



ELECTRICAL NOTES

- All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag all wires at both ends. Wire runs must be continuous copper stranded and free from splices.
 - Aluminum or solid wires are not allowed.
 - Wire sizes given are for use of equipment. Larger sizes may be required by local codes.
- It is recommended that all wires be color coded, as required in accordance with national and local electrical codes.
- Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or national codes.
- Convenience outlets are not illustrated. Their number and location are to be specified by others. Locate at least one convenience outlet close to the system control, the power distribution unit and one on each wall of the procedure room. Use hospital approved outlet or equivalent.
- General room illumination is not illustrated. Caution should be taken to avoid excessive heat from overhead spotlights. Damage can occur to ceiling mounting components and wiring if high wattage bulbs are used. Recommend low wattage bulbs no higher than 75 watts and use dimmer controls (except MR). Do not mount lights directly above areas where ceiling mounted accessories will be parked.
- Routing of cable ductwork, conduits, etc., must run direct as possible otherwise may result in the need for greater than standard cable lengths (refer to the interconnection diagram for maximum usable lengths point to point).
- Conduit turns to have large, sweeping bends with minimum radius in accordance with national and local electrical codes.
- A special grounding system is required in all procedure rooms by some national and local codes. It is recommended in areas where patients might be examined or treated under present, future, or emergency conditions. Consult the governing electrical code and confer with appropriate customer administrative personnel to determine the areas requiring this type of grounding system.
- The maximum point to point distances illustrated on this drawing must not be exceeded.
- Physical connection of primary power to GE equipment is to be made by customer's electrical contractor with the supervision of a GE representative. The GE representative would be required to identify the physical connection location, and insure proper handling of GE equipment.
- GEHC conducts power audits to verify quality of power being delivered to the system. The customer's electrical contractor is required to be available to support this activity.

CONNECTIVITY REQUIREMENTS

Broadband Connections are necessary between customer's imaging devices and the GE Support Center, starting from the installation process to ensure full support from the Engineering Teams. GE provides remote maintenance and maximum availability for the customer's system, during the equipment's full lifetime. GE guarantees to keep the equipment at a maximum performance level.

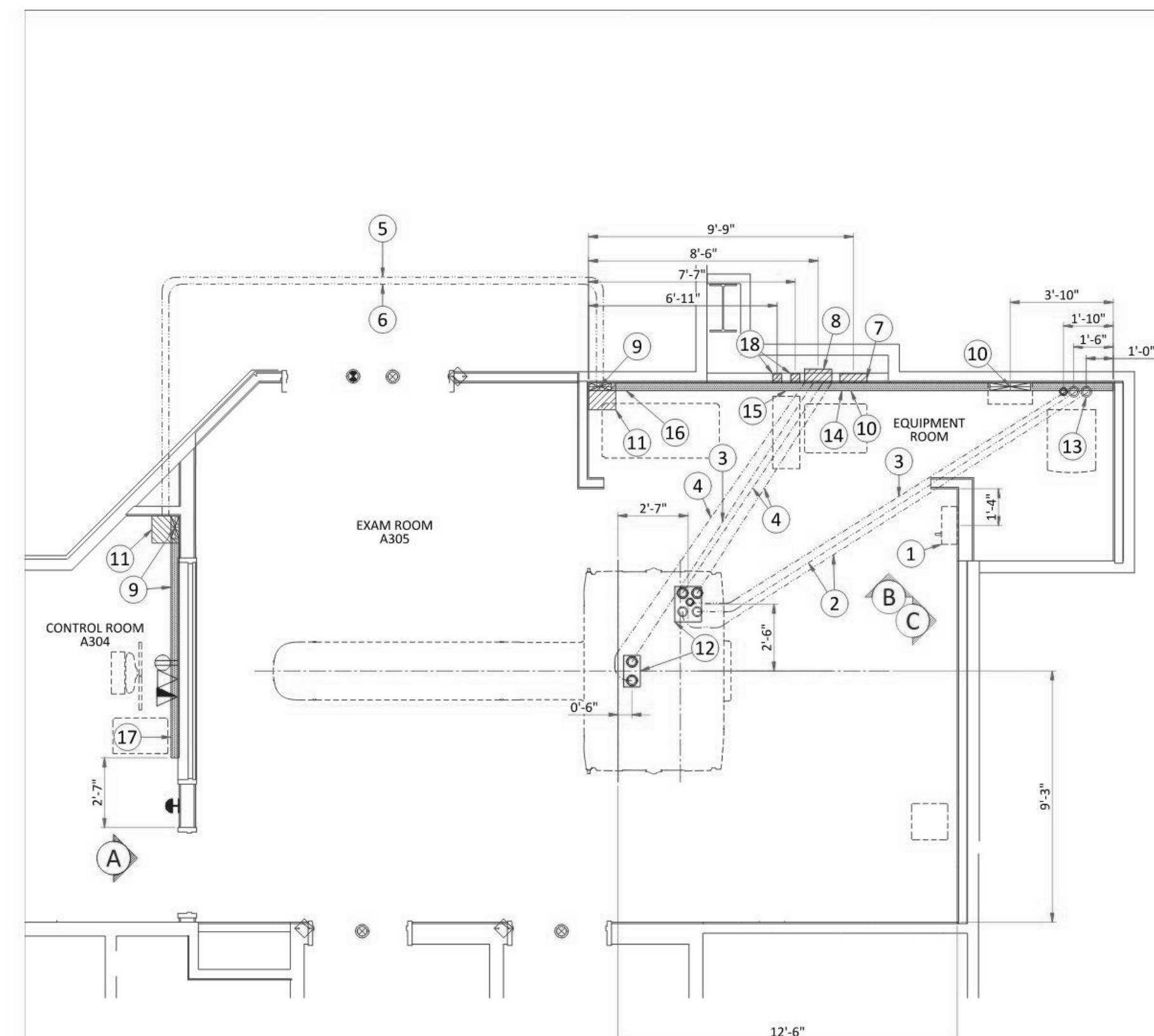
Proactive and reactive maintenance are available through utilizing a wide range of digital tools. You may choose from the connectivity solutions listed below:

- Site-to-Site VPN/GE Solution
- Site-to-Site VPN/Customer Solution
- Connection through Dedicated Service Network
- Internet Access - connectivity for InSite 2.0

The requirements for these connectivity solutions are explained in the broadband solutions catalogue (separate document).

- All junction boxes, conduit, duct, duct dividers, switches, circuit breakers, cable tray, etc., are to be supplied and installed by customer's electrical contractor.
- Conduit and duct runs shall have sweep radius bends
- Conduits and duct above ceiling or below finished floor must be installed as near to ceiling or floor as possible to reduce run length.
- Ceiling mounted junction boxes illustrated on this plan must be installed flush with finished ceiling.
- All ductwork must meet the following requirements:
 - Ductwork shall be metal with dividers and have removable, accessible covers.
 - Ductwork shall be certified/rated for electrical power purposes.
 - Ductwork shall be electrically and mechanically bonded together in an approved manner.
- PVC as a substitute must be used in accordance with all local and national codes.
- All openings in raceway and access flooring are to be cut out and finished off with grommet material by the customer's contractor.
- General contractor to insert pull cords for all cable run conduits between the equipment room and the operator's control room.
- 10 foot pigtail at all junction points.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.

McKay Dee Hospital Center DISCOVERY MI PET/CT PET-M248567-FIN-00-A.DWG Rev A | Date 25/MAY/2021 | E1 - Electrical Notes 14/18

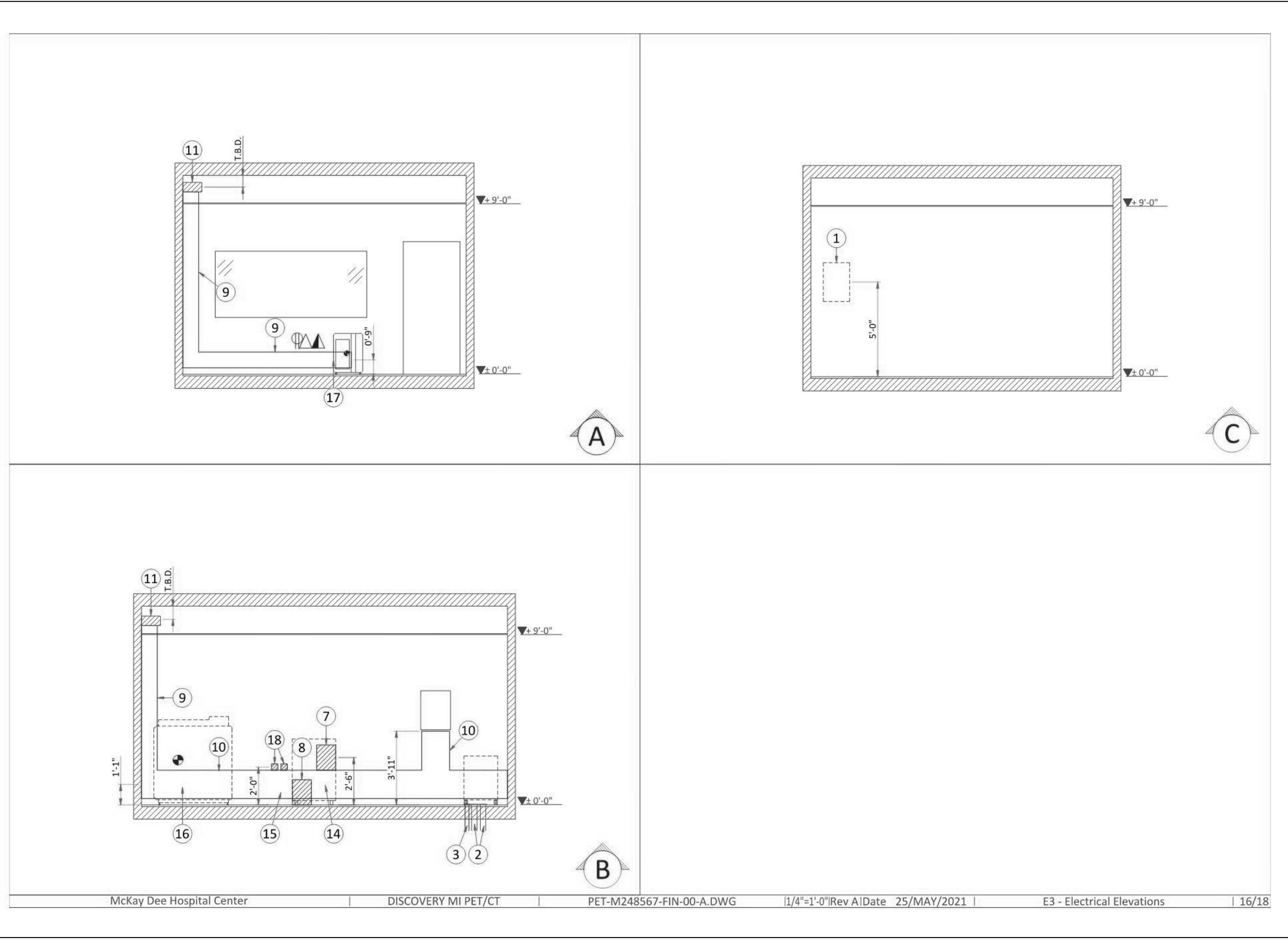


ITEM	DESCRIPTION
FLOOR	
1	Main disconnect panel (recommended 1 1/2m [60 in] floor to middle of panel)
2	75 [3"] conduit below floor for water lines
3	64 [2 1/2"] conduit below floor
4	89 [3 1/2"] conduit below floor
5	64 [2 1/2"] conduit above ceiling
6	89 [3 1/2"] conduit above ceiling
7	300 x 400 x 100 [12" x 16" x 4"] box for power distribution unit
8	300 x 400 x 150 [12" x 16" x 6"] box for power distribution unit
9	250 x 100 [10" x 3 1/2"] surface wall duct with minimum 2 dividers
10	450 x 100 [18" x 3 1/2"] surface wall duct with minimum 2 dividers
11	Box above ceiling, size per local code
12	Suitable bushings & lock nuts for Gantry
13	Suitable bushings & lock nuts for Chiller
14	Grommeted opening for PDU
15	Grommeted opening for UPS
16	Grommeted opening for Systems Cabinet
17	Grommeted opening for Console
18	100 x 100 x 100 [4" x 4" x 4"] box for UPS

ITEM	QTY	Outlet Legend for GE Equipment
▲		Dedicated telephone line(s)
Ⓝ		Network outlet
Ⓢ		Duplex hospital grade, dedicated wall outlet 120 v, single phase power
Ⓢ		System emergency off (SECO), (recommended height 1.2m [48"] above floor)
Ⓢ		X-Ray room warning light control panel
Ⓢ		X-Ray On lamp (1) - 24V
↔		Door interlock switch (needed only if required by state/local codes)

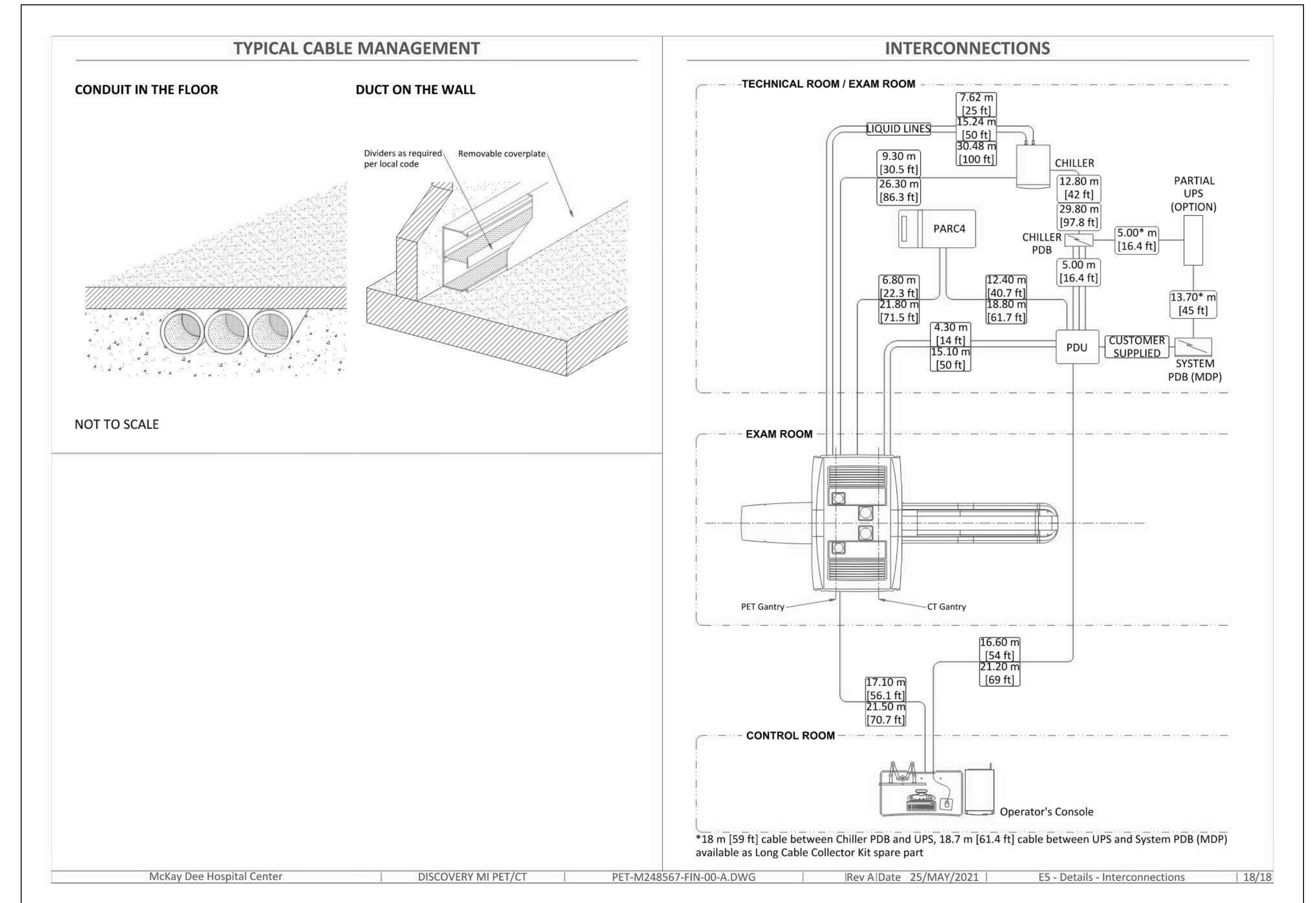
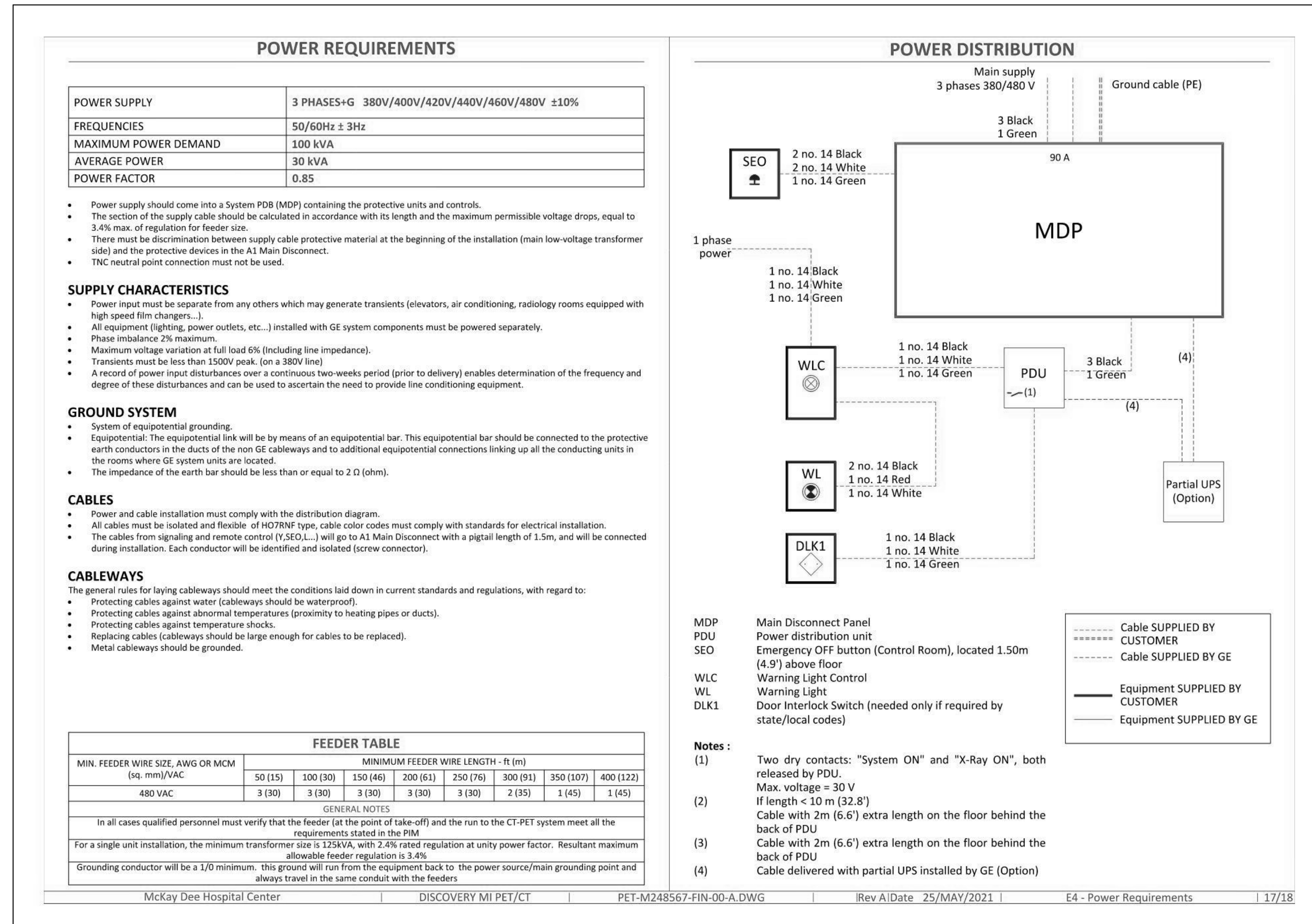
Additional Conduit Runs (Contractor Supplied and Installed)				
From (Bubble # / Item)	To (Bubble # / Item)	Qty	Size	
			In.	mm
3 Phase Power	#1 Main Disconnect	1	As req'd	As req'd
#1 Main Disconnect	Emergency Off	1	1/2	13
#7 Power Distribution Unit	Power Distribution Unit	1	As req'd	As req'd
#7 Power Distribution Unit	Door Switch	1	1/2	13
#7 Power Distribution Unit	Warning Light Control	1	1/2	13
#7 Power Distribution Unit	1 Phase Power	1	1/2	13
Options:				
#1 Main Disconnect Panel	#18 UPS	1	1 1/4	30
#7 Power Distribution Unit	#18 UPS	1	2	50

