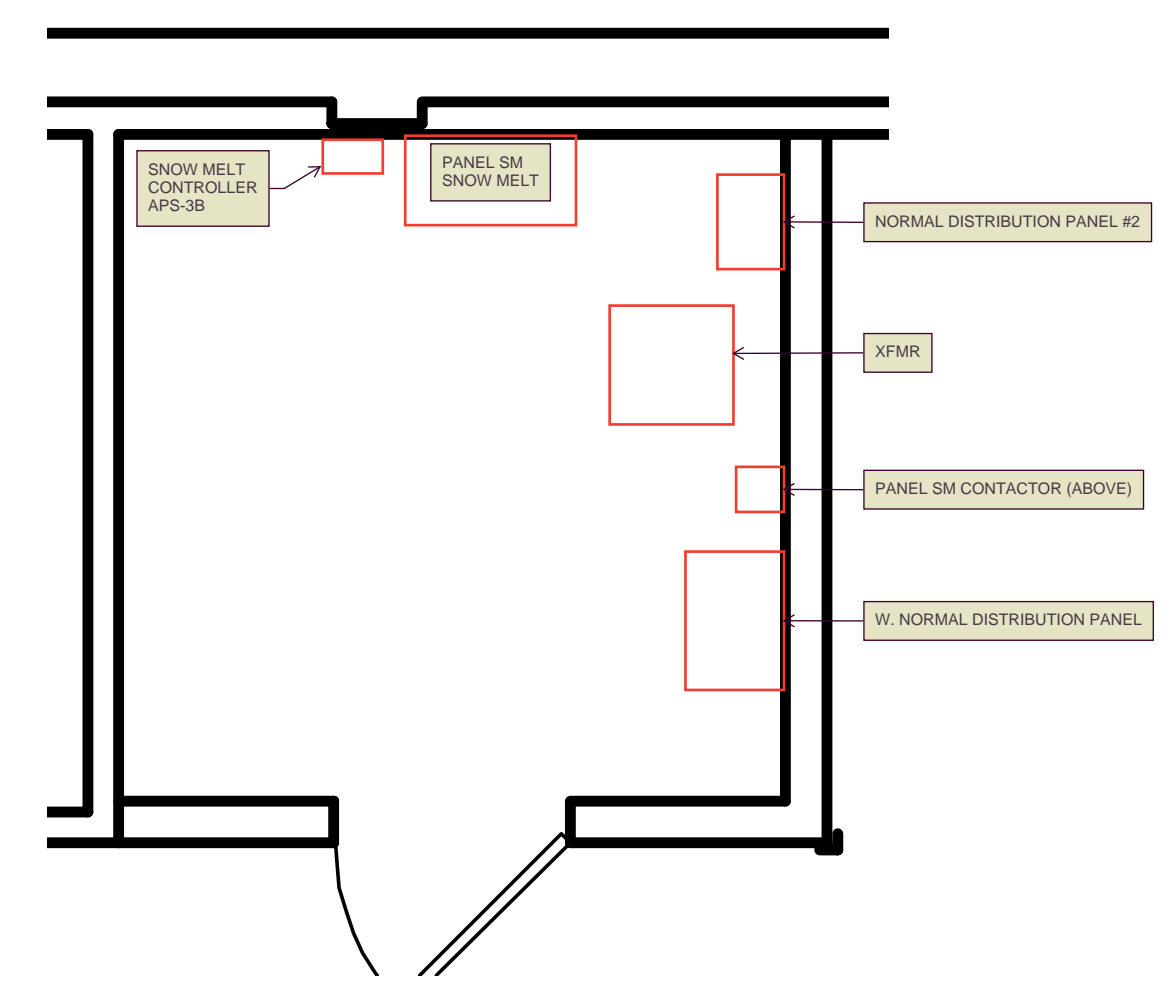
**SECOND FLOOR**



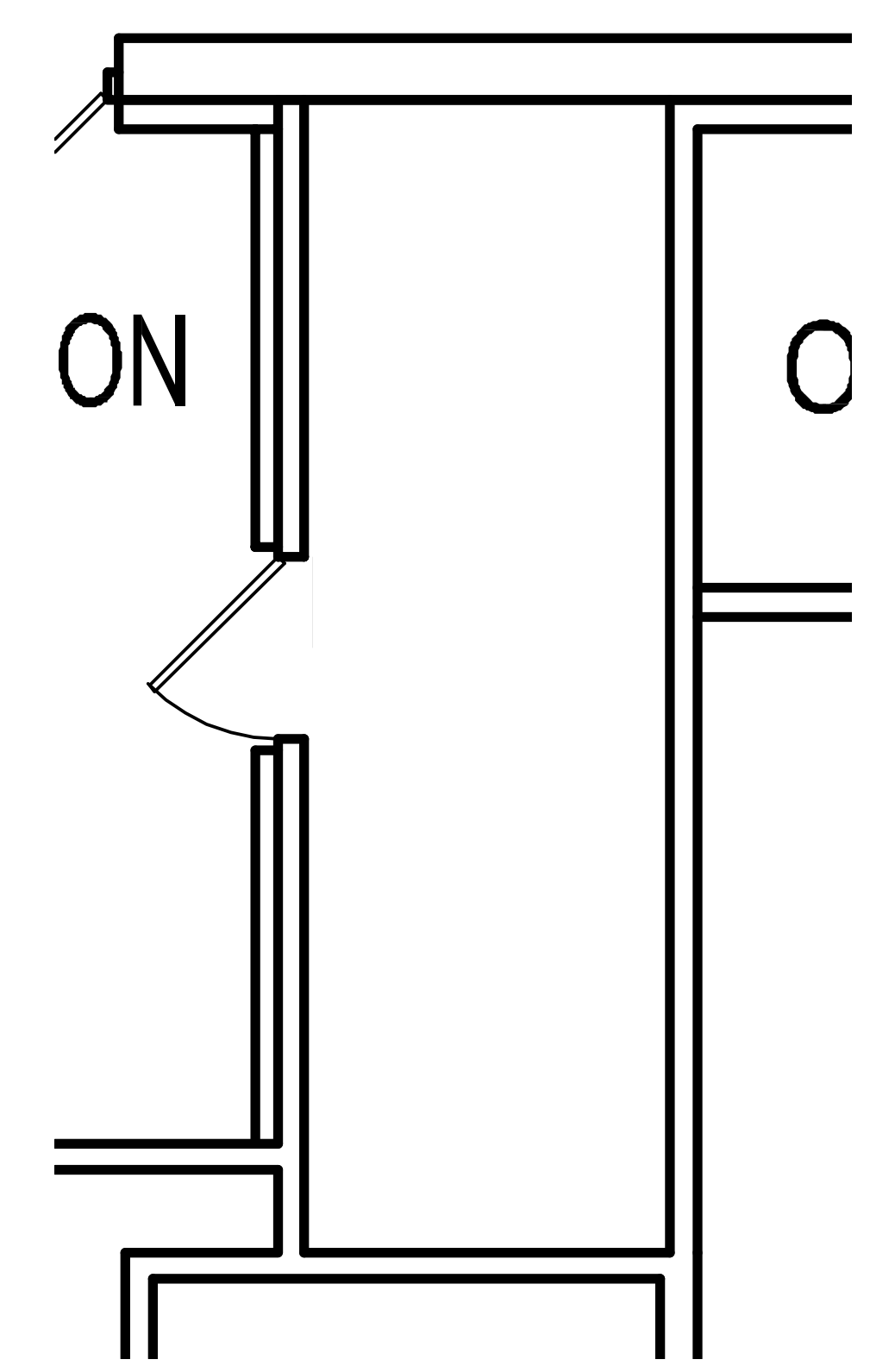
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



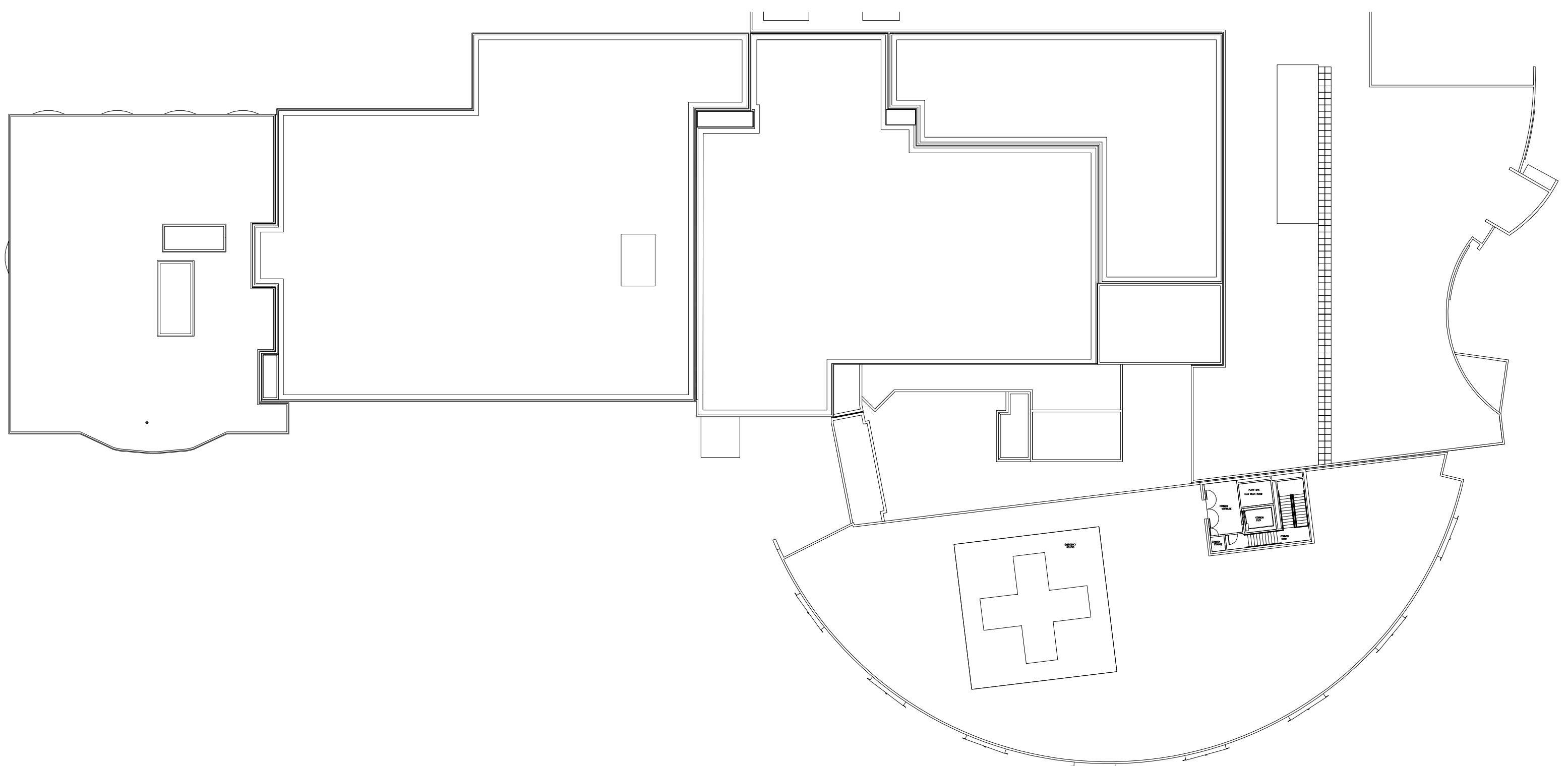
INFUSION 176 FIRST FLOOR



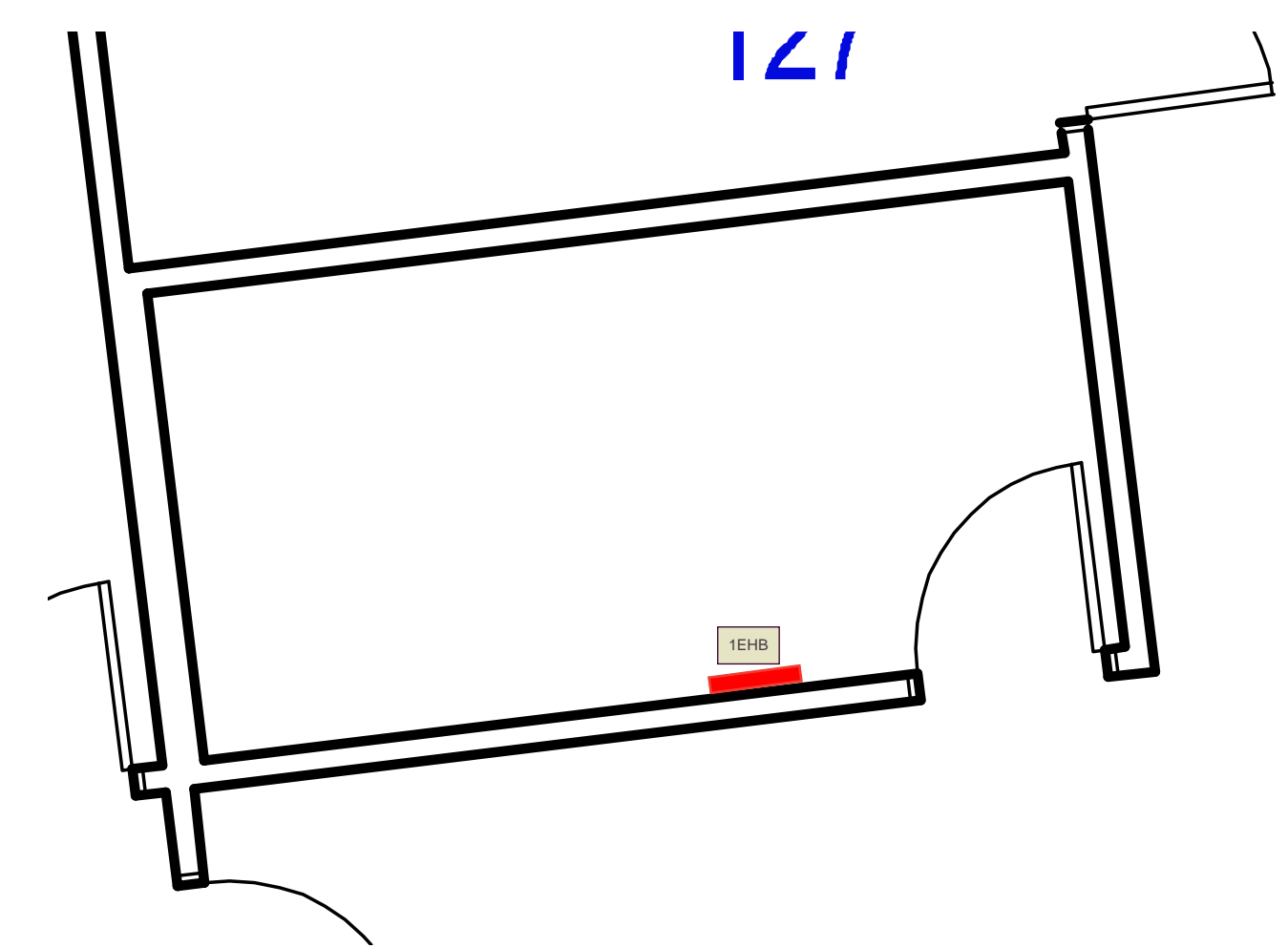
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN



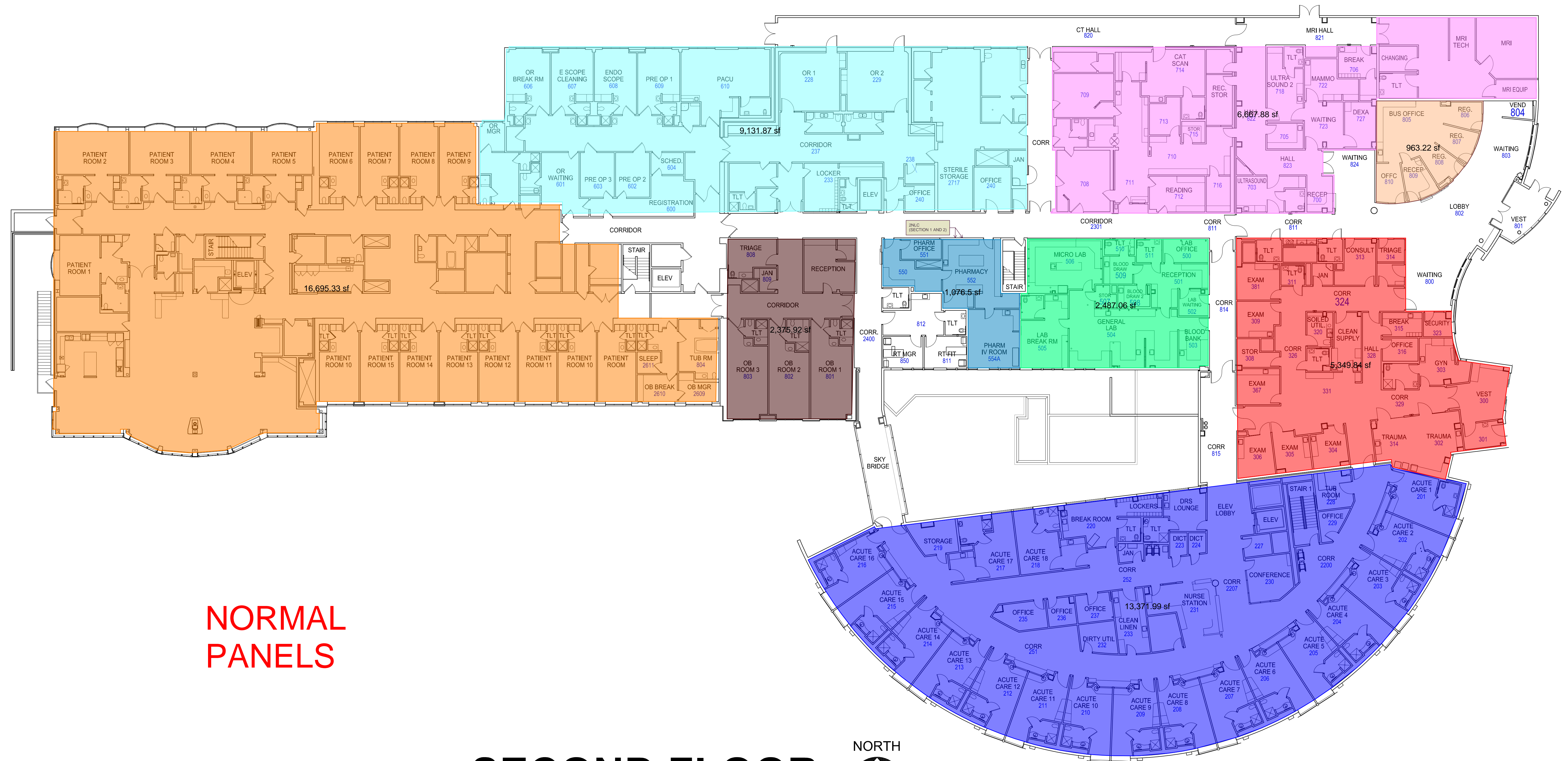
ELECTRICAL 126 FIRST FLOOR



EQUIPMENT PANELS

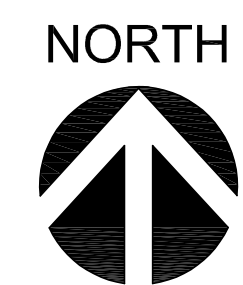


- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

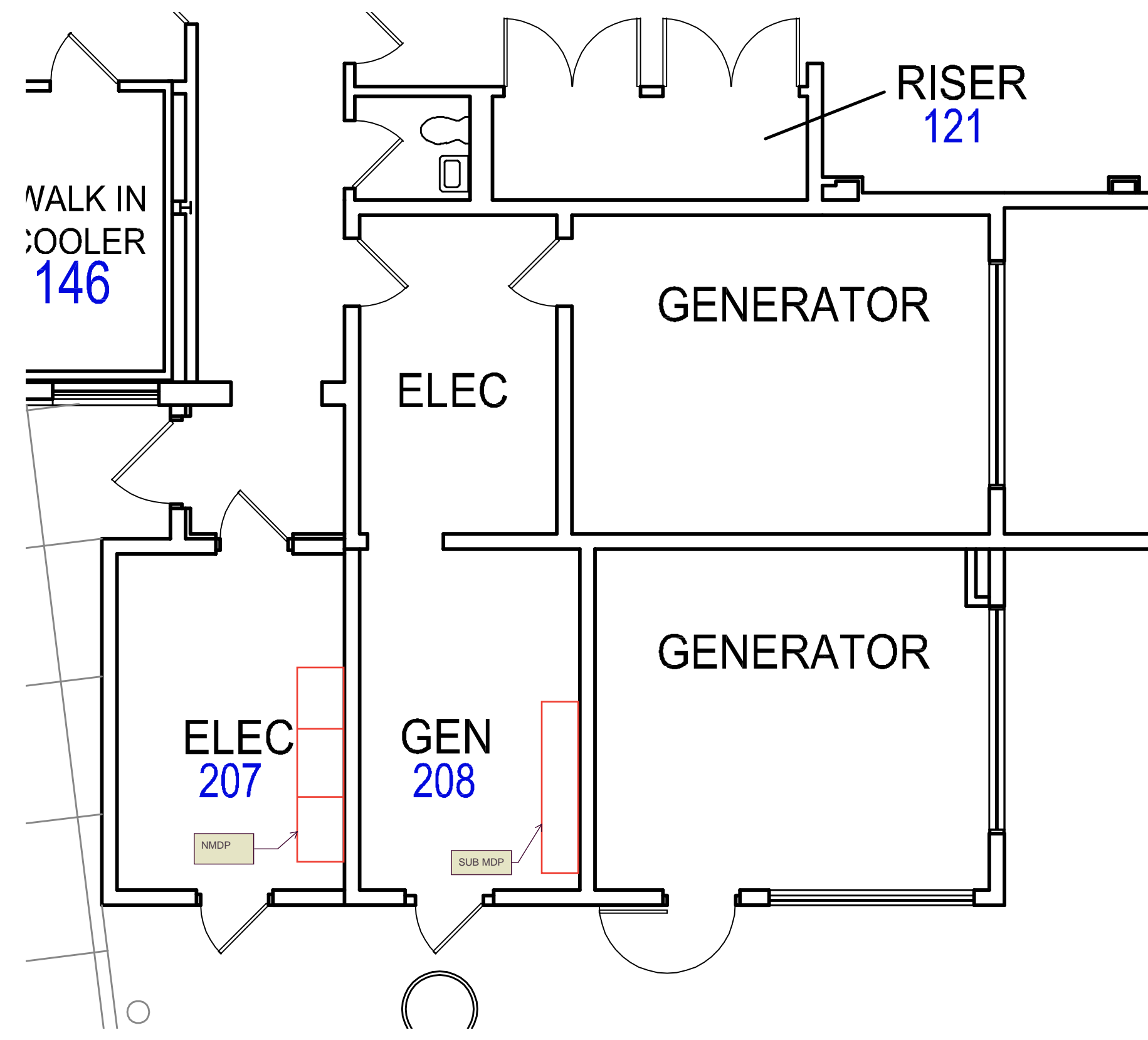


**NORMAL  
PANELS**

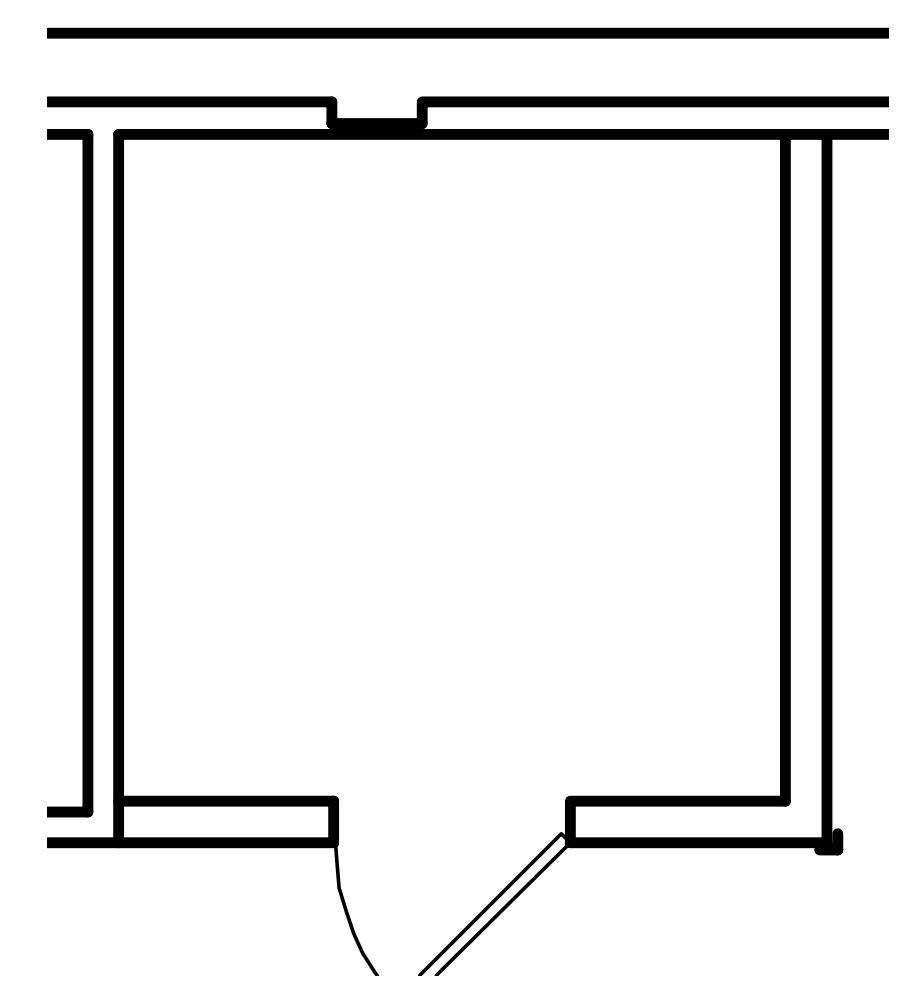
**SECOND FLOOR**



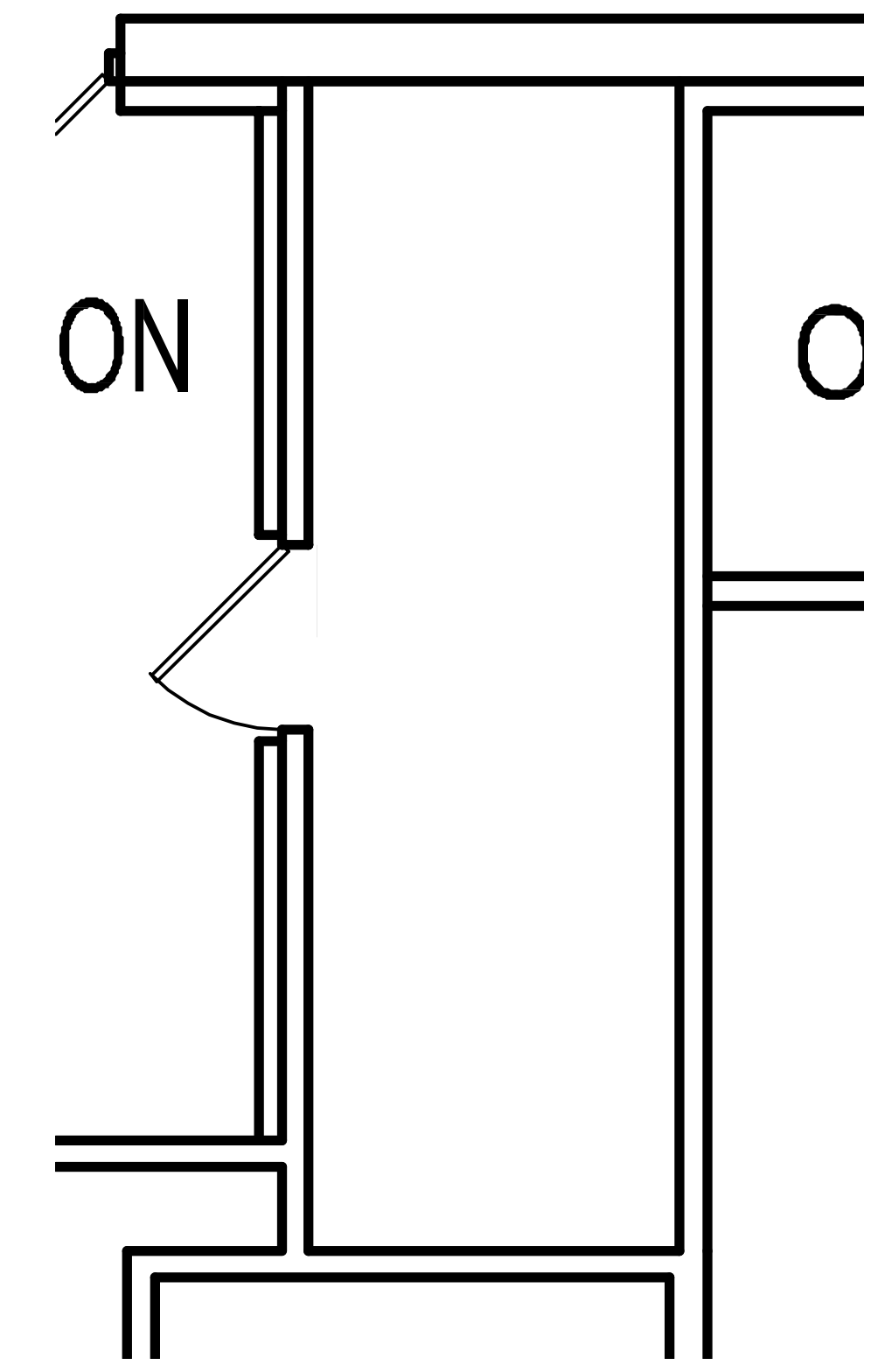
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



