# **POWER REQUIREMENTS**

POWER SUPPLY	3 PHASES+G 380V/400V/4
FREQUENCIES	50/60Hz ± 3Hz
MAXIMUM POWER DEMAND	100 kVA
AVERAGE POWER	30 kVA
POWER FACTOR	0.85

- Power supply should come into a Main Disconnect Panel (MDP) containing the protective units and controls.
- Governing electrical codes may require a neutral wire. If present, neutral must be terminated in MDP. The section of the supply cable should be calculated in accordance with its length and the maximum permissible voltage drops, equal to 3.4% max. of regulation for feeder size.
- There must be discrimination between supply cable protective material at the beginning of the installation (main low-voltage transformer side) and the protective devices in the MDP.
- TNC neutral point connection must not be used.

### SUPPLY CHARACTERISTICS

- Power input must be separate from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with high speed film changers...).
- All equipment (lighting, power outlets, etc...) installed with GE system components must be powered separately.
- Phase imbalance 2% maximum.
- Maximum voltage variation at full load 6% (Including line impedance). Transients must be less than 1500V peak. (on a 380V line)
- A record of power input disturbances over a continuous two-weeks period (prior to delivery) enables determination of the frequency and degree of these disturbances and can be used to ascertain the need to provide line conditioning equipment.

### **GROUND SYSTEM**

- System of equipotential grounding.
- Equipotential: The equipotential link will be by means of an equipotential bar. This equipotential bar should be connected to the protective earth conductors in the ducts of the non GE cableways and to additional equipotential connections linking up all the conducting units in the rooms where GE system units are located.
- The impedance of the earth bar should be less than or equal to 2  $\Omega$  (ohm)

## CABLES

- Power and cable installation must comply with the distribution diagram.
- All cables must be isolated and flexible of HO7RNF type, cable color codes must comply with standards for electrical installation. The cables from signaling and remote control (Y,SEO,L...) will go to A1 Main Disconnect with a pigtail length of 1.5m, and will be connected during installation. Each conductor will be identified and isolated (screw connector).

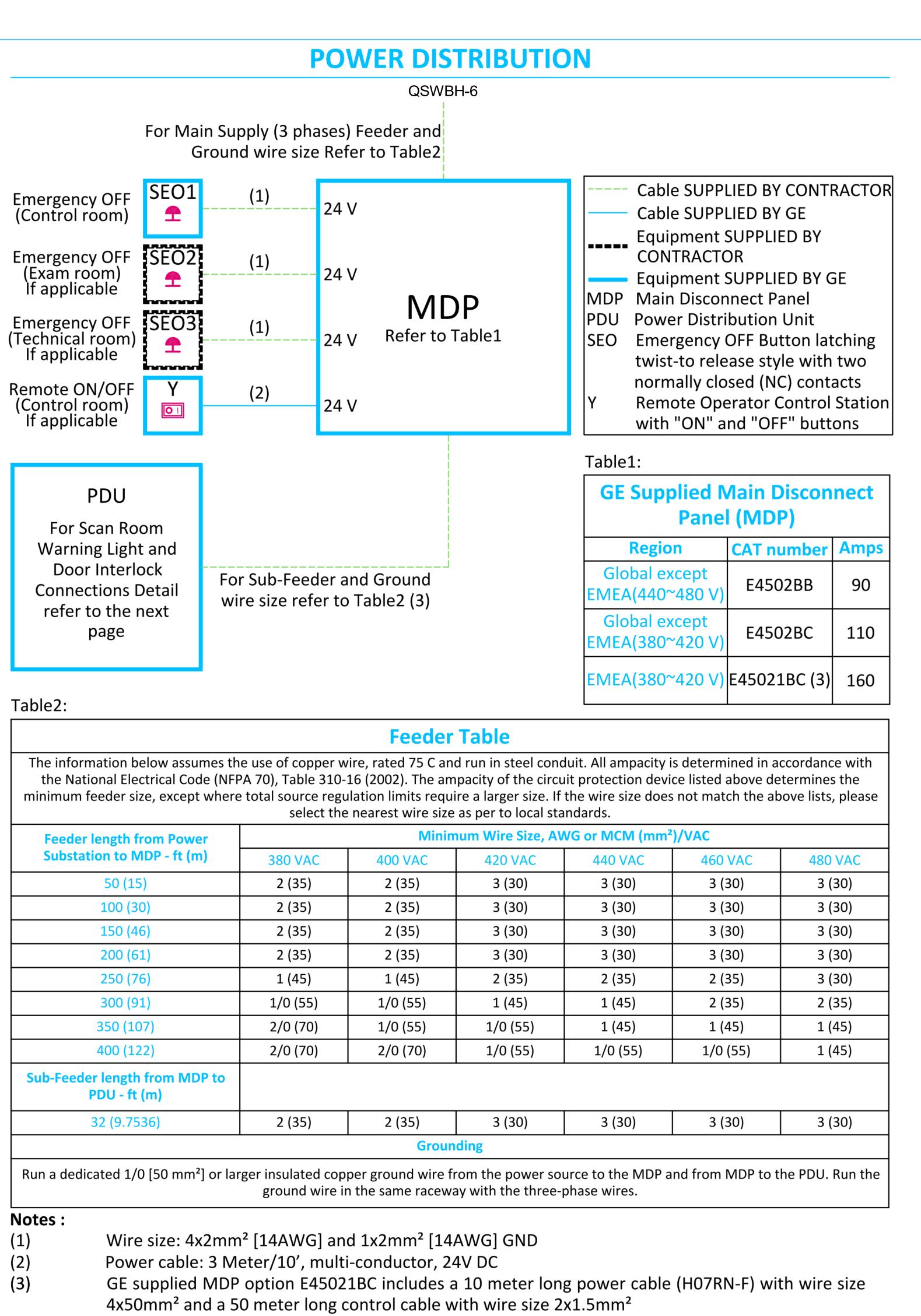
### CABLEWAYS

The general rules for laying cableways should meet the conditions laid down in current standards and regulations, with regard to:

- Protecting cables against water (cableways should be waterproof).
- Protecting cables against abnormal temperatures (proximity to heating pipes or ducts). Protecting cables against temperature shocks.
- Replacing cables (cableways should be large enough for cables to be replaced).
- Metal cableways should be grounded.



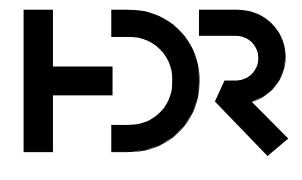
## 420V/440V/460V/480V ±10%



	Feeder length from Power
380 V	Substation to MDP - ft (m)
2 (35	50 (15)
2 (35	100 (30)
2 (35	150 (46)
2 (35	200 (61)
1 (45	250 (76)
1/0 (5	300 (91)
2/0 (7	350 (107)
2/0 (7	400 (122)
	Sub-Feeder length from MDP to PDU - ft (m)
2 (35	32 (9.7536)

Notes :	
(1)	Wire size: 4x2mm <sup>2</sup> [14AW
(2)	Power cable: 3 Meter/10'
(3)	GE supplied MDP option
	4x50mm <sup>2</sup> and a 50 meter

| 18/19|



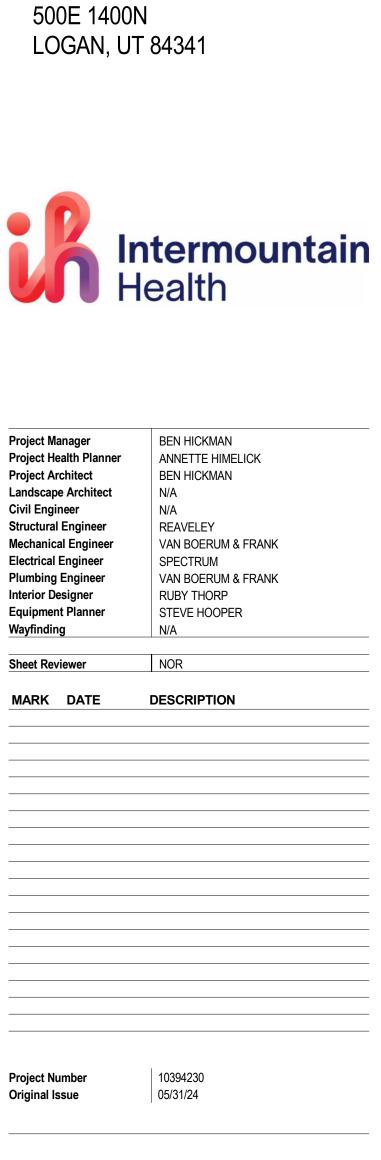
HDR ARCHITECTURE P.C. **SUITE 1500** 201 CALIFORNIA ST. SAN FRANCISCO, CA