McKay Dee Hospital Center DISCOVERY MI PET/CT PET-M248567-FIN-00-A.DWG 11/4"=1'-0" Rev A | Date 25/MAY/2021 | E2 - Electrical Layout 15/18



McKay Dee Hospital Center DISCOVERY MI PET/CT PET-M248567-FIN-00-A.DWG 11/4"=1'-0" Rev A | Date 25/MAY/2021 | E3 - Electrical Elevations 16/18

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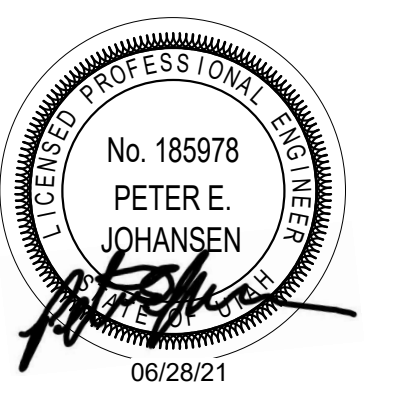


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NJRA Architects, Inc.
5272 S. College Drive, Suite 104
Murray, Utah 84123
801.364.9259
www.njraarchitects.com



SHEET KEYNOTES

- GROUNDING CONDUCTOR IS THE SAME SIZE AS CURRENT CARRYING CONDUCTORS.
- MDP2 BY GE.
- CABLE PROVIDED BY GE.

COPPER CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER (E.G. 5)
SUBSCRIPT (NOTE 5) (E.G. 5)_{IG}

SYM	AMP	HH	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	CONDUCTOR (NOTE 1) SIZE	G	IG/HH	SE	NOTES
(1)	20	-	.75	2	12	12	12	8	2
(2)	20	-	.75	3	12	12	12	8	2,3
(3)	20	24	.75	4	12	12	12	8	2,3
(4)	30	-	.75	2	10	10	10	8	2
(5)	30	-	.75	3	10	10	10	8	2
(6)	30	32	.75	4	10	10	10	8	2
(7)	40	-	1	2	8	10	8	6	2
(8)	40	-	1	3	8	10	8	6	2
(9)	40	44	1	4	8	10	8	6	2
(10)	55	-	1	2	6	10	8	4	2
(11)	55	-	1	3	6	10	8	4	2
(12)	55	60	1.25	4	6	10	8	4	2
(13)	70	-	1	2	4	8	4	2	2
(14)	70	-	1.25	3	4	8	4	2	2
(15)	70	76	1.25	4	4	8	4	2	2
(16)	85	-	1.25	2	3	8	3	2	2
(17)	85	-	1.25	3	3	8	3	2	2
(18)	85	92	1.25	4	3	8	3	2	2
(19)	95	-	1.25	3	2	8	2	2	2
(20)	95	104	1.50	4	2	8	2	2	2
(21)	130	-	1.50	3	1	6	2	2	2
(22)	130	116	1.50	4	1	6	2	2	2
(23)	150	-	2	3	1/0	6	2	1/0	2
(24)	150	136	2	4	1/0	6	2	1/0	2
(25)	175	-	2	3	2/0	6	2	2/0	2
(26)	175	156	2	4	2/0	6	2	2/0	2
(27)	200	-	2	3	3/0	6	2	2/0	2
(28)	200	180	2.50	4	3/0	6	2	2/0	2
(29)	230	-	2.50	3	4/0	4	2	2/0	2
(30)	230	208	2.50	4	4/0	4	2	2/0	2
(31)	255	-	2.50	3	250	4	1	2/0	2
(32)	255	232	2.50	4	250	4	1	2/0	2
(33)	310	-	3	3	350	3	1/0	3/0	2
(34)	310	280	3	4	350	3	1/0	3/0	2
(35)	380	-	3.50	3	500	3	3/0	3/0	2
(36)	380	344	4	4	500	3	3/0	3/0	2
(37)	400	-	2 EA 2	3	3/0	3	3/0	3/0	2
(38)	400	360	2 EA 2.50	4	3/0	3	3/0	3/0	2
(39)	510	-	2 EA 2.50	3	250	1	4/0	3/0	2
(40)	510	464	4	250	1	4/0	3/0	2	2
(41)	620	-	2 EA 3	3	350	1/0	4/0	3/0	2,4
(42)	620	560	2 EA 3	4	350	1/0	4/0	3/0	2,4
(43)	760	-	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
(44)	760	688	2 EA 4	4	500	1/0	4/0	3/0	2,4
(45)	855	-	3 EA 3	3	300	2/0	4/0	3/0	2,4
(46)	855	768	3 EA 3	4	300	2/0	4/0	3/0	2,4
(47)	1000	-	3 EA 3.50	3	400	2/0	4/0	3/0	4
(48)	1000	912	3 EA 3.50	4	400	2/0	4/0	3/0	4
(49)	1140	-	3 EA 4	3	500	3/0	4/0	3/0	4
(50)	1140	1032	3 EA 4	4	500	3/0	4/0	3/0	4
(51)	1240	-	4 EA 3	3	350	3/0	4/0	3/0	4
(52)	1240	1120	4 EA 3	4	350	3/0	4/0	3/0	4
(53)	1675	1520	5 EA 4	4	400	4/0	4/0	4/0	4
(54)	2310	1824	6 EA 4	4	400	250	250	2/0	4
(55)	2660	2408	7 EA 4	4	500	350	350	3/0	4
(56)	3040	2752	8 EA 4	4	500	500	500	500	4
(57)	4180	3784	11 EA 4	4	500	500	500	500	4
(58)	-	-	5 EA 4	-	-	-	-	-	6
(59)	-	-	5	-	-	-	-	-	6
(60)	-	-	10 EA 4	-	-	-	-	-	6

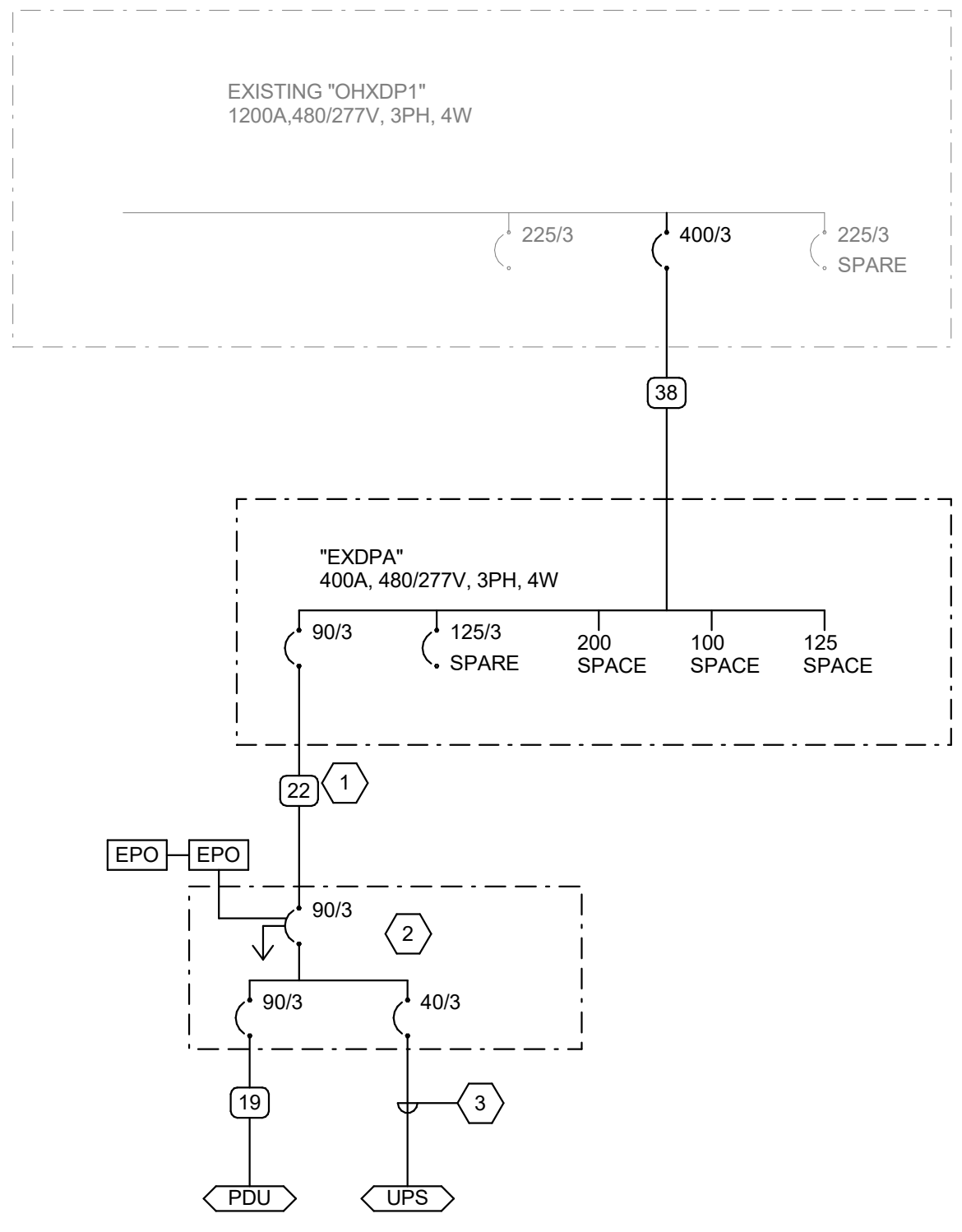
ALUMINUM CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER (E.G. 5)
SUBSCRIPT (NOTE 5) (E.G. 5)_{IG}

SYM	AMP	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	CONDUCTOR (NOTE 1) SIZE	G	IG	SE	NOTES
(21)	130	2	3	2/0	4	1/0	4	2,7
(22)	130	2	4	2/0	4	1/0	4	2,7
(23)	150	2	3	3/0	4	1/0	4	2,7
(24)	150	2	4	3/0	4	1/0	4	2,7
(25)	175	2	3	4/0	4	1/0	2	2,7
(26)	175	2.50	4	4/0	4	1/0	2	2,7
(27)	200	2.50	3	250	4	1/0	2	2,7
(28)	200	3	4	250	4	1/0	2	2,7
(29)	230	2.50	3	300	2	1/0	1/0	2,7
(30)	230	3	4	300	2	1/0	1/0	2,7
(31)	250	3	3	350	2	2/0	1/0	2,7
(32)	250	3	4	350	2	2/0	1/0	2,7
(33)	310	3	3	500	1	3/0	1/0	2,7
(34)	310	4	4	500	1	3/0	1/0	2,7
(35)	380	2 EA 2.50	3	250	1	4/0	3/0	2,7
(36)	380	2 EA 3	4	250	1	4/0	3/0	2,7
(37)	400	2 EA 2.50	3	250	1/0	4/0	3/0	2,7
(38)	400	2 EA 2.50	4	250	1/0	4/0	3/0	2,7
(39)	500	2 EA 3	3	350	1/0	300	3/0	2,4,7
(40)	500	2 EA 3	4	350	1/0	300	3/0	2,4,7
(41)	620	2 EA 3	3	500	3/0	300	3/0	2,4,7
(42)	620	2 EA 4	4	500	3/0	300	3/0	2,4,7
(43)	750	3 EA 3	3	350	3/0	300	4/0	2,4,7
(44)	750	3 EA 3	4	350	3/0	300	4/0	2,4,7
(45)	810	3 EA 3	3	400	4/0	300	250	2,4,7
(46)	810	3 EA 4	4	400	4/0	300	250	2,4,7
(47)	1000	4 EA 3	3	350	4/0	300	250	4,7
(48)	1000	4 EA 3	4	350	4/0	300	250	4,7
(49)	1140	4 EA 4	3	500	250	300	250	4,7
(50)	1140	4 EA 4	4	500	250	300	250	4,7
(51)	1240	4 EA 4	3	500	350	300	250	4,7
(52)	1240	4 EA 4	4	500	350	300	250	4,7
(53)	1620	6 EA 4	4	400	400	350	250	4,7
(54)	2170	7 EA 4	4	500	400	500	250	4,7
(55)	2695	7 EA 4	4	750	600	750	750	4,7
(56)	3080	8 EA 4	4	750	600	750	750	4,7
(57)	4235	11 EA 4	4	750	800	750	750	4,7
(58)	-	5 EA 4	-	-	-	-	-	6
(59)	-	5	-	-	-	-	-	6
(60)	-	10 EA 4	-	-	-	-	-	6

- CONDUIT AND CONDUCTOR SCHEDULE NOTES**
- CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
 - PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
 - PROVIDE #10 NEUTRALS FOR MULTIBRANCH CIRCUITS SERVING COMPUTERS.
 - GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
 - SYMBOL SUBSCRIPTS:
 - "2N": INCLUDE TWO NEUTRAL CONDUCTORS, SIZED AS SCHEDULED FOR PHASED AND NEUTRAL CONDUCTORS.
 - "FG": FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.
 - "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY.
 - "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.
 - "SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
 - RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.
 - ALUMINUM CONDUCTORS NOT TO BE USED FOR CONNECTION TO MOTORS OR MOTOR DRIVEN EQUIPMENT.

- CONDUIT AND CONDUCTOR SCHEDULE NOTES**
- CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
 - PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
 - PROVIDE #10 NEUTRALS FOR MULTIBRANCH CIRCUITS SERVING COMPUTERS.
 - GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
 - SYMBOL SUBSCRIPTS:
 - "2N": INCLUDE TWO NEUTRAL CONDUCTORS SIZED AS SCHEDULED FOR PHASE AND NEUTRAL CONDUCTORS WHERE THE CONDUCTOR IS #10 OR LARGER. INCLUDE A SINGLE 200% RATED CONDUCTOR THAT IS TWICE THE AMPACITY OF THE SCHEDULED PHASE AND NEUTRAL CONDUCTOR WHERE THE CONDUCTOR IS BELOW #10 IN SIZE.
 - "FG": FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.
 - "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.
 - "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.
 - "SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
 - RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.