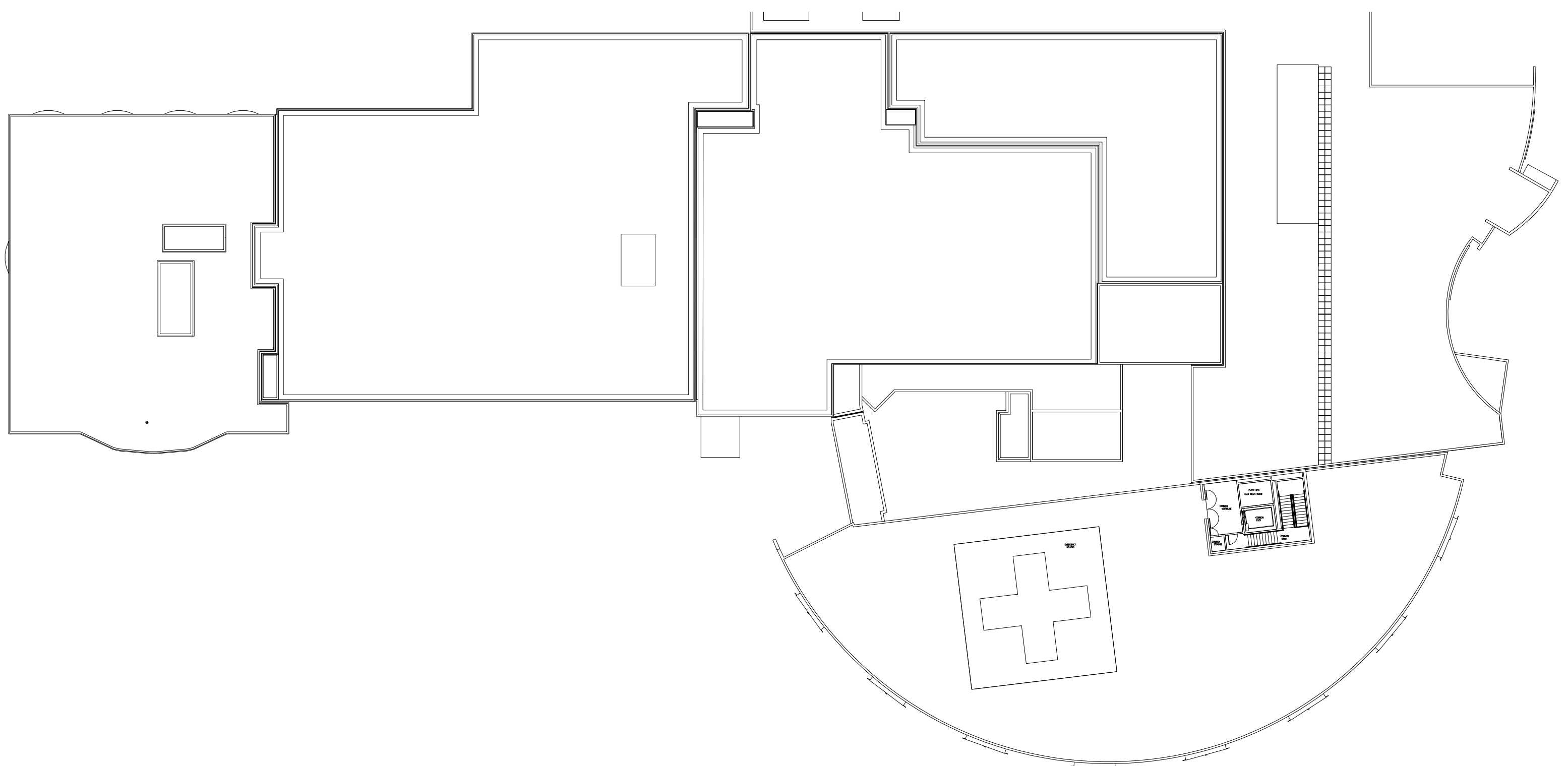
INFUSION 176 FIRST FLOOR



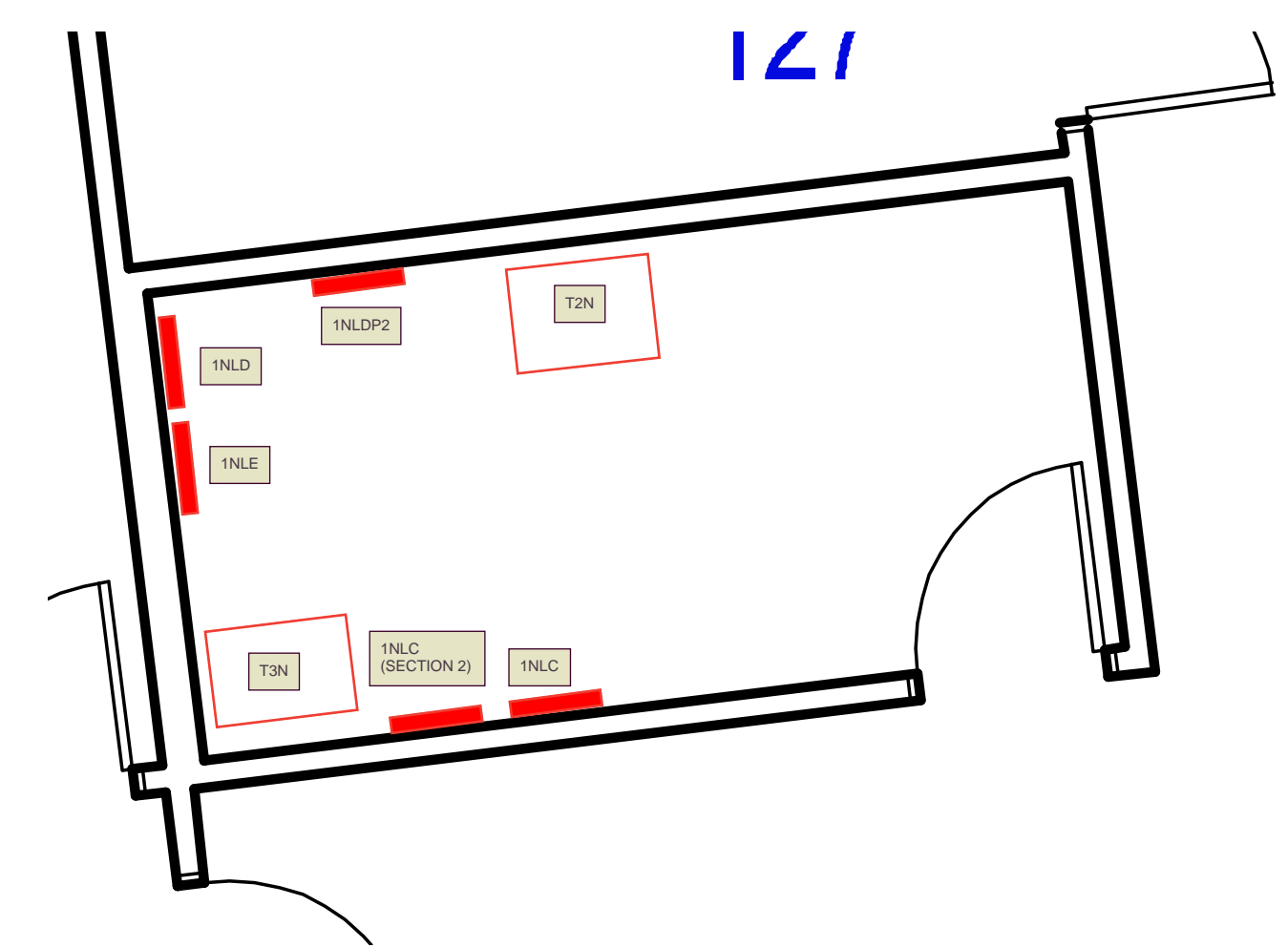
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN

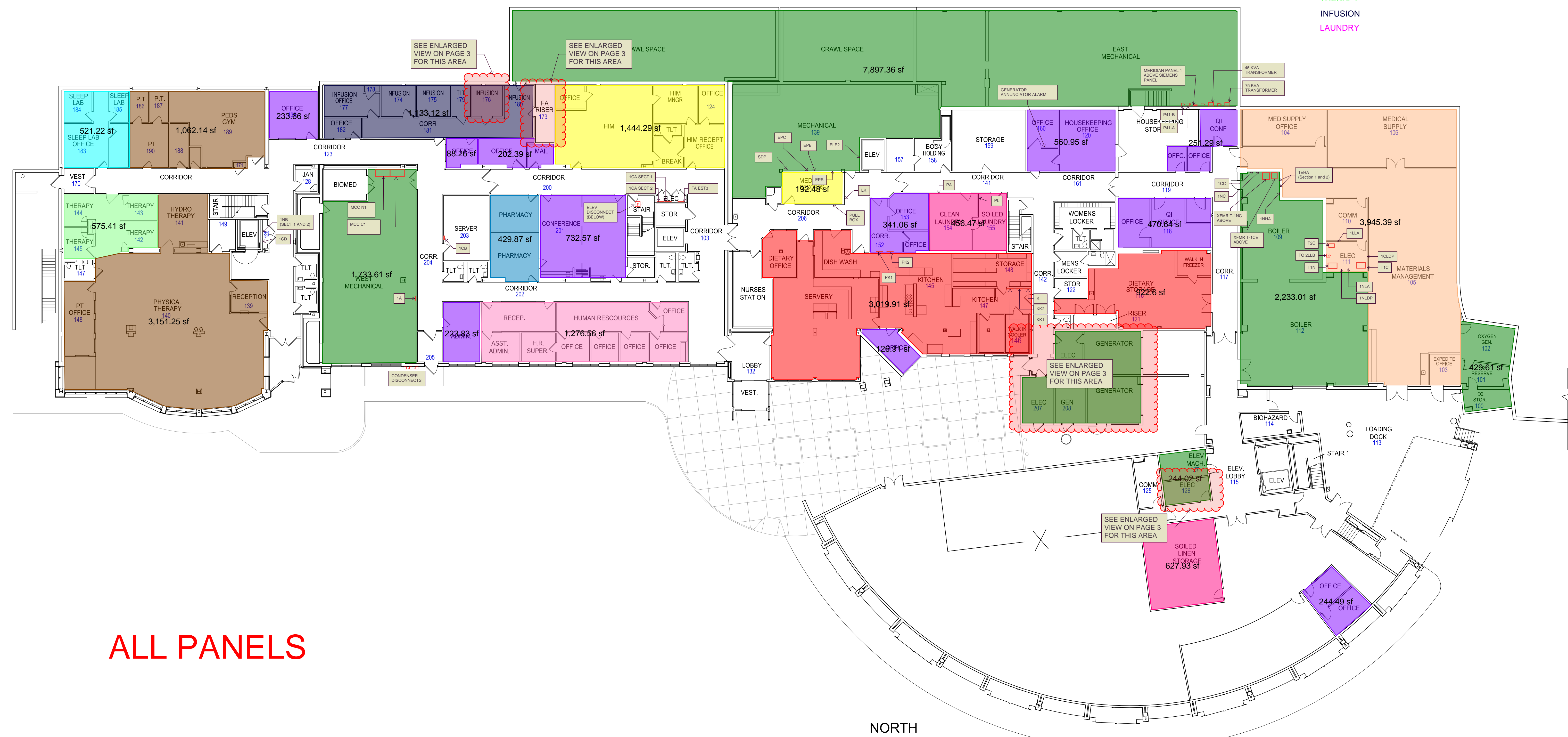


ELECTRICAL 126 FIRST FLOOR



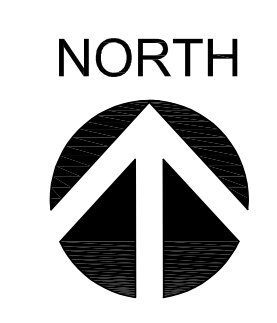
NORMAL  
PANELS

- MECHANICAL / ELECTRICAL
- MATERIAL MANAGEMENT
- ADMIN
- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY

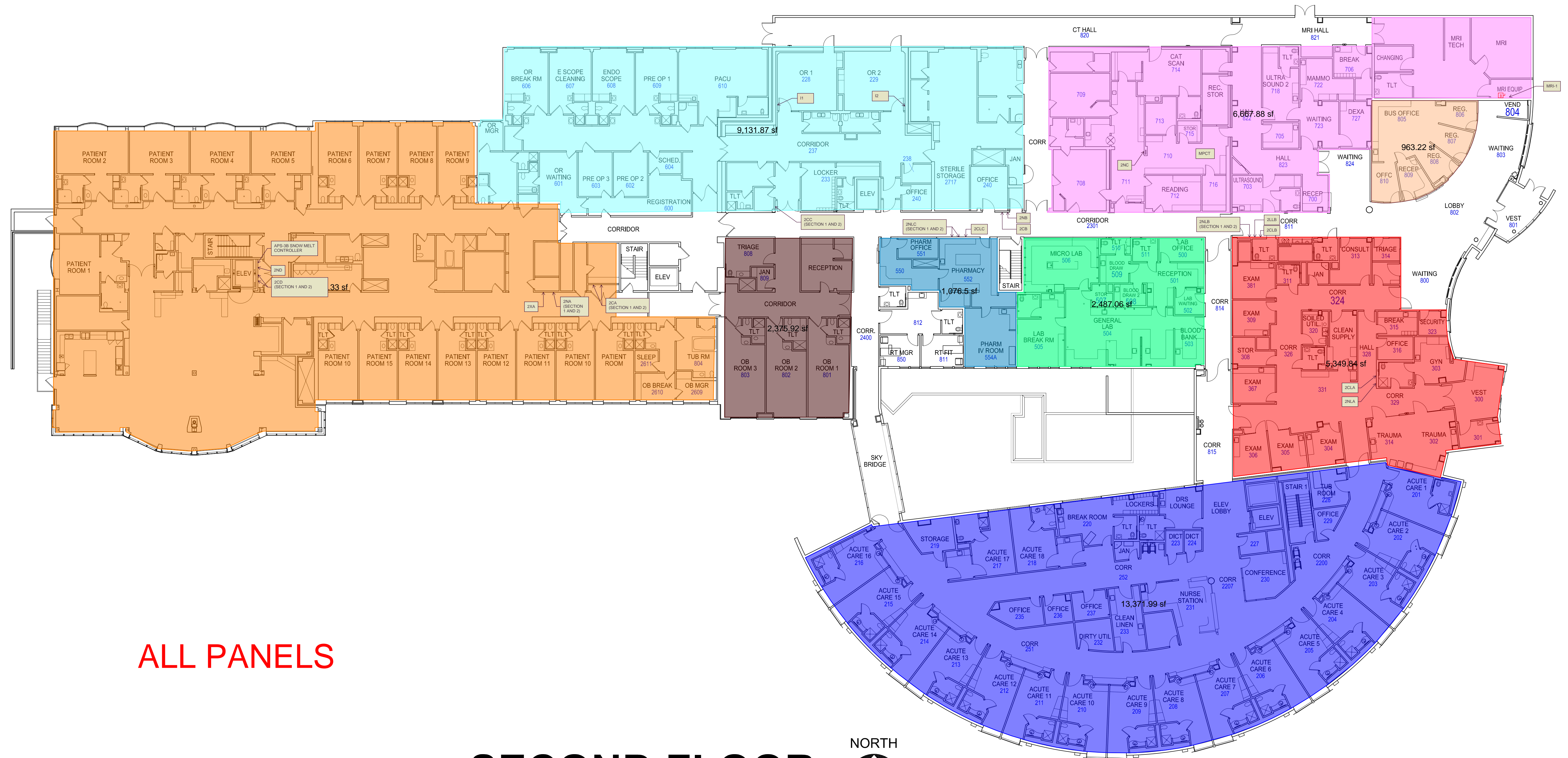


ALL PANELS

**FIRST FLOOR**



- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

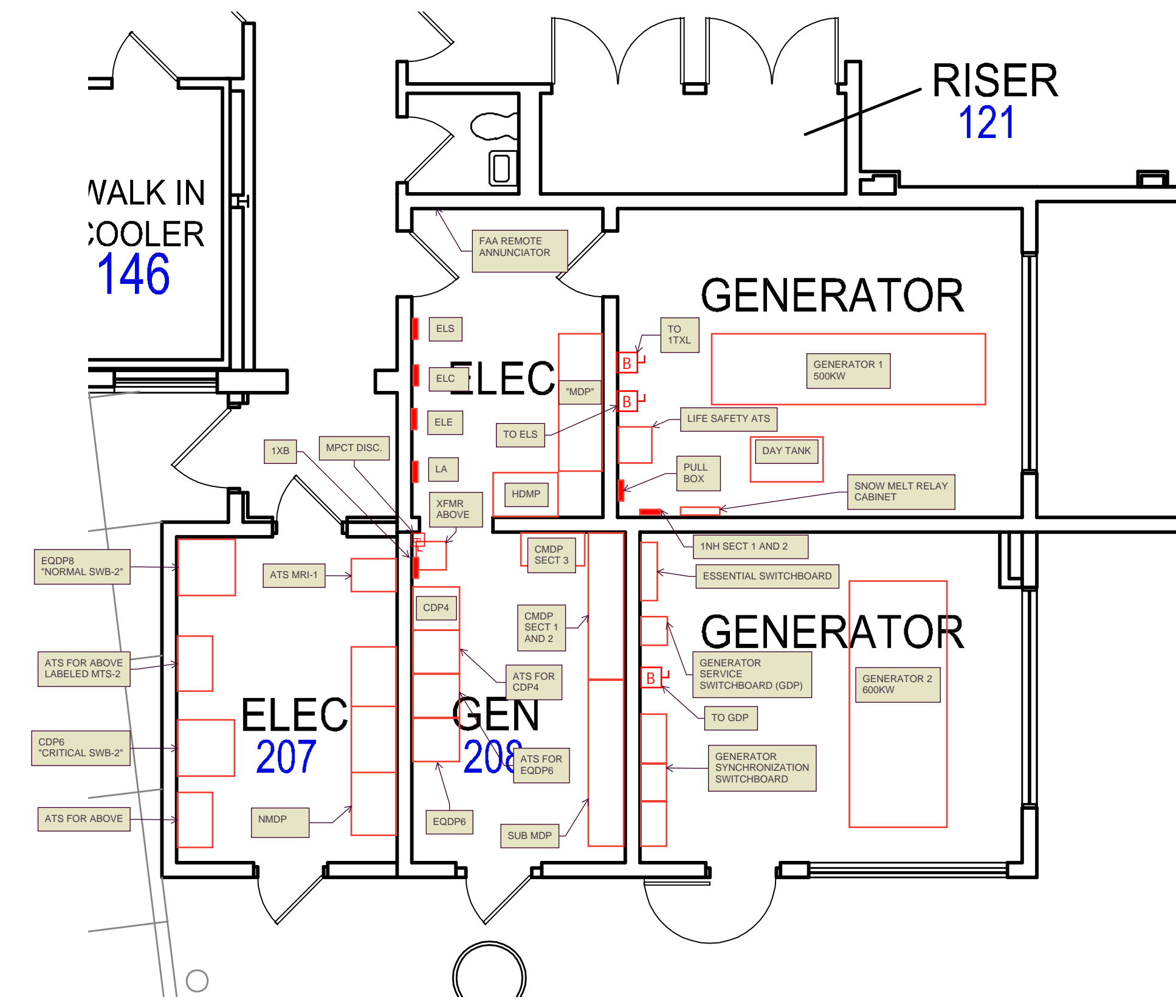


ALL PANELS

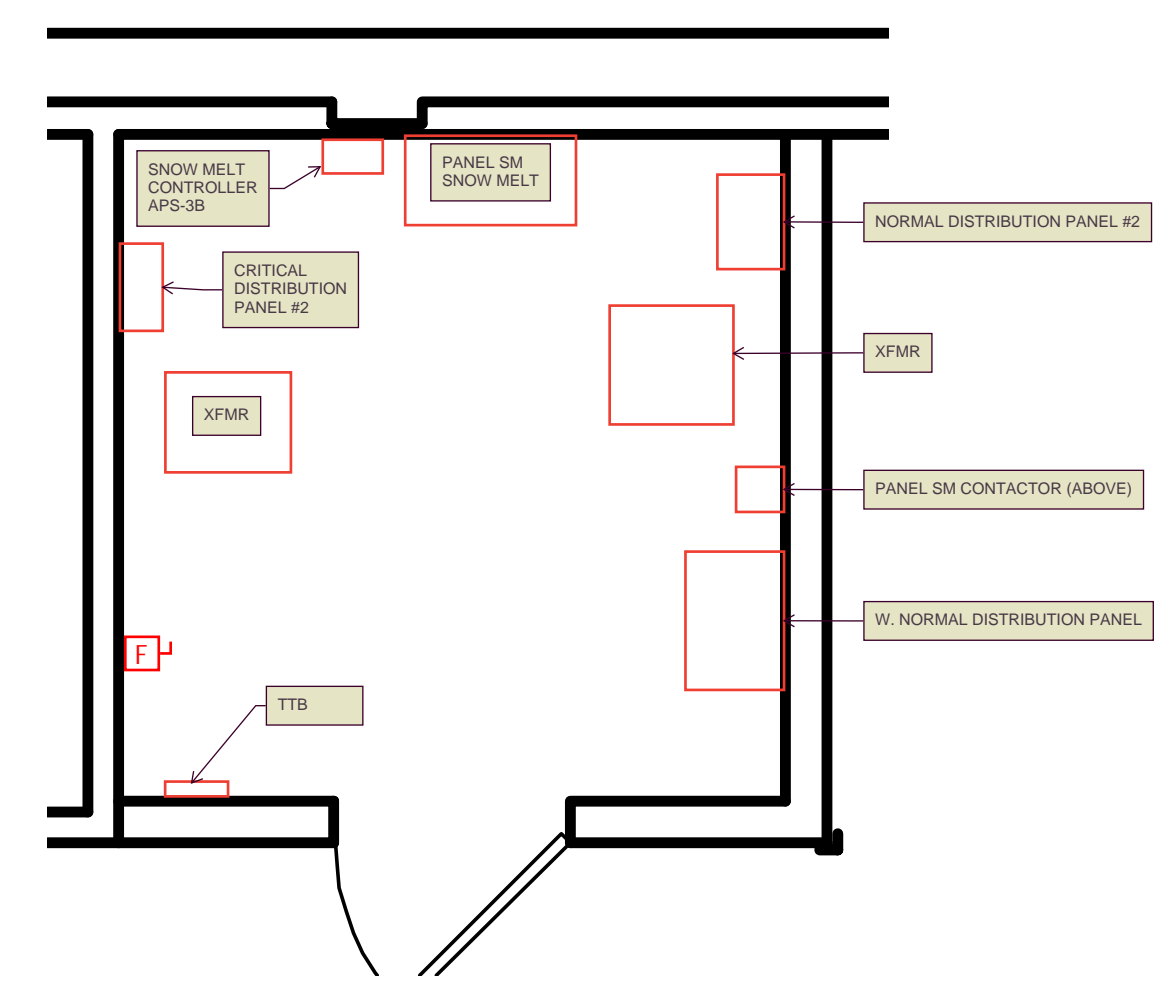
# SECOND FLOOR



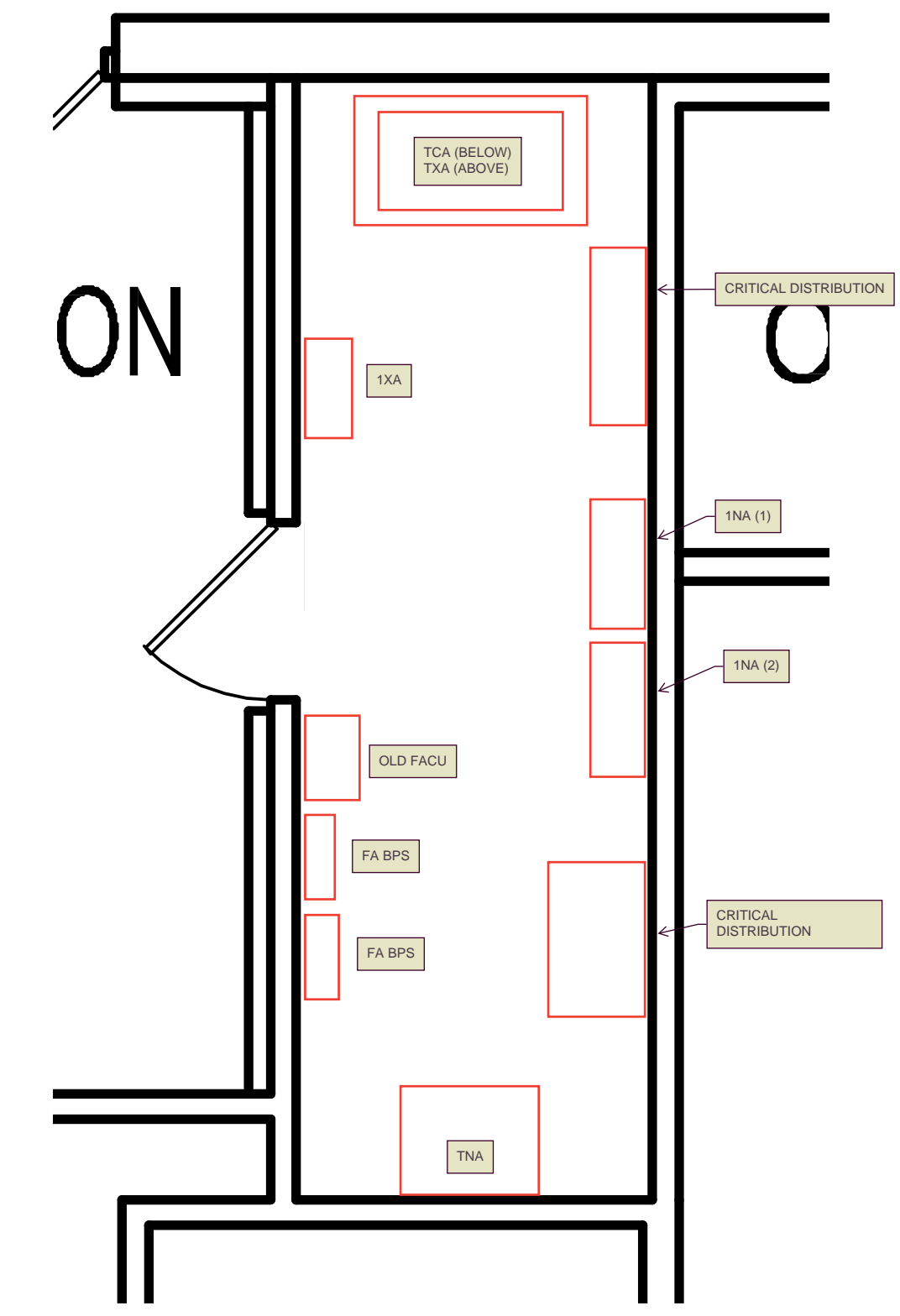
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



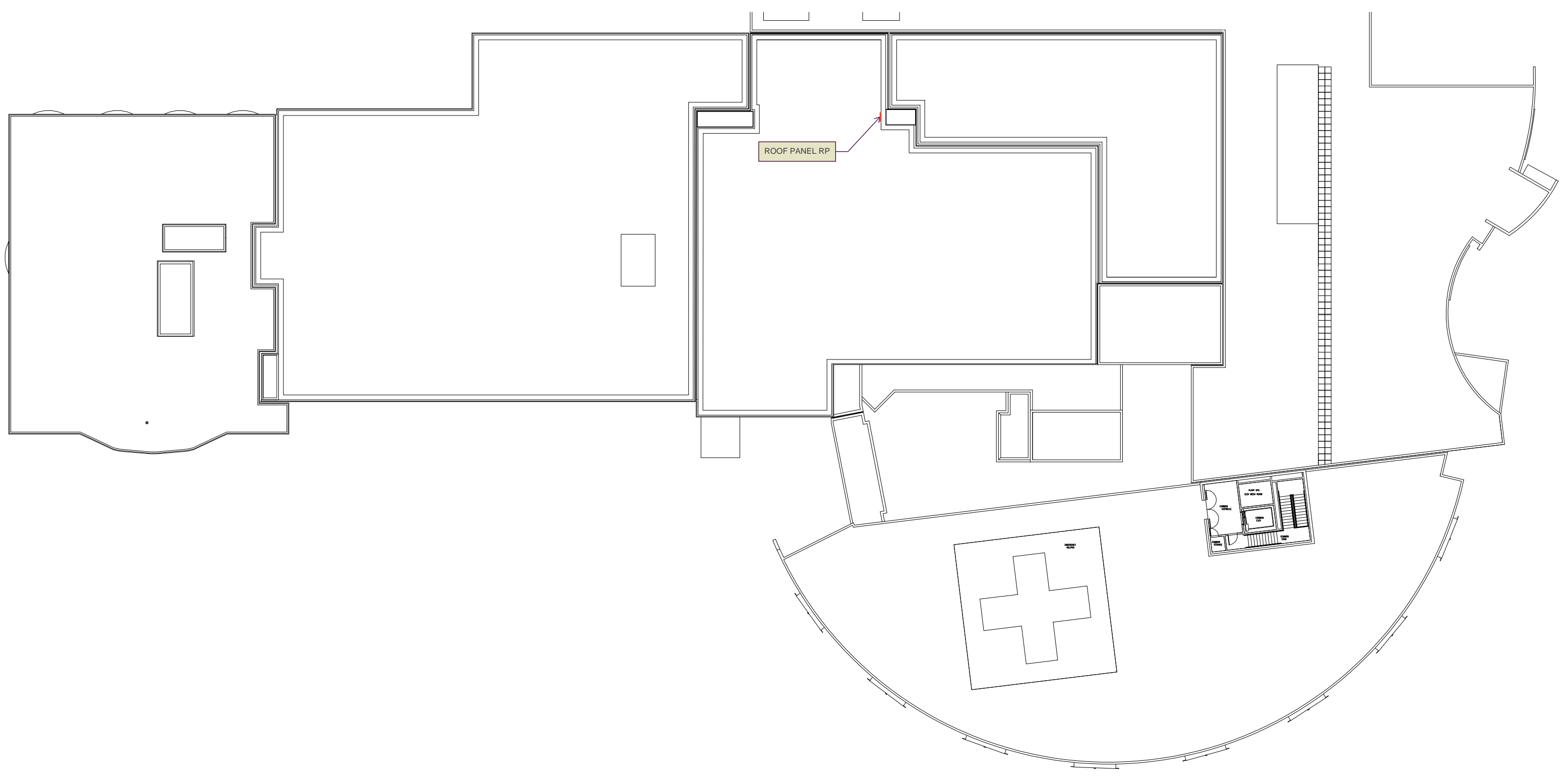
INFUSION 176 FIRST FLOOR



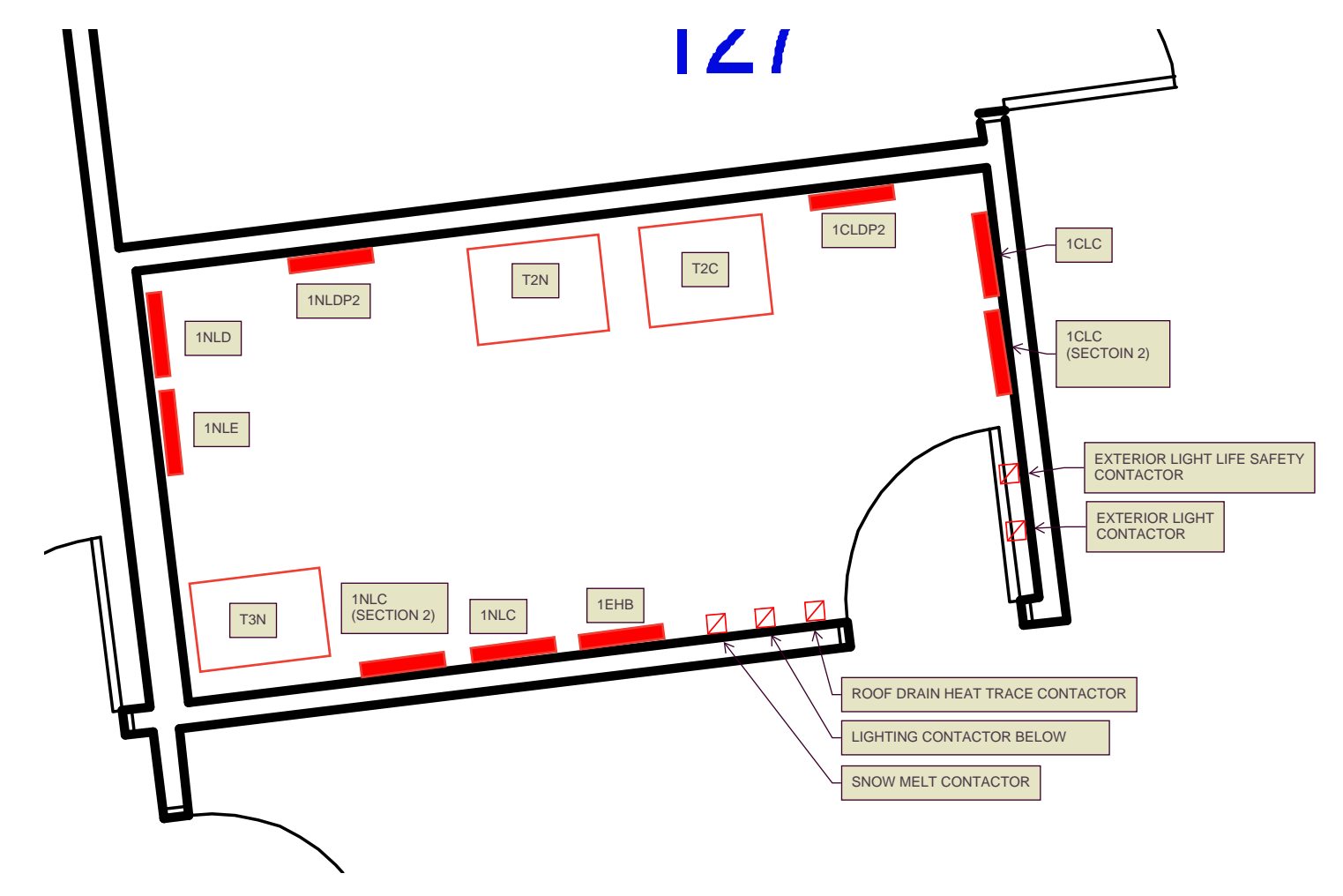
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN

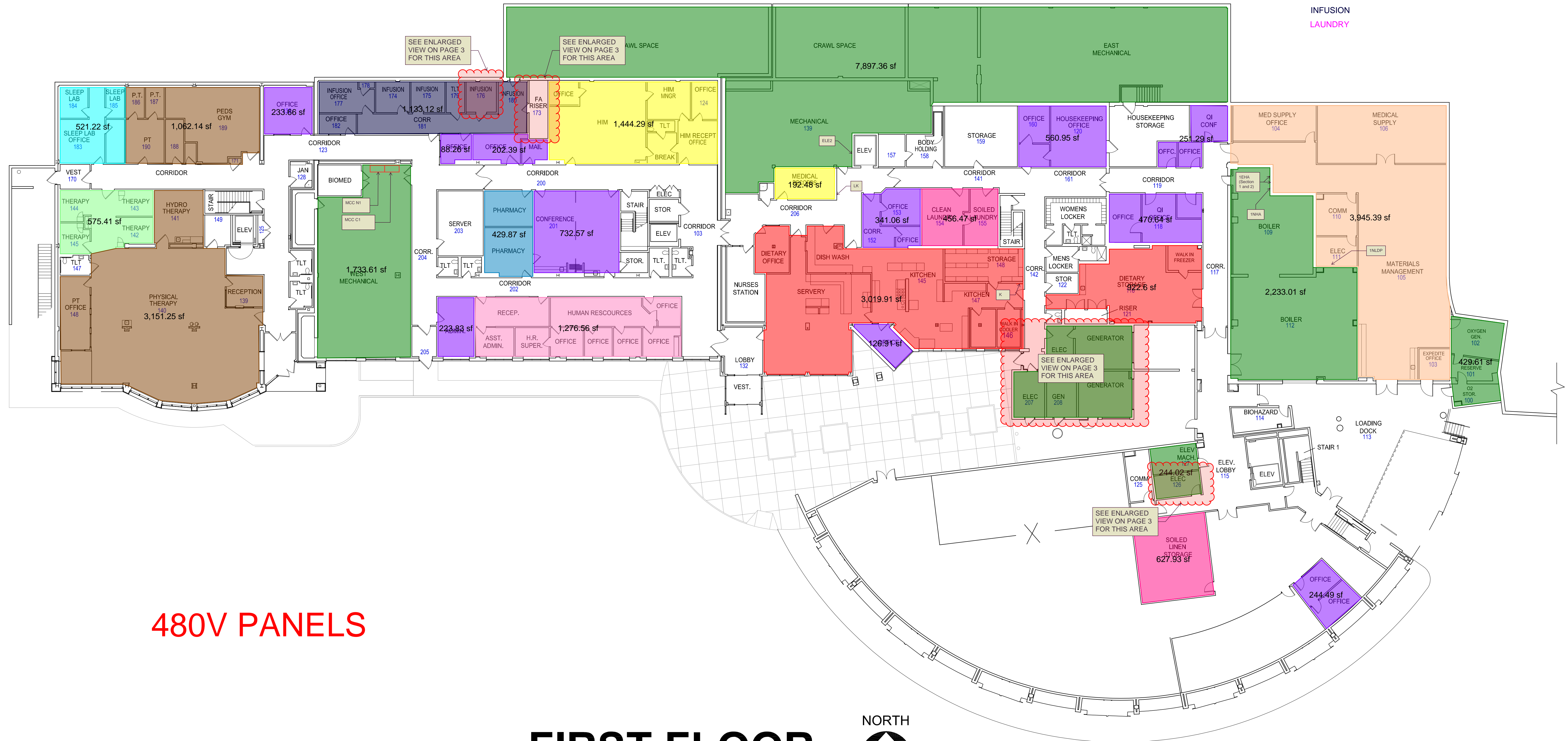


ELECTRICAL 126 FIRST FLOOR



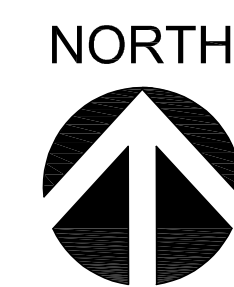
ALL PANELS

- MECHANICAL / ELECTRICAL
- MATERIAL MANAGEMENT
- ADMIN
- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY

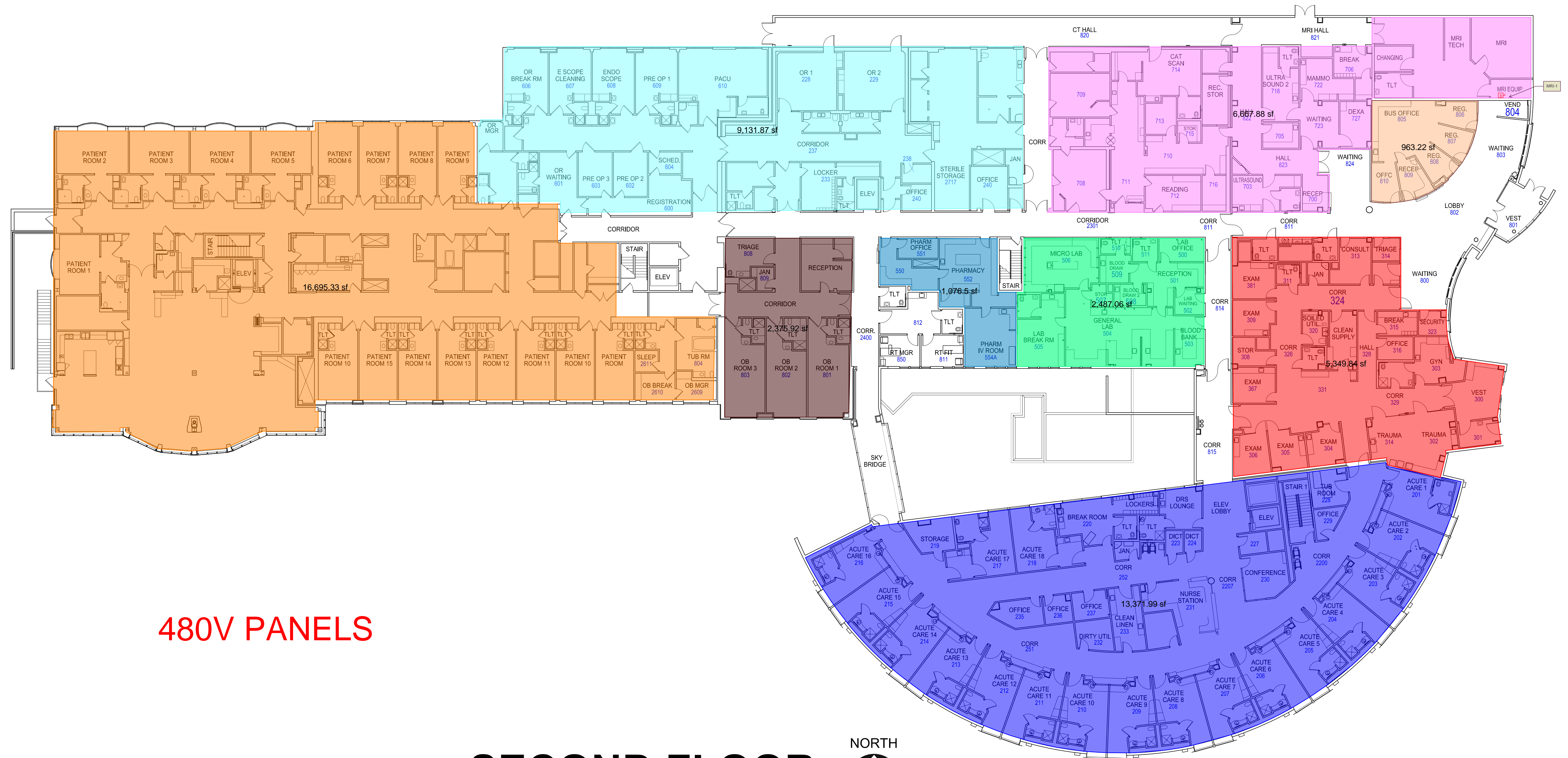


480V PANELS

# FIRST FLOOR



- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

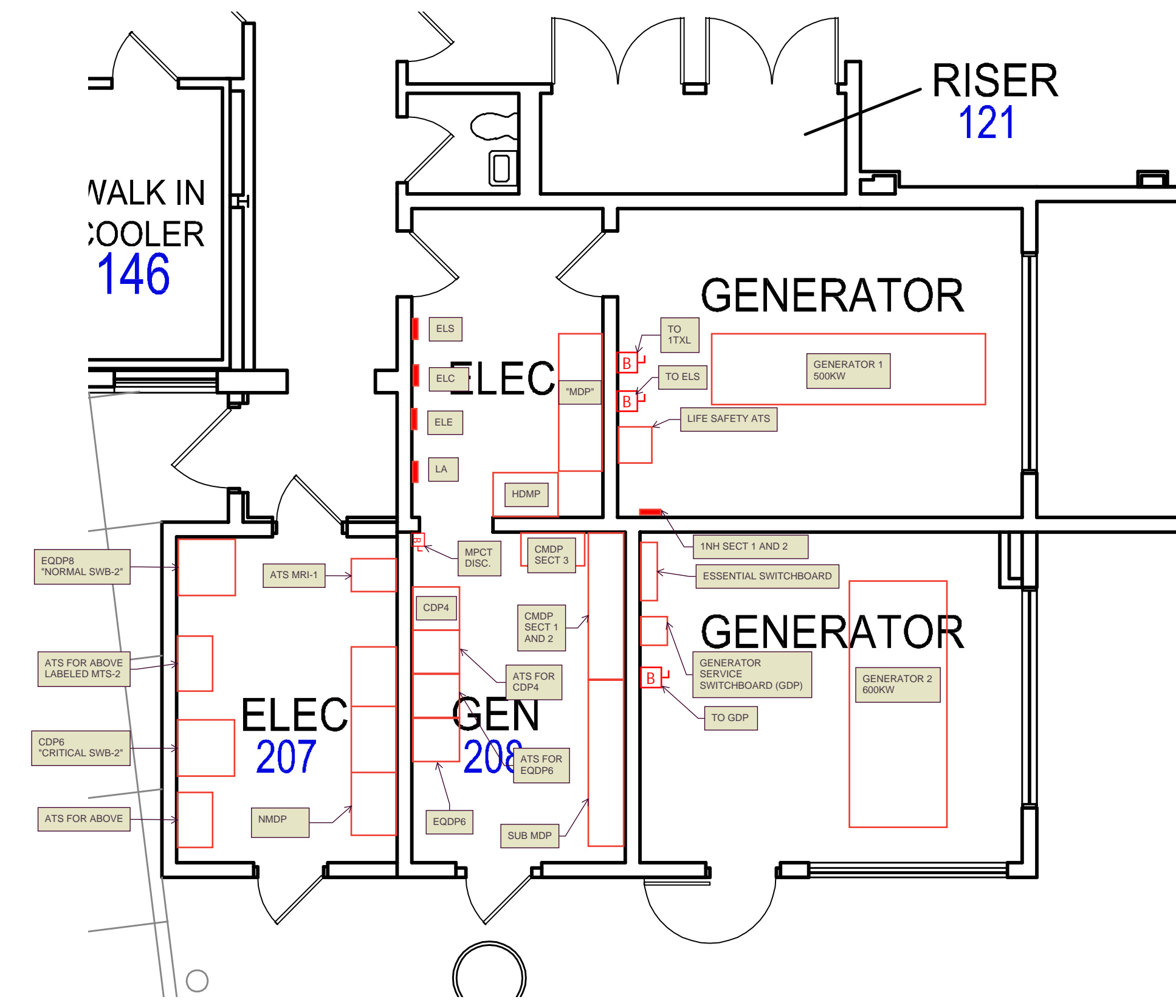


480V PANELS

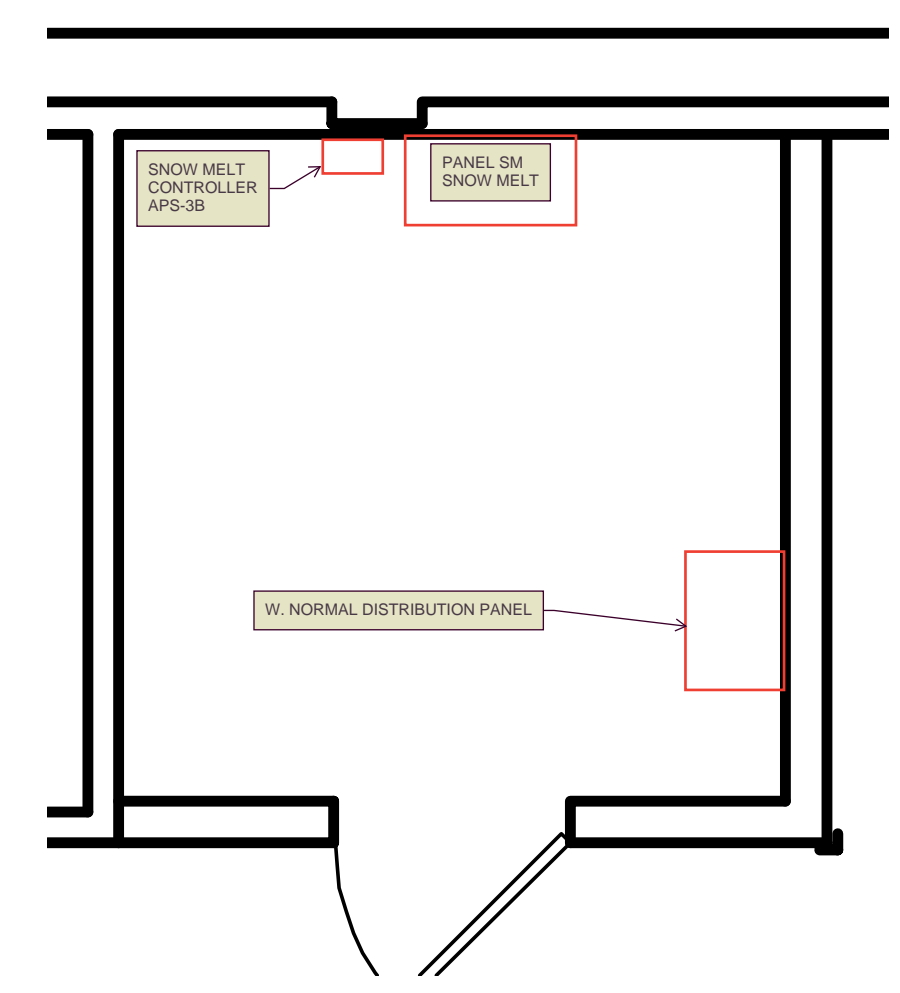
# SECOND FLOOR



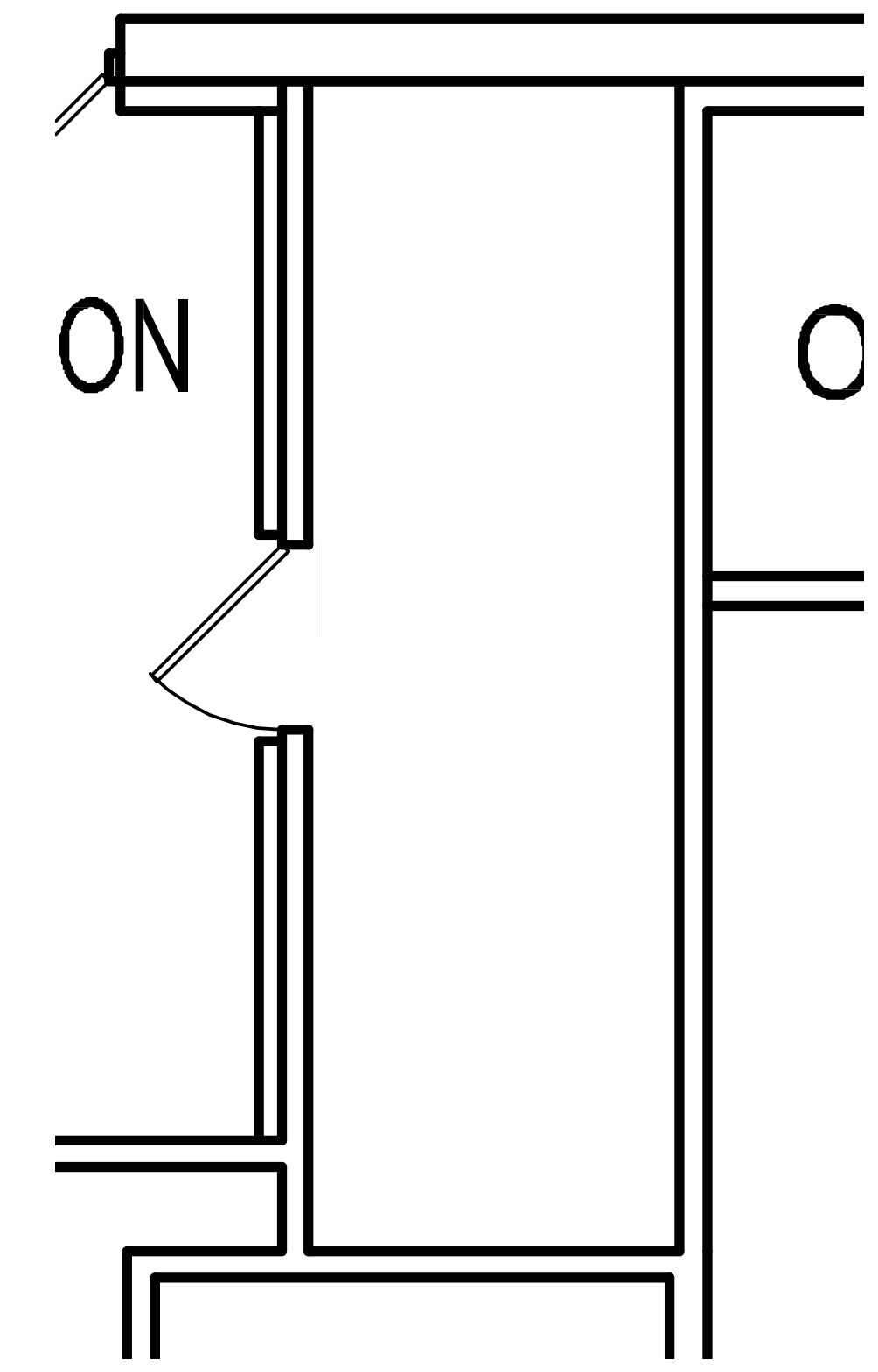
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



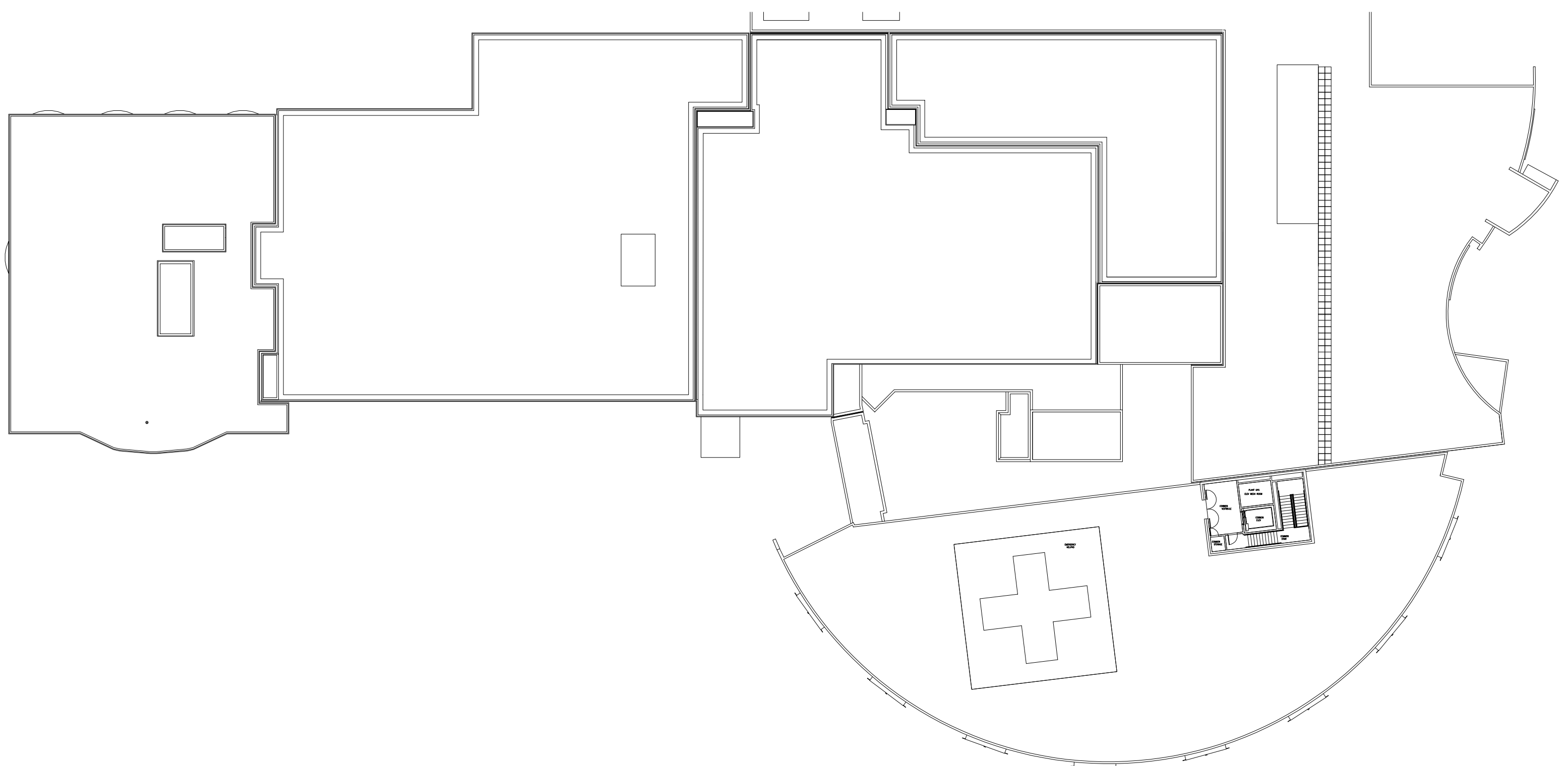
INFUSION 176 FIRST FLOOR



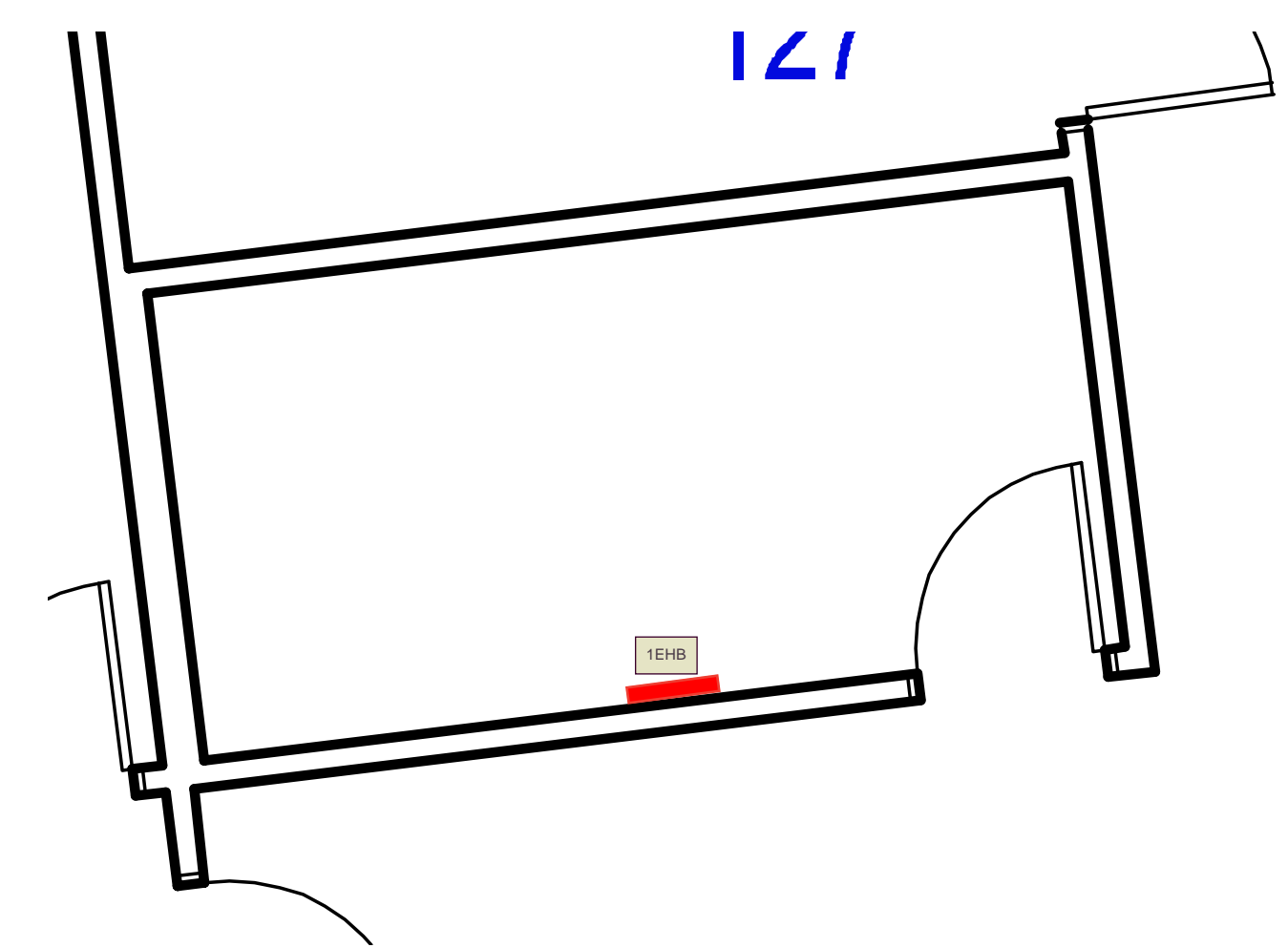
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN

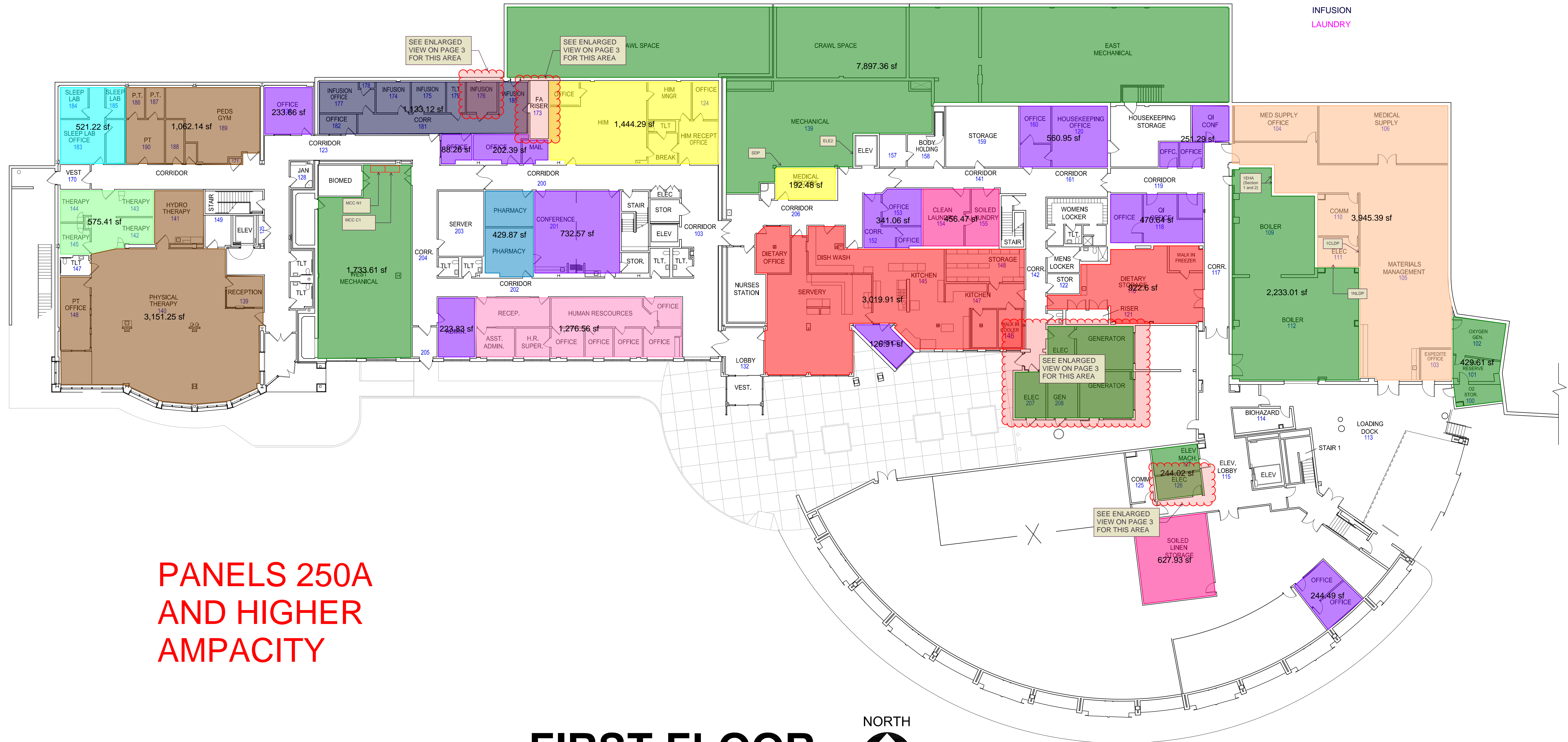


ELECTRICAL 126 FIRST FLOOR



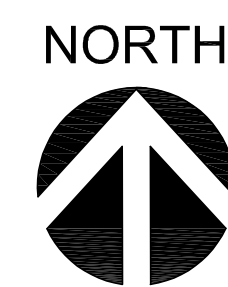
480V PANELS

- MECHANICAL / ELECTRICAL
- MATERIAL MANAGEMENT
- ADMIN
- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY

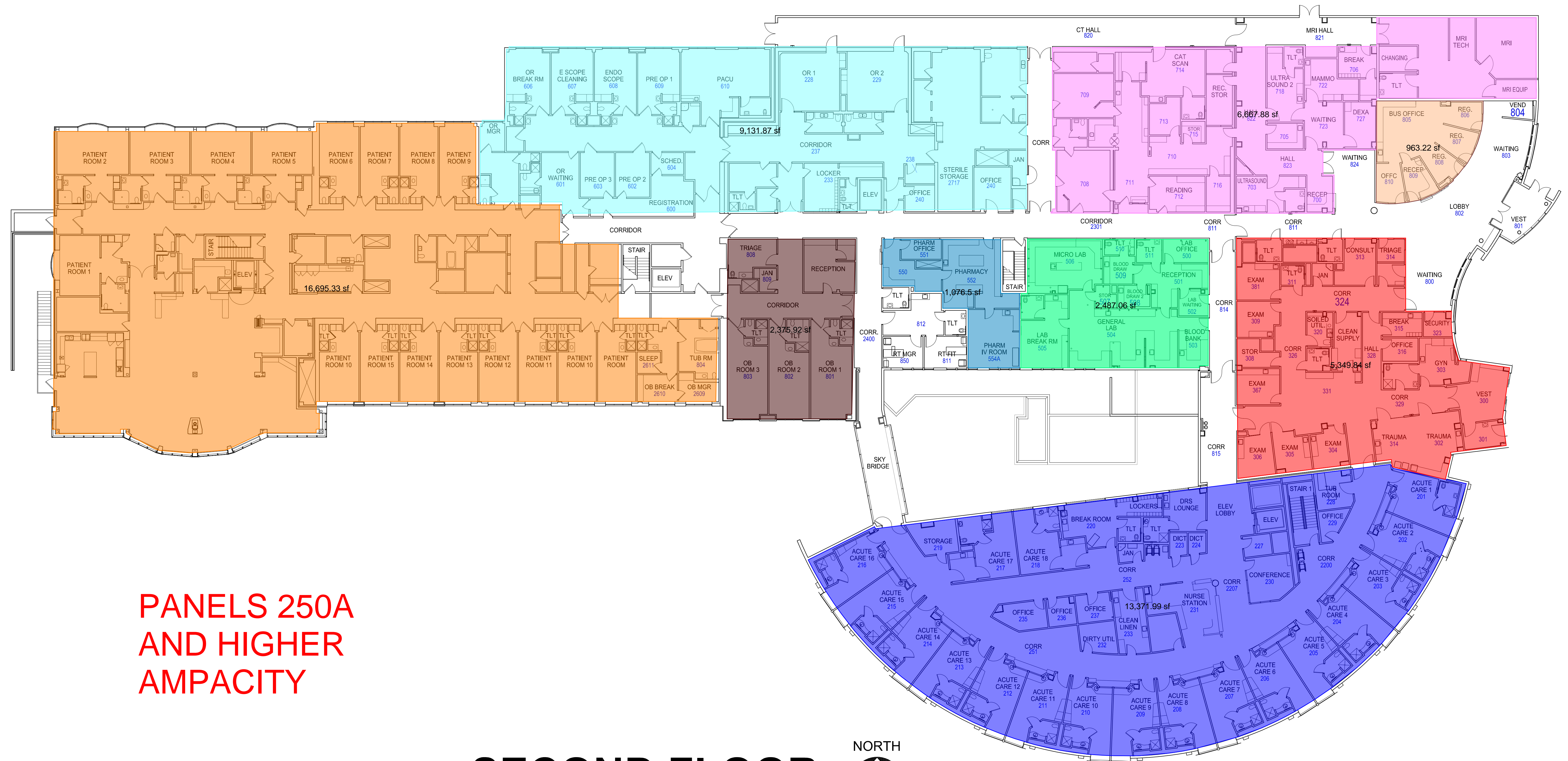


**PANELS 250A  
AND HIGHER  
AMPACITY**

**FIRST FLOOR**

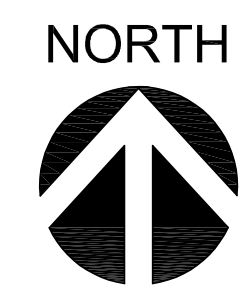


- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

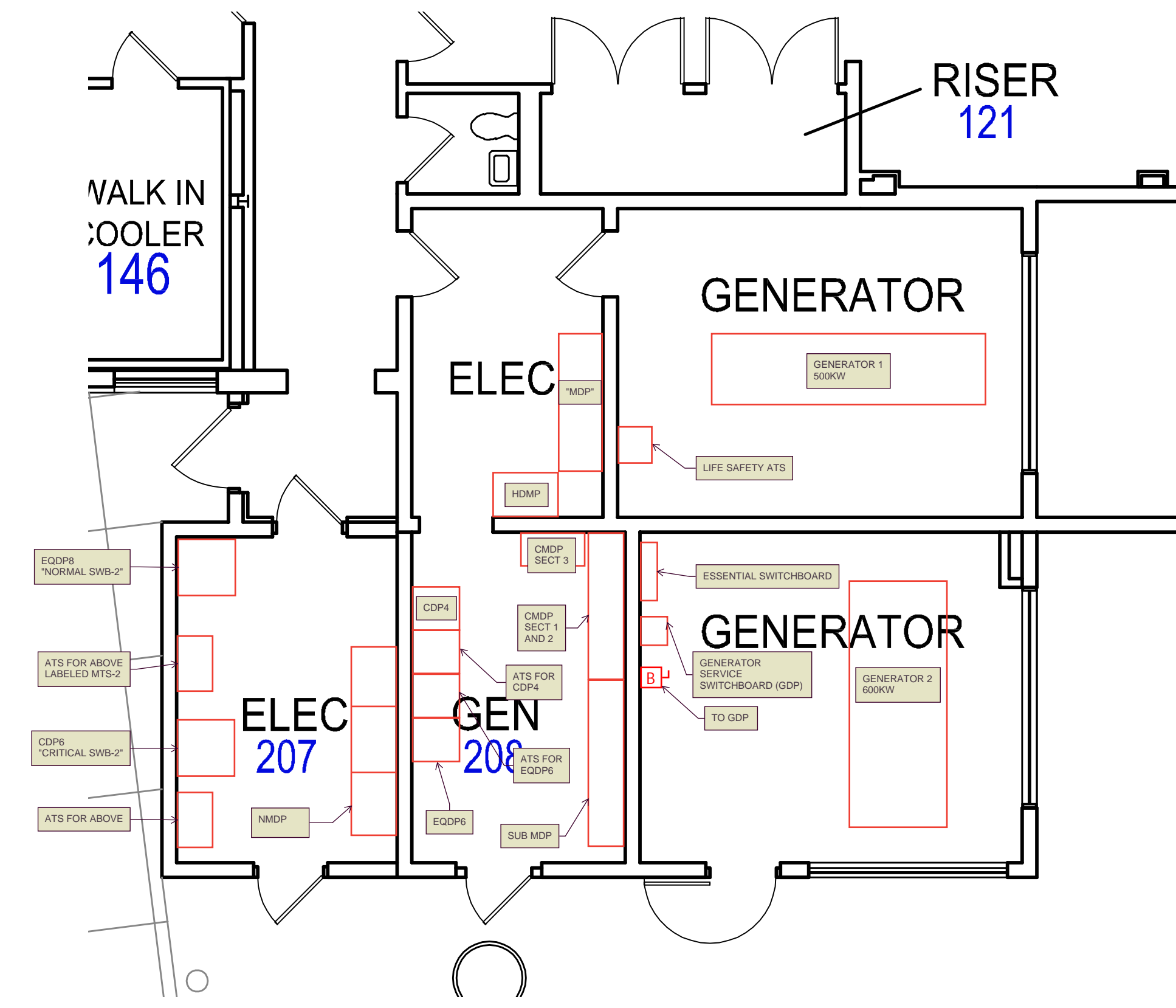


**PANELS 250A  
AND HIGHER  
AMPACITY**

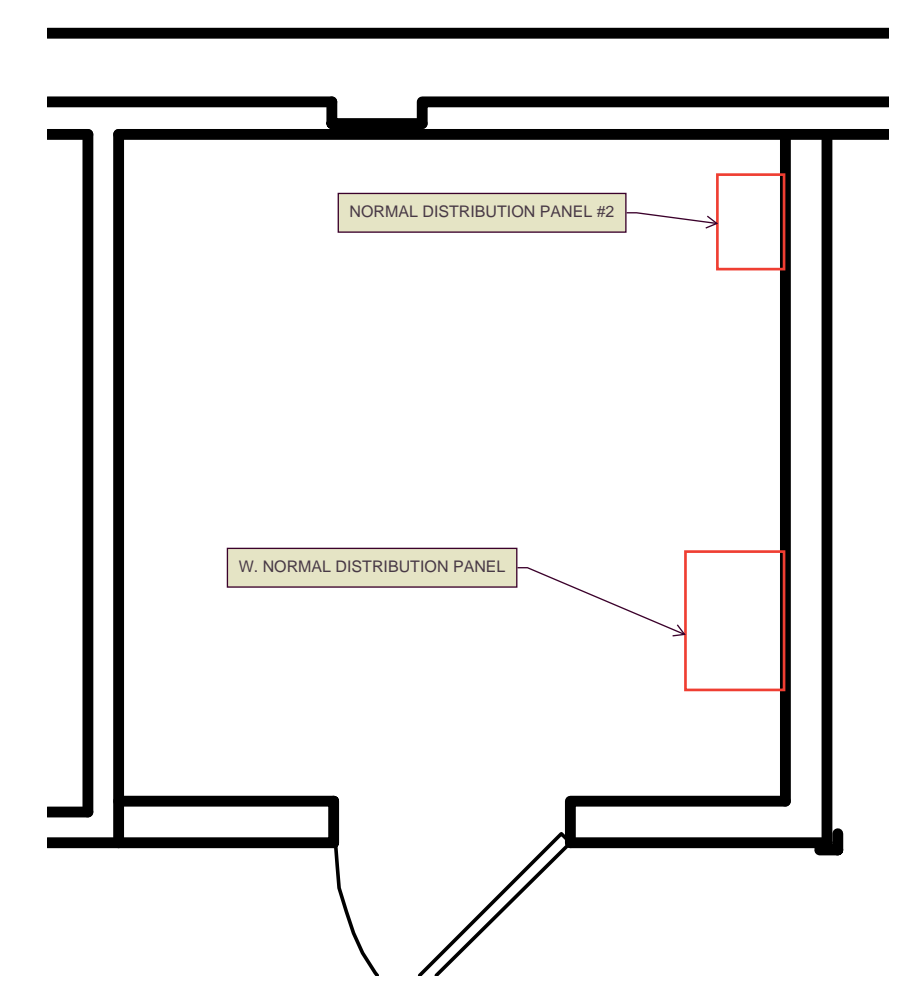
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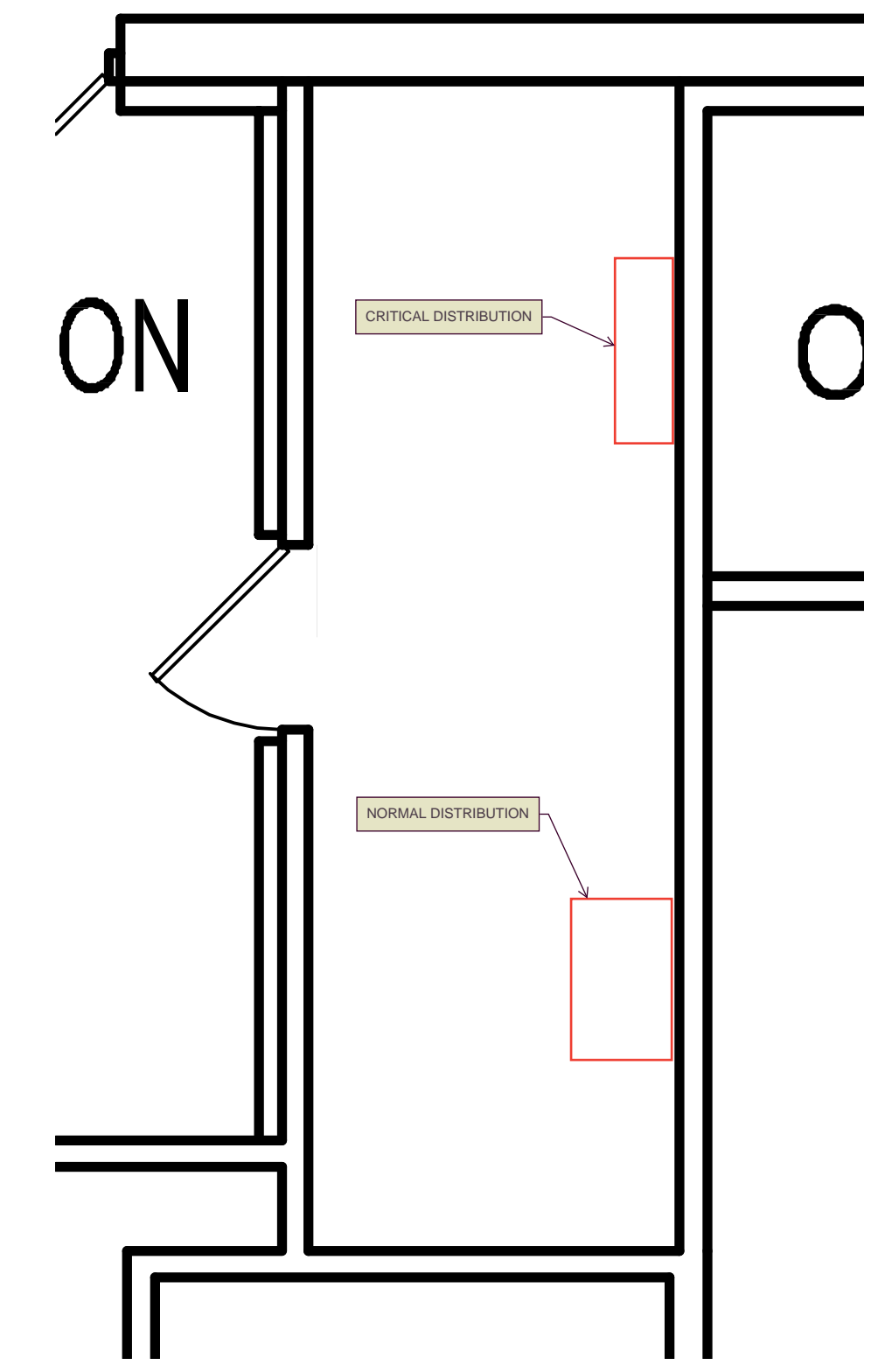
GENERATOR AND ELECTRICAL SPACE FIRST FLOOR



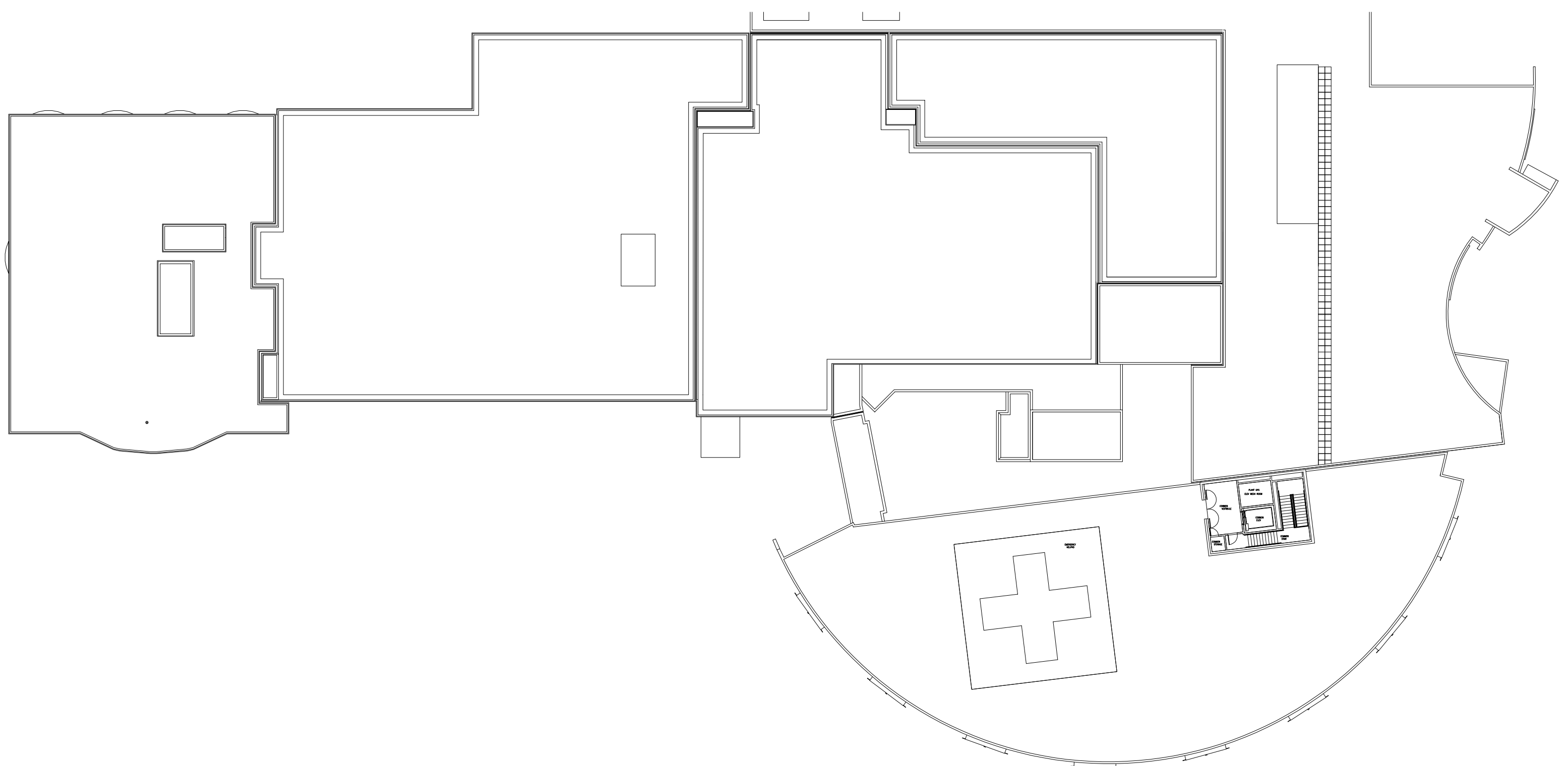
INFUSION 176 FIRST FLOOR



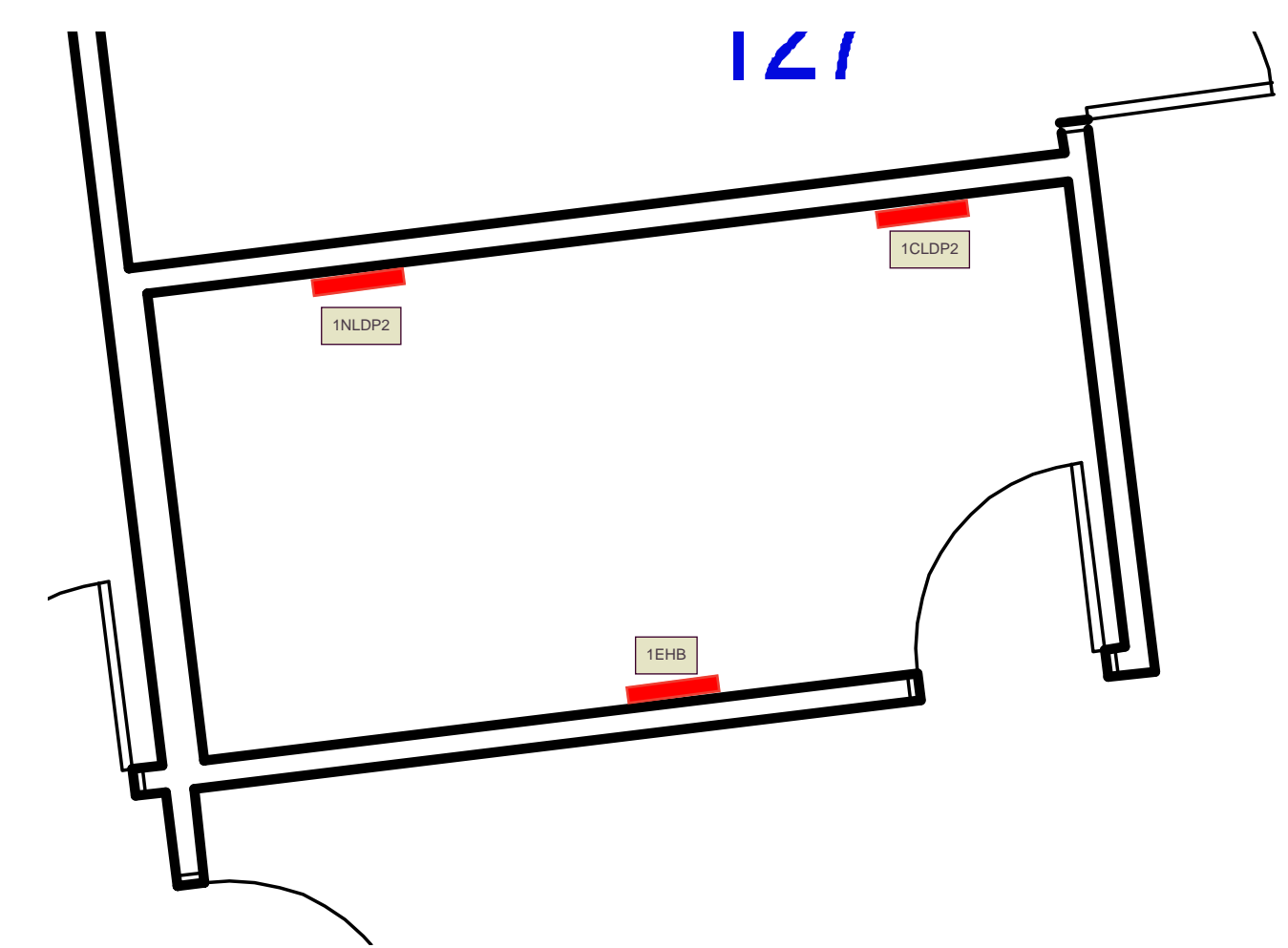
FA RISER 173 FIRST FLOOR



HOSPITAL ROOF PLAN



ELECTRICAL 126 FIRST FLOOR



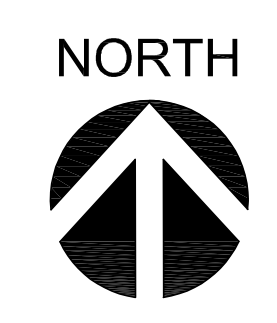
PANELS 250A AND HIGHER AMPACITY

- MECHANICAL / ELECTRICAL
- MATERIAL MANAGEMENT
- ADMIN
- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY

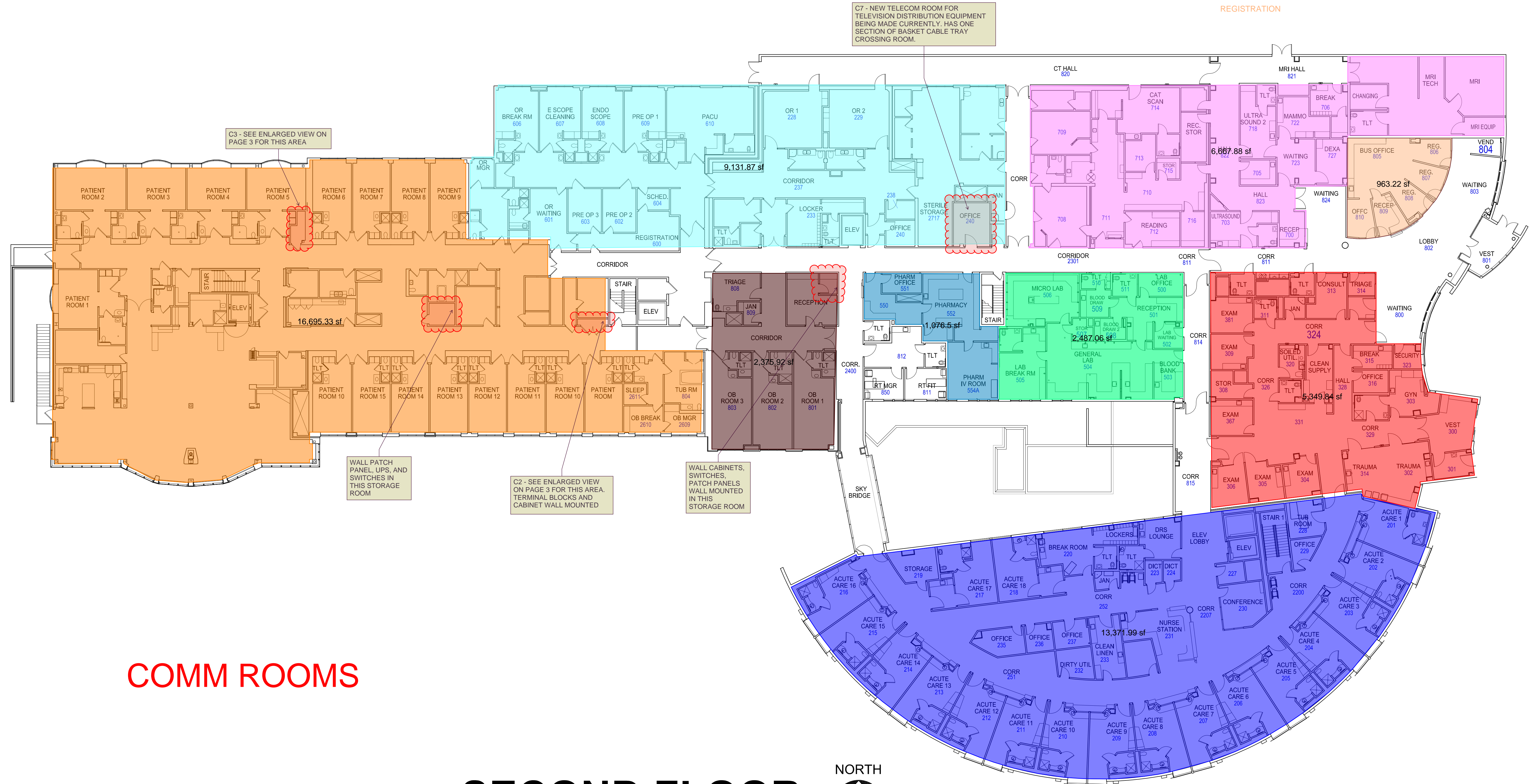


# COMM ROOMS

# FIRST FLOOR

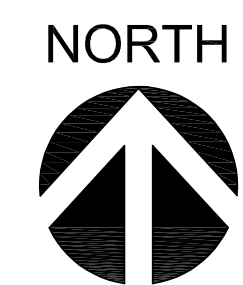


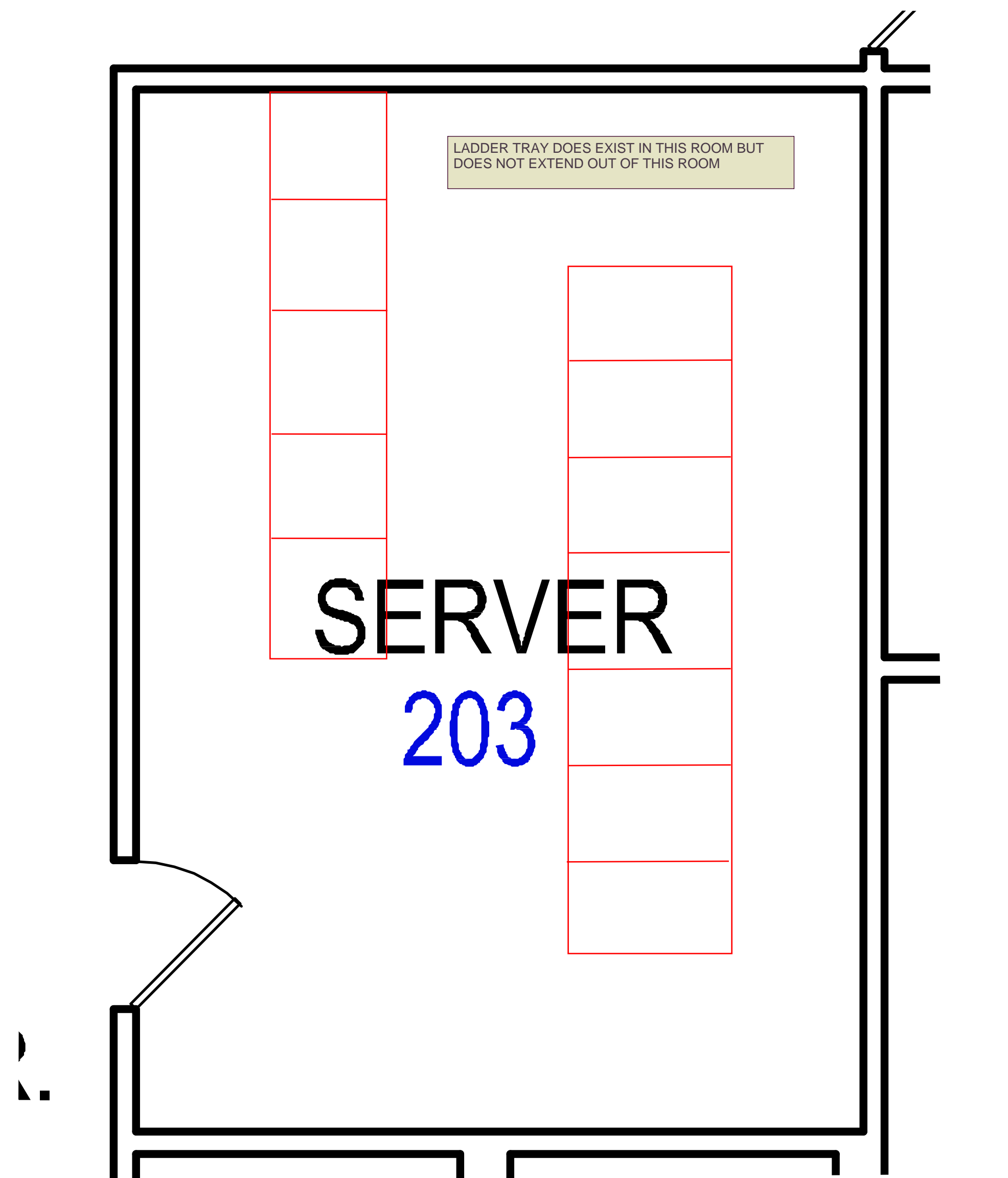
- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION