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LOGAN REGINAL

HOSPITAL

PET/CT





GE HEALTHCARE

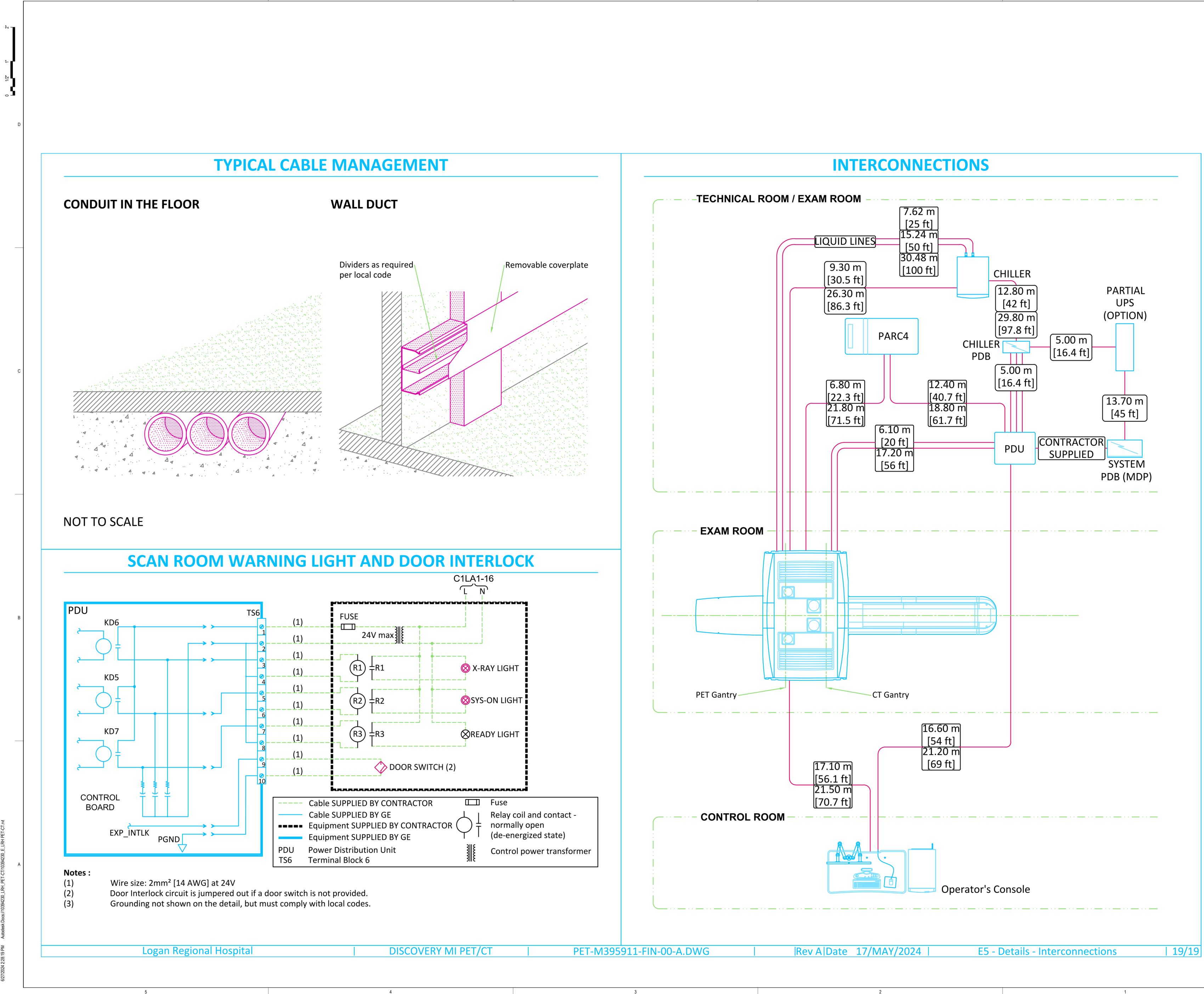
DOCUMENTS

Sheet Name



EQUIPMENT

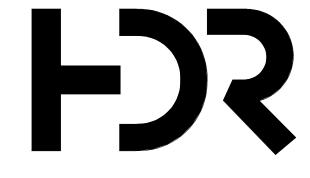
Project Status 100% CONSTRUCTION DOCUMENTS



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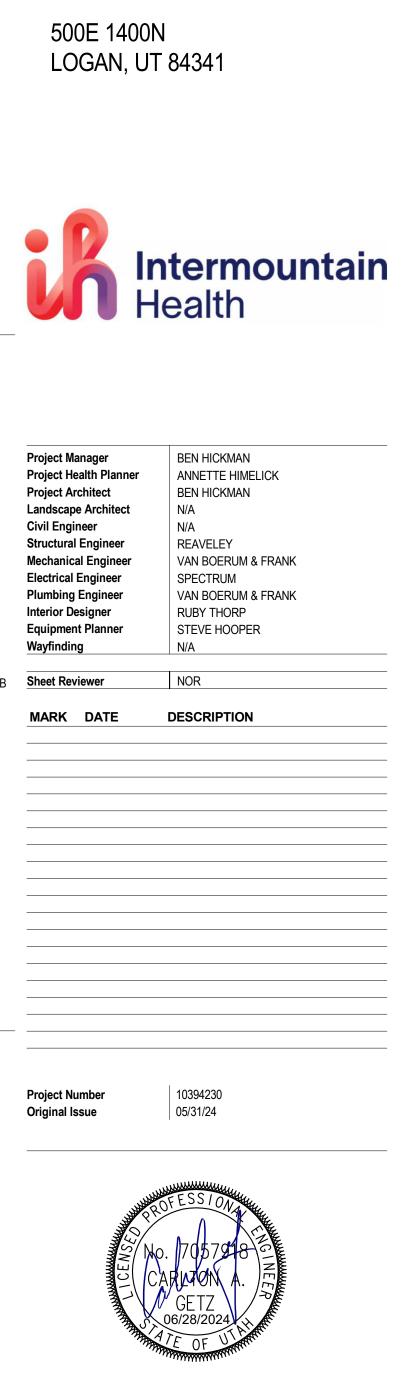
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DOCUMENTS

Sheet Number

Sheet Name

**EP805** 

Project Status 100% CONSTRUCTION DOCUMENTS

GE HEALTHCARE

EQUIPMENT

### LIGHTING FIXTURE SCHEDULE

NOTE TO BIDDERS: COMPLY WITH THE SPECIFICATIONS. REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, BALLASTS, AND LAMPS. THE CATALOG NUMBERS LISTED BELOW HAVE BEEN CAREFULLY PREPARED TO ASSIST BIDDERS IN SELECTING PRODUCTS TO ACHIEVE THE DESIGN CONCEPT, HOWEVER, PRIOR TO BIDDING, EACH MANUFACTURER SHALL COMPARE THE CATALOG NUMBERS SHOWN WITH THE DESCRIPTION AND REQUIREMENTS ON THE DRAWINGS, AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES. SPECIFICALLY INCLUDED IN THIS EVALUATION SHALL BE THE VERIFYING OF PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS. NO ALLOWANCE OR REDRESS WILL BE ALLOWED FOR DISCREPANCIES THAT WERE NOT REPORTED TO THE ARCHITECT/ENGINEER IN TIME FOR CORRECTION OR CLARIFICATION BEFORE THE BID. THE REPORTING OF ANY AMBIGUITY IS THE RESPONSIBILITY OF THE BIDDER. PROVIDE UNIT PRICES AND FIXTURE BRAND SELECTED FOR ADD/DELETE CHANGES FOR EACH FIXTURE TYPES SHOWN WITHIN 48 BUSINESS HOURS OF THE BID DATE. FAILURE TO COMPLY WITH THIS REQUIREMENT MAY DISQUALIFY THE PRODUCTS AND EMPOWER THE ENGINEER TO DETERMINE FAIR VALUE FOR FIXTURE AND INSTALLATION CHANGES, WITHOUT FURTHER INPUT FROM THE CONTRACTOR OR INSTALLER. SUBMITTAL PACKAGE SHALL INCLUDE LAMP MANUFACTURER AND CATALOG NUMBER ON EACH FIXTURE SHEET. ON ALL PENDANT MOUNTED FIXTURES, PROVIDE A SECOND SET OF PENDANTS, OF A DIFFERENT LENGTH, AS DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDED AND INSTALLED AT NO ADDITIONAL CHARGE. ALL FIXTURES SHALL BE APPROVED BY UL OR ANOTHER ACCEPTABLE TESTING LAB FOR THE PURPOSE INTENDED AND WITH THE LAMP AND BALLAST PROPOSED. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED. AND DO NOT INCLUDE ANY TAXES. UNIVERSAL VOLTAGE (120/277)