1 PARTIAL ONE LINE DIAGRAM

SCALE: NTS

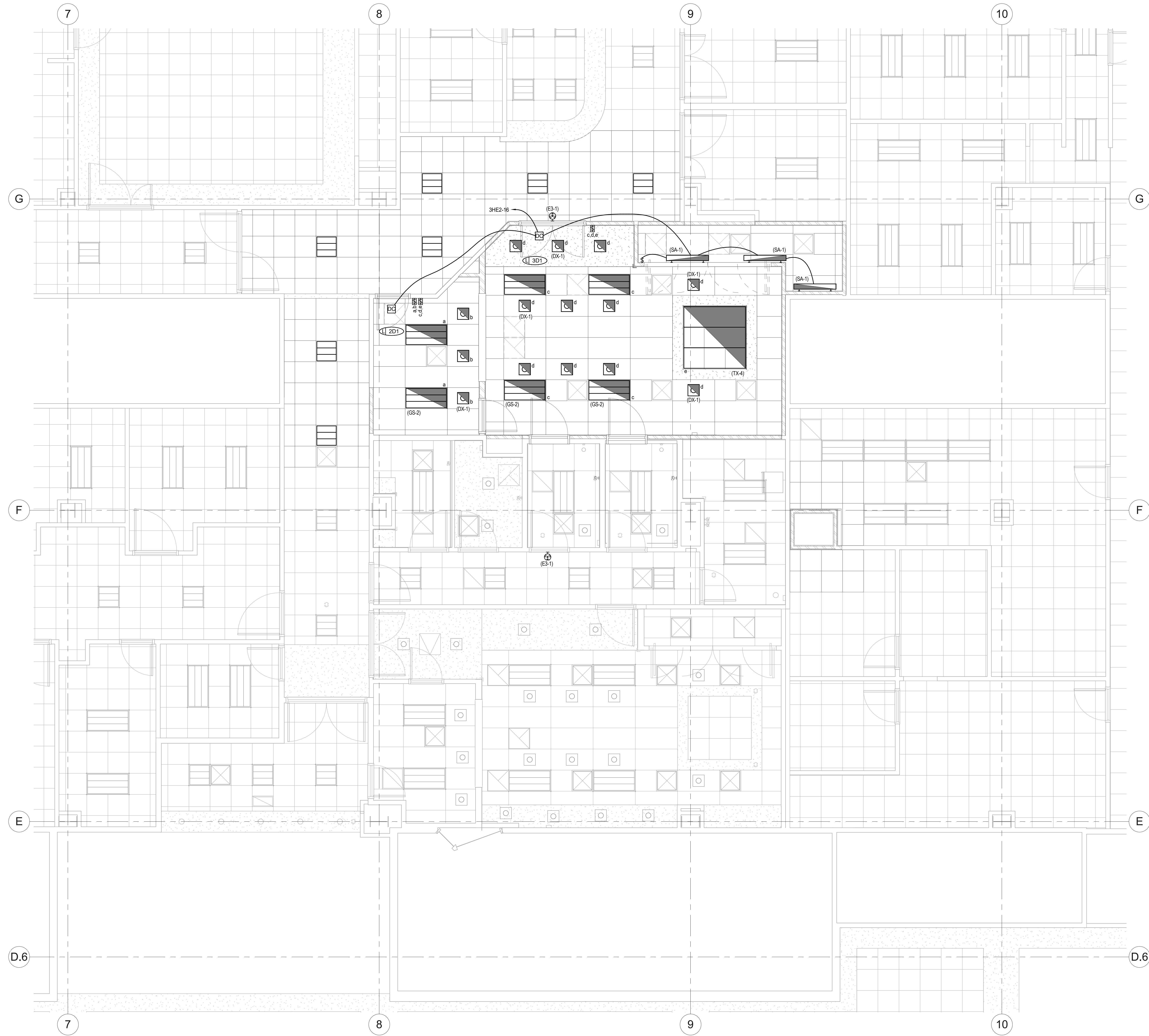
Intermountain Healthcare
McKay-Dee Hospital
PET/CT Remodel

4401 Harrison Blvd
Ogden, Utah 84403

NJRA Project # 18216.00
Construction Documents June 28, 2021

PARTIAL ONE LINE DIAGRAM

EP601



1 LIGHTING PLAN - LEVEL 3

SCALE: 1/4" = 1'-0"

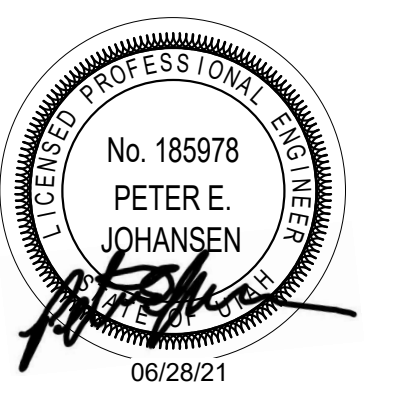
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GENERAL SHEET NOTES

SHEET KEYNOTES



NJRA Architects, Inc.
 5272 S. College Drive, Suite 104
 Murray, Utah 84123
 801.364.9259
 www.njraarchitects.com



Intermountain Healthcare
McKay-Dee Hospital
PET/CT Remodel

4401 Harrison Blvd
 Ogden, Utah 84403

NJRA Project # 18214.00
 Construction Documents June 28, 2021

LIGHTING
 PLAN - LEVEL
 3

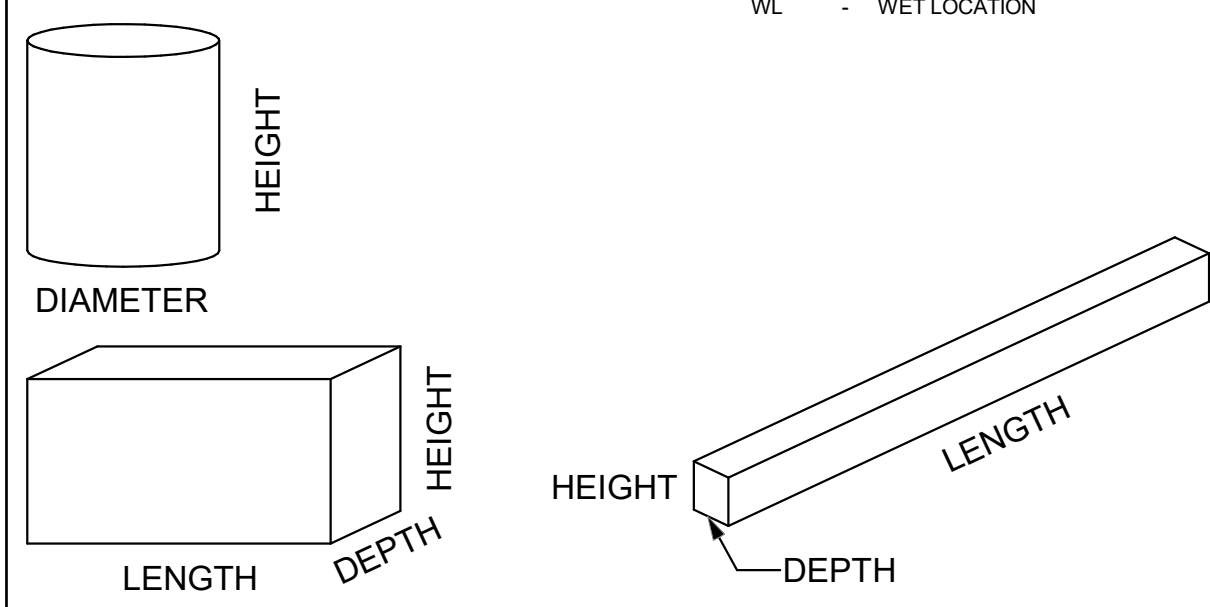
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INTERIOR LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS

MOUNTING B - BASE C - CEILING F - FLANGE G - GRID P - PENDANT PL - POLE R - RECESSED S - SURFACE W - WALL	LUMINAIRE OPTIONS ARHR - AIR RETURN AND HEAT REJECTION DL - DAMP LOCATION EQC - EARTHQUAKE CLIPS F - FUSING HLD - HINGED AND LATCHED DOOR HS - HOUSE SIDE SHIELD PS - PHOTOCELL SWITCH QRS - QUARTZ RESTRIKE ST - STATIC WG - WIRE GUARD WL - WET LOCATION	FINISH MW - MATTE WHITE BL - BLACK SL - SILVER GL - GOLD CL - CLEAR PW - PAINTED WHITE EA - EXTRUDED ALUMINUM S - STEEL GS - GALVANIZED STEEL C - CAST CBA - COLOR BY ARCHITECT SCBA - STANDARD COLOR BY ARCHITECT CCA - CUSTOM COLOR BY ARCHITECT FS - MEETS FEDERAL STANDARD 209D TP - THERMALLY PROTECTED FL - FLUSH R - REGRESS M - MITERED	DIFFUSER/LENS #A - ACRYLIC #THICK #GA - ACRYLIC #THICK (OPAL) GC - GLASS (CLEAR) GO - GLASS (OPAL) CL - CLEAR SGL - SOFT GLOW LENS HFL - HIGH PERFORMANCE LENS DO - DROP OPAL CGL - CONVEX GLASS LENS S - SATIN LENS	REFLECTOR OP - NONE/OPEN SP - SPECULAR SS - SEMI-SPECULAR D - DIFFUSE (WHITE ENAMEL) SC - SPECULAR (COLORED) PR - PRISMATIC FOR - FULL DEPTH REFLECTOR DS - DIFFUSE (SEMI SPECULAR) SILVER LI - LOW IRRIDESCENT IR - IRRIDESCENT SL - SILVER GL - GOLD CA - CLEAR ALZAK
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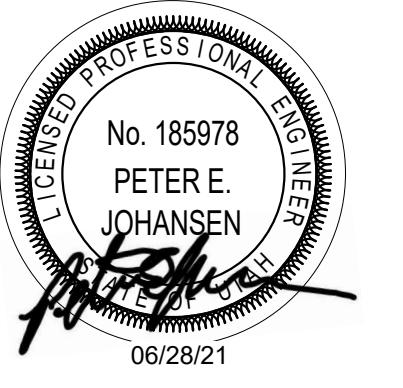


NOTES

GENERAL NOTES

- 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.
- 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.
- SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING. THEY MUST BE SUBMITTED TO THE ENGINEER NO LESS THAN 2 WEEKS PRIOR TO BID OPENING.
- SAMPLES MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON A/E REQUEST PRIOR TO RELEASING FIXTURES.
- ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE AND LOCATION.
- VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.
- COMPLY WITH THE 'INTERIOR LIGHTING' SECTION OF THE SPECIFICATIONS.
- REFER TO SPECIFICATIONS FOR IMPORTANT TECHNICAL REQUIREMENTS FOR LIGHTING FIXTURES, DRIVERS, AND LAMPS.
- ALL LIGHT FIXTURES TO BE EITHER "DLC" OR "LIGHTING FACTS" LISTED OR TO BE APPROVED BY ARCHITECT/ENGINEER AND OWNER.

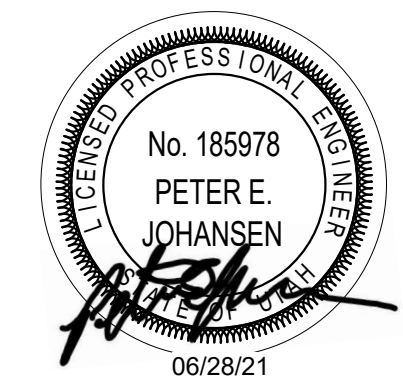
ID	DESCRIPTION	NOMINAL SIZE				MOUNTING	TYPE	COLOR TEMP	CRI	DRIVER CONFIGURATION	VOLTAGE	WATTS	FINISH	FIXTURE LUMENS	DIFFUSER/LENS	REFLECTOR	OPTIONS	NOTES	MANUFACTURER (CATALOG SERIES)			
		LENGTH	DEPTH	HEIGHT	DIAMETER APERTURE														OPTION 1	OPTION 2	OPTION 3	
(DX-1)	6" ROUND RECESSED DOWNLIGHT				6"	CR	LED	3500K		0-10% DIMMING (10%)	120/277	36		2400						LITHONIA (LP6NF-36TRT-8B9W-MVO-LT)		
(E3-1)	X-RAY IN USE LIGHT, RED LETTERS, BLACK BACKGROUND, RECESSED IN WALL					WR	LED	RED		NO DIMMING	120/277	3		0						DUAL-LITE (OBN)	KENALL (METS/R)	LITHONIA (LOM)
(GS-2)	2' X 4' LED FLAT PANEL, GRID LAY-IN	4'-0"	2'-0"			CR	LED	3500K		0-10% DIMMING (10%)	120/277	50		4300						VIVIDLEDS (VVDES2450-35-V27-WH-D1)		
(SA-1)	4' LED STRIP LIGHT, WHITE FINISH	4'-0"				CS	LED	3500K		NO DIMMING	120/277	42		3000						LITHONIA (L2N L48 MDD MVOLT 40K-90CRI WH)	DAYBRITE (LF4FR3140UDZT)	METALUX (4SNLED-LD4-30SL-LW-U NV-L840-CD1-U)
(TX-4)	DIMMABLE LED LIGHT, BOXES (6" X 6"). FIXTURE WILL BE PROVIDED BY DIVISION 09 AND INSTALLED BY DIVISION 26.	6'-0"	6'-0"			CR	LED					0		0								



LIGHTING/SPACE CONTROL TYPE SCHEDULE

WIRING LEGEND		APPROVED MANUFACTURERS	LIGHTING CONTROL ID	GENERAL NOTES										GENERAL NOTES						
_____ LINE VOLTAGE WIRING - - - - - 0-10V WIRING CAT5E CABLING _____ WIRING BY OTHERS ○---○ TWP SEGMENT NETWORK CABLING		1. WATTSTOPPER (BASIS OF DESIGN) 2. NLIGHT 3. HUBBEL BUILDING AUTOMATION 4. GREENGATE	1. # = NUMBER OF ZONES 2. D = DIMMING, S = SWITCHING 3. P = DAYLIGHT PHOTOCELL 4. L = PLUG LOAD CONTROLLER 5. # = INSTANCE	1. COORDINATE INITIAL PROGRAMMING WITH OWNER AND MODIFY CONTROL TIMES AND OPERATION AS REQUESTED BY OWNER. 2. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS UPON REQUEST BY OWNER WITHIN FIRST 6 MONTHS AFTER SUBSTANTIAL COMPLETION. 3. PROVIDE CUSTOMIZED ENGRAVED PERMANENT BUTTON LABELS ON EACH SWITCH, LABEL TO MATCH BUTTON LABEL ID OR AS DIRECTED BY OWNER. 4. PART NUMBERS SHOWN ARE BASED ON WATTSTOPPER AS THE BASIS OF DESIGN. ALL APPROVED MANUFACTURERS ARE SUBJECT TO MEETING ALL FUNCTIONS AND CAPABILITIES OF THE BASIS OF DESIGN SYSTEM AND PRODUCTS. FAILURE TO MEET THESE SHALL REQUIRE THE CONTRACTOR TO PROVIDE A SYSTEM THAT DOES AT NOT ADDITIONAL COST.										5. REFER TO PLANS FOR LOCATIONS AND QUANTITIES OF DEVICES. 6. INSTALL ONE OF EACH CONTROL TYPE WITH PROGRAMMING, ADJUST, AND OBTAIN OWNERS APPROVAL PRIOR TO PROGRAMMING THE REMAINING CONTROLS. 7. WIRING MAY VARY BETWEEN MANUFACTURERS, CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE REQUIRED WIRING THAT WILL BOTH MEET THE MANUFACTURERS REQUIREMENTS AND MATCH WITH THE SHOWN SYSTEM. 8. PROVIDE COMPLETE SHOP DRAWING SUBMITTALS INCLUDING OCCUPANCY SENSOR LAYOUT AND COVERAGE PATTERNS. PROVIDE ADDITIONAL SENSORS AS REQUIRED FOR 100% COVERAGE OF SPACES WITH OCCUPANCY SENSOR CONTROL.						
ID	DETAIL	LIGHTS ON CONTROL	LIGHTS OFF CONTROL	LIGHTING CONTROL TYPE	DAYLIGHT SENSOR SETTING (FC)	TIME DELAY TO OFF (MIN.)	BAS AUX RELAY SIGNAL	PLUG LOAD CONTROLLER	NETWORKED CONTROLS	BUTTON 1	BUTTON 2	BUTTON 3	BUTTON 4	BUTTON 5	BUTTON 6	BUTTON 7	BUTTON 8	BUTTON 9	NOTES	
201		MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	DIMMING 0-10V	-	15	RELAY CLOSED ON OCCUPANCY	-	-	TOGGLE PRESS TOP-ON, PRESS BOTTOM-OFF, HOLD TOP-RAISE, HOLD BOTTOM-RAISE, HOLD BOTTOM-OFF/LOWER	FUNCTION: PRESS-PRESET SCENE #01	FUNCTION: PRESS-PRESET SCENE #02	FUNCTION: PRESS-SELECT ZONE 'a' FOR DIMMING LABEL ID: 'ZONE a'	FUNCTION: PRESS-SELECT ZONE 'b' FOR DIMMING LABEL ID: 'ZONE b'	-	-	-	-	-	-
301		MANUAL & OCCUPANCY	MANUAL OR OCCUPANCY	DIMMING 0-10V	-	15	RELAY CLOSED ON OCCUPANCY	-	-	FUNCTION: PRESS TOP-ON, HOLD TOP-RAISE, PRESS BOTTOM-OFF, HOLD BOTTOM-LOWER LABEL ID: 'TOP-ON/RAISE' BOTTOM-OFF/LOWER	FUNCTION: PRESS-PRESET SCENE #01	FUNCTION: PRESS-SELECT ZONE 'a' FOR DIMMING LABEL ID: 'ZONE a'	FUNCTION: PRESS-SELECT ZONE 'b' FOR DIMMING LABEL ID: 'ZONE b'	FUNCTION: PRESS-SELECT ZONE 'c' FOR DIMMING LABEL ID: 'ZONE c'	-	-	-	-	-	-