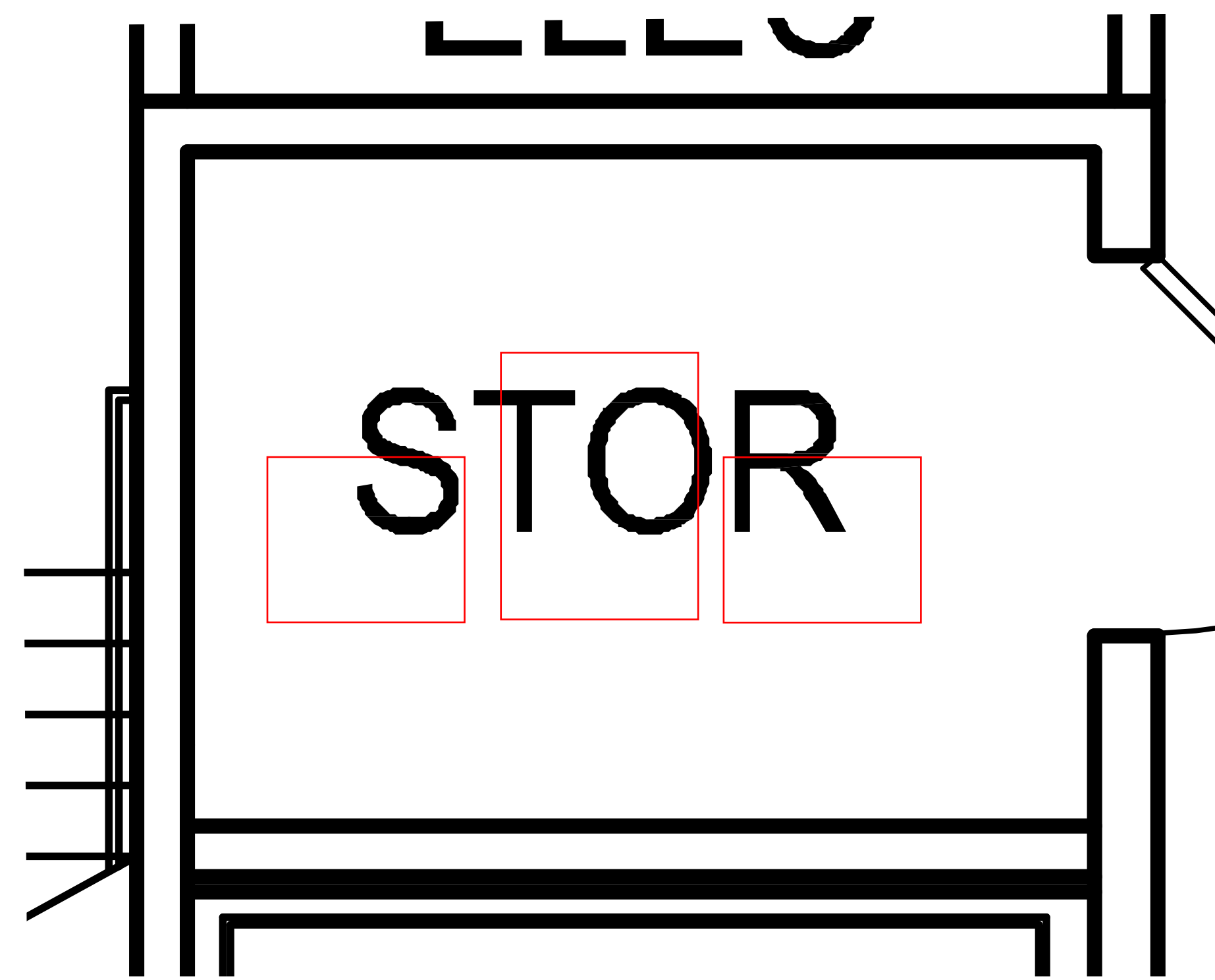
# COMM ROOMS

# SECOND FLOOR

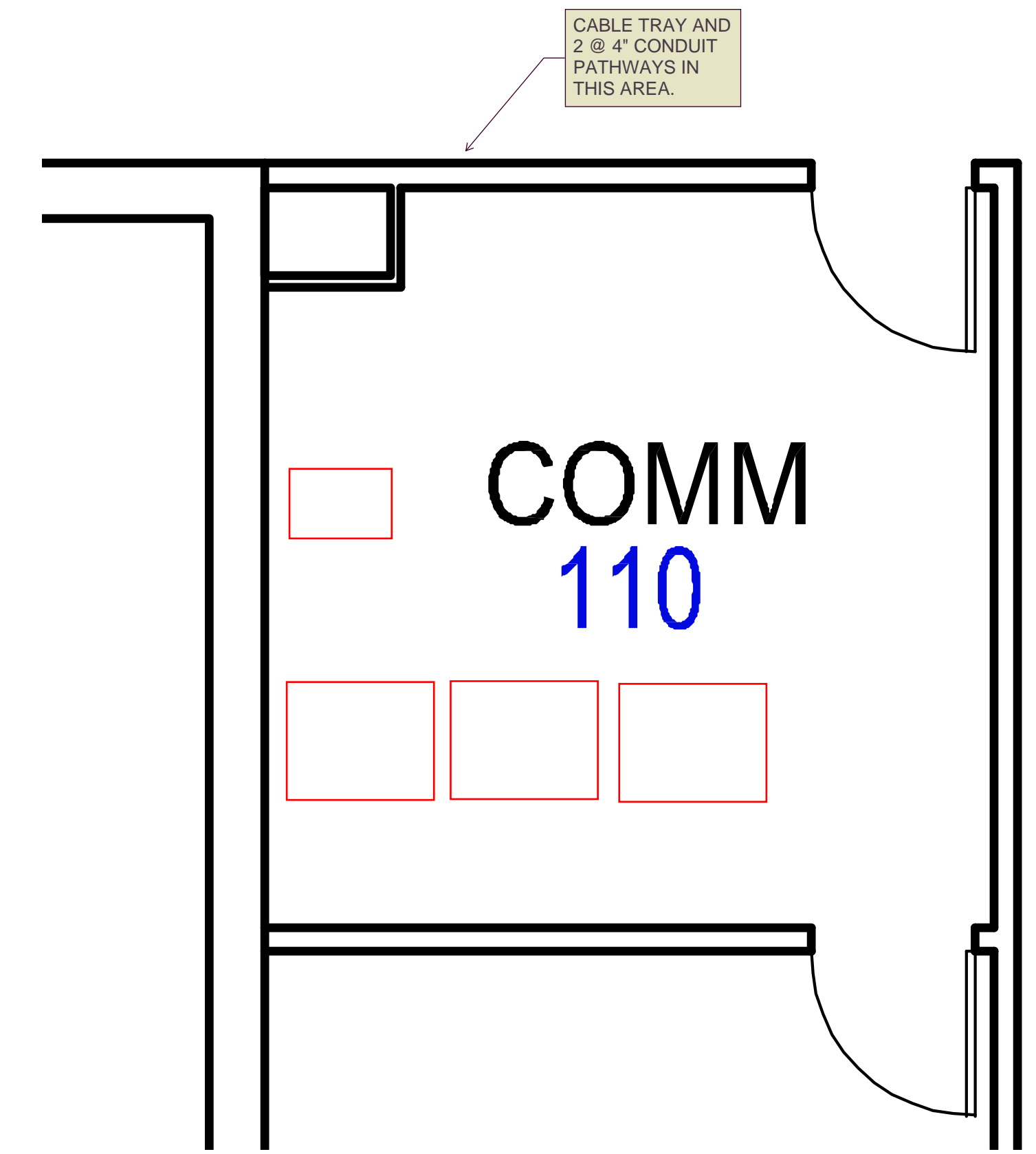




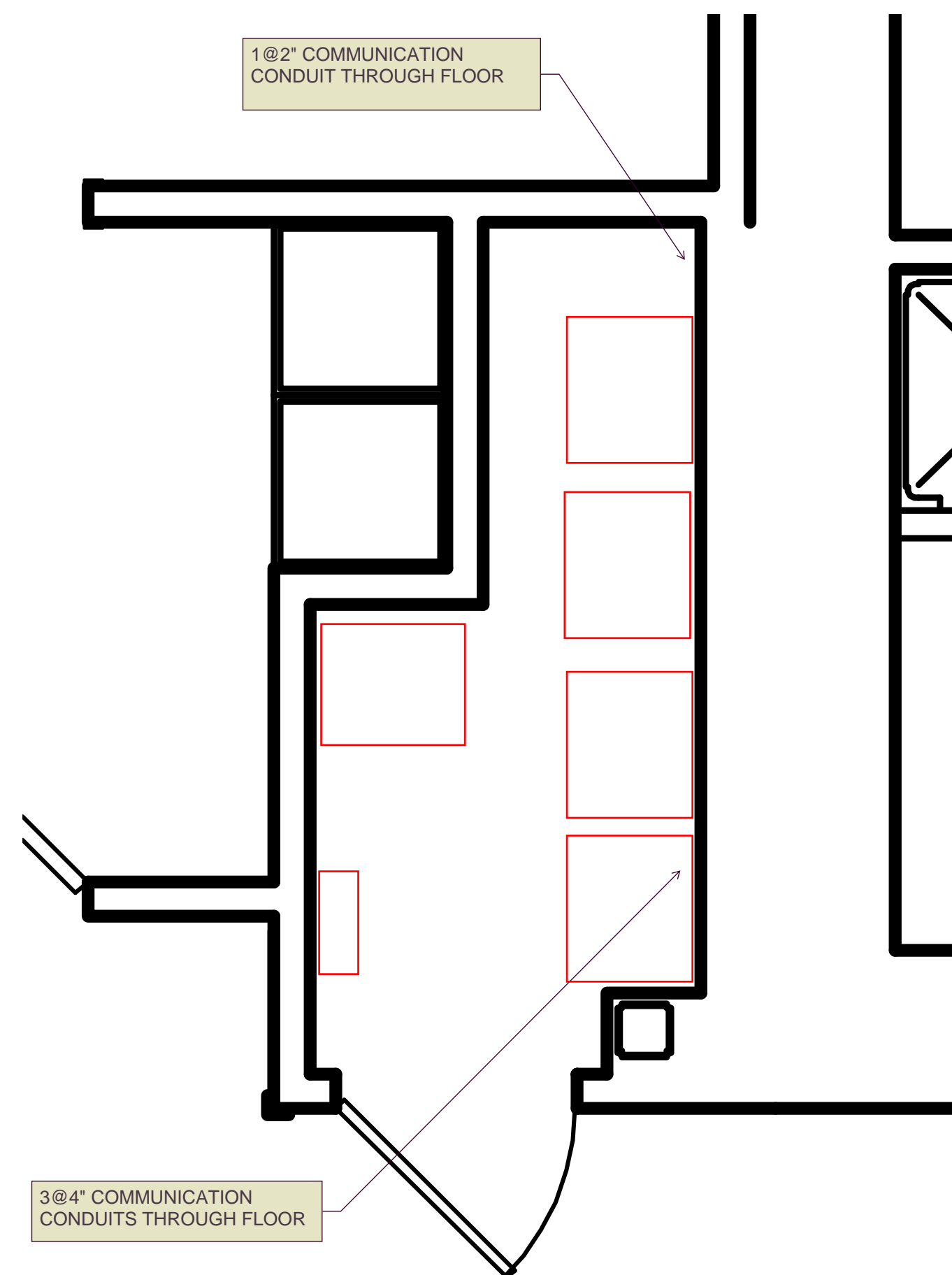
MAIN SERVER ROOM FIRST FLOOR



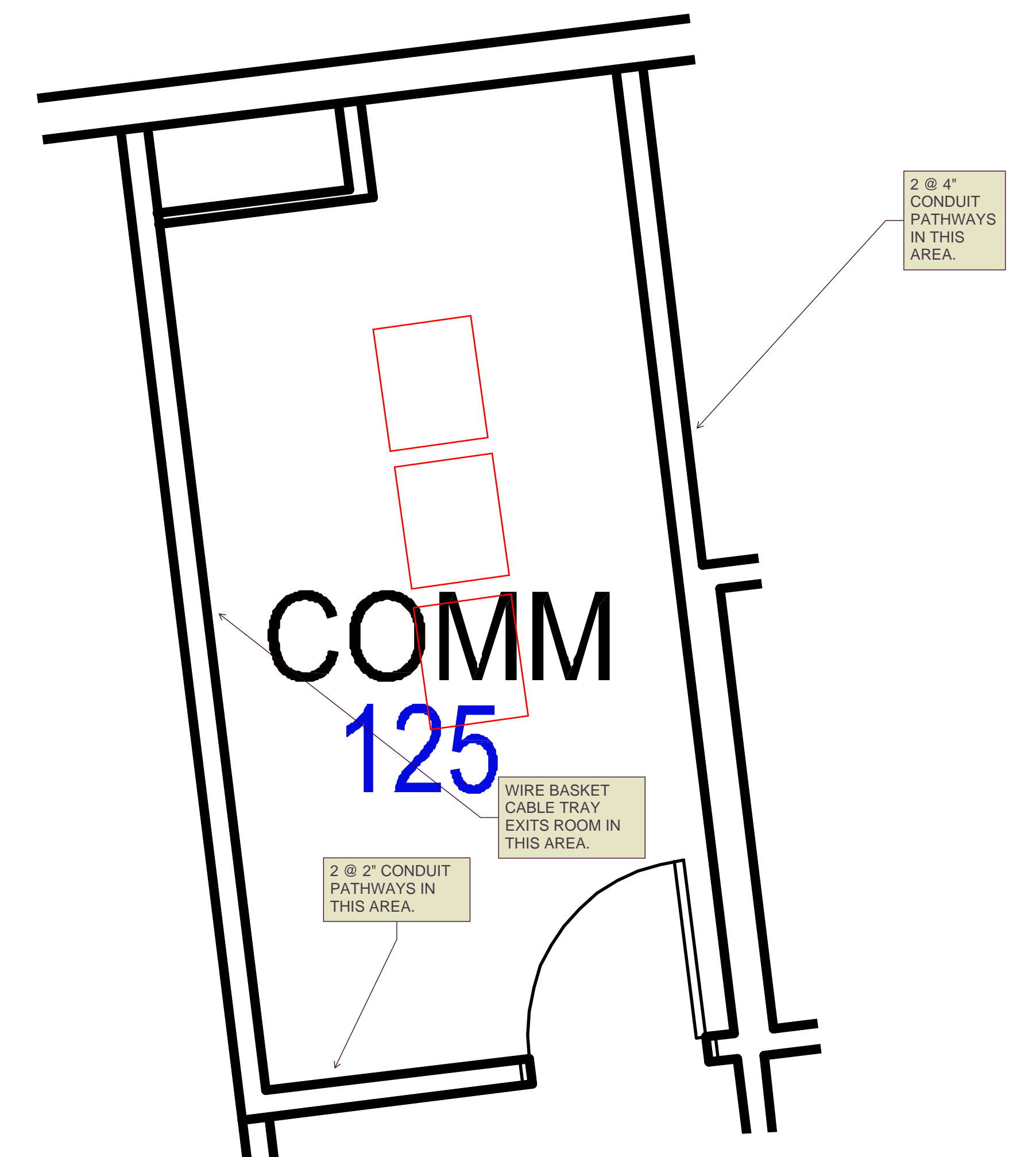
C1 - CENTRAL COMM ROOM FIRST FLOOR



C5 - MATERIALS MANAGEMENT COMM ROOM FIRST FLOOR



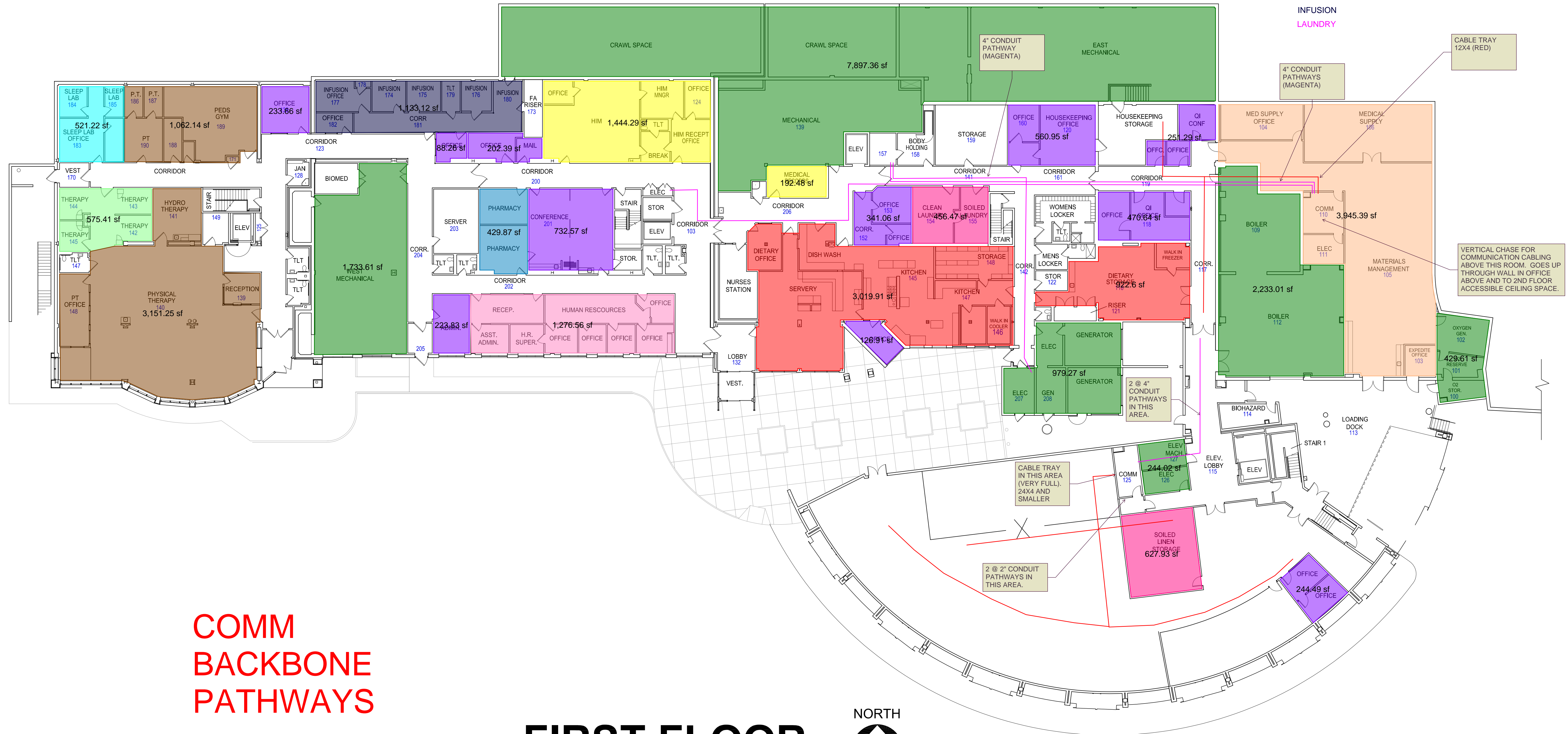
C3 - LTC COMM CLOSET SECOND FLOOR



C6 - SHELL SPACE ROOM FIRST FLOOR - CURRENTLY MAINLY SUPPORTING FLOOR ABOVE

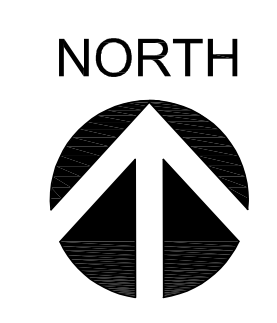
MECHANICAL / ELECTRICAL  
 FIBER OPTIC CABLING DOES RUN BETWEEN MAIN SERVER ROOMS AND MAIN COMM ROOMS BUT IS GENERALLY ABOVE CEILING IN J-HOOKS OR ON CEILING TILES. LIMITED COMM PATHWAYS ARE SHOWN OR NOTED.

- NUTRITION SERVICES
- HEALTH INFORMATION MANAGEMENT (YELLOW)
- PHYSICAL THERAPY
- HUMAN RESOURCES
- PHARMACY
- SLEEP THERAPY
- THERAPY
- INFUSION
- LAUNDRY



**COMM  
 BACKBONE  
 PATHWAYS**

**FIRST FLOOR**



CABLE TRAY 12X4 (RED)

4" CONDUIT PATHWAYS (MAGENTA)

4" CONDUIT PATHWAYS (MAGENTA)

VERTICAL CHASE FOR COMMUNICATION CABLING ABOVE THIS ROOM. GOES UP THROUGH WALL IN OFFICE ABOVE AND TO 2ND FLOOR ACCESSIBLE CEILING SPACE.

CABLE TRAY IN THIS AREA (VERY FULL). 24X4 AND SMALLER

2 @ 2" CONDUIT PATHWAYS IN THIS AREA.

2 @ 4" CONDUIT PATHWAYS IN THIS AREA.

SOILED LINEN STORAGE 627.93 sf

OFFICE 244.49 sf

COMM 244.02 sf

ELEC 979.27 sf

GEN 979.27 sf

DIETARY STORAGE 922.6 sf

DIETARY OFFICE 341.06 sf

OFFICE 476.64 sf

OFFICE 560.95 sf

OFFICE 341.06 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

OFFICE 560.95 sf

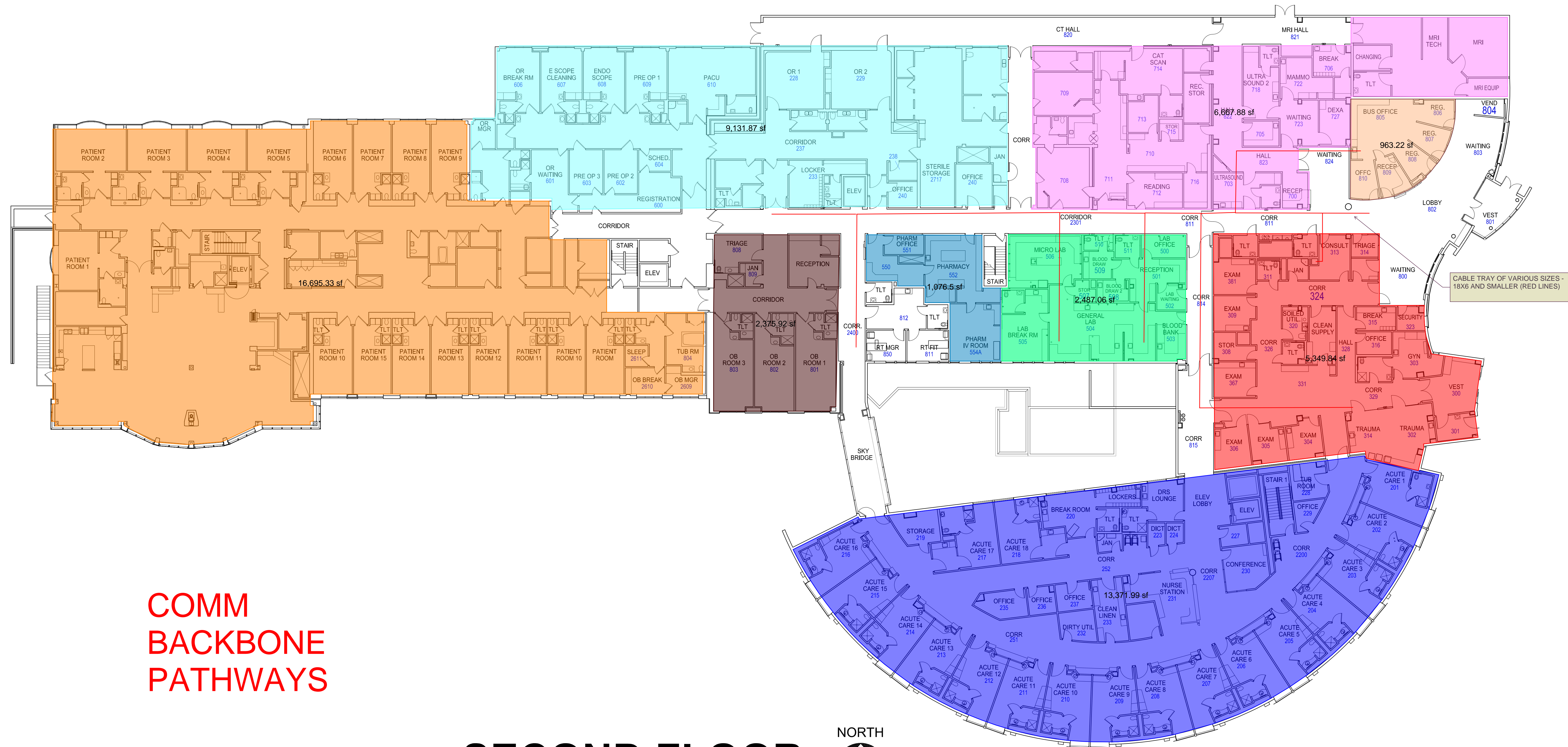
OFFICE 560.95 sf

OFFICE 560.95 sf

- EMERGENCY
- IMAGING
- PHARMACY
- SURGERY
- LONG TERM CARE
- LABORATORIES
- ACUTE CARE
- OBSTETRICS
- REGISTRATION

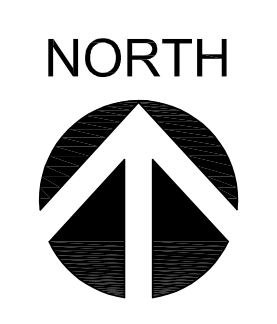
COMMUNICATION CABLING DOES RUN BETWEEN SERVERS AND CLOSETS BUT IS GENERALLY ABOVE CEILING IN J-HOOKS OR ON CEILING TILES. LIMITED COMM PATHWAYS ARE SHOWN OR NOTED.

NO KNOWN BACKBONE PATHWAYS BETWEEN ANY OF THESE TELECOM AREAS AND ROOMS EXCEPT FOR COUPLE NOTED.



**COMM  
BACKBONE  
PATHWAYS**

**SECOND FLOOR**



CABLE TRAY OF VARIOUS SIZES - 18X6 AND SMALLER (RED LINES)

# South Peninsula Hospital Energy Audit

Level 1 Report

FINAL

November 1, 2024

Prepared by:

Randall S. Williams PE

RESPEC

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## 1. EXECUTIVE SUMMARY

A Level 1 Energy Audit has been performed for South Peninsula Hospital. The Audit follows the procedures and requirements established by ASHRAE Standard 211-2018 - Commercial Building Energy Audits. The main purpose of Level 1 Audits is to establish an energy use baseline against which candidate Energy Efficiency Measures (EEM) can be evaluated.

### a. Overall assessment of benchmarking and energy performance

South Peninsula Hospital's energy use is currently on par with similar facilities in similar climates. The 127,400 square foot hospital consumes approximately 255 kBtu per square foot per year, at a cost of \$8.25 per square foot. The majority of the energy used is in the form of natural gas; however, electricity accounts for the majority of the cost.

### b. Potential savings and return on investment (ROI)

The hospital is at a crossroads given the age and condition of much of the HVAC equipment. Repair and replacement needs are widespread; but merely replacing the equipment will not lead to large energy savings. A significant reduction in energy consumption is only realistic if major changes are made to the HVAC systems and strategies currently deployed in the hospital. Some of those strategies are listed below. All of them require a significant capital investment. ROI is generally poor to fair given the need to add cooling capability and the associated increase in energy consumption, in addition to the low cost of thermal energy (gas) which hinders the economics of EEMs.

### c. Table of recommended measures with estimated level of savings and ROI

<b>Low-Cost and No-Cost Recommendations</b>	<b>Modified System</b>	<b>Cost</b>	<b>Typical ROI</b>	<b>Priority</b>
Aggressively reset and tune Heating Water Supply Temperature	Heating Controls	Low	Med	Med
Standardize & tune Supply Air Temperature reset strategy	HVAC Controls	Low	Med	Med
Improve Economizer operation	HVAC	Low	Med	Low
Convert remaining lighting to LED	Lighting	Low	Med	Low
<b>Potential Capital Recommendations</b>	<b>Modified System</b>	<b>Cost</b>	<b>Typical ROI</b>	<b>Priority</b>
Consolidate Cooling for IT and Server Rooms and Capture Waste Heat for re-use	CRACs, DHW	High	Med	Med
Replace VAV- and CV-reheat HVAC in non-clinical areas with Variable Refrigerant Flow Fan Coils and water-cooled heat pump (or water-source heat pump loop) with Dedicated Outdoor Air Supply. Add Dry Coolers for heat rejection. Add dedicated low temperature condensing water boilers for heat source.	HVAC	High	Med	Med
Convert Domestic Hot Water Heaters from storage-type to instantaneous (reduces steam load)	Water Heaters	Med	Low	Med
Replace Steam Heating Boilers with Condensing Water. Reduce Steam Plant size. Reset Heating-water supply temperature. Consider relocating plant.	Boilers, Heating	High	Low	Med

## 2. INTRODUCTION

### a. Audit scope

Energy use was audited for the South Peninsula main hospital building at 4300 Bartlett St. in Homer, AK. A Level 1 Audit was chosen as the best use of available data and consultant costs.

Level 1 Audits consist of the following procedures:

- Establish scope of systems to be included in audit.
- Benchmark the existing energy consumption using utility records.
  - Calculate the Energy Use Intensity (EUI) in kBtu per Gross Square Foot per Year
  - Calculate the Energy Cost Index (ECI) in \$ per Gross Square Foot per Year
  - Compare EUI to a Peer Sample
- Review Utility Rate Structure
- Perform a Facility Site Survey
  - Identify O&M problems & needs.
  - Identify major energy-using systems.
  - Identify current space use, thermal or IAQ problems, and planned improvements.
- Complete a space function analysis.
- Identify Low- and No-Cost Energy Efficiency Measure (EEM) Recommendations.
- Identify Potential EEM Capital Recommendations.

### b. Key dates

The Facility Site Survey visit was performed on November 6-8 in conjunction with a condition survey. Utility energy consumption data and trend logs of the HVAC equipment from the building automation system were obtained in November and December of 2023. Utility records spanned from October of 2020 through December of 2023, providing three full years of gas and electric data.

### c. Contact information

For further information about this report, please contact the RESPEC Project Manager Rand Williams, PE at 907-743-3200 or [randall.williams@RESPEC.com](mailto:randall.williams@RESPEC.com).

### 3. FACILITY DESCRIPTION

#### a. Site information

#### All Audit Levels - Building Characteristics

Building Name*	South Peninsula Hospital	user input
Building Owner	Kenai Peninsula Borough	calculated
Energy Auditor	RESPEC	
Street*	4300 Bartlett St	
City*	Homer	
State*	AK	
Postal Code*	99603	
Date of site visit(s)	11/9/2023	
Primary Building use type*	Hospital (General Medical & Surgical)	
Client Name	Kenai Peninsula Borough	
Key Contacts	Harrison Smith	

Year of construction*	1974
Last Renovation*	2023
Year of Prior Energy Audit	-
Year Last Commissioned	-
Building automation system? (Y/N)	Y
Historical landmark status? (Y/N)	N
Percent owned (%)	100%
Percent leased (%)	

Gross floor area*	127,400	sq ft
Total Number of Floors	2	
Total conditioned area (both heated and cooled)	58,131	sq ft
Conditioned area (heated only)	58,991	sq ft
Conditioned area (cooled only)	-	sq ft
Conditioned Floors Above grade*	2	
Conditioned Floors Below grade*	-	

<b>Spaces excluded from gross floor area</b>
Outdoor areas (loading dock), crawl spaces.