FIXTURE CHARACTERISTICS
BALLASTS REQUIRED UNLESS NOTED OTHERWISE. DIMENSION SEQUENCE = (LENGTH X WIDTH X DEPTH) IN INCHES.
ALLOWANCE PRICE MAT OR MAT NOT INCEODE LAMP(3) OR TREIGHT AS NOTED, AND DO NOT INCEODE ANT TAXES. UNI

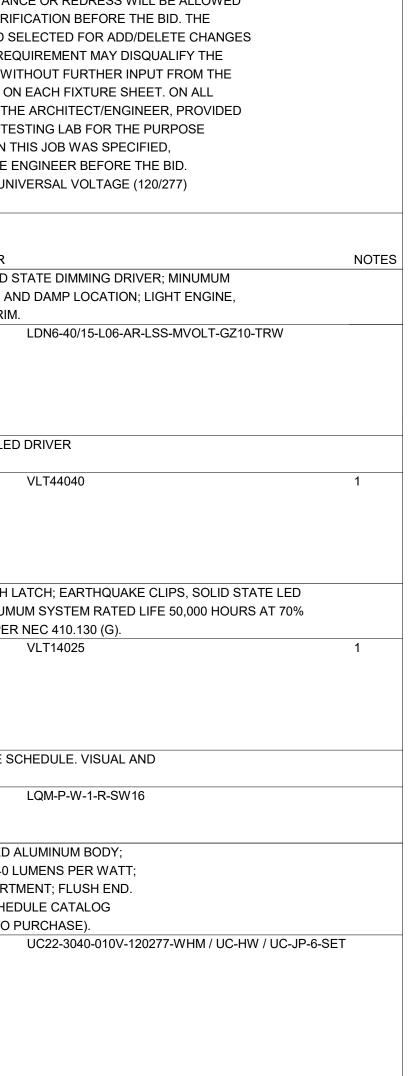
		FIXTURE CHARACTERISTICS				
		BODY / AIR / MOUNTING / DOOR				
SYMBOL	MARK	LENS/LOUVER/REFLECTOR/OTHER	LAMP	WATTS	VOLTS	MANUFACTURER
	D	RECESSED LED: SOLID STATE LED LIGHT E	NGINE; CLAS	S P THERM	IALLY PROT	ECTED 0-10V SOLID S
		SYSTEM RATED LIFE 50,000 HOURS AT 70%				
		DRIVER, AND JUNCTION BOX ACCESSIBLE	-ROM ABOVE	OR BELOV	V CEILING; S	SELF-FLANGING TRIM
	D-89	6" APERTURE: COMFORT CLEAR	LED	20W	UNV	LITHONIA
		DIFFUSER; 4000 K COLOR TEMP LED;				
		~1500 LUMENS; 20 INPUT WATTS;				
		120V/277V; 0-10V 1% SOLID STATE DIMMING	ì			
		DRIVER; LENS; WHITE FLANGE.				
	G	DECORATIVE LENSED TROFFERS: RECESS	ED; ACRYLIC	PRISMATIC	C LENS; EAR	THQUAKE CLIPS, LED
		0-10 VOLT DIMMING DRIVER WHERE INDICA	TED IN PROD	DUCT NUME	BER.	
	G-2	RECESSED LED FIXTURE, 2X4, ACRYLIC	LED	35W	UNV	LITETRONICS
		DIFFUSER, ~4800 LUMENS, MULTI				
		VOLT, 4000K, GRID MOUNTED;				
		ANTIMICROBIAL FINISH, MINIMUM				
		MINIMUM 82 CRI (~7" WIDE LENS)				
	GF	DIRECT TROFFERS: RECESSED FOR GYPSI	JM BOARD CE	EILING; HIN	GED FLUSH	STEEL DOOR WITH L
		LIGHT ENGINE; CLASS P THERMALLY PROT	ECTED 0-10V	1% SOLID	STATE DIM	MING DRIVER; MINUM
		OUTPUT; LISTED FOR THROUGH-BRANCH V	VIRING AND D	DAMP LOCA	TION; DRIV	ER DISCONNECT PER
	GF-1	RECESSED LED FIXTURE, 1X4, ACRYLIC	LED	25W	UNV	LITETRONICS
		DIFFUSER, ~3000 LUMENS, MULTI				
		VOLT, 4000K, GYP MOUNTED;				
		ANTIMICROBIAL FINISH, MINIMUM				
		MINIMUM 82 CRI				
	ТХ	SPECIAL FIXTURES AS INDICATED. MEET A	L REQUIREM	IENTS OF S	SPECIFICATI	IONS AND FIXTURE S
		FINISH APPROVAL REQUIRED.				
	TX-1	SINGLE FACE X-RAY IN USE WARNING	LED	3W	UNV	LITHONIA
		LIGHT				
	UC	LED UNDERCABINET LIGHT: LOW PROFILE	1" HIGH X 1-3/	/4"DEEP X I	LENGTH AS	NOTED; EXTRUDED A
		EXTRUDED CLEAR, POLYCARBONATE LENS	; INTERNAL L	ED DRIVER	R; EFFICACY	GREATER THAN 40 L
		50,000 HOUR RATED LAMP LIFE; 2700 - 3000	DEG KELVIN	COLOR TE	MPERATUR	E, WIRING COMPART
		CONNECTORS FOR ROW INSTALLATION (CO	ONNECTORS	ARE NOT II	NCLUDED IN	N THE FIXTURE SCHEE
		NUMBERS - CONNECTOR CONFIGURATION	TO BE FIELD	DETERMIN	IED BY CON	TRACTOR PRIOR TO F
	UC-99	SURFACE MOUNTED UNDERCABINET	LED	5W	UNV	KELVIX
		LIGHT FIXTURE, LED, 19" NOMINAL				
		LENGTH, WHITE ANTIMICROBIAL FINISH,				
		UNIVERSAL VOLTAGE, ~400 LUMENS,				
		PROVIDE INTERCONNECT CORDS				
		BETWEEN FIXTURES FOR SERIES				
		MOUNTED INSTALLATIONS				

NOTE 1: PROVIDE ONLY INDICATED FIXTURES. ALTERNATES WILL NOT BE ACCEPTED.