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CABLE/OUTLET COLOR SCHEDULE	
COLOR	TYPE
BLUE	DATA
BLUE	IP SECURITY CAMERAS
YELLOW	WIRELESS

STATION PATCH CORD SCHEDULE (CATEGORY 6A F/UTP CABLES W/RJ-45 CONNECTORS)			
LENGTH (FEET)	COLOR	QUANTITY	UNIT COST (EACH)
7'	BLUE	40% OF TOTAL PORTS IN TDRS	
10'	BLUE	40% OF TOTAL PORTS IN TDRS	
15'	BLUE	20% OF TOTAL PORTS IN TDRS	

WIRELESS PATCH CORD PATCH CORD SCHEDULE (CATEGORY 6A F/UTP W RJ45 CONNECTORS)			
LENGTH (METER)	COLOR	QUANTITY	UNIT COST (EACH)
7'	YELLOW	100% OF TOTAL PORTS IN TDRS	

EQUIPMENT/CABLE LIST	
THE ITEMS INDICATED BELOW SHALL NOT BE CONSTRUED AS A "BILL OF MATERIALS". THIS LIST IDENTIFIES ITEMS OF SIGNIFICANCE USED DURING THE DESIGN OF THE CABLING INSTALLATION. WHERE THE ITEMS INDICATED ARE ONE PORTION OF AN ASSEMBLY, THE ENTIRE ASSEMBLY SHALL BE PROVIDED UNLESS SPECIFIED OTHERWISE. PROVIDE ALL MISCELLANEOUS HARDWARE AND SUPPORTS WHICH MAY NOT BE LISTED HERE, FOR A COMPLETE INSTALLATION. COMPARE CATALOG NUMBERS WITH DESCRIPTIONS AND NOTIFY ENGINEER OF DISCREPANCIES PRIOR TO BID. IF CATALOG NUMBERS DO NOT MATCH DESCRIPTIONS, THE DESCRIPTIONS TAKE PRECEDENCE. PROVIDE COMPLETE SUBMITTAL FOR APPROVAL PRIOR TO PURCHASING ANY EQUIPMENT OR CABLE. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.	
SYMBOL	ITEM DESCRIPTION
	STATION CABLE, DATA - CATEGORY 6A FUTP RISER, DATA, BLUE
	STATION CABLE, DATA - CATEGORY 6A FUTP PLENUM, WIRELESS, YELLOW
	STATION CABLE, DATA - CATEGORY 6A FUTP PLENUM, SECURITY, BLUE
	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 2 POSITION
	CATEGORY 6A JACK - DATA, BLUE
	BLANK INSERT, WHITE
	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 2 POSITION ("A" = ABOVE COUNTER)
	CATEGORY 6A JACK - DATA, BLUE
	DATA OUTLET, SINGLE GANG FACEPLATE, WHITE, 4 POSITION
	CATEGORY 6A JACK - DATA, BLUE
	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 2 POSITION
	CATEGORY 6A JACK - DATA, BLUE
	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 2 POSITION
	CATEGORY 6A JACK - WIRELESS, YELLOW
	DATA OUTLET, SURFACE MOUNT BOX, WHITE, 1 POSITION
	CATEGORY 6A JACK - SECURITY, BLUE
	48 PORT, 1RU ANGLE PATCH PANEL WITH OUTLETS
	HORIZONTAL WIRE MANAGERS, 4RU
	VERTICAL WIRE MANAGERS, DOUBLE SIDED, BLACK, 10" WIDE x 8'-0" HIGH
	EQUIPMENT RACK 19" WIDE x 8'-0" HIGH, 52RU, BLACK
	CABLE RUNWAY - 24", BLACK WITH ALL REQUIRED MOUNTING ACCESSORIES
	BUTT SPLICE KIT, BLACK
	JUNCTION SPLICE KIT, BLACK
	FOOT KIT, BLACK
	6" CHANNEL BACK TO RUNWAY, BLACK
	TRIANGLE BRACKETS, BLACK
	END CLOSING KIT, CABLE RUNWAY, BLACK
	WALL ANGLE SUPPORT KIT, CABLE RUNWAY, BLACK
	CABLE RUNWAY ELEVATION KIT, 6"
	CABLE RUNWAY RADIUS DROP
	PLYWOOD BACKBOARD, 4' X 8', GRADE AC, FIRE TREATED & PAINTED
	TELECOMMUNICATIONS MAIN GROUNDING BUS BAR
	TELECOMMUNICATIONS GROUNDING BUS BAR

NOTE: ALL RACKS, LADDER, PATCH PANELS AND ACCESSORIES SHALL BE BLACK IN COLOR.

- ### GENERAL PROJECT NOTES
- UNLESS OTHERWISE NOTED, INSTALL ALL CABLE INSIDE RACEWAY SYSTEMS. WHERE RACEWAY SYSTEMS HAVE NOT BEEN PROVIDED OR SPECIFIED, INSTALL CABLE THROUGH THE SPECIFIED "CADDY" CLIPS AT THE MINIMUM INTERVALS IDENTIFIED IN THE SPECIFICATIONS. SUPPORT "CADDY" CLIPS DIRECTLY FROM THE BUILDING STRUCTURE, NOT FROM OTHER BUILDING SYSTEM SUPPORT WIRES OR CABLE.
 - PROVIDE PLENUM RATED CABLE IN ALL AIR PLENUMS. IF A PLENUM RATED CABLE IS NOT SPECIFIED, PROVIDE THE PLENUM RATED EQUIVALENT TO THE SPECIFIED CABLE.
 - LABEL ALL CABLE INSTALLED UNDER THIS CONTRACT REGARDLESS OF LENGTH.
 - THE EQUIPMENT LABELING IDENTIFIED ON DETAILS IN THESE DRAWINGS ARE EXAMPLES ONLY OF THE ACTUAL LABELING WHICH IS REQUIRED AS PART OF THIS CONTRACT. PRIOR TO FABRICATION, SUBMIT THE NOMENCLATURE FOR ALL LABELS TO THE OWNER FOR REVIEW. THIS REQUIREMENT INCLUDES BUT IS NOT LIMITED TO ALL CABLE LABELING, AND ALL EQUIPMENT LABELING.
 - IF OUTLET IS TERMINATED IN CEILING SPACE, LABEL THE T-BAR GRID WITH THE OUTLET NUMBER FOR EASY LOCATION AND IDENTIFICATION.
 - GROUND ALL EQUIPMENT RACKS INSTALLED UNDER THIS CONTRACT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
 - FOR EVERY CABLE PULL SPECIFIED, COIL 15' OF EXCESS CABLE AT THE STATION END FOR FUTURE USE. NEATLY COIL 15' ABOVE THE CEILING OR BELOW FLOOR WHERE APPLICABLE.
 - PROVIDE THE QUANTITY OF PATCH PANELS REQUIRED +20% FOR THE TOTAL DATA OUTLETS SHOWN ON FLOOR PLANS FOR THE PARTICULAR LEVEL.
 - RACK SPACE ALLOCATION SHOULD BE FOLLOWED PER DRAWINGS. IF YOU HAVE A SYSTEM THAT HAS NOT RACK ALLOCATION PLEASE CALL BOE SAUSEDO AT 801-707-3805.
 - ALL DATA LOCATIONS ARE NOT SHOWN IN ET SHEETS. REFER TO ENLARGED POWER PLANS FOR DATA LOCATIONS IF NOT SHOWN ON ET SHEETS.

ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

A	AUGMENTED
CAT	CATEGORY
E	ENHANCED
EA	EACH
ER	EQUIPMENT ROOM
FRP	FIBER PATCH PANEL
GIG	GIGA HERTZ
HWM	HORIZONTAL WIRE MANAGEMENT
NIC	NOT IN CONTRACT
OE	OWNER ELECTRONICS
PNM	PLENUM
PR	PAIR
PS	POWER SUPPLY
RRP	RISER PATCH PANEL
SPP	STATION PATCH PANEL
TC	TELECOMMUNICATIONS ROOM
TYP	TYPICAL
VWM	VERTICAL WIRE MANAGEMENT

DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", "AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVE: THE TERM "APPROVED" WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

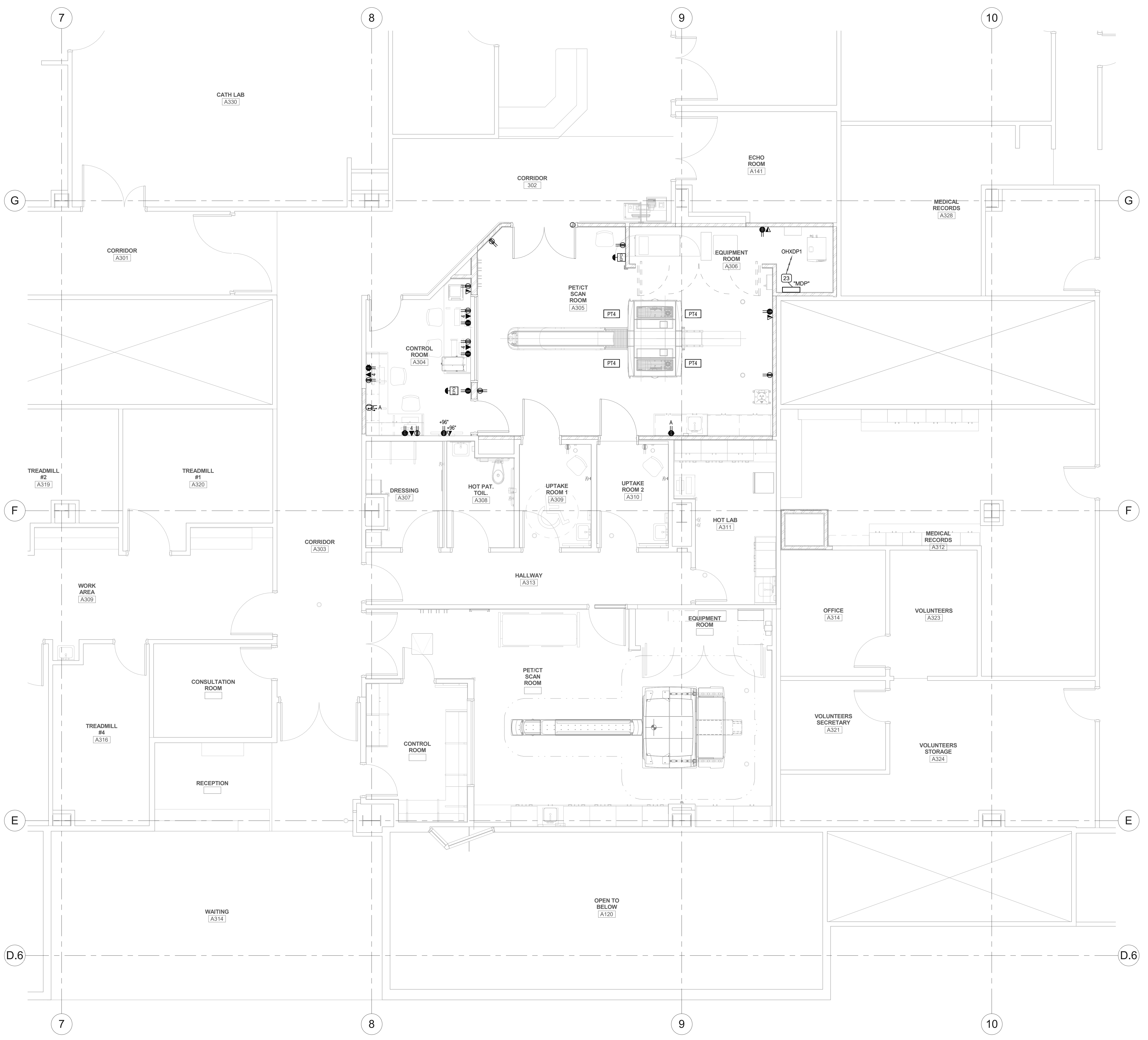
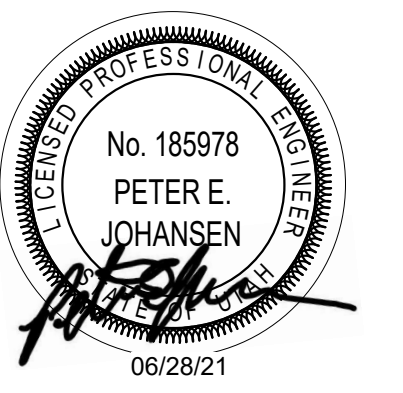
PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

ELECTRONIC SYSTEMS: THE TERM "ELECTRONIC SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

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McKay-Dee Hospital
PET/CT Remodel

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Ogden, Utah 84403



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1 TELECOM PLAN - LEVEL 3
SCALE: 1/4" = 1'-0"

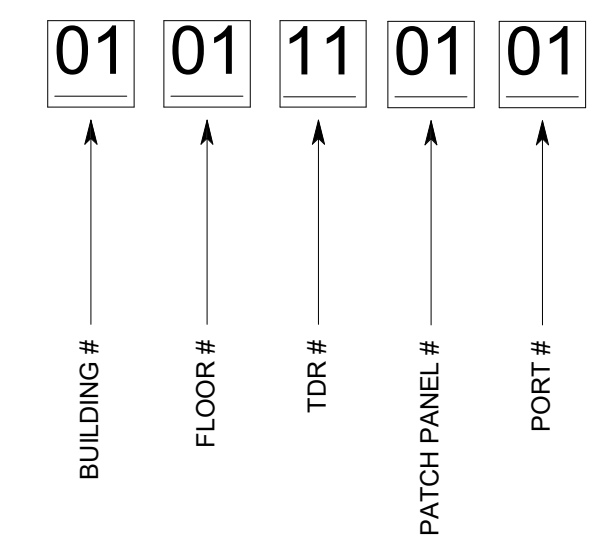
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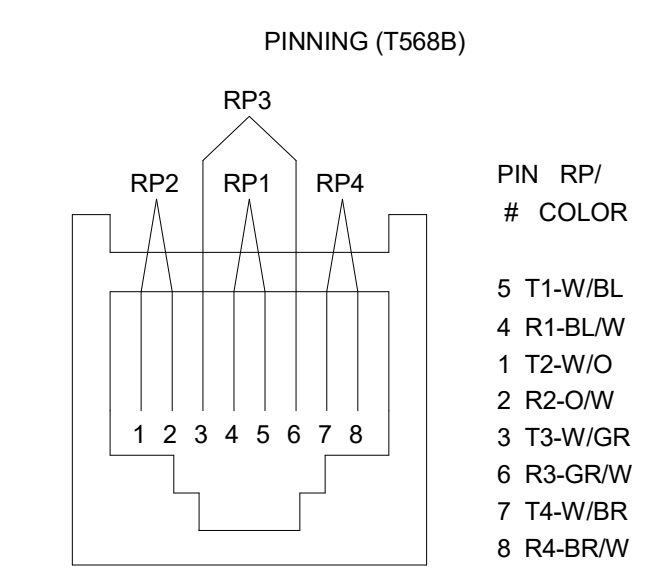
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TELECOM
PLAN - LEVEL
3