Space Function*	Floor Area	%
Hospital (General Medical & Surgical)	59,907	55%
Outpatient Rehabilitation/Physical Therapy	10,000	9%
Medical Office	8,000	7%
Senior Care Community	20,000	18%
Urgent Care/Clinic/Other Outpatient	12,000	11%
<b>Total</b>	<b>109,907</b>	

<b>Occupancy*</b>		
Typical occupancy	168	hours/week
Typical occupancy	52	weeks/year
Typical number of occupants (during occ hours)	400	ESTIMATED ONLY
Number of Dwelling Units in Building (Multifamily Only)		
% of Dwelling Units currently Occupied (Multifamily Only)		

Energy Sources**			
Energy Source	ID	Type	Rate schedule
Electricity	Acct 14376026 Meter #600428	Master meter without sub-metering	Large Gen Svc
Electricity			
Natural gas	Acct 3211928858 Meter #1636	Master meter without sub-metering	G4 Commercial
Chilled Water			
Hot Water			
Fuel Oil			
Steam			
Renewable Energy			
Other			

b. Notable conditions

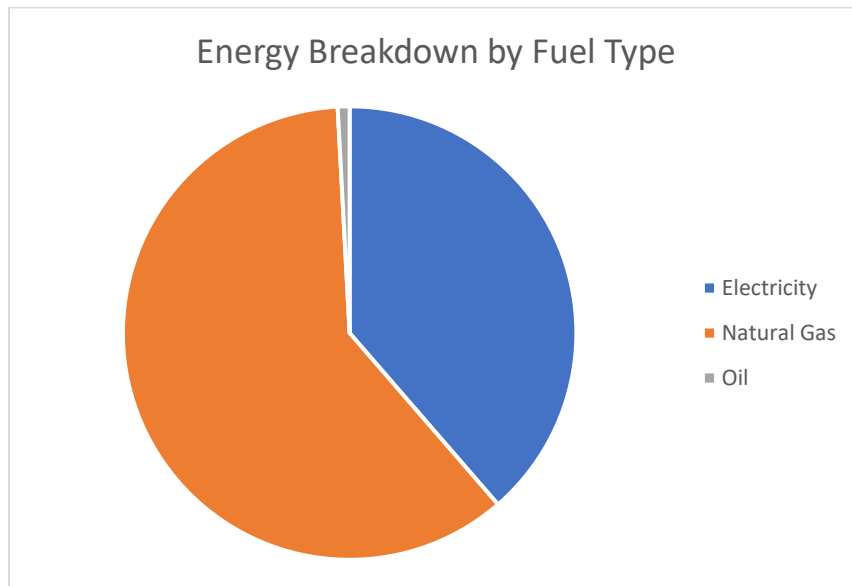
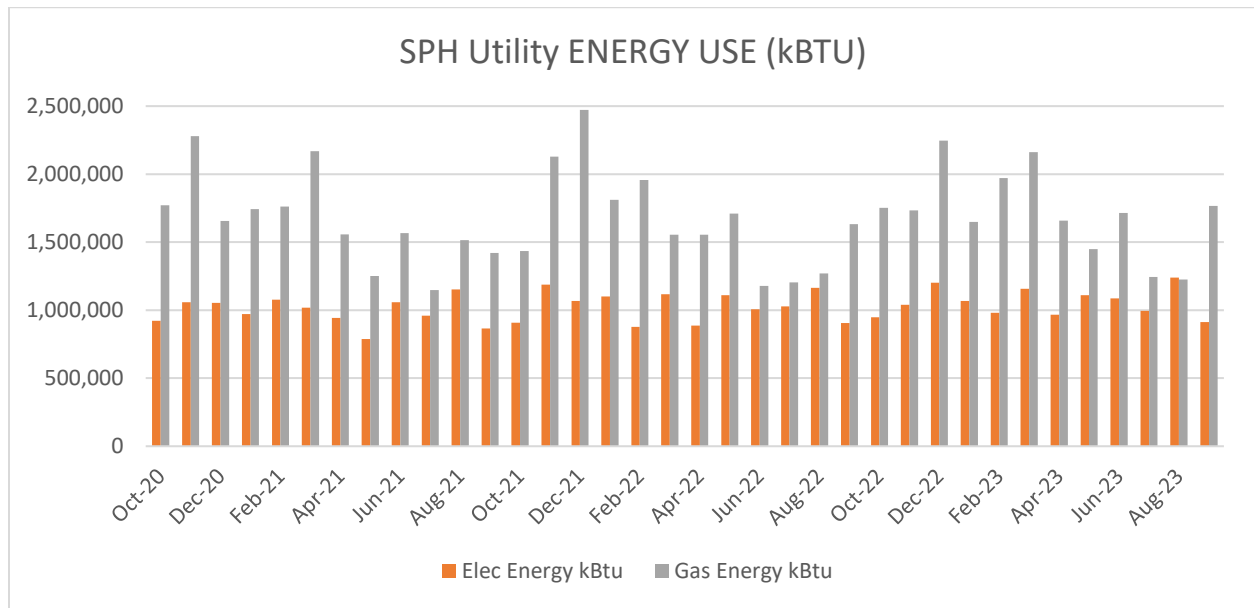
Observed and known issues in the building related to energy consumption include the following:

Facility Description - Notable Conditions
Lack of Cooling in Long Term Care; Overheating in Emergency Department; Lack of Cooling in AHU-4, 5, 6, 7; Inadequate cooling for Server Room(s); Backlog of Deferred Maintenance & Scheduled Replacement; Storage-type domestic hot water system; Heating Piping failures in West Expansion; Lack of heat recovery systems for multiple AHUs;

4. HISTORICAL UTILITY DATA

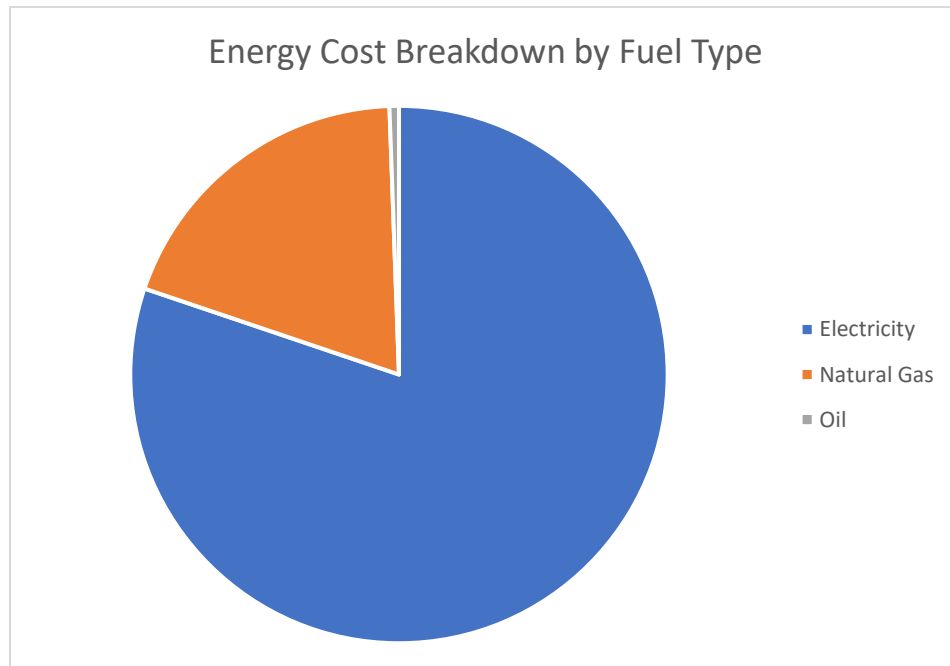
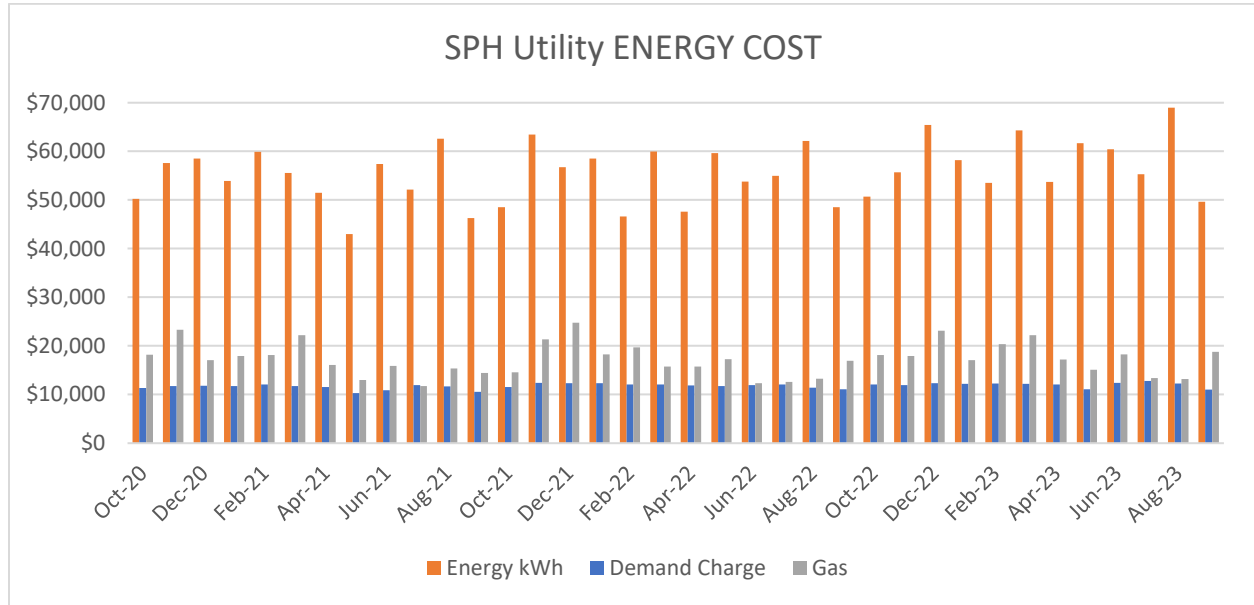
a. Data summary and rate schedules

Below are graphs depicting the monthly energy consumption over the three-year period from 2020-2023.



Electricity consumption is steady at approximately 1 million kbtu per month. Thermal energy consumption varies with weather conditions and is therefore higher in winter months and lower in summer but never drops below 1.2 million kbtu per month. Natural gas accounts for nearly 2/3 of the energy consumed at the hospital.

The corresponding costs for the same time period are shown in the two graphs below. It's evident that the demand charge for electricity is nearly constant, and that electrical energy charges dominate the expenses. Total energy costs per year run approximately \$1 million. Over 3/4 of the energy cost is associated with electricity.



**All Audit Levels - Annual Summary**

<b>Summary for Existing Building</b>	user input
	calculated

**Imported Energy (E<sub>imp</sub>)**

Energy Type	Total Annual Use*	Units	Conversion Multiplier	Thousands BTU (kBtu)	Total Annual Cost (\$)
Electricity	3,723,120	kWh	3.4	12,703,285	\$ 847,226
Natural Gas	198,909	therms	100.0	19,890,915	\$ 203,342
Oil	2000	gallons (Fuel Oil #2)	139.0	278,000	\$ 6,000
<b>E<sub>imp</sub> Total</b>				<b>32,872,200</b>	<b>\$ 1,056,569</b>

Fuel oil was included because it serves as a backup for natural gas, and the generators also run on fuel oil. A nominal amount of fuel is used for generator testing every month. Overall fuel oil is not a significant contributor to energy consumption during normal operations.

Electric Utility Rate is Homer Electric Large General Service:

SERVICE TYPE	MONTHLY CUSTOMER CHARGE (A)	ENERGY CHARGE PER KWH (H)	SYSTEM DELIVERY CHARGE (B)	DEMAND CHARGE PER KW (I)	MINIMUM DEMAND CHARGE (C)	COST OF POWER ADJUSTMENT PER KWH (D)	REGULATORY COST CHARGE (G)
Large General Service (F)	\$50.00	\$0.10883	\$0	\$22.387	\$447.74	\$0.08868	\$0.001028

Gas Utility Rate is ENSTAR G4:

**G4 Rates**

<b>Customer Charge</b>	\$538.00 per account
<b>Service Charge (Base)</b>	\$0.06580 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

b. Annual Energy Use Intensity (EUI), Energy Cost Index (ECI)

**Existing Building EUI/ECI**

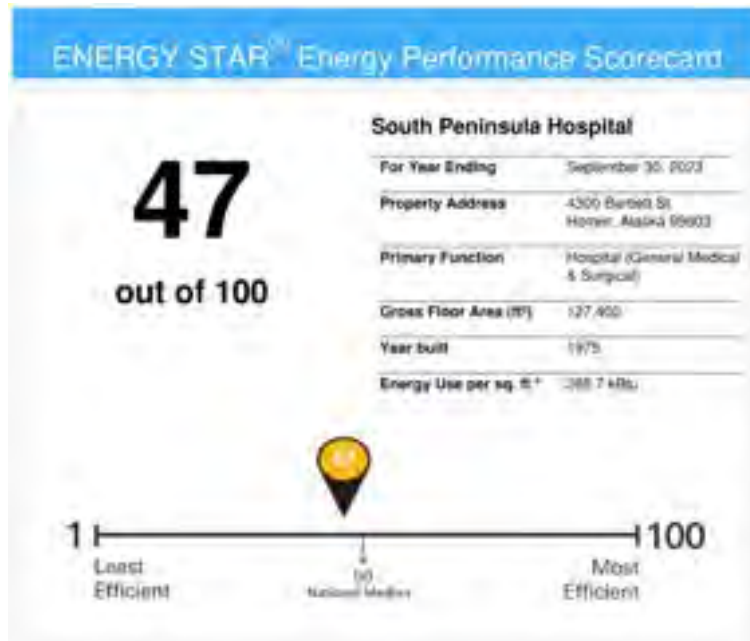
Building Name	South Peninsula Hospital
Gross Conditioned Square Feet	127,400
EUI [building] (kBtu/sf/yr)	255.8
<b>EUI [site] (kBtu/sf/yr)</b>	<b>255.8</b>
<b>Site ECI (energy cost index or \$/sf/yr)</b>	<b>\$ 8.25</b>

\*EUI: Energy Use Intensity

What is not known is the effect of the missing cooling equipment on the EUI for SPH. Because roughly half the square footage of the hospital does not have mechanical cooling, the reported energy consumption is lower than it would be with cooling equipment running during the summer. However, summers are short and cool in Homer and the actual net effect of adding mechanical cooling on electrical load is likely relatively small. The most likely scenario would be increased demand charges in the summer, with an accompanying slight increase in electrical energy consumption.

**5. BENCHMARKING**

Entering the same utility data into the online Energy Star Portfolio Manager leads to a score of 47 out of 100. This means that approximately half of similar facilities use more and half use less energy than South Peninsula Hospital. Put another way, South Peninsula Hospital is about average in energy consumption among similar hospitals.



For further comparison to similar facilities, the EPA publishes median EUI data for dozens of specific market sectors, including healthcare which is excerpted below. From the table a large difference can be

seen between hospital properties and other healthcare related occupancies. For example, outpatient facilities range from 62 to 64.5 EUI, compared to 234.3 EUI for General Medical and Surgical facilities such as South Peninsula Hospital. This illustrates the fact that hospital facilities are some of the highest energy use buildings in the United States.

Market Sector	Property type	Source EUI (kBtu/ft <sup>2</sup> )	Site EUI (kBtu/ft <sup>2</sup> )
Healthcare	Ambulatory Surgical Center	138.3	62.0
<b>Healthcare</b>	<b>Hospital (General Medical &amp; Surgical)</b>	426.9	<b>234.3</b>
Healthcare	Other/Specialty Hospital	433.9	206.7
Healthcare	Medical Office	121.7	51.2
Healthcare	Outpatient Rehabilitation/Physical Therapy	138.3	62.0
Healthcare	Urgent Care/Clinic/Other Outpatient	145.8	64.5

Median EUIs in the United States (from EPA Portfolio Manager, see [Portfolio Manager Technical Reference: U.S. National Energy Use Intensity](#))

Another comparison to peer facilities can be found in the American Society for Healthcare Engineering (ASHE) 2023 publication "Energy benchmarking for hospitals". The publication surveyed 538 hospital facilities across climate and size variations throughout the United States. South Peninsula Hospital is considered a "Small" hospital in a "Very Cold" climate zone.

Size Category	# Beds	Typical Gross Square Footage (GSF)
Critical Access Hospital (CAH) <sup>1</sup>	25 or less	<50,000
Small	26–99	50,000–250,000
Medium	100–399	250,000–825,000
Large	400+	825,000+



Based on those criteria, the average EUI would be expected to be 255, which compares favorably to the calculations of approximately 255-265, and supports the statement that SPH is about average energy consumption.

CY2022 Building America Zone	Site EUI Small	Site EUI Medium	Site EUI Large	Site EUI All
Hot-Humid	364	230	212	232
Hot-Dry	245	222	197	235
Marine	238	208	199	210
Mixed-Humid	239	245	248	242
Cold	242	225	220	230
Very Cold	255	Insufficient Data		253

### 6. ESTABLISH TARGET AND ESTIMATE SAVINGS

ASHRAE and EPA encourage setting a target for energy savings so that progress can be measured over time. Since SPH sits at the middle of the pack, there is ample room for improvement. Energy Star suggests targeting a score of 75 as an achievable goal, which seems reasonable for SPH.

**ENERGY STAR® Progress & Goals Report**

**47**  
ENERGY STAR® Score<sup>1</sup>

**South Peninsula Hospital**

Primary Property Type: Hospital (General Medical & Surgical)  
Gross Floor Area (ft<sup>2</sup>): 127,400  
Built: 1975

Property Address:  
South Peninsula Hospital  
4300 Barklett St  
Homer, Alaska 99603

For Year Ending: September 30, 2023  
Date Generated: February 04, 2024

Property ID: 31-45375

1. This ENERGY STAR score is a third assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

	Progress			Performance Goals		
	Baseline (Ending Date: 9/30/2023)	(Ending Date: 9/30/2023)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
<b>ENERGY STAR Score</b>	47	47		75	50	75
<b>Energy</b>						
Site EUI (kBtu/ft <sup>2</sup> )	265.7	265.7		227.5	281.8	227.5
Source EUI (kBtu/ft <sup>2</sup> )	453.5	453.5		388.2	446.9	388.2
Energy Cost (\$)	1,061,746.11	1,061,746.11		908,969.24	1,046,365.5	908,969.24
Energy Cost Intensity (\$/ft <sup>2</sup> )	8.33	8.33		7.13	8.21	7.13
<b>Total (Location-Based) GHG Emissions</b>						
Total (Location-Based) GHG Emissions (Metric Tons CO <sub>2</sub> e)	2,936.2	2,936.2		2,513.7	2,893.7	2,513.7
Total (Location-Based) GHG Emissions Intensity (kgCO <sub>2</sub> e/ft <sup>2</sup> )	22	23		19.7	22.7	19.7

Moving from a score of 47 to a score of 75 requires a reduction in site EUI from 265.7 to 227.5, and a corresponding reduction in Energy Cost Intensity from \$8.33 to \$7.13. Progress toward these goals can be tracked through the portfolio manager by entering each month's utility data over time and then checking this report regularly.

**Benchmarking & Target EUI/ECI**

Benchmark Source	ASHE Energy Benchmarking for US Hospitals	
Benchmark EUI (kBtu/sf/yr)	258.0	
Target EUI [building] (kBtu/sf/yr)	227.5	
Target EUI [site] (kBtu/sf/yr)	227.5	
Target ECI [site] (\$/sf)	\$ 7.13	
Annual Energy Savings to Reach Target	3,888,700	kBTU
Annual Cost Savings to Reach Target	\$ 148,207	(if available)

If those targets can be achieved, it would save nearly 4 million KBTU and nearly \$150,000 per year. Actual cost savings will vary considerably depending on whether electrical or thermal energy is saved. Electrical energy is much more costly, so the larger the electrical portion saved, the larger the cost savings will be. Achieving those targets will be challenging for SPH, because of the recognized need to add cooling to much of the building. It may be more strategic to set a goal of not increasing cost or energy use while providing better occupant comfort.

**7. ENERGY SAVING OPPORTUNITIES**

**a. Low-cost/no-cost savings measures**

Several inexpensive strategies can be applied to help reduce energy consumption and stabilize operation. Some or all of these may already be partially deployed, but a comprehensive strategy review is recommended.

Level 1 Audit - Recommended Energy Efficiency Measure Summary							
Low-Cost and No-Cost Recommendations	Modified System	Impact on Occupant Comfort or IEQ	Other Non-Energy Impacts	Cost	Savings Impact	Typical ROI	Priority
Aggressively reset and tune Heating Water Supply Temperature	Heating Controls	-	-	Low	Low	Med	Med
Standardize & tune Supply Air Temperature reset strategy	HVAC Controls	-	-	Low	Low	Med	Med
Improve Economizer operation	HVAC	Improved Cooling	Better SA Temperature control	Low	Low	Med	Low

Level 1 Audit - Recommended Energy Efficiency Measure Summary							
Low-Cost and No-Cost Recommendations	Modified System	Impact on Occupant Comfort or IEQ	Other Non-Energy Impacts	Cost	Savings Impact	Typical ROI	Priority
Convert remaining lighting to LED	Lighting	-	Improved lighting	Low	Low	Med	Low

### b. Capital projects

The hospital is at a bit of a crossroads given the age and condition of much of the HVAC equipment. Repair and replacement needs are widespread; but just replacing the equipment will not lead to energy savings. Significant Reduction in energy consumption is only realistic if major changes are made to the systems and strategies currently deployed in the hospital. Some of those strategies are listed below. Not surprisingly, all of them require a significant capital investment.

Level 1 Audit - Recommended Energy Efficiency Measure Summary							
Potential Capital Recommendations	Modified System	Impact on Occupant Comfort or IEQ	Other Non-Energy Impacts	Cost	Savings Impact	Typical ROI	Priority
Consolidate Cooling for IT and Server Rooms and Capture Waste Heat for re-use	CRACs, DHW,	Address overheated IT spaces	Improve IT eq't service life	High	Med	Med	Med
Replace VAV- and CV-reheat HVAC in non-clinical areas with Variable Refrigerant Flow Fan Coils and water-cooled heat pump (or water-source heat pump loop) with Dedicated Outdoor Air Supply. Add Dry Coolers for heat rejection. Add dedicated low temperature condensing water boilers for heat source.	HVAC	Adds Cooling capability	-	High	Med	Med	Med
Convert Domestic Hot Water Heaters from storage-type to instantaneous (reduces steam load)	Water Heaters	-	Reduce risk of Legionella	Med	Med	Low	Med
Replace Steam Heating Boilers with Condensing Water. Reduce Steam Plant size. Reset heating-water supply temperature. Consider relocating plant.	Boilers, Heating	Addresses overheating in ER	-	High	Med	Low	Med
Replace fixtures with LED lamps with fixtures with an integral LED source	Lighting	-	Improved lighting and controls	Med	Med	Med	Low



## APPENDICES

- Tabulated utility data
- Utility rate schedules
- Basis for savings and cost estimates
- Lighting and equipment inventory tables

## Tabulated utility data

All Audit Levels - Metered Energy			
Building Name	South Peninsula Hospital	sq ft	user input
Gross floor area	127,400		calculated
Date	12/21/2023		
Utility #1	Electricity		
Utility #2	Natural Gas		
Utility #3			

Utility #1 - Shall be Electricity if present at the site

If sampling of meters was performed during utility analysis, describe methodology here:

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**Utility #1      Electricity**

MAIN DATA FOR ANALYSIS - Electricity						
Start Date	End Date	Days	Electricity Use (kWh)	Electricity Peak (kW)	Electricity Cost (\$)	Electricity Load Factor
10/4/2022	11/2/2022	29	277,520	559.52	\$ 63,183.00	71%
11/2/2022	12/2/2022	30	304,800	553.28	\$ 68,056.17	77%
12/2/2022	1/4/2023	33	352,080	569.92	\$ 78,219.03	78%
1/4/2023	2/2/2023	29	313,040	564.16	\$ 70,802.82	80%
2/2/2023	3/2/2023	28	287,760	566	\$ 66,120.99	76%
3/2/2023	4/4/2023	33	338,960	563.04	\$ 76,904.41	76%
4/4/2023	5/2/2023	28	283,120	558.24	\$ 66,159.55	75%
5/2/2023	6/5/2023	34	325,280	511.92	\$ 73,191.79	78%
6/5/2023	7/6/2023	31	318,240	572.4	\$ 73,261.83	75%
7/6/2023	8/2/2023	27	291,360	590.16	\$ 68,514.91	76%
8/2/2023	9/6/2023	35	363,360	565.76	\$ 81,731.07	76%
9/6/2023	10/4/2023	28	267,600	508.72	\$ 61,080.56	78%

Annual Total	365	3,723,120	590.2	\$ 847,226	
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SUPPORTING ANNUAL USE DATA - Electricity						
Start Date	End Date	Days	Electricity Use (kWh)	Electricity Peak (kW)	Electricity Cost (\$)	Electricity Load Factor
10/6/2021	11/4/2021	29	265,920	535.12	\$ 60,407.50	71%
11/4/2021	12/8/2021	34	348,000	573.6	\$ 76,284.39	74%
12/8/2021	1/7/2022	30	313,120	569.04	\$ 69,439.47	76%
1/7/2022	2/7/2022	31	322,880	570.64	\$ 71,252.01	76%
2/7/2022	3/4/2022	25	257,360	557.44	\$ 59,072.29	77%
3/4/2022	4/6/2022	33	327,520	559.2	\$ 72,549.45	74%
4/6/2022	5/4/2022	28	259,920	550	\$ 59,900.15	70%
5/4/2022	6/7/2022	34	325,520	547.76	\$ 71,803.87	73%
6/7/2022	7/5/2022	28	294,800	550.8	\$ 66,060.56	80%
7/5/2022	8/3/2022	29	301,360	556.72	\$ 67,390.54	78%
8/3/2022	9/6/2022	34	340,960	527.52	\$ 74,014.59	79%
9/6/2022	10/4/2022	28	265,600	512.88	\$ 59,985.83	77%
Annual Total		363	3,622,960	573.6	\$ 808,161	72%

SUPPORTING ANNUAL USE DATA - Electricity						
Start Date	End Date	Days	Electricity Use (kWh)	Electricity Peak (kW)	Electricity Cost (\$)	Electricity Load Factor
10/5/2020	11/4/2020	30	270,240	526.08	\$ 61,869	71%
11/4/2020	12/8/2020	34	310,080	542	\$ 69,642	70%
12/8/2020	1/8/2021	31	308,960	546.32	\$ 70,655	76%
1/8/2021	2/5/2021	28	284,400	544.24	\$ 65,940	78%
2/5/2021	3/8/2021	31	316,080	556.64	\$ 72,271	76%