5

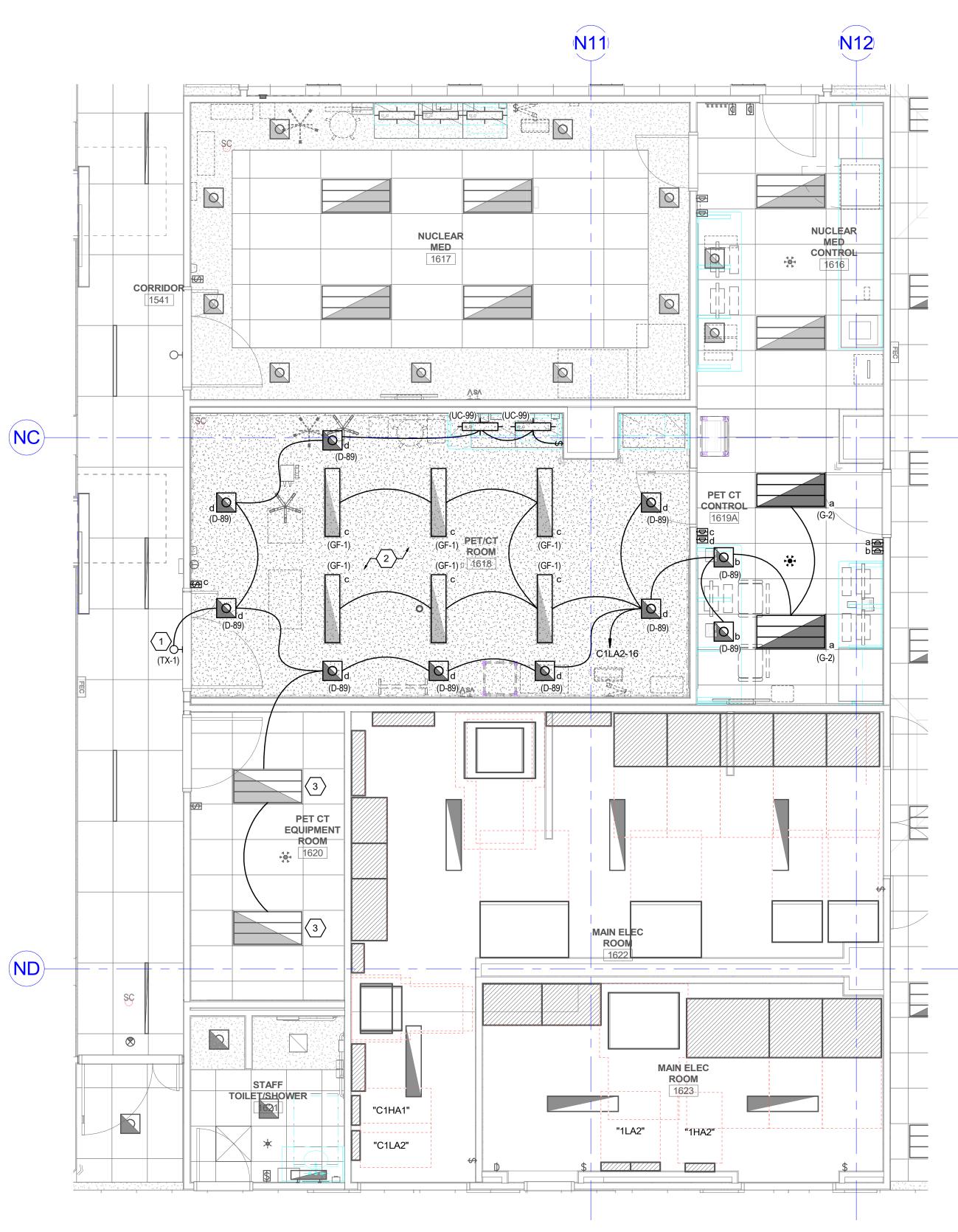
### LEVEL 1 PET/CT LIGHTING PLAN (A3) LEVEL 1 SCALE: 1/4" = 1'-0"

3



4

4



# GENERAL SHEET NOTES

1

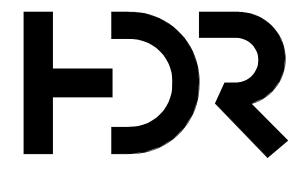
- PROVIDE LABELS ON ALL NEW DEVICES PER PROJECT SPECIFICATIONS CONFORMING WITH DIVISION 26 SPECIFICATIONS FOR IDENTIFICATION OF ELECTRICAL EQUIPMENT AND INTERMOUNTAIN'S DIVISION 27 SPECIFICATIONS PRIOR TO SUBSTANTIAL COMPLETION.
- EXISTING CABLING, CONDUIT, ETC., SERVING SPACES NOT DIRECTLY IMPACTED BY THE SCOPE OF WORK MAY BE IMPROPERLY SUPPORTED OR UNSUPPORTED. PROVIDE AN HOURLY TIME AND MATERIALS RATE FOR PROPERLY SUPPORTING ANY EXISTING TO REMAIN CABLING, CONDUIT, ETC., FOUND TO BE IMPROPERLY SUPPORTED OR UNSUPPORTED TO CONFORM WITH THE SUPPORT REQUIREMENTS IN THE PROJECT SPECIFICATIONS. CONTRACTOR SHALL DOCUMENT AND REPORT ALL INSTANCES OF IMPROPERLY SUPPORTED OR UNSUPPORTED CABLING, CONDUIT, ETC., TO OWNER AND ARCHITECT. RESUPPORT ANY EXISTING CABLING AND/OR CONDUIT AS NECESSARY TO ELIMINATE CONTACT WITH EXISTING FIRE

PROTECTION PIPING AND AVOID CONTACT WITH NEW FIRE PROTECTION LINES.

### SHEET KEYNOTES

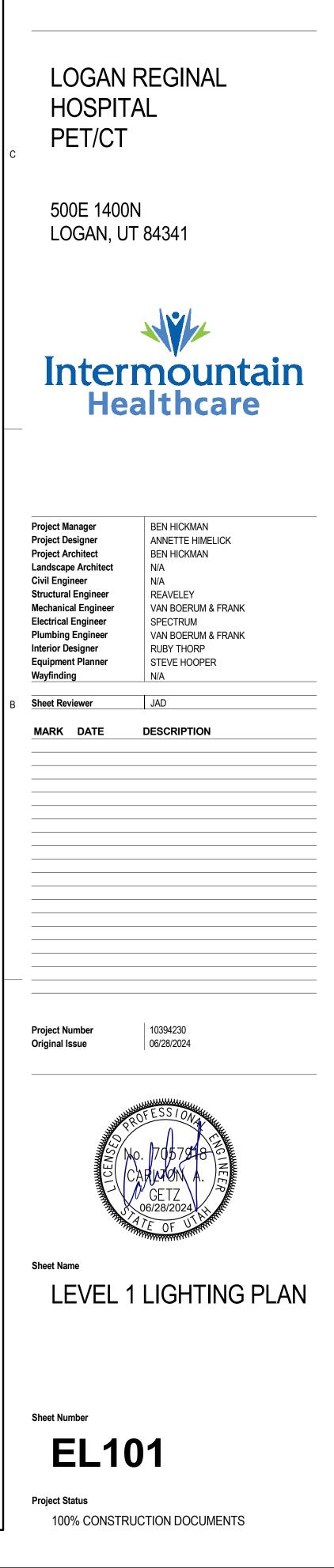
- PROVIDE CIRCUITING TO "IN USE" FIXTURE THROUGH PET/CT VENDOR PROVIDED RELAY CONTROLS PER VENDOR DOCUMENTATION.
- ALL LIGHTING FIXTURES INSTALLED IN THE CEILING AND ALL LIGHTING DEVICES WITHIN SPACE ARE TO BE INSTALLED WITH LEAD SHIELDING IN ACCORDANCE WITH SPECIFICATION SECTION 134900.
- CIRCUIT EXISTING LIGHTING MAINTAINED DURING DEMOLITION TO NEW CRITICAL LIGHTING BRANCH CIRCUIT AS SHOWN ON PLAN.

1



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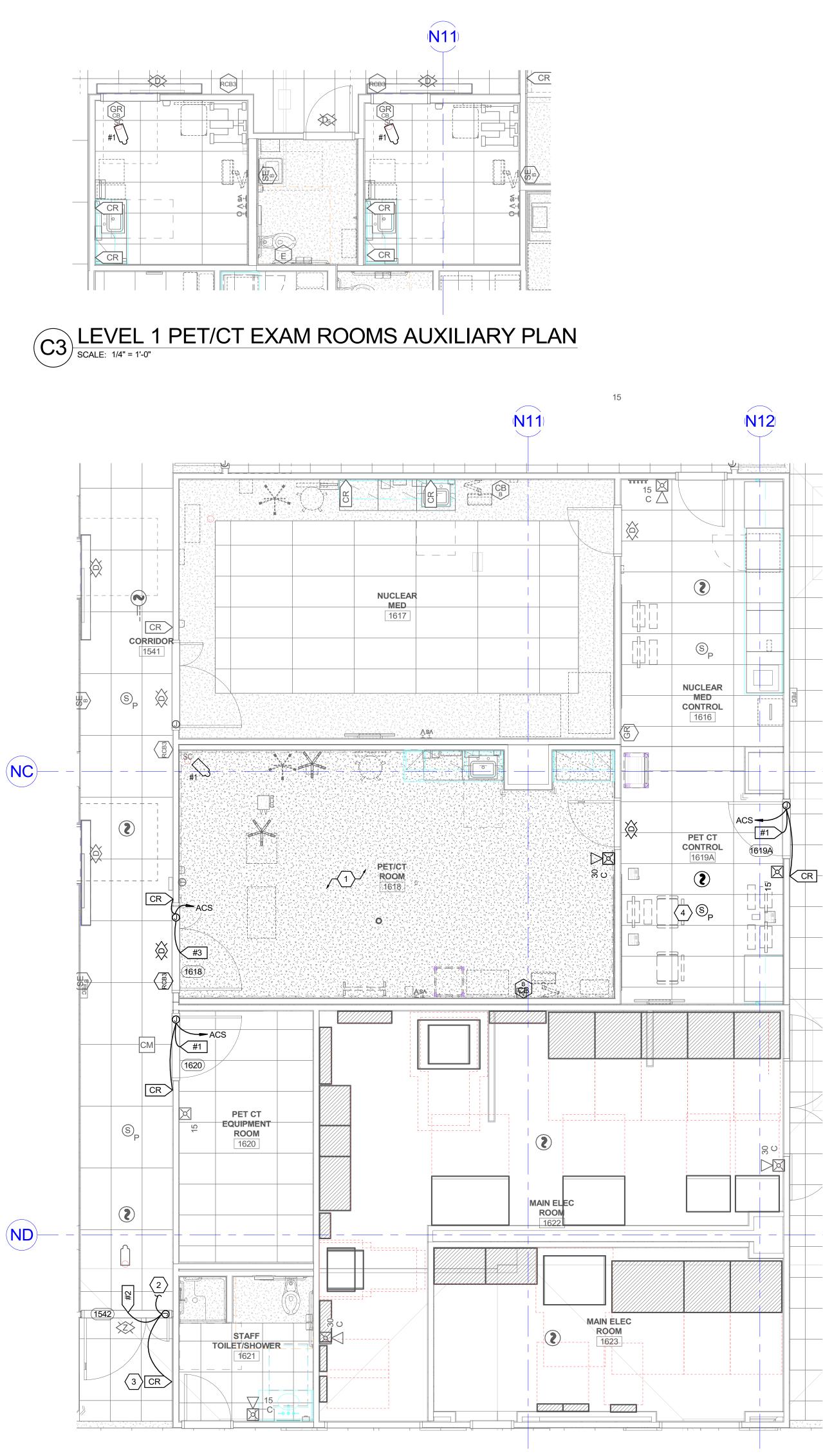
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С		
В		
JOB 240090	5	4