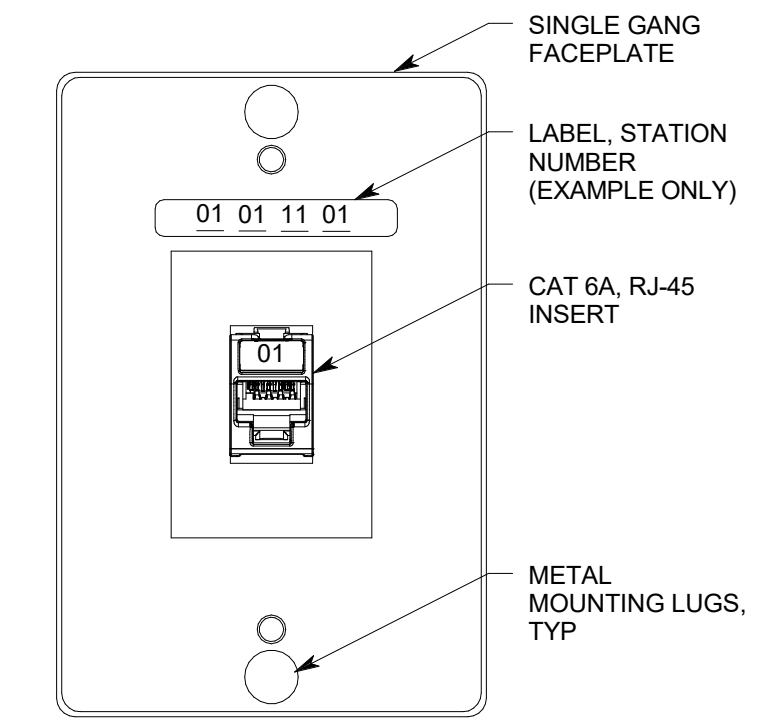
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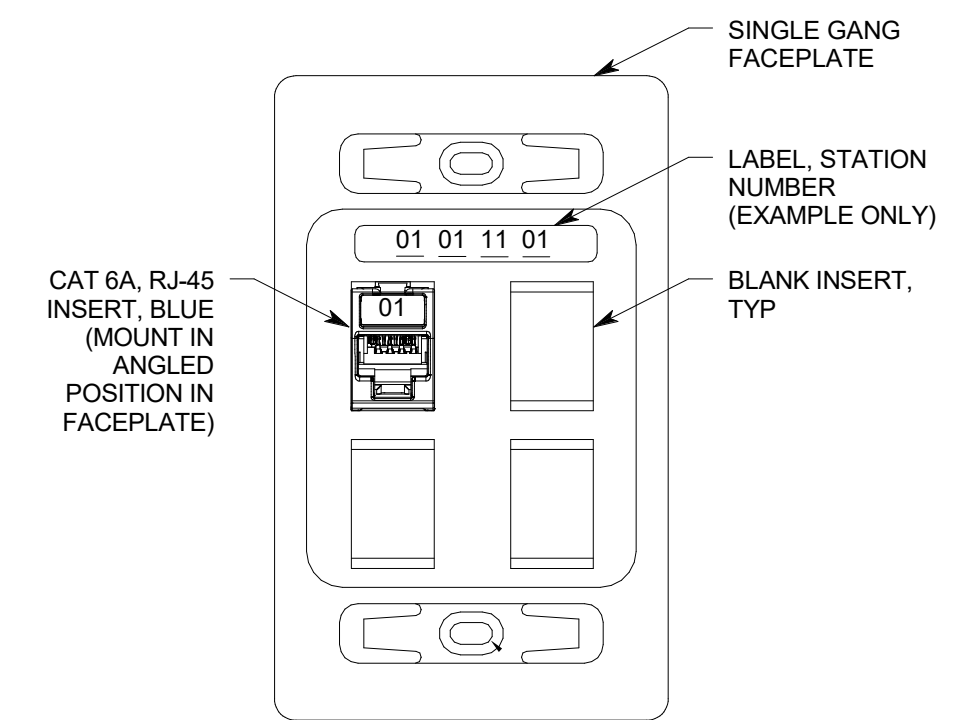
13 CABLE ID EXAMPLE DETAIL
NO SCALE



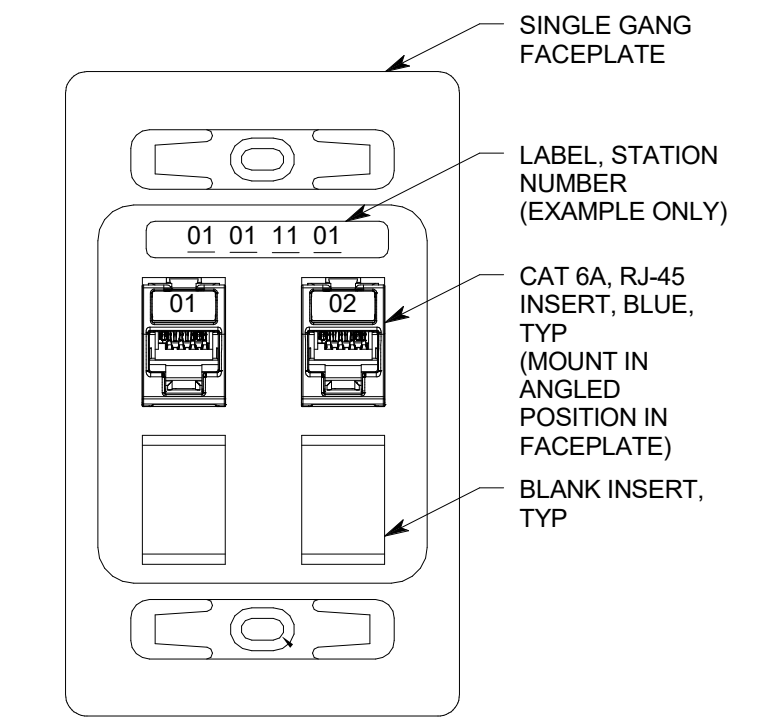
10 TYPICAL VOICE-DATA OUTLET PINNING DETAIL
NO SCALE



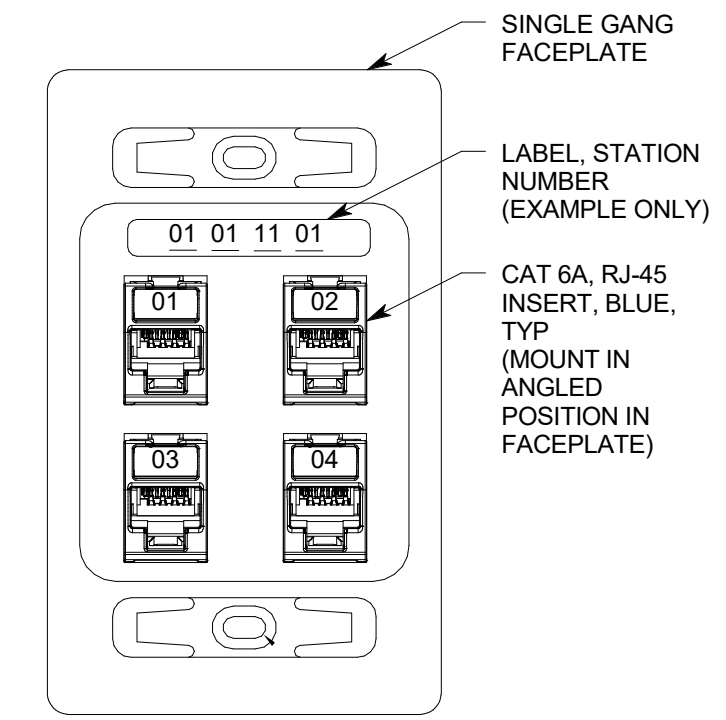
5 TYPICAL WALL PHONE OUTLET
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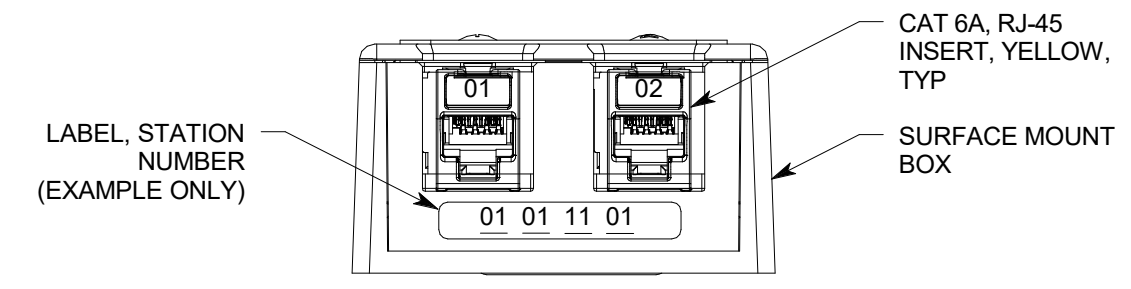
9 TYPICAL 1-PORT DATA OUTLET
NO SCALE



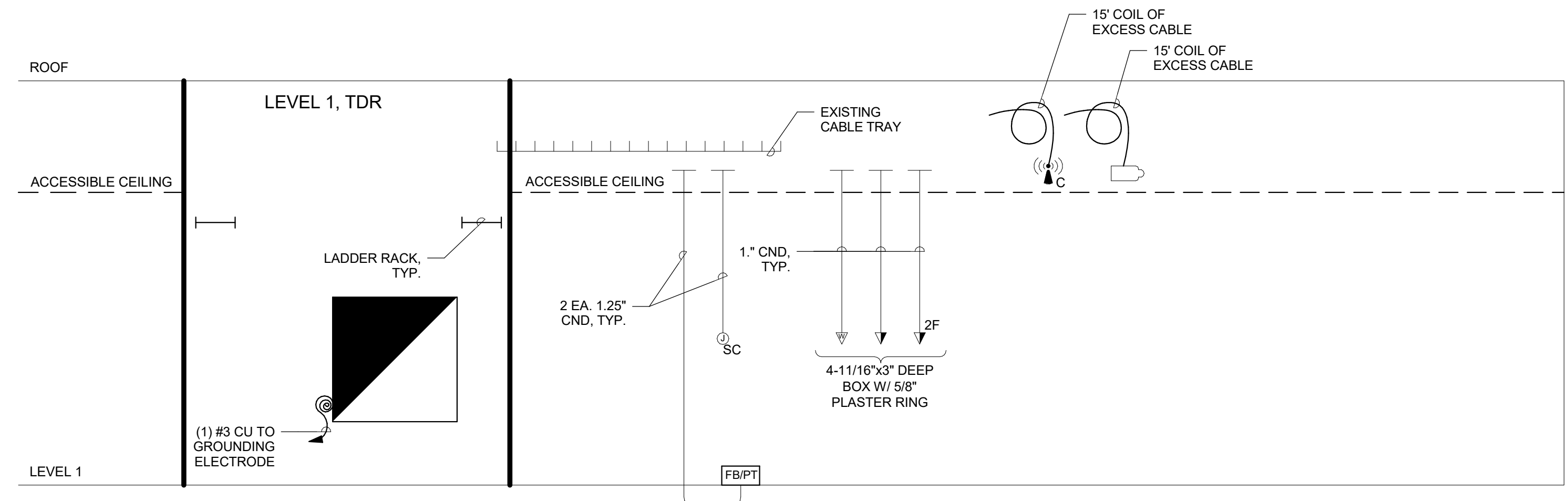
4 TYPICAL 2-PORT DATA OUTLET
NO SCALE



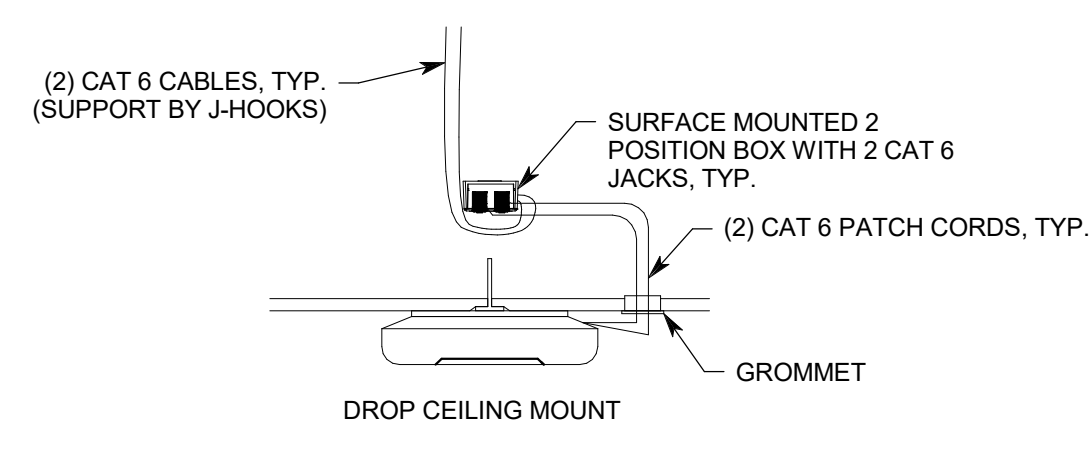
8 TYPICAL 4-PORT DATA OUTLET
NO SCALE



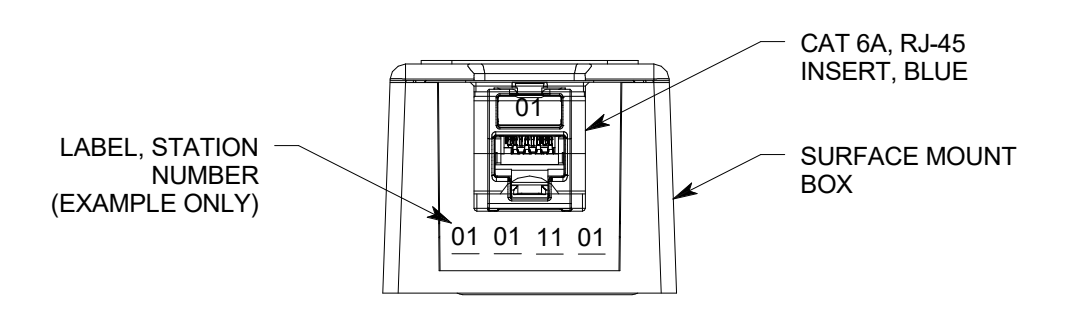
3 TYPICAL 'WAP' DATA OUTLET
NO SCALE



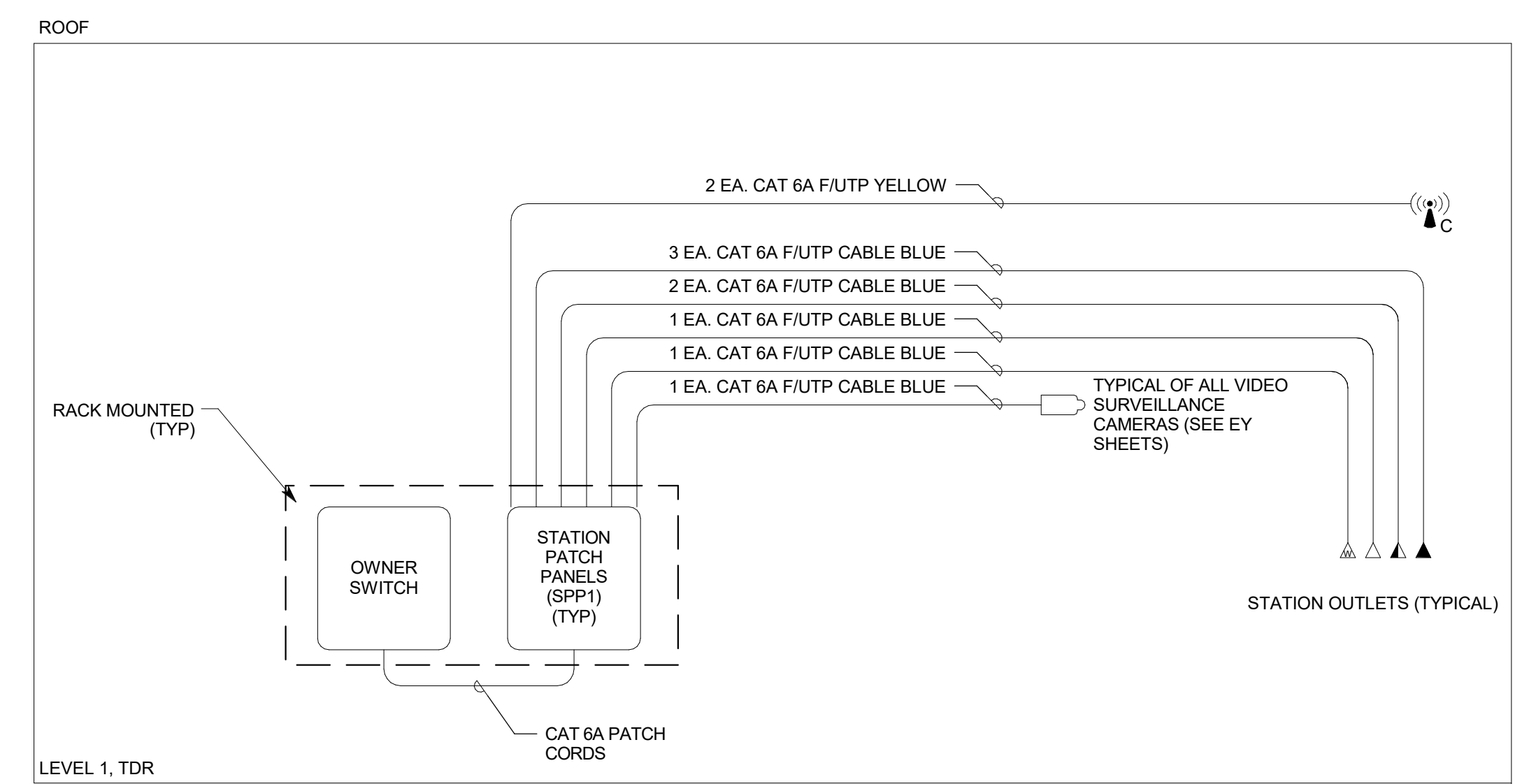
12 TELECOM CONDUIT RISER DIAGRAM
NO SCALE