3/8/2021	4/7/2021	30	298,480	544.4	\$ 67,624	76%
4/7/2021	5/7/2021	30	276,400	533.04	\$ 63,254	72%
5/7/2021	6/4/2021	28	230,960	475.52	\$ 53,522	72%
6/4/2021	7/7/2021	33	310,000	503.76	\$ 68,639	78%
7/7/2021	8/4/2021	28	281,600	552.96	\$ 64,422	76%
8/4/2021	9/8/2021	35	338,080	539.76	\$ 74,639	75%
9/8/2021	10/6/2021	28	253,680	489.2	\$ 57,176	77%
Annual Total		365	3,478,960	556.6	789,654	71%

**Utility #1: Definition**

Units	kWh
kBtu/unit	3.41

*[note: this formula may be overridden if other units are used]*

**Utility #2      Natural Gas**

MAIN DATA FOR ANALYSIS - Natural Gas				
Start Date	End Date	Days	Natural Gas Use (therms)	Natural Gas Cost (\$)
10/7/2020	11/4/2020	28	17711.87	\$ 18,216
11/4/2020	12/9/2020	35	22799.42	\$ 23,296
12/9/2020	1/5/2021	27	16562.37	\$ 17,068
1/5/2021	2/3/2021	29	17420.8	\$ 17,925
2/3/2021	3/3/2021	28	17619.32	\$ 18,124
3/3/2021	4/7/2021	35	21676.75	\$ 22,175
4/7/2021	5/5/2021	28	15564.45	\$ 16,072
5/5/2021	6/2/2021	28	12512.31	\$ 13,024
6/2/2021	7/7/2021	35	15659.68	\$ 15,864
7/7/2021	8/4/2021	28	11482.87	\$ 11,774
8/4/2021	9/8/2021	35	15144.62	\$ 15,360

9/8/2021	10/6/2021	28	14209.73	\$ 14,444
Annual Total		364	198,364	\$ 203,342

SUPPORTING ANNUAL USE DATA - Natural Gas				
Start Date	End Date	Days	Natural Gas Use (therms)	Natural Gas Cost (\$)
10/6/2021	11/2/2021	27	14351.91	\$ 14,584
11/2/2021	12/1/2021	29	21279.72	\$ 21,367
12/1/2021	1/5/2022	35	24718.82	\$ 24,740
1/5/2022	2/2/2022	28	18110.23	\$ 18,267
2/2/2022	3/9/2022	35	19565.54	\$ 19,693
3/9/2022	4/6/2022	28	15545.67	\$ 15,756
4/6/2022	5/4/2022	28	15548.35	\$ 15,758
5/4/2022	6/8/2022	35	17105.6	\$ 17,283
6/8/2022	7/6/2022	28	11773.93	\$ 12,341
7/6/2022	8/3/2022	28	12038.17	\$ 12,606
8/3/2022	9/1/2022	29	12698.09	\$ 13,268
9/1/2022	10/5/2022	34	16335.69	\$ 16,941
Annual Total		364	199,072	\$ 202,605

SUPPORTING ANNUAL USE DATA - Natural Gas				
Start Date	End Date	Days	Natural Gas Use (therms)	Natural Gas Cost (\$)
10/5/2022	11/3/2022	29	17526.77	\$ 18,137
11/3/2022	12/1/2022	28	17329.6	\$ 17,939
12/1/2022	1/4/2023	34	22466.78	\$ 23,098
1/4/2023	1/31/2023	27	16483.24	\$ 17,089

1/31/2023	3/2/2023	30	19709.06	\$ 20,329
3/2/2023	4/5/2023	34	21605.66	\$ 22,233
4/5/2023	5/3/2023	28	16594.56	\$ 17,201
5/3/2023	5/31/2023	28	14479.3	\$ 15,077
5/31/2023	7/5/2023	35	17159.25	\$ 18,285
7/5/2023	8/2/2023	28	12443.24	\$ 13,407
8/2/2023	8/30/2023	28	12252.78	\$ 13,210
8/30/2023	10/4/2023	35	17654.19	\$ 18,797
Annual Total		364	198,364	\$ 203,342

**Utility #2: Definition**

Units	therms
kBtu/unit	100.00

## Utility rate schedules

Electricity:

**HEA Rate Schedule (effective October 1, 2023)**

HEA offers four different rates to its members, depending on the classification of the service provided. Our rates are regulated by the [Regulatory Commission of Alaska](#).

SERVICE TYPE	MONTHLY CUSTOMER CHARGE (A)	ENERGY CHARGE PER KWH (H)	SYSTEM DELIVERY CHARGE (B)	DEMAND CHARGE PER KW (I)	MINIMUM DEMAND CHARGE (C)	COST OF POWER ADJUSTMENT PER KWH (D)	REGULATORY COST CHARGE (G)
Residential	\$20.00	\$0.16640	\$24.96	N/A	N/A	\$0.08868	\$0.001028
General Service (E)	\$20.00	\$0.17320	\$25.98	N/A	N/A	\$0.08868	\$0.001028
<b>Large General Service (F)</b>	<b>\$50.00</b>	<b>\$0.10883</b>	<b>\$0</b>	<b>\$22.387</b>	<b>\$447.74</b>	<b>\$0.08868</b>	<b>\$0.001028</b>
Industrial Service	For more information contact Member Services.						
Outdoor Lighting	175 watt lamp: \$30.64; 250 watt lamp: \$36.17; 360 watt lamp: \$43.95; 400 watt lamp: \$48.60; 55 watt LED: \$29.99; 93 watt LED: \$33.44; 160 watt LED: \$42.76 per lamp per month						

It should be noted that residential rates are increasing in 2024:

HEA Residential Rates	Current *effective April 1, 2020	New Rate *effective January 1, 2024
Energy Charge per kWh	\$0.16077	\$0.16640
Cost of Power Adjustment	\$0.08191	\$0.08868

Gas:

**Rates & Regulatory Information**

ENSTAR is regulated by the [Regulatory Commission of Alaska](#) (RCA), an entity that ensures public utilities and pipeline companies provide safe and adequate service at reasonable rates.

When a public utility (electric, natural gas, wastewater, etc.) wants to raise or lower rates, it has to request the change through the RCA, which publishes notices of proposed changes to allow comments for 30 days before making a decision.

ENSTAR has four rate classes for Gas Sales Service, based on the capacity of the gas meter required to serve the home or business. Each rate consists of four parts:

- **Customer Charge:** A flat fee that is determined by the meter size (G1, G2, G3, or G4) on the account. The customer charge recovers a portion of the utility's costs such as meter-reading, record-keeping, billing, collections, and costs associated with service lines and meters.

- **Service Charge (Base):** A volumetric charge that covers system maintenance costs and is determined by the meter size (G1, G2, G3, or G4) on the account. This charge recovers system maintenance costs.
- **RCC:** The "Regulatory Cost Charge" is a volumetric charge provided for by Alaska Statutes. This charge helps fund the Regulatory Commission of Alaska (RCA).
- **GCA:** The "Supplier Gas Cost Charge" is a volumetric charge that reflects the price ENSTAR customers pay for gas based on gas supply agreements previously approved by the RCA. The GCA is adjusted annually in July.

### Current Rates: Effective July 1, 2023

#### G1 Rates

<b>Customer Charge</b>	\$16.25 per account
<b>Service Charge (Base)</b>	\$0.14980 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

#### G2 Rates

<b>Customer Charge</b>	\$35.50 per account
<b>Service Charge (Base)</b>	\$0.09600 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

#### G3 Rates

<b>Customer Charge</b>	\$112.00 per account
<b>Service Charge (Base)</b>	\$0.09448 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

#### G4 Rates

<b>Customer Charge</b>	\$538.00 per account
<b>Service Charge (Base)</b>	\$0.06580 per CCF
<b>RCC</b>	0.327% of the total bill
<b>GCA</b>	\$0.86517 per CCF

View ENSTAR's complete tariff [here](#).

Basis for savings and cost estimates

## Lighting and equipment inventory tables

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
HWCP-1	No additional information in record info	1974	P	DHW Circulator	Mech Room 139 Serves Core area		-40
HWCP-2	No additional information in record info	1974	P	High temp DHW Circ			-40
HC-1	--	1974	AHU-8	Heating Coil	Serves AC-1	Critical	-30
A-6	--	1983	S1	Duplex Condensate Recovery	Boiler Room 109		-26
A-7	--	1983	S1	Duplex Condensate Recovery	Mech 139	Fair	-26
A-8	--	1983	S1	Duplex Condensate Recovery	Mech 120	Fair	-26
HF-1	--	1974	AHU-8	HEPA Filter	Serves AC-1	Critical	-25
HF-2	--	1974	AHU-8	HEPA Filter	Serves AC-1	Critical	-25
HF-5	--	1974	V3	HEPA Filter	Serves HV-1	Critical	-25
HV-1	--	1974	V3	Heat Coil + Fan?	Serves HV-1	Critical	-25
MPF-1	--	1974	AHU-8	Medium Pre filter	Serves AC-1	Critical	-25
A-1	--	1983	H1	Main HW Pump	Boiler Room 109	Fair	-21
A-2	--	1983	H1	Main HW Pump (stand-by)	Boiler Room 109	Fair	-21
EF-10	--	1983	AHU-7	both Floors East Toilet EF	Interlocked with SF-4	Critical	-21
EF-11	PENN FUME-X / NO.9RL	1983		Power Roof Exhauster	Serves Sterilizer Hood	Critical	-21
EF-12	PENN FUME-X / NO.9RL	1983		Power Roof Exhauster	Hot Lab Hood	Critical	-21
EF-8	--	1983	AHU-4	2nd floor West Toilet EF	Interlocked with SF-1	Critical	-21
EF-9	--	1983	AHU-5	1st Floor West Toilet EF	Interlocked with SF-2	Critical	-21
HC-1	--	1983	AHU-4	Heating Coil	Serves SF-1	Critical	-21
HC-2	--	1983	AHU-5	Heating Coil	Serves SF-2	Critical	-21
HC-3	--	1983	AHU-6	Heating Coil	Serves SF-3	Critical	-21
HC-4	--	1983	AHU-7	Heating Coil	Serves SF-4	Critical	-21
HU-10	ARMSTRONG / --	1983	AHU-7	Humidifier	Serves SF-4	Critical	-18
HU-17	ARMSTRONG / --	1983	AHU-7	Humidifier	Serves SF-4	Critical	-18
HU-7	ARMSTRONG / --	1983	AHU-4	Humidifier	Serves SF-1	Critical	-18
HU-8	ARMSTRONG / --	1983	AHU-5	Humidifier	Serves SF-2	Critical	-18

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
HU-9	ARMSTRONG / --	1983	AHU-6	Humidifier	Server SF-3	Critical	-18
CV-1A	PATTERSON- KELLY CO./ --	1983	H	U Tube Heat Exchanger	Whole Building Heating except 2006 & 2009 Additions	Fair	-17
CV-1B	PATTERSON- KELLY CO./ --	1983	H	U Tube Heat Exchanger	Whole Building Heating except 2006 & 2009 Additions	Fair	-17
AS-1	B&G / R-6 Rolairtrol	1983	H	Air Separator		Fair	-16
BCS-1	--	1983	P	Blowdown Cooling Sump	Not accessable	Poor	-16
HWG- 1	RECO / R8213	1983				Fair	-16
IHWG- 1	AERCO / SWIA-04	1983	P	Steam HW Generator	For high temp laundry water	Fair	-16
AC-1	--	1974	AHU-8	Supply Fan	Serves AC-1	Critical	-15.3
RF-1	--	1974	AHU-8	Return Fan	Serves AC-1	Critical	-15.3
HGS- 1A	GRUNDFOS / UPS 40-160/F	1999	AHU-1	Hot P.G. to AHU- 1 HC	Serving AHU-1	Critical	-15
HGS- 1B	GRUNDFOS / UPS 40-160/F	1999	AHU-1	Hot P.G. to AHU- 1 HC	Serving AHU-1	Critical	-15
HWF- 1A	GRUNDFOS / UPS 40-160/F	1999	AHU-1	HW to AHU-1 HX	Serving AHU-1	Critical	-15
HWF- 1B	GRUNDFOS / UPS 40-160/F	1999	AHU-1	HW to AHU-1 HX	Serving AHU-1	Critical	-15
P-1 : P-40	TACO / 00X	1999	H2	Various terminal unit Pumps	Throughout LTC area	?	-15
P42A	LITTLE GIANT / 5 ASP-FS	1999	P	Elevator Shaft Sump Pumps	ELEV. b/t 149 & 125	?	-15
P42B	LITTLE GIANT / 5 ASP-FS	1999	P	Elevator Shaft Sump Pumps	ELEV. b/t 149 & 125	?	-15
P-43	TACO / 006	1999	P2	Domestic HW Circ.	Mech 139	Fair	-15
P-4	GRUNDFOS / UP 26-96BF	2006	P3	Domestic HW Circ.	Boiler Room 109	Good	-8
EF-4	--	1983	AHU-4	Return Air Fan	Serves SF-1	Critical	-6
EF-5	--	1983	AHU-5	Return Air Fan	Serves SF-2	Critical	-6
EF-6	--	1983	AHU-6	Return Air Fan	Serves SF-3	Critical	-6
EF-7	--	1983	AHU-7	Return Air Fan	Serves SF-4	Critical	-6
SF-2	--	1983	AHU-5	Supply Air Fan	SF-2	Critical	-6
SF-3	--	1983	AHU-6	Supply Air Fan	SF-3	Critical	-6
SF-4	--	1983	AHU-7	Supply Air Fan	SF-4	Critical	-6

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
BP-1	SHURFLO / 2088-594-154	2009	P3	Distilled Water Boost. Pump	East Mechanical	?	-5
P-1	STANCOR / SE40	2009	P	Elevator Sump Pump	ELEV Near ELEV Lobby 115	?	-5
P-41 A	TACO / FE2008	1999	H2	LTC Main Loop pumps	*Don't see on MP Scan*	Poor	-5
P-41 B	TACO / FE2008	1999	H2	LTC Main Loop Pumps	*Don't see on MP Scan*	Poor	-5
REF-1	GREENHECK / GB-140-5	1999		Roof Top EF	1999 Exhaust serving toilets	Fair	-5
CRU-1	B&G 23CB22-20	2006	S1	Duplex Condensate Receiver	Boiler Room 112	Poor	-3
ACU-1	LIEBERT / MMD60E	2009		Cooling IDU	Equip. Room 2674 : connected to CU-1	Fair	0
AHU-1	GOVERNAIR / --	1999	AHU-1	Roof Top AHU	AHU-1	Fair	0
CU-1	LIEBERT / PFH067	2009		Cooling ODU	Roof Connected to ACU-1	Fair	0
HC-1	--	1999	AHU-1	Heat Coil	Serving AHU-1	Fair	0
RF-1	--	1999	AHU-1	Return Fan	Serving AHU-1	Fair	0
T-1	CEMLINE / V560SWH	1999	P	Hot Water Generator	(I think installed was a AERCO)	Fair	0
HC-1	--	2010	AHU-10	Electric Heating Coil		Fair	1
RHC-1	--	2010	AHU-10	Electric Reheat Coil	MRI Room	Fair	1
RHC-2	--	2010	AHU-10	Electric Reheat Coil	Control Room	Fair	1
RHC-3	--	2010	AHU-10	Electric Reheat Coil	Waiting Room	Fair	1
RTU-1	McQUAY / MPS005BYDM	2010	AHU-10	Roof top unit	Serves MRI, All electric heating	Fair	1
C-1	TRANE / RAUC C304B	2006	AHU-2	Condensing Unit	Serving AHU-2 DX Coil	Good	2
CC-1	--	2006	AHU-2	Cooling Coil	Serving AHU-2	Good	2
EF-11	COOK / ACEB 60C3B	2006		Downblast Centr. Roof	Shredder	Fair	2
EF-7	COOK / ACEB 135C3B	2006	EF-7	Downblast Centr. Roof	Varies	Fair	2
EF-8	COOK / ACEB 80C3B	2006	EF-8	Downblast Centr. Roof	Typ. Toilet Rooms	Fair	2
HC-1	--	2006	AHU-2	Heating Coil	Serving AHU-2	Good	2
P-1A	PACO / 91892693	2006	H4	Glycol for east expansion	Boiler Room 112	Good	2

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
P-1B	PACO / 91892693	2006	H4	Glycol for east expansion	Boiler Room 112	Good	2
P-2A	PACO / 91890089	2006	H5	HW for east expansion T.U.	Boiler Room 112	Fair	2
P-2B	PACO / 91890089	2006	H5	HW for east expansion T.U.	Boiler Room 112	Fair	2
P-3	GOULD / J55	2006	H4	Glycol Makeup Pump	Boiler Room 112	Good	2
CP-1A&B	GRUNDFOS / UPS 40-240	2017	AHU-9/-8/V3	Heating glycol pump	central Mech.	Good	3
CP-2AB	ARCTICHILL	2017	V1	Provided with CH-1	Roof?	?	3
CP-2AB	ARCTICHILL	2017	AHU-9	Provided with CH-1	Roof @ CH-1	Good	3
CC-2	--	2009	AHU-3	Cooling Coil	Serving AHU-3	Good	5
EF-10	COOK / ACEB 180C4B	2009		Downblast Centr. Roof	General Lab	Good	5
EF-12	COOK / ACEB 60C3B	2009		Downblast Centr. Roof	Hydrotherapy	Good	5
EF-14	PENNBARRY / FUMEX FX30B	2009		Upblast Centr. Roof	Kitchen Hood Exhaust Fan	Good	5
EF-15	COOK / ACEB 120C2B	2009		Downblast Centr. Roof	Gas Cabinet Exhaust	Good	5
EF-16	GREENHECK / VEKTOR H-9	2009		Lab Exhaust System	IV Glove Box Exhaust	Good	5
EF-17	GREENHECK / VEKTOR H-9	2009		Lab Exhaust System	Microlab Exhaust	Good	5
EF-2	COOK / ACEB 180C5B	2009	EF-2	Downblast Centr. Roof	Loading Dock	Good	5
EF-3	COOK / ACEB 80C3B	2009	EF-3	Downblast Centr. Roof	Patient Bathrooms	Good	5
EF-4	COOK / ACEB 80C3B	2009	EF-4	Downblast Centr. Roof	Patient Bathrooms	Good	5
EF-9	COOK / ACEB 70C3B	2009	EF-9	Downblast Centr. Roof	Typ. Toilet Rooms	Good	5
HC-2	--	2009	AHU-3	Heating Coil	Serving AHU-3	Good	5
BFWP-1	GRUNDFOS / CR3-17K-FGJ-A-E-HQQE	2020	S1	Boiler Feed Water B-1	Boiler Room 109	Good	6
CC-1	--	2010	AHU-10			Fair	6
CP-1	GRUNDFOS / UP 26-99 BF	2020		DHW recirc east wing	central mech.	Fair	6
CP-3	GRUNDFOS / UP 15-42SF	2020		DHW recirc Kitchen	central mech	Fair	6

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
HX-1A	ARMSTRONG / WS-104-4-1	2006	S1/V4/V6	U-Tube steam HX	Glycol Heating System	Good	6
HX-2A	ARMSTRONG / WS-105-2-1	2006	S1/H1	U-Tube Steam HX	Water heating System	Good	6
AHU-1	HAAKON / --	2006	AHU-2	Roof top AHU	AHU-2	Good	7
AS-1	B&G / ROLAIRTROL R-4	2006	H	Air Separator	Glycol Heating System	Good	7
AS-2	B&G / ROLAIRTROL R-6	2006	H	Air Separator	Water Heating System	Good	7
DT-1	SIMPLEX / SST 150	2006	P	Fuel Oil Day Tank		Fair	7
EF-1	COOK / GN-720	2006		Inline Cabinet (in gas storage)	Oxygen Generator	Fair	7
EF-12	Not Used	2006		--		--	7
EF-13	COOK / GN-184	2006		Inline Cabinet (in Gas Storage)	Decon, serves wash down	Fair	7
ET-1	B&G / Model D- 120V	2006	H	Expansion Tank	Glycol Heating System	Fair	7
ET-2	B&G / Model D- 240V	2006	H	Expansion Tank	Water heating System	Fiar	7
ET-3	AMTROL / ST-60- VC	2006	P	Expansion Tank	DHW	Fair	7
F-3	--	2006	V5	Filter	AHU-4	Fair	7
FP-1A	ROPER / 26 AM 02	2006	F1	Fuel Pump	Exterior Adjacent to tank	?	7
FP-1B	ROPER / 26 AM 02	2006	F1	Fuel Pump	Exterior Adjacent to tank	?	7
HWG- 1	A.O. SMITH / HWG1000V GOAM080	2006	P	Domestic Hot Water Generator	Steam to Water	Good	7
OG-1	OGSI / OGS-175	2006	P	Medical Oxygen Generator		?	7
RF-1	--	2006	AHU-2	Return Fan	Serving AHU-2	Good	7
SF-1	--	2006	AHU-2	Supply Fan	Serving AHU-2	Good	7
T-2	A.O. SMITH / VD- 20-100	2006	P	Waste Holding Tank	Decontamination Shower	?	7
WH-1	IN-SINK-ERATOR / GN	2006	P	Point of Use DHW Dispenser		?	7
BDS-1	HURST / 071714 BDS	2007	P	Blowdown Separator		Fair	8
S-2	DRI-STEAM / '--	2009	AHU-3	Humidification	Serving AHU-3	Good	8
H-1	DRI-STEAM	2010	AHU-10			Fair	9
AHU-2	HAAKON / --	2009	AHU-3	Air Handler Unit	AHU-3	Good	10
C-2	TRANE / RAUC C404B	2009	AHU-3	Scroll Condensing Unit	Serving AHU-3DX	Good	10

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
EF-18	COOK / 60SQN-B	2009		Square Inline	Glove Boox Room Exhaust	Good	10
EF-5	COOK / GN-720	2009		Inline Cabinet	Varies	Good	10
EF-6	COOK / 135SQN17D	2009		Square Inline	Patient Isolation	Good	10
ET-4	WELL-MATE / WM-6	2009	P	Expansion tnk	Distilled Water	Fair	10
RF-2	HAAKON / --	2009	AHU-3	Return Fan	Serving AHU-3	Good	10
SF-2	HAAKON / --	2009	AHU-3	Supply Fan	Serving AHU-3	Good	10
WH-1	IN-SINK-ERATOR / GN	2009	P	Point of Use DHW Dispenser		?	10
B-1	MIURA / EX-100 SGO	2006	S1	Steam Boiler Min 85% Eff. Fuel to Steam	Steam Boiler	Good	12
B-2	MIURA / EX-100 SGO	2006	S1	Steam Boiler Min 85% Eff. Fuel to Steam	Steam Boiler	Good	12
CC-1	DAIKIN / 5WL1212C	2017	AHU-9	Cooling Coil	Serves AC-2	Good	13
CP- 1A&B	GRUNDFOS / UPS 40-240	2017	V1/V2/V3	Heating glycol pump	central Mech.	Good	13
HC-1	DAIKIN / 5WQ0801C	2017	AHU-9	Heat Coil	Serves AC-2	Good	13
B-3	MIURA / EX-100 SGO	2009	S1	Steam Boiler Min 85% Eff. Fuel to Steam	Steam Boiler	Good	15
BFWP- 2	GRUNDFOS / CR3- 15K-FGJ-A-E- HQQE	2020	S1	Boiler Feed Water B-2	Boiler Room 109	Good	16
BFWP- 3	GRUNDFOS / CR3- 15K-FGJ-A-E- HQQE	2020	S1	Boiler Feed Water B-3	Boiler Room 109	Good	16
BFWP- 4	GRUNDFOS / CR3- 15K-FGJ-A-E- HQQE	2020	S1	Boiler Feed Water Spare	Boiler Room 109	Good	16
CFP-1	--	2020	P	Chemical Feed Pump & Mixing Tank		Good	16
CFP-2	--	2020	P	Chemical Feed Pump & Mixing Tank		Good	16
CFP-3	--	2020	P	Chemical Feed Pump & Mixing Tank		Good	16

TAG	NAME (MANUFACTURER /MODEL)	YEAR	SYSTEM (H/V/P)	EQUIPMENT	SERVICE	CONDITION	REMAINING SERVICE LIFE
CP-2	GRUNDFOS / UP 26-99 BF	2020		DHW recirc west wing	central Mech.	Fair	16
AHU-3	TRANE / MCCB	2006	V5	Boiler Room AHU	For combustion air	Fair	17
AC-2	Energy Labs / C7260-FCH-L	2017	AHU-9	Air Handler	serves surgery and Xray	Good	18
AS-1	SPIROTHERM / VDN200	2017	AHU-9/- 8/V3	Heating Air Separator		Good	18
AS-2	SPIROTHERM / VDN250	2017	AHU-9	Cooling Air Separator	Cooling for AC-2	Good	18
CH-1	ARCTICHILL / ACVMV0300D4- MM-DS	2017	AHU-9	Scroll Chiller	Serves CC-1 (AC- 2)	Good	18
ET-1	AMTROL / SX-90V	2017	AHU-9	Expansion tnk	Serves AC-2 and HV-1 and AC-1 Likely (conflicting docs)	Good	18
ET-2	ARCTICHILL	2017	AHU-9	Expansion tnk, chiller package	Serves CH-1	Good	18
HX-1	KELVION / FG10X20-120	2017	AHU-9/- 8/V3	AC-2 Heating Coil HX	Serves AC-2 and HV-1 and AC-1 Likely (conflicting docs)	Good	18
RF- 2A,B	GREENHECK / SQ- 160-A	2017	AHU-9	Inline Fan	Serves AC-2	Good	18
SF-1	--	2017	AHU-9	Supply Fan Array(2x Plug fan)	Serves AC-2	Good	18
DA-1	HURST / 1900061DA	2020	S1	DA tank		Good	21
SF-1	Q-PAC / FA1700069	2023	AHU-1	Supply Fan	Serving AHU-1	Fiar	24
SF-1	Q-PAC / FA1700069	2023	AHU-4	Supply Air Fan	SF-1	Good	34