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4



NC

A3 LEVEL 1 PET/CT AUXILIARY PLAN SCALE: 1/4" = 1'-0"

3

2

# GENERAL SHEET NOTES

1

- PROVIDE LABELS ON ALL NEW DEVICES PER PROJECT SPECIFICATIONS CONFORMING WITH DIVISION 26 SPECIFICATIONS FOR IDENTIFICATION OF ELECTRICAL EQUIPMENT AND INTERMOUNTAIN'S DIVISION 27 SPECIFICATIONS PRIOR TO SUBSTANTIAL COMPLETION.
- EXISTING CABLING, CONDUIT, ETC., SERVING SPACES NOT DIRECTLY IMPACTED BY THE SCOPE OF WORK MAY BE IMPROPERLY SUPPORTED OR UNSUPPORTED. PROVIDE AN HOURLY TIME AND MATERIALS RATE FOR PROPERLY SUPPORTING ANY EXISTING TO REMAIN CABLING, CONDUIT, ETC., FOUND TO BE IMPROPERLY SUPPORTED OR UNSUPPORTED TO CONFORM WITH THE SUPPORT REQUIREMENTS IN THE PROJECT SPECIFICATIONS. CONTRACTOR SHALL DOCUMENT AND REPORT ALL INSTANCES OF IMPROPERLY SUPPORTED OR UNSUPPORTED CABLING, CONDUIT, ETC., TO OWNER AND ARCHITECT. RESUPPORT ANY EXISTING CABLING

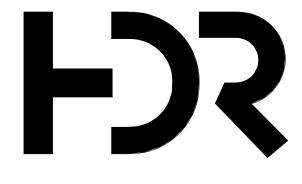
AND/OR CONDUIT AS NECESSARY TO ELIMINATE CONTACT WITH EXISTING FIRE PROTECTION PIPING AND AVOID CONTACT WITH NEW FIRE PROTECTION LINES.

## SHEET KEYNOTES

- ALL DEVICES WITHIN SPACE ARE TO BE INSTALLED WITH LEAD SHIELDING IN ACCORDANCE WITH SPECIFICATION SECTION 134900.
- 2 RECONNECT TO EXISTING ACS CABLING MAINTAINED DURING DEMOLITION.
- 3 INSTALL CARD READER SALVAGED DURING DEMOLITION.

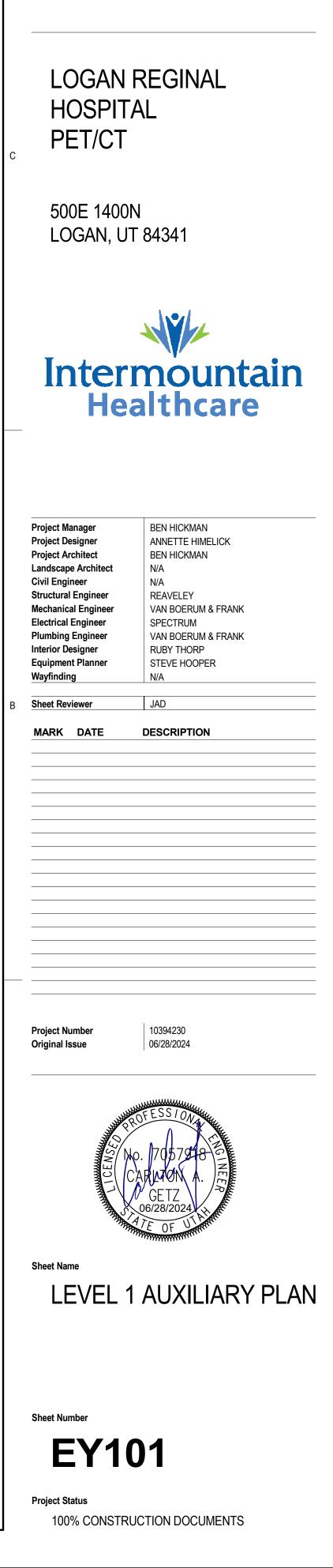
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4 CONNECT NEW PAGING SPEAKER TO PAGING ZONE SERVING ADJACENT SPEAKER IN NUCLEAR MED CONTROL 1616.