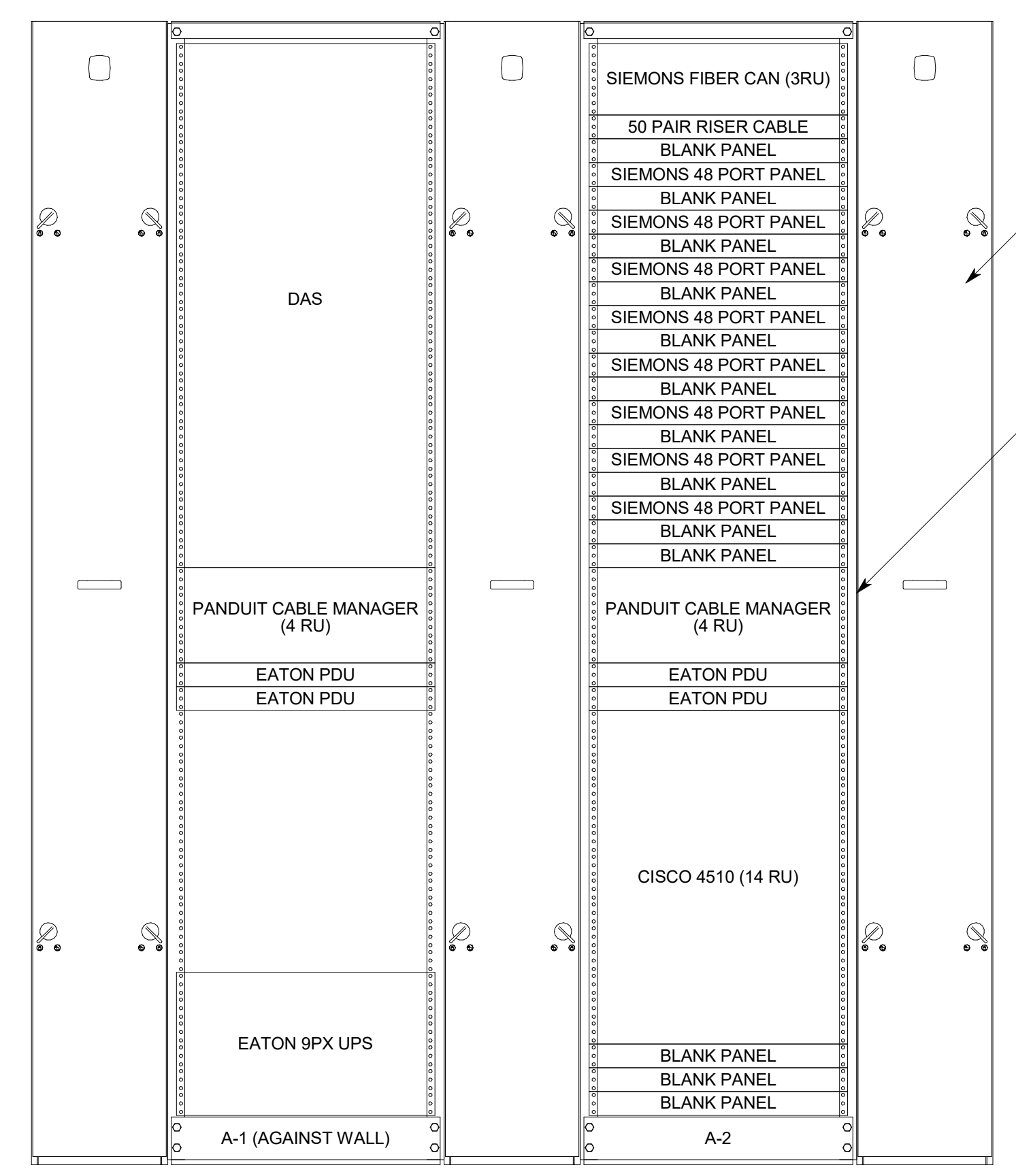
7 WIRELESS AP MOUNTING DETAIL
NO SCALE



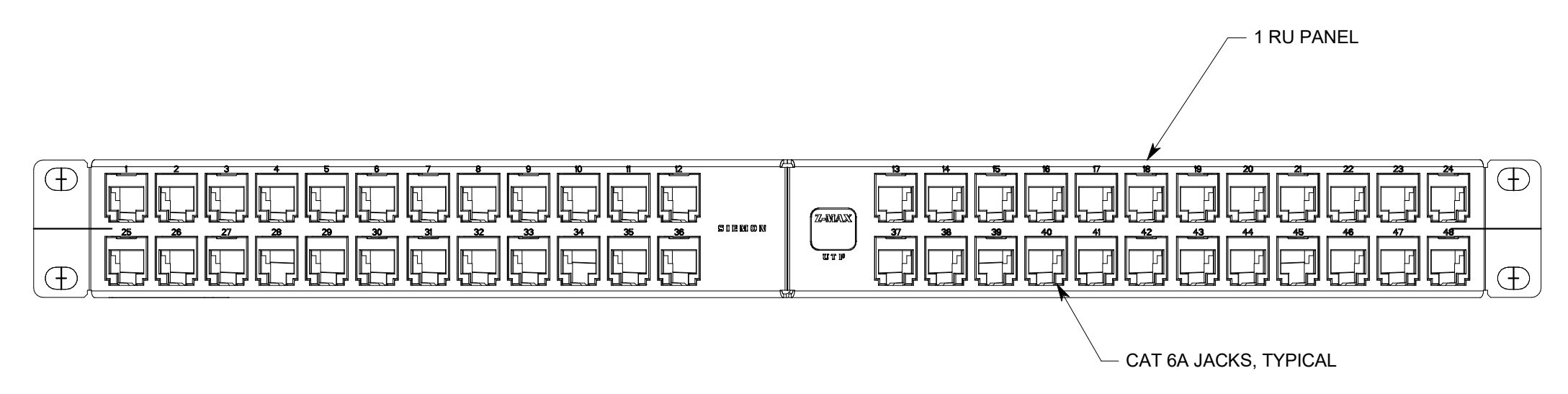
2 TYPICAL 1-PORT CAMERA DATA OUTLET
NO SCALE



14 TELECOM CABLE RISER DIAGRAM
NO SCALE



11 TELECOM RACK ELEVATION DETAIL, LEVEL 1, DATA ROOM
NO SCALE



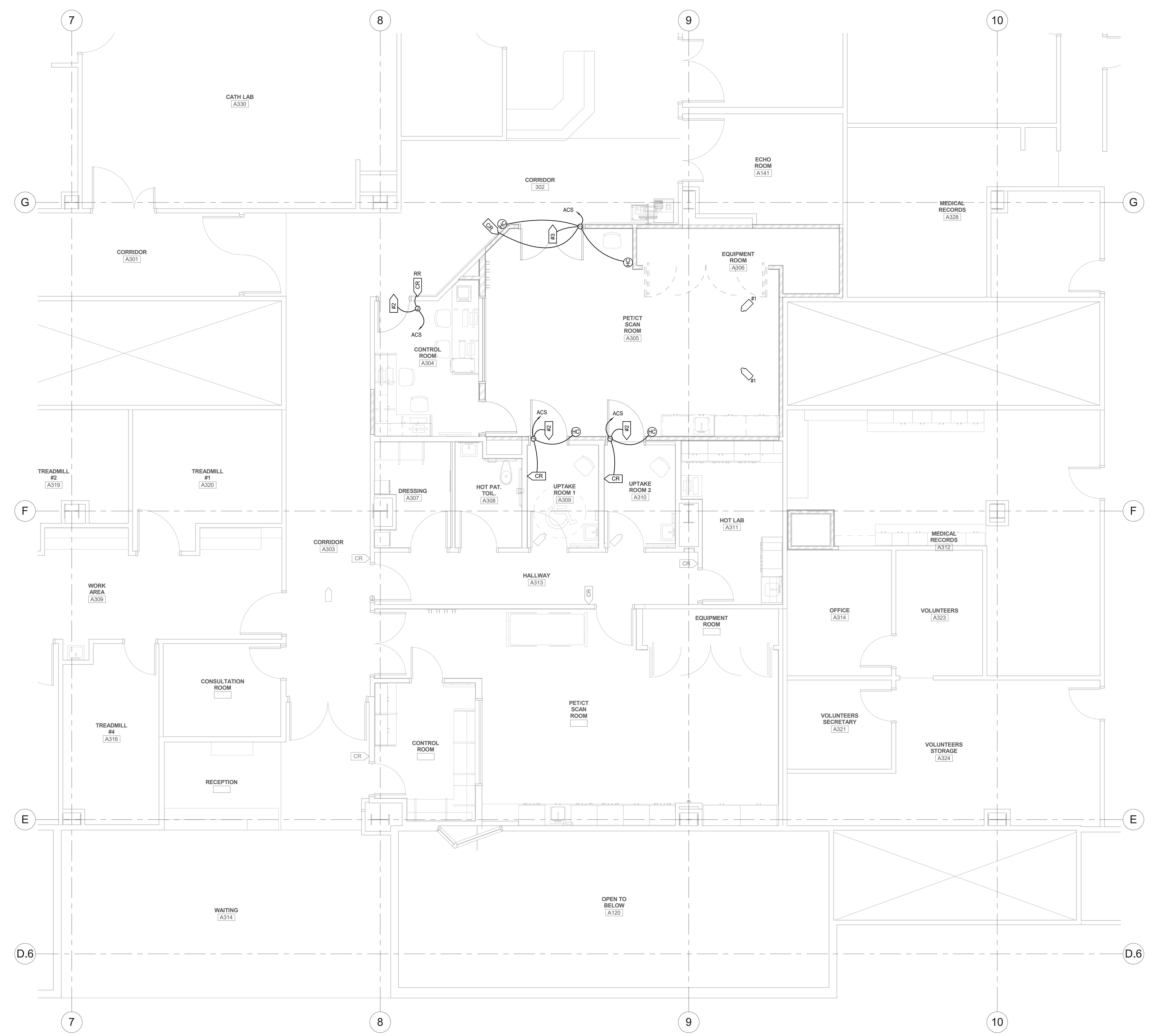
6 STATION PATCH PANEL, (SPP1), TDR
NO SCALE

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GENERAL SHEET NOTES

SHEET KEYNOTES



1 SECURITY PLAN - LEVEL 3

SCALE: 1/4" = 1'-0"

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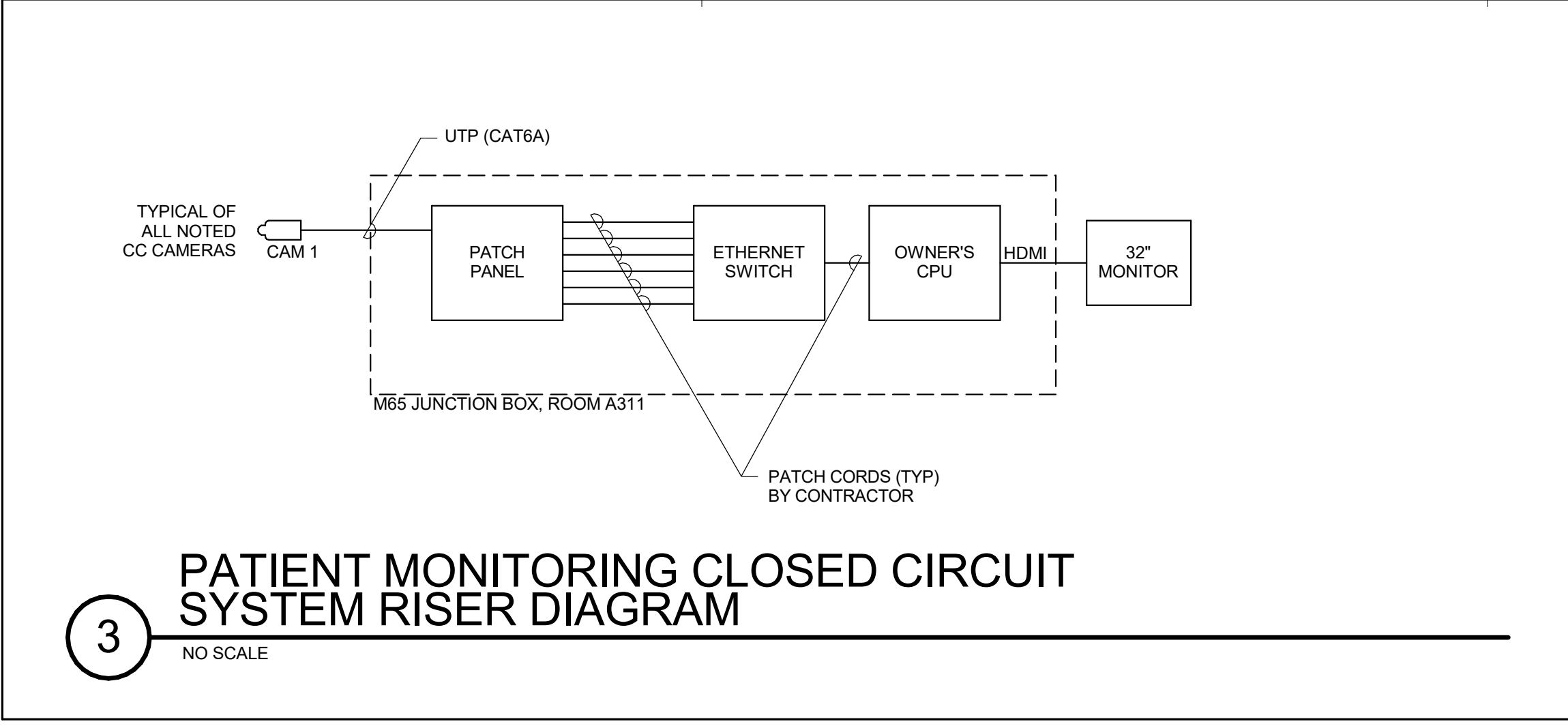
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Construction Documents June 28, 2021

SECURITY PLAN - LEVEL 3

EY101



- ### NOTES
1. 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.
 2. PROVIDE CONCEALED .75" C TYPICAL FOR LINES SHOWN TO DEVICE BOXES ON PROTECTED SIDE AND UNPROTECTED SIDE ELEVATIONS.
 3. 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.
 4. LOCATE CARD READER BOX AS INDICATED ON FLOOR PLANS. RACEWAY AND BOXES BY DIV. 26. REFER TO 281300 FOR CARD ACCESS SYSTEM REQUIREMENTS.
 5. 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.



3 PATIENT MONITORING CLOSED CIRCUIT SYSTEM RISER DIAGRAM
NO SCALE

VSS CAMERA SCHEDULE

TYPE	INTERIOR (INT)/ EXTERIOR (EXT)	DESCRIPTION	AXIS MODEL #
1	INT	FIXED DOME, VARIFOCAI, CEILING MOUNT	P3374-V
2	INT	FIXED DOME, VARIFOCAI, WALL MOUNT	P3374-V
3	EXT	FIXED DOME, VARIFOCAI, WALL MOUNT	Q3505-VE
4	INT/EXT	FIXED DOME, CEILING MOUNT (360°)	P3707-PE
5	INT/EXT	FIXED DOME, CEILING MOUNT (180°)	Q3708-PVE

VSS CAMERA/ENCLOSURE ROUGH-IN SCHEDULE

DESCRIPTION	INCLUDES
INTERIOR CAMERA - FIXED DOME (CEILING MOUNTED)	* JUNCTION BOX ABOVE ACCESSIBLE CEILING WITH 1" CONDUIT TO VSS
INTERIOR CAMERA - FIXED DOME (CEILING MOUNTED, CC PATIENT MONITORING)	* JUNCTION BOX ABOVE ACCESSIBLE CEILING WITH 1" CONDUIT TO MONITOR BACK BOX IN CONTROL ROOM A311
INTERIOR CAMERA - FIXED DOME (WALL MOUNTED)	* JUNCTION BOX AT +90" ABOVE FINISHED FLOOR, WITH 1" CONDUIT BACK TO VSS
32" MONITOR (WALL MOUNTED)	* CHIEF PAC 5255FOW LARGE FORMAT BACK BOX, MOUNTED AT 60" AFF. SEE POWER PLANS