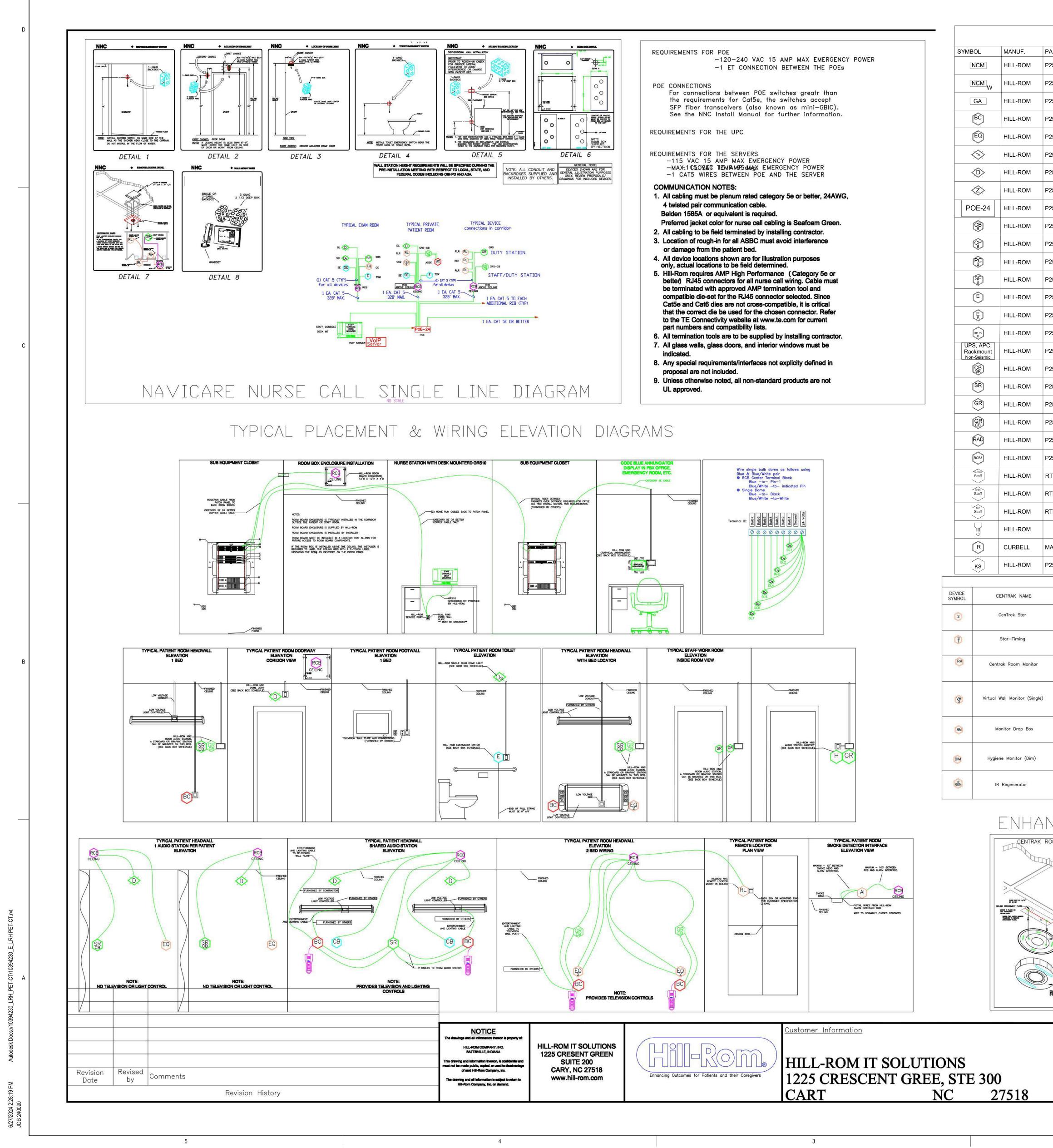


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# NOTE: CONTRACTOR TO CONFIRM ALL BACK BOX REQUIREMENTS WITH HILLROM PRIOR TO ROUGH-IN.



		NURSE CA	LL SYI	MBOL	LIST		
PART#	DESCRIPTI	ON		BACKBOX			BOX MOUNTING HEIGHT
P2500NNC1B00	STAFF COM	NSOLE, DESK MOUNT			871 3/4R, RACO 561, SINGLE GANG BACK BOX.		18" AFF (UNDER DESK)
P2594NNC3A00	STAFF CON	NSOLE, WALL MOUNT			871 3/4R, RACO 561, SINGLE GANG BACK BOX.		54" AFF OR 48" TO COMPLY W/ OSHPD AND ADA
P2594NNC3B00	GRAPHICA	L ANNUNCIATOR			871 3/4R, RACO 561, SINGLE GANG BACK BOX.		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2505NNC1B00	AUDIO STA	TION BED CONNECTOR (ASBC	;)		3/4, WITH GARVIN 52C13 RING, OI DEEP BACK BOX WITH SINGLE (		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2516A01	EQUIPMEN	T RECEPTACLE, WITH CALL C	ORD		371 3/4R, RACO 561, SINGLE GANG BACK BOX.		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2506NNC1B00	DOME LIGH	HT, SINGLE LED			H RACO 778 RING, 2 4" SQUARE 2 1/8" DEEP BACK BO	DX.	CLG / WALL CENTER ABOVE PATIENT DOOR 90" AFF
P2506NNC8A00-I	ICON BASE	D-LIGHT LED DOME LIGHT			LE-3/4, RACO 591, 2 3.5" DEEP SINGLE GANG BACK E	BOX.	CLG / WALL CENTER ABOVE PATIENT DOOR 90" AFF
P2506NNC8A00-7	ICON BASE	D-LIGHT LED ZONE LIGHT			LE-3/4, RACO 591, 2 3.5" DEEP SINGLE GANG BACK E	BOX.	CLG / WALL CENTER ABOVE PATIENT DOOR 90" AFF
P2519NNC1A24	POE SWITC	СН					REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2520A07	CODE BLUI	E PUSH BUTTON SWITCH		RACO 561 BACH	K BOX,		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2520A09	CODE PINK	PUSH BUTTON SWITCH		RACO 561 BACH	K BOX,		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2520A12	PUSH FOR	ASSISTANCE PUSH BUTTON S	SWITCH	RACO 561 BACH OR ANY OTHER	K BOX, 2.5" DEEP SINGLE GANG BACK F	BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2520A08	STAFF EME	ERGENCY PUSH BUTTON SWIT	СН	RACO 561 BACH OR ANY OTHER	K BOX, 2 2.5" DEEP SINGLE GANG BACK E	BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2520B01	BATH SWIT	CH, W/CANCEL, SUPERVISED		RACO 561 BACH OR ANY OTHER	K BOX, 2 2.5" DEEP SINGLE GANG BACK E	BOX.	42" AFF
P2520B02	BATH SWIT	CH, W/O CANCEL, SUPERVISE	D	RACO 561 BACH OR ANY OTHER	K BOX, 2 2.5" DEEP SINGLE GANG BACK E	BOX.	78" AFF
P2520NNCBH00	BH BATH S	WITCH, W/CANCEL, SUPERVIS	ED	RACO 561 BACH OR ANY OTHER	( BOX, 2.5" DEEP SINGLE GANG BACK E	BOX.	42" AFF
P2521B02	UPS, RACK	MOUNTABLE, 2U - NON-SEISM	/IC				REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2594NNC1B11	STAFF STA	TION - STANDARD ROOM STA	TION W/ CODE		/-225G, RACO 691 2.5" DEEP, TWO OR THREE GAN	G BACK BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
2594NNC1B01	STAFF STA	TION - STANDARD ROOM STA	TION W/O CODE		/-225G, RACO 691 2 2.5" DEEP, TWO OR THREE GAN	G BACK BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2594NNC2C00	GRAPHICA	L ROOM STATION (GRS) - STA	FF		/-225G, RACO 691 2 2.5" DEEP, TWO OR THREE GAN	G BACK BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2594NNC2C11	GRAPHICA	L ROOM STATION (GRS) - PATI	ENT		/-225G, RACO 691 2 2.5" DEEP, TWO OR THREE GAN	G BACK BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2594NNC4A10	REMOTE A	UDIO DEVICE			/-225G, RACO 691 2 2.5" DEEP, TWO OR THREE GAN	G BACK BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2599NNC3A00	RCB3 ROO	M CONTROL BOARD			/-235G, RACO 696 2 3.5" DEEP, TWO OR THREE GAN	G BACK BOX.	SURFACE MOUNT ABOVE CEILING
RTLS-CLOSED	RTLS - STA	FF LOCATING LOCATION-CLO	SED AREA		/-225G, RACO 691 TWO GANG BACK BOX.		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
RTLS-OPEN	RTLS - STA	FF LOCATING LOCATION-GLA	SS/OPEN AREA		/-225G, RACO 691 TWO GANG BACK BOX.		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
RTLS-BAY	RTLS - STA	FF LOCATING LOCATION-BAY			/-225G, RACO 691 TWO GANG BACK BOX.		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
	PILLOW SF	PEAKEKER, REQUIRES ASBC.					
MAP985A	REMOTE E	NTERTAINMENT STATION			/-225C, RACO 691 TWO GANG BACK BOX.		REFER TO ARCHITECTURAL ELEVATION DRAWINGS
P2514A01	SWITCH, K	EY SWITCH, ENABLE/DISABLE			_E-3/4, RACO 591, 3.5" DEEP SINGLE GANG BACK E	BOX.	REFER TO ARCHITECTURAL ELEVATION DRAWINGS
		NaviCo	are Nurse Call	RTLS			
PAF	т#	BRACKETS	WORKING		POWER	Ň	WORKING FUNCTION
CEN-I	TK-103		Ceili	ing	POE.		terface the tags and to the IT network.
CEN-I	TK-123		Equipr Clos	ment set	to ethernet. One needed per sub net.		ryone from talking at once.
CEN-I	TK-313	ITA-361 9/16" ITA-362 15/16" ITA-363 5/16"	Ceiling	/ Wall	Battery Powered		gain visibility to tags a very accurate local racy using IR siginaling.
						Locating	tagged assets or people

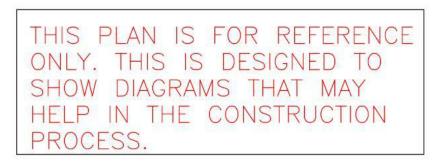
CEN-ITA-359		Ceiling / Wall		If over 5 Virtual Wall Manitors are installed, a IR Regenerator needs to be install after the 4th VW Monitor in Series.
CEN-ITK-373		Mounts to soap dispenser, pump, and or sink.	Battery Powered	Automatically tracks hand hygiene, 24/7 at the caregivers level. Collects data on all events at hand washing stations.
CEN-ITK-383		Wall	Battery Powered	
CEN-ITK-323	ITA-371 9/16" ITA-372 15/16"	Ceiling / Wall	Battery Powered	Locating tagged assets or people that are geared to semi-private rooms and bays typically found in ED or OR units. The area of coverage is not effected by physical walls.
CEN-ITK-313	ITA-362 15/16" ITA-363 5/16"	Ceiling / Wall	Battery Powered	and keep a very accurate local location accuracy using IR siginaling.