CARD ACCESS DOOR TYPE SCHEDULE

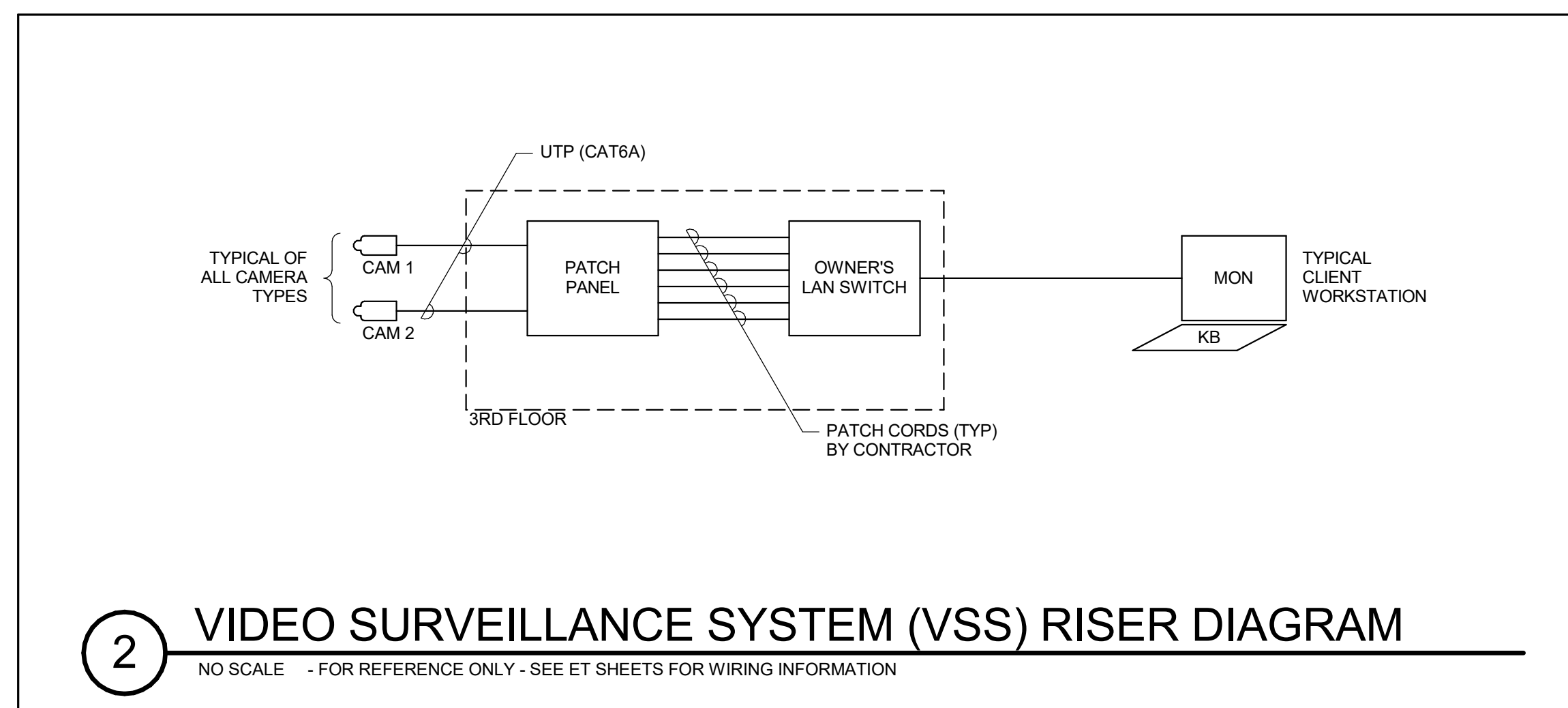
DOOR TYPE #	SYMBOL	DESCRIPTION	PROTECTED SIDE ELEVATION	UNPROTECTED SIDE ELEVATION	LOCK TYPE(S)	DIVISION OF WORK AND COMMENTS
TYPE 1		SINGLE DOOR, 1 CARD READER	4SQ J-BOX ABOVE ACC CEILING DOOR HARNESS ELECTRIC STRIKE	LOCKSET	ELECTRIC STRIKE	SECURITY CONTRACTOR PROVIDES: • CR, FH, LPS HARDWARE CONTRACTOR PROVIDES: • ES LOCK CONTROLLED BY: • CR
TYPE 2		SINGLE DOOR, 1 CARD READER WITH AUTO OPENER	.75" C 4SQ J-BOX ABOVE ACC CEILING ACTUATOR 4SQ BOX W/ 1G TRIM DOOR HARNESS ELECTRIC STRIKE	[AUTO OPENER] 4SQ J-BOX ABOVE ACC CEILING ACTUATOR 4SQ BOX W/ 1G TRIM LOCKSET	ELECTRIC STRIKE	SECURITY CONTRACTOR PROVIDES: • CR, FH, LPS HARDWARE CONTRACTOR PROVIDES: • ES, PP, AO LOCK CONTROLLED BY: • CR, AO
TYPE 3		DOUBLE DOOR, 1 CARD READER W/ AUTO OPENER AND 2 ACTUATORS	.75" C 4SQ J-BOX ABOVE ACC CEILING ACTUATOR 4SQ BOX W/ 1G TRIM ELECTRIC STRIKE POWER TRANSFER 1G BOX IN FRAME DOOR HARNESS IN DOOR	[AUTO OPENER] 4SQ J-BOX ABOVE ACC CEILING ACTUATOR 4SQ BOX W/ 1G TRIM CARD READER 4SQ BOX W/ 1G RING	ELECTRIC EXIT DEVICE	SECURITY CONTRACTOR PROVIDES: • CR, LPS, FH, DH HARDWARE CONTRACTOR PROVIDES: • ES, EPT, AO, PP LOCK CONTROLLED BY: • CR, AO

- ### ABBREVIATIONS
- 1G = 1-GANG OR SINGLE GANG
 - 4SQ = FOUR SQUARE JUNCTION BOX
 - AO = AUTO OPENER
 - AS = AS REQUIRED
 - 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
 - LPS = LOCK POWER SUPPLY
 - MD = MOTION DETECTOR
 - ML = ELECTROMAGNETIC LOCK
 - OCC = OCCUPANCY
 - OPF = OBTAIN FROM PLANS
 - PB = PUSH BUTTON RELEASE
 - PH = PANIC HARDWARE
 - PP = PUSH PAD ACTUATOR
 - PS = POWER SUPPLY
 - PEE = 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/FUNCTION
 - TLC = TIME/SYSTEM LOCK CONTROL
 - TYP = TYPICAL
 - W/ = WITH

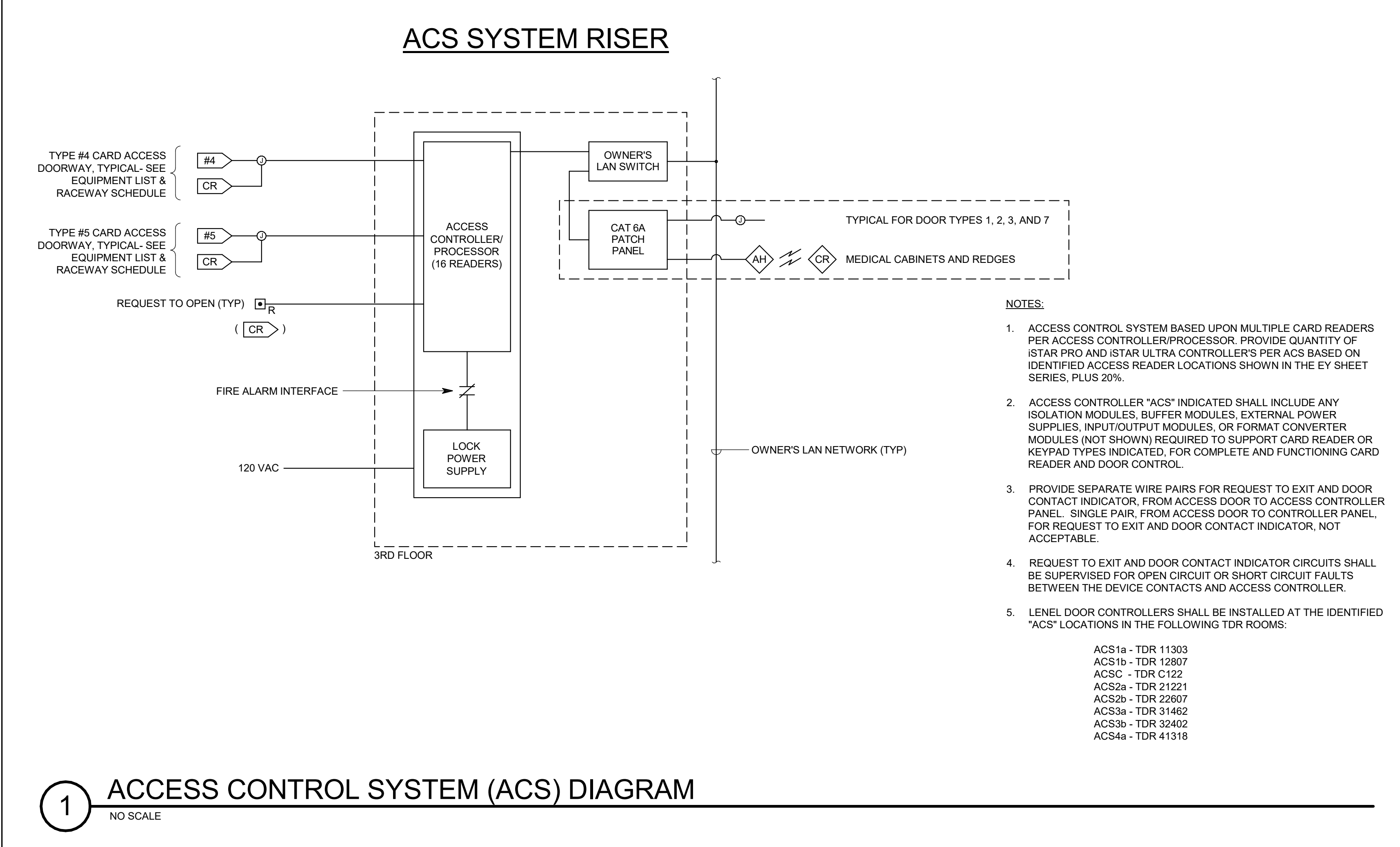
SECURITY AND PATIENT MONITORING CC EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	MOUNTING *	ROUGH-IN	QTY	ACCEPTABLE TYPES
	CARD READER	40"	4SQ W/ 1G RING	OFF	SEE SECTION 281300
	CARD READER FOR FRIDGE AND/OR FREEZER	40"	4SQ W/ 1G RING	OFF	PROVIDE HID READER WITH HES 660 SERIES LOCKSET
	CARD ACCESS DOOR TYPE, TYPICAL. REFER TO CARD ACCESS DOOR TYPE SCHEDULE.	SEE SCHEDULE	SEE SCHEDULE	OFF	REFER TO CARD ACCESS DOOR TYPE SCHEDULE & SECTION 281300
	DOOR MONITOR - CONTACT INDICATOR SWITCH	SEE SCHEDULE	SEE SCHEDULE	OFF	SEE SECTION 281300
[I]	IP INTERCOM WALL STATION	54"	3-GANG VERTICAL BOX	OFF	PROVIDE AXIS A8004-VE NETWORK VIDEO DOOR STATION
[VSS]	VSS CAMERA/ENCLOSURE TYPE, TYPICAL. REFER TO VSS CAMERA/ENCLOSURE TYPE SCHEDULE.	SEE SCHEDULE	SEE SCHEDULE	OFF	SEE VSS CAMERA/ENCLOSURE TYPE SCHEDULE
[P]	DURESS BUTTON	UNDER COUNTER J-BOX - 18"	4SQ W/ 1G RING	OFF	SEE SECTION 281600
[ACS]	CARD ACCESS CONTROLLERS & PWR SUPPLIES	72"	4"x4" GUTTER & STUBS A/R	A/R	SEE SECTION 281300
[TVSS]	TRANSIENT VOLTAGE SURGE SUPPRESSER "TVSS"	AS NOTED	A/R	A/R	
[VSS]	VIDEO SURVEILLANCE SYSTEM	RACK MOUNTED			COORDINATE WITH OWNER
	ETHERNET SWITCH, 10 PORT PoE	IN MONITOR BACK BOX		OFF	CISCO SG300-10P OR AS APPROVED BY OWNER
[MS2]	MONITOR, 32", COMMERCIAL LDC, MINIMUM 4K	WALL AT 60" AFF	SEE SCHEDULE	OFF	LG 32UD99-W
	WALL MOUNT W/ MONITOR MATING PLATE				CHIEF TS181TU

* COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS BEFORE INSTALLATION.

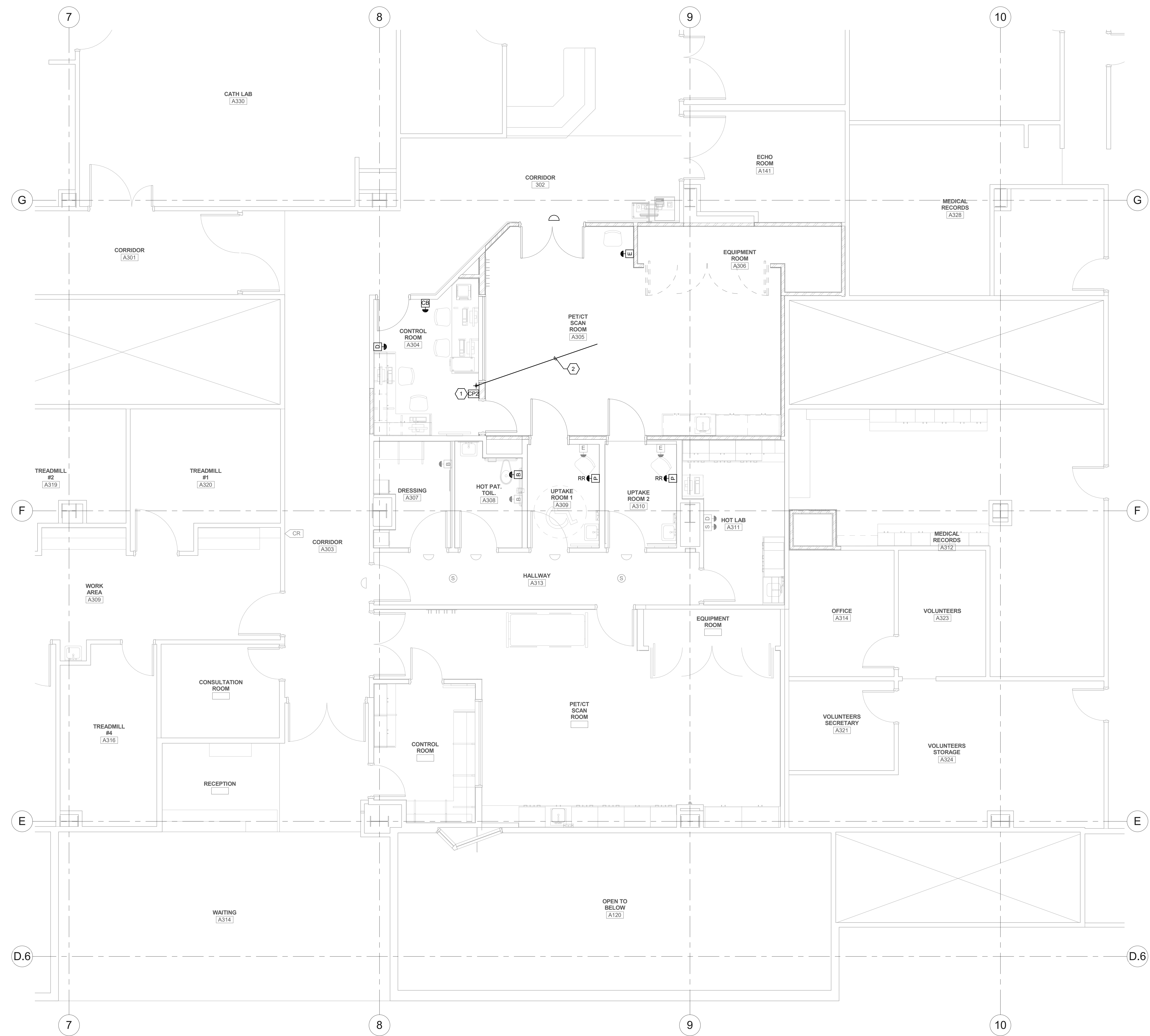


2 VIDEO SURVEILLANCE SYSTEM (VSS) RISER DIAGRAM
NO SCALE - FOR REFERENCE ONLY - SEE ET SHEETS FOR WIRING INFORMATION



1 ACCESS CONTROL SYSTEM (ACS) DIAGRAM
NO SCALE

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GENERAL SHEET NOTES

SHEET KEYNOTES

- 1. INSTALL CONNECTION PANEL #2 IN SINGLE GANG JUNCTION BOX ABOVE DESK TOP. COORDINATE EXACT HEIGHT WITH FURNITURE.
- 2. 1" CONDUIT IN CEILING AND UP CONTROL ROOM WALL FOR EKG LEADS.