# ENHANCED LOCATING - CENTRAK

	-
DM MONITOR	
	~
III	
D	
The	
A	h
	RATE SIZE & 6/18"
	CELNO ATROHEM FAIL
	Callad BR. State BR. State Rolling Data Science Articiser Full.
- ROOM MONITOR BACKING	
LOOKS IN FLACE ON THE SUMPLICED	ATENHE ON STAT SOLAD
USHS THE SHARE 2 SORES IRSN THE ATTREMANT PLAT.	Article of a state state.
	CENTRAL CENTRAL STAR
	Sure Prot on Source of the Case Source or Contract and Case of the
	PLATE TABLE CLOOKING TO
CENTRAK ROOM MONITOR	
LIP MONTON TO MAN AND THIN MER WITH DWARS	
	CENTRAK STAR

2

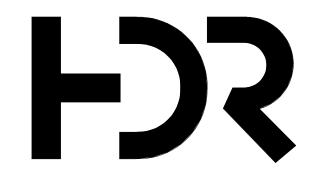
NOTE - ALL METAL BOXES MUST BE GROUNDED, IF THE CONDUIT SYSTEM IS NOT GROUNDED, THE BOXES MUST BE GROUNDED BACK TO THE BUILDING STEEL. MASONERY BOXES ARE NOT REQUIRED, ALL BOXES ARE REQUIRED TO BE METAL.



1

Project Information	Drawing Information	
	Lab01040 Rev1.dwg Sheet Number	Total Sheets
Rev 1		Total Sheets
1/24/2014	<u>Drawing Scale</u>	

U.L. LISTED



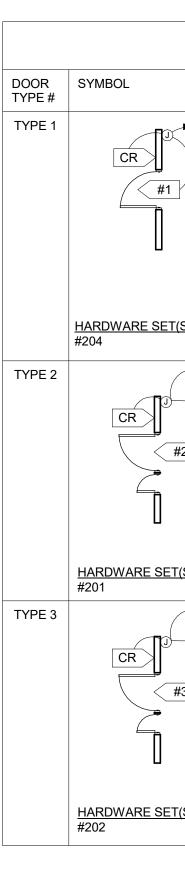
HDR ARCHITECTURE P.C. SUITE 1500 201 CALIFORNIA ST. SAN FRANCISCO, CA 94111

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5

C A			
		в	С



4

FIRE ALARM INPUT/OUTPUT MATRIX						
		ZONE				
SES SES	1	MAIN LEVEL INITIATING LOC				
NITIATING DEVICES	2					
ING [	3					
ITIAT	4					
Z	5					

		CARD ACCESS DOOR 1	TYPE SCHEDULE	
	DESCRIPTION	PROTECTED SIDE ELEVATION	UNPROTECTED SIDE ELEVATION	LOC
► TO ACS	SINGLE DOOR, 1 CARD READER	4SQ J-BOX ABOVE ACC CEILING RETROFIT ELECTRIC STRIKE	4SQ J-BOX ABOVE ACC CEILING CEILING CARD READER 4SQ BOX W/ 1G RING	ELE
<u>(S):</u>				
► TO ACS	DOUBLE DOOR, 1 CARD READER	4SQ J-BOX ABOVE ACC CEILING FRAME .75" C (TYP) ELECTRIC POWER TRANSFER 1G BOX IN FRAME ELECTRIC EXIT DEVICE	4SQ J-BOX ABOVE ACC CEILING CARD READER 4SQ BOX W/ 1G RING	ELE
► TO ACS	DOUBLE DOOR, 1 CARD READER	AUTO OPENER ABOVE ACC CEILING FRAME .75" C (TYP) ELECTRIC STRIKE ELECTRIC POWER TRANSFER 1G BOX IN FRAME	4SQ J-BOX ABOVE ACC CEILING .75" C (TYP) CARD READER 4SQ BOX W/ 1G RING	ELE

3

CAMERA/ENCLOSU	RE
DESCRIPTION	INCLUE
INTERIOR CAMERA - FIXED DOME	* JUNC
(CEILING MOUNTED)	WITH
INTERIOR CAMERA - FIXED DOME	* JUNC
(WALL MOUNTED)	FLOO
EXTERIOR CAMERA - FIXED DOME	* JUNC
(WALL MOUNTED)	FLOO

		CAMERA SCHEDULE	
TYPE	INTERIOR (INT)/ EXTERIOR (EXT)	DESCRIPTION	AXIS MODEL #
1	INT	FIXED DOME, VARIFOCAL, CEILING MOUNT	P-3265-V

	OUTPUT DEVICES							
۲ 	GENERAL ALARM	DOOR HOLDER/CLOSERS	ELEVATOR RECALL MAIN LEVEL	ELEVATOR RECALL ALTERNATE LEVEL	MAIN LEVEL ELEVATOR DOORS HOLD OPES			NOTES
OP	0	0			o			

	WIRIN	G SCH	EDUL	E
FUNCTION	< 500'	< 1000'	1000'-3000'	> 3000'
ADDRESSABLE LOOP	#18 TSP	#18 TSP	#16 TSP	#14 TSP
POWER LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
SPARE LOOP	#14 THWN	#14 THWN	#12 THWN	#10 THWN
STROBE HORNS	#14 THWN	#14 THWN	#12 THWN	#10 THWN
MAGNETIC DOOR HOLDER	#12 THWN	#10 THWN		
SPEAKERS	#16 TSP	#16 TSP	#14 TSP	#14 TSP

NOTIFICATION SCHEDULE						
SYMBOL	STROBE SIZE	COVERAGE	AVERAGE CURRENT	MAXIMUM PER CIRCUIT ALONE		
15	15 CD	20'x20'	.085A	17		
30	30 CD	30'x30'	.135A	11		
75	75 CD	40'x40'	.200A	7		
110	110 CD	50'x50'	.225A	6		

K TYPE(S)	DIVISION OF WORK AND COMMENTS
CTRIC KSET	SECURITY CONTRACTOR PROVIDES: • CR, L/PS HARDWARE CONTRACTOR PROVIDES: • CI, ES LOCK CONTROLLED BY: • CR
CTRIC KSET	SECURITY CONTRACTOR PROVIDES: • CR, L/PS <u>HARDWARE CONTRACTOR PROVIDES:</u> • ES, EPT, FH, DH, CI, EED <u>LOCK CONTROLLED BY:</u> • CR, FA, EED
CTRIC KSET	SECURITY CONTRACTOR PROVIDES: • CR, L/PS HARDWARE CONTRACTOR PROVIDES: • ES, EPT, FH, DH, ADA LOCK CONTROLLED BY: • CR, FA

## ROUGH-IN SCHEDULE

JDES CTION BOX ABOVE ACCESSIBLE CEILING H 1" CONDUIT TO VSS

CTION BOX AT +90" ABOVE FINISHED OR, WITH 1" CONDUIT BACK TO VSS

NCTION BOX AT +120" ABOVE FINISHED DOR, WITH 1" CONDUIT BACK TO VSS

2

## NOTES

- PROVIDE RACEWAY AND EQUIPMENT AS INDICATED FOR CARD ACCESS DOOR TYPE INDICATED. REFER TO SECTION 281300 AND CARD ACCESS LOCK CONTROL DETAILS FOR ADDITIONAL REQUIREMENTS.
- PROVIDE CONCEALED .75" C TYPICAL FOR LINES SHOWN TO DEVICE BOXES ON PROTECTED SIDE AND UNPROTECTED SIDE ELEVATIONS.
- CONFIRM CORRECT CARD ACCESS DOOR RACEWAY, LOCK VOLTAGE, AND EXIT SWITCH CURRENT RATING (2 AMPS MIN.) WITH DIV. 8 FURNISHED CARD ACCESS DOOR HARDWARE PER DIV. 8 DOOR HARDWARE SPECIFICATIONS.
- LOCATE CARD READER BOX AS INDICATED ON FLOOR PLANS. RACEWAY AND BOXES BY DIV. 26. REFER TO 281300 FOR CARD ACCESS SYSTEM REQUIREMENTS.
- DOUBLE 4SQ J-BOX ON PROTECTED SIDE OF DOORWAY (SIDE OPPOSITE OF CARD READER) ABOVE ACCESSIBLE CEILING OR IN OTHER ACCESSIBLE LOCATION. PROVIDE COVER FOR J-BOX.
- 6. ELECTRIC LOCKING HARDWARE (MAG LOCKS, ELECTRIC STRIKES, POWER TRANSFER HINGES, ETC.) BY DIV 8. REVIEW DOOR HARDWARE FURNISHED AND VERIFY LOCK VOLTAGES AND OPERATIONAL FUNCTIONALITY OF LOCKS. CONTACT ENGINEER WITH QUESTIONS OR CONCERNS.

1

### ABBREVIATIONS

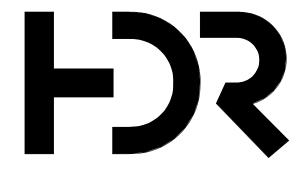
1G = 1-GANG OR SINGLE GANG
4SQ = FOUR SQUARE JUNCTION BOX
AO = AUTO OPENER
A/R = AS REQUIRED
ACC = ACCESSIBLE
ACC = ACCESSIBLE ACS = ACCESS CONTROL SYSTEM CONTROLLER
ADA = ASSISTED DISABILITY OPENER
AED = ELECTRIC EXIT DEVICE/CR COMBO ON DOOR
AEL = ELECTRIC LOCK/CR COMBO ON DOOR
C = CONDUIT
CI = DOOR CONTACT INDICATOR SWITCH
CR = CARD READER
DH = DOOR HARNESS
DBL = DOUBLE
DED = DELAYED EXIT DEVICE
DIR = DIRECTION
ED = EXIT DEVICE
EH = ELECTRIC HINGE
EL = ELECTRIC LOCKSET
ES = ELECTRIC STRIKE
EDL = ELECTRIC DEADLATCH
EED = ELECTRIFIED EXIT DEVICE
ELC = EMERGENCY LOCK CONTROL EPT = ELECTRIC POWER TRANSFER
FA = FIRE ALARM SYSTEM
FH = FRAME HARNESS
HDWR = HARDWARE
IDS = INTRUSION DETECTION SYSTEM
KS = KEY SWITCH
LS = LOCK INDICATOR SWITCH IN HARDWARE
LX = PANIC HARDWARE LATCH POSITION SWITCH
L/PS = LOCK POWER SUPPLY
MD = MOTION DETECTOR
ML = ELECTROMAGNETIC LOCK
OCC = OCCUPANCY
OFP = OBTAIN FROM PLANS
PB = PUSH BUTTON RELEASE
PH = PANIC HARDWARE
PP = PUSH PAD ACTUATOR
PS = POWER SUPPLY
PED = POE EXIT DEVICE
PEL = POE ELECTRIC LOCKSET
PIB = INTERFACE BOARD FOR COMBO LOCKING HARDWARE
PWR = POWER
QTY = QUANTITY
RS = REMOTE OPEN SWITCH
REX = REQUEST TO EXIT SWITCH
TLC = TIME/SYSTEM LOCK CONTROL
TYP = TYPICAL
W/ = WITH

# GENERAL SHEET NOTES

- PLANS ARE BASED UPON 99 MONITOR AND CONTROL DEVICES PER ADDRESSABLE LOOP. OTHER CONFIGURATIONS ARE ACCEPTABLE SUBJECT TO CONTRACTOR ALLOWING FOR INCREASED WIRING REQUIREMENTS AND SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION. MAXIMUM INITIAL DEVICES PER LOOP SHALL NOT EXCEED 75% MAXIMUM ALLOWABLE.
- PLANS ARE BASED UPON THE WIRING SCHEDULE SHOWN. WHERE MANUFACTURER'S REQUIREMENTS EXCEED REQUIREMENTS SHOWN, INCLUDE ADDITIONAL ASSOCIATED COSTS AND SUBMITTAL DRAWINGS INDICATING NEW WIRING CONFIGURATION.
- PLANS ARE BASED UPON 2 AMPS AT 24 VDC, NOT TO EXCEED 75% (1.50 AMPS AVAILABLE), POWER SUPPLY CAPACITY PER NOTIFICATION CIRCUIT. NOTIFICATION DEVICE LOADS ARE BASED UPON NOTIFICATION DEVICE SCHEDULE SHOWN. INCLUDE ADDITIONAL ASSOCIATED COSTS FOR INCREASED WIRING AND POWER SUPPLY CAPACITY IF LOADS OF ACTUAL DEVICES PROVIDED EXCEED CIRCUIT CAPACITY, OR IF LOAD OUTPUT OF ACTUAL POWER SUPPLIES PROVIDED IS SIZED DIFFERENTLY. PROVIDE SUBMITTAL DRAWINGS SHOWING NEW WIRING CONFIGURATION.
- FLOW AND TAMPER CONFIGURATION BASED UPON FIRE SPRINKLER DESIGN CONCEPT. FIELD VERIFY ACTUAL REQUIREMENTS. INCLUDE ANY ADDITIONAL MONITOR MODULES REQUIRED BY ACTUAL DESIGN REQUIREMENTS.
- HEAT DETECTORS WHEN INSTALLED IN ELEVATOR SHAFTS OR MECHANICAL ROOMS FOR ELEVATOR SHUT DOWN SHALL HAVE HEAT DETECTOR WITH LOWER RESPONSE TIME INDEX THAN SPRINKLER HEAD.
- PROVIDE POWER SUPPLY CAPACITY AS REQUIRED FOR DOOR HOLD OPENS SHOWN. BATTERY CAPACITY TO BE ADEQUATE TO OPERATE 15 MINUTES AFTER 24 HOURS
- PLUS 25% SPARE CAPACITY.
- VFD REQUIRES TWO RELAYS, ONE FOR SMOKE CONTROL, ONE SPARE. RUN SPARE LOOPS IN SAME CONDUIT. DO NOT EXCEED 40% AREA FILL OF
- CONDUITS. 0 PROVIDE DUCT DETECTORS FOR SUPPLY AND RETURN AIR SYSTEMS OVER 2000 CFM. INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE
- ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT. PROVIDE DUCT DETECTOR AT EACH FLOOR, PRIOR TO CONNECTION TO A COMMON RETURN AND PRIOR TO RECIRCULATING OR FRESH AIR INLET IN AIR RETURN SYSTEMS OVER 15,000 CFM CAPACITY AND SERVING MORE THAN ONE STORY.
- 2 PROVIDE MANUAL PULL STATIONS IN BOILER ROOMS AND KITCHENS. 3 PROVIDE ONE YEAR OFF SITE MONITORING INCLUDING ALL INTERFACE DEVICES AND
- MONITORING CHARGES. COORDINATE WITH BUILDING OWNER'S OFF SITE MONITORING COMPANY.
- 14 LOCATE SMOKE DETECTORS MINIMUM 3' FROM AIR SUPPLY AND RETURN LOUVERS. 5 PROVIDE SYNCHRONIZED STROBES THROUGHOUT FACILITY. PROVIDE

SYNCHRONIZATION MODULES PER MANUFACTURER'S REQUIREMENTS. INCLUDE

- ADDITIONAL WIRING, IF REQUIRED. 16 INITIATING AND INDICATING LOOPS SHALL NOT SERVE AN AREA OF GREATER THAN
- 22,500 SQUARE FEET. PROVIDE ADDITIONAL LOOPS FOR AREAS LARGER THAN THIS. 7 ALL OUTPUT DEVICES ARE DESIGNED ON SYSTEMS WITH 2 AMP POWER SUPPLY.
- 18 HORN/STROBE BASED ON 120 MILLIAMPS, DOOR HOLDERS BASED ON 70 MILLIAMPS.
- 19 INSTALL DUCT DETECTORS PER NFPA 72 REQUIREMENTS AND PROVIDE ADDITIONAL DUCT DETECTORS DEPENDING UPON FINAL DUCT ARRANGEMENT.



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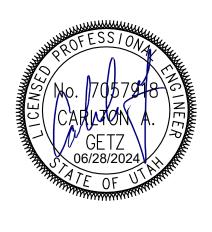
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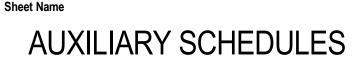


Project Manager BEN HICKMAN Project Designer ANNETTE HIMELICK Project Architect BEN HICKMAN Landscape Architect N/A Civil Engineer N/A Structural Engineer REAVELEY Mechanical Engineer VAN BOERUM & FRANK Electrical Engineer SPECTRUM VAN BOERUM & FRANK Plumbing Engineer Interior Designer RUBY THORP Equipment Planner STEVE HOOPER Wayfinding N/A Sheet Reviewer JAD MARK DATE DESCRIPTION

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