NJRA Architects, Inc.
 5272 S. College Drive, Suite 104
 Murray, Utah 84123
 801.384.9259
 www.njraarchitects.com



Intermountain Healthcare
 McKay-Dee Hospital
 PET/CT Remodel

4401 Harrison Blvd
 Ogden, Utah 84403

NJRA Project # 18214.00
 Construction Documents June 28, 2021

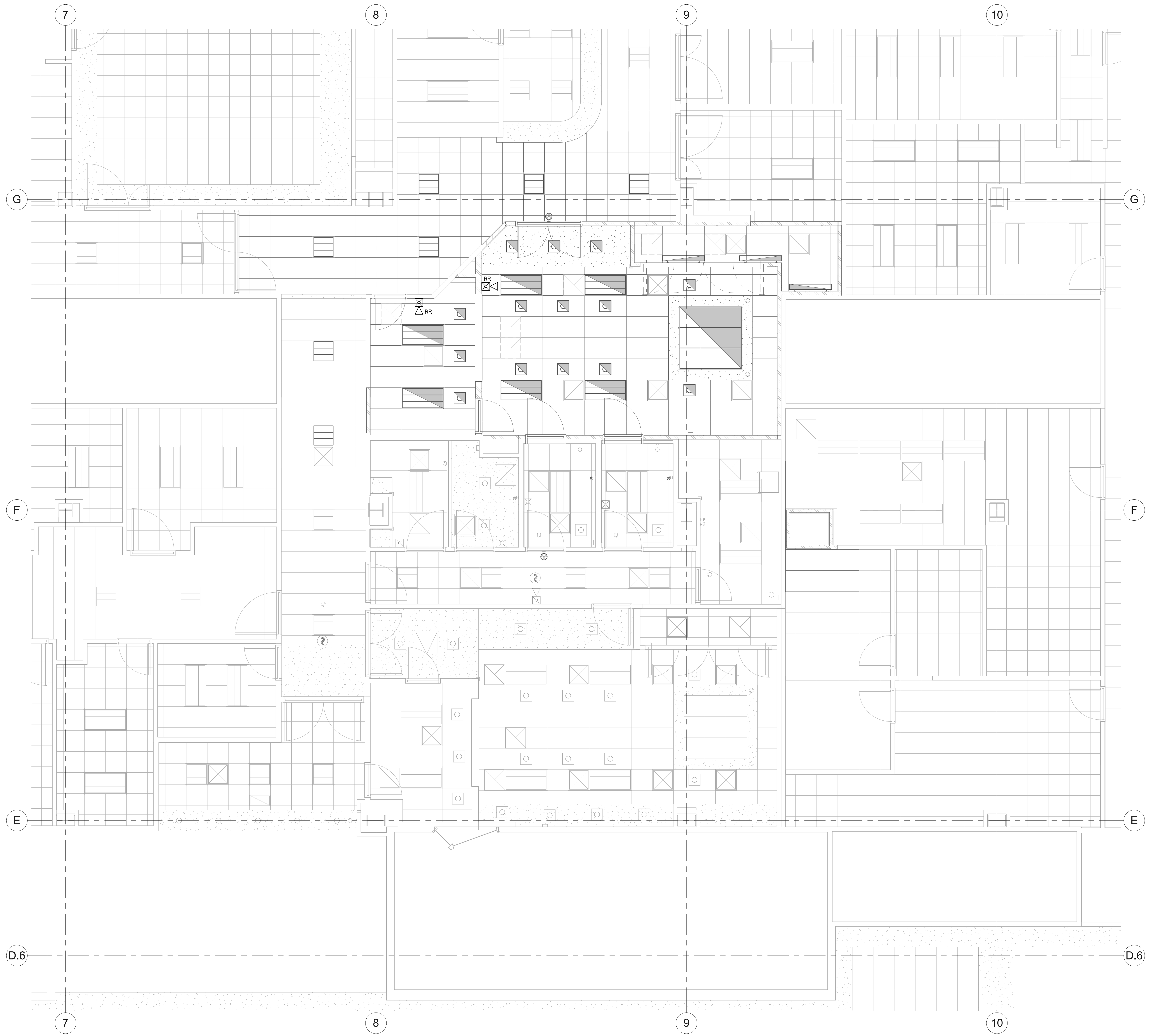
SYSTEMS PLAN
 - LEVEL 3

EC103

1 SYSTEMS PLAN - LEVEL 3
 SCALE: 1/4" = 1'-0"

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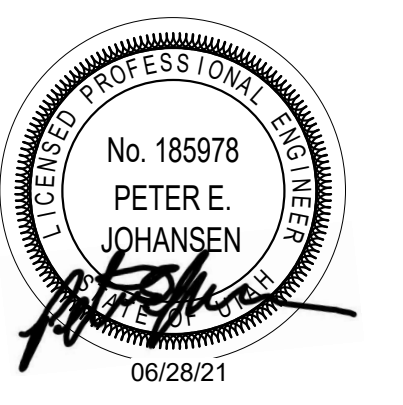
1 FIRE ALARM PLAN - LEVEL 3
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

SHEET KEYNOTES



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5272 S. College Drive, Suite 104
Murray, Utah 84123
801.364.9259
www.njraarchitects.com



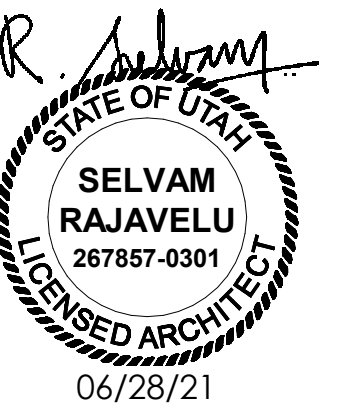
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FIRE ALARM
PLAN - LEVEL
3

FA103



**McKay Dee Hospital Center
Ogden, Utah
USA**

REV	DATE	MODIFICATIONS
A	25/MAY/2021	Final Drawing Based on DC-268421

01 - C1 - Cover Sheet	10 - S1 - Structural Notes
02 - C2 - Disclaimer - Site Readiness	11 - S2 - Structural Layout
03 - A1 - General Notes	12 - S3 - Structural Details (1)
04 - A2 - Equipment Layout	13 - M1 - HVAC
05 - A3 - Radiation Protection	14 - E1 - Electrical Notes
06 - A4 - Radiation Protection Details	15 - E2 - Electrical Layout
07 - A5 - Equipment Dimensions (1)	16 - E3 - Electrical Elevations
08 - A6 - Equipment Dimensions (2)	17 - E4 - Power Requirements
09 - A7 - Delivery	18 - E5 - Details - Interconnections



GE Healthcare

Wendel Larson
801-891-9934
Wendel.larson@ge.com

**DISCOVERY MI PET/CT
FINAL STUDY**

A mandatory component of this drawing set is the GE Healthcare Pre Installation manual. Failure to reference the Pre Installation manual will result in incomplete documentation required for site design and preparation.
Pre Installation documents for GE Healthcare products can be accessed on the web at: www.gehealthcare.com/siteplanning

GE does not take responsibility for any damages resulting from changes on drawings made by others. Errors may occur by not referring to the complete set of final issue drawing. GE cannot accept responsibility for any damage due to the partial use of GE final issue drawings, however caused. All dimensions are in millimeters unless otherwise specified. Do not scale from printed pdf files. GE accepts no responsibility or liability for defective work due to scaling from these drawings.

Drawn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
JAL	APP	-	2006913101.7	5661740-1EN	5
Format	Scale	File Name		Date	Sheet
A3	1/4"=1'-0"	PET-M248567-FIN-00-A.DWG		25/MAY/2021	01/18

Intermountain Healthcare
 McKay-Dee Hospital
 PET/CT Remodel

4401 Harrison Blvd
 Ogden, Utah 84403

NJRA Project # 18214.00
Construction Documents June 28, 2021

Equipment
Drawing

EQ101

DISCLAIMER

GENERAL SPECIFICATIONS

- GE is not responsible for the installation of developers and associated equipment, lighting, cassette trays and protective screens or derivatives not mentioned in the order.
- The final study contains recommendations for the location of GE equipment and associated devices, electrical wiring and room arrangements. When preparing the study, every effort has been made to consider every aspect of the actual equipment expected to be installed.
- The layout of the equipment offered by GE, the dimensions given for the premises, the details provided for the pre-installation work and electrical power supply are given according to the information noted during on-site study and the wishes expressed by the customer.
- The room dimensions used to create the equipment layout may originate from a previous layout and may not be accurate as they may not have been verified on site. GE cannot take any responsibility for errors due to lack of information.
- Dimensions apply to finished surfaces of the room.
- Actual configuration may differ from options presented in some typical views or tables.
- If this set of final drawings has been approved by the customer, any subsequent modification of the site must be subject to further investigation by GE about the feasibility of installing the equipment. Any reservations must be noted.
- The equipment layout indicates the placement and interconnection of the indicated equipment components. There may be local requirements that could impact the placement of these components. It remains the customer's responsibility to ensure that the site and final equipment placement complies with all applicable local requirements.
- All work required to install GE equipment must be carried out in compliance with the building regulations and the safety standards of legal force in the country concerned.
- These drawings are not to be used for actual construction purposes. The company cannot take responsibility for any damage resulting therefrom.

CUSTOMER RESPONSIBILITIES

- It is the responsibility of the customer to prepare the site in accordance with the specifications stated in the final study. A detailed site readiness checklist is provided by GE. It is the responsibility of the customer to ensure all requirements are fulfilled and that the site conforms to all specifications defined in the checklist and final study. The GE Project Manager of Installation (PMI) will work in cooperation with the customer to follow up and ensure that actions in the checklist are complete, and if necessary, will aid in the rescheduling of the delivery and installation date.
- Prior to installation, a structural engineer of record must ensure that the floor and ceiling is designed in such a way that the loads of the installed system can be securely borne and transferred. The layout of additional structural elements, dimensioning and the selection of appropriate installation methods are the sole responsibility of the structural engineer. Execution of load bearing structures supporting equipment on the ceiling, floor or walls are the customer's responsibility.

RADIO-PROTECTION

- Suitable radiological protection must be determined by a qualified radiological physicist in conformation with local regulations. GE does not take responsibility for the specification or provision of radio-protection.

THE UNDERSIGNED, HEREBY CERTIFIES THAT I HAVE READ AND APPROVED THE PLANS IN THIS DOCUMENT.

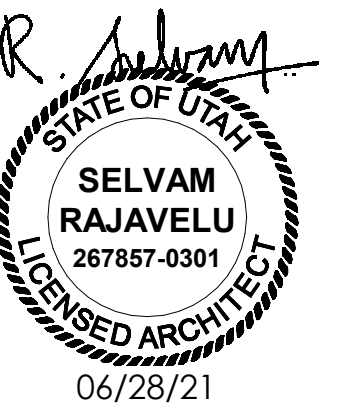
DATE	NAME	SIGNATURE

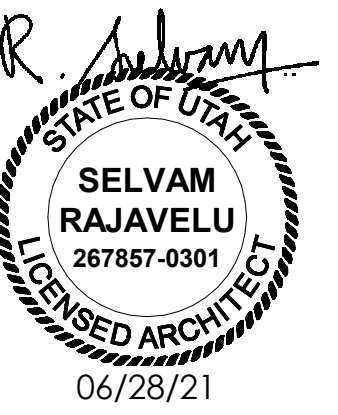
GLOBAL SITE READINESS CHECKLIST (DI)

DOC1809666 Rev. 7

Site Ready Checks at Installation
EHS Site Requirements
Overall access route to the scan room free from obstruction / high hazards.
Enough space to store tools, equipment, parts, install waste and the general area free from obstruction and trip hazards.
Enough necessary facilities for the GE employees available.
No 3rd parties working in the area that may affect the safety of the installation activity.
Area free from any chemical, gas, dust, welding fume exposure and has painting been completed and dry.
All emergency routes identified, signed and clear from obstruction.
Accessible single source lockable panel that LOTO can be applied to for GE equipment installation (MDP and/or PDU).
There are no other conditions or hazards that you have observed or have been made aware of by the customer or contractors on site.
Required for Mechanical Install start
Room dimensions, including ceiling height, for all Exam, Equipment/Technical & Control rooms meets GE specifications.
Ceiling support structure, if indicated on the GE drawing, is in the correct location and at the correct height according to the Original Equipment Manufacturer specifications.
Levelness and spacing has been measured, and is ready for the installation of any GE supplied components.
Overhead support Structure (unistrut) has been confirmed with customer/contractor to meet required GE provided criteria.
Finished ceiling is installed. If applicable ceiling tiles installed per PMI discretion.
Floor levelness/flatness is measured and within tolerance, and there are no visible defects per GEHC specifications.
Entry door threshold meets PIM requirement
Floor Strength and thickness have been discussed with customer/contractor and they have confirmed GE requirements are met.
Rooms that will contain equipment, including staging areas if applicable, are construction debris free. Precautions must be taken to prevent debris from entering rooms containing equipment.
Cable ways (floor/wall/ceiling/Access Flooring) are available for installation of GE cables are of correct length and diameter.
Cable ways routes per GE Final drawings and cable access openings areas installed at a time determined by GEHC PM. Surface floor duct can be installed at time of system installation.
Adequate room illumination installed and working.
Customer supplied countertops where GE equipment will be installed are in place.
Nuclear Medicine systems levelness measurement survey must be provided to GE prior the delivery.
Required for Calibration start
HVAC systems Installed, and the site meets minimum environmental operational system requirements.
System power & grounding (PDB/MDP) is available as per GE specifications.
System power & grounding (PDB/MDP) is installed at point of final connection and ready to use. Lock Out Tag Out is available.
PMI to confirm all feeder wires and breaker are size appropriately. EPO installed if needed.
PMI to confirm with electrician all power and signal cables are well terminated ensuring there are no loose connections.
Network outlets installed.
Computer network available and working.
Site has license for using/importing radioactive sources and a Hot Lab is available. Radioactive Sources should be available for system calibration during installation.
Lead doors and windows complete or scheduled to be installed. If applicable, radiation protection (shielding) finished & radioprotection regulatory approval for installation obtained.

Note: The details shown here are only an extract from DOC1809666. For the complete document please contact your PMI.





ENVIRONMENT

ALTITUDE

- Operating altitude: from -150 m [-492 ft] (below) to 2400 m [7875 ft] (above) sea level.

MAGNETIC FIELD SPECIFICATIONS

- Limit the magnetic interference to guarantee specified imaging performance.

GANTRY

- Ambient static magnetic fields less than 1 Gauss.
- Ambient AC magnetic fields less than 0.01 Gauss.

OPERATOR CONSOLE

- Ambient static magnetic fields less than 10 Gauss.

MAXIMUM GANTRY AUDIBLE NOISE LEVEL

- The maximum ambient noise level is produced by the gantry during a CT scan acquisition.
- It is less than 70 dBA when measured at a distance of one meter from the nearest gantry surface, in any direction.

BACKGROUND RADIATION

- It is important that background radiation be kept to a minimum. The coincidence detection used in a PET system allows a moderate amount of external singles events. The PET/CT system has been found to have less than 1% deadtime if the external field is below 1 mR/hr from a single source.
- Because area background can be more general than a single source, a lower limit is appropriate. If the area dose rate is maintained to less than 0.2 mR/hr (due to 511 or lower energy gamma rays) at the covers, detector deadtime should not exceed 1%.
- Radioactive sources must be stored in approved shielded containers. It is recommended that any radioactive source not specifically designed to be housed in the gantry's lead storage container be stored in a separate room (hot lab) adjacent to, and accessible from, the Scan Room. Doses should be prepared in the same area.

VIBRATION SPECIFICATIONS

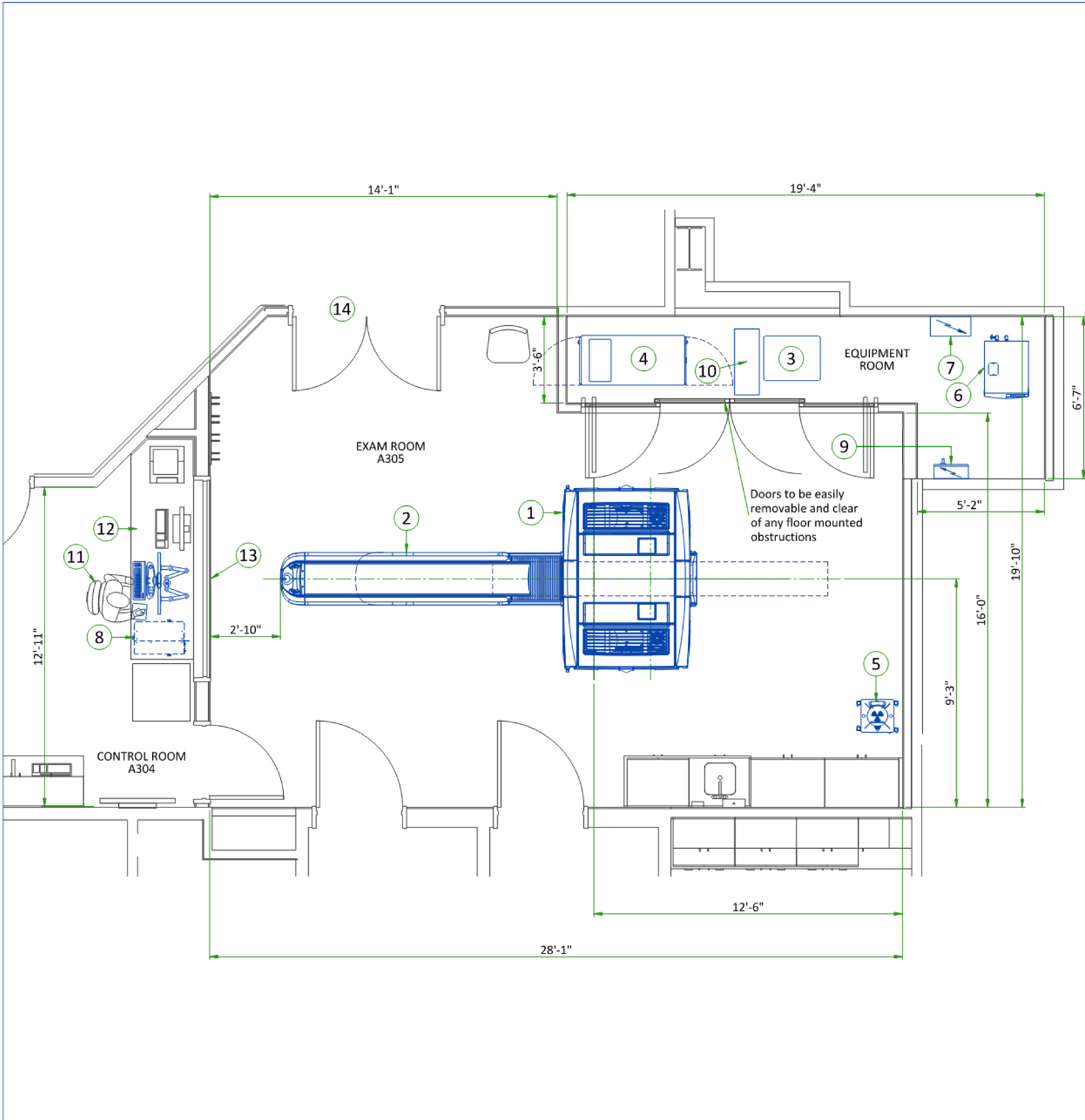
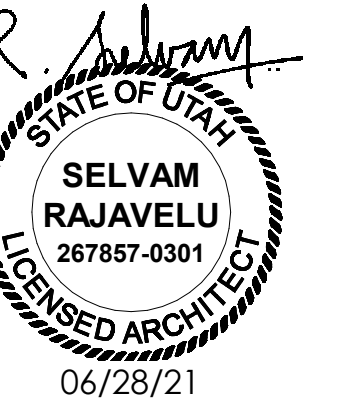
- Shock Restrictions: The system cannot tolerate shock or vibration. System components cannot be tipped, dropped, or hoisted.
- The scanning facility shall be isolated from vibration such as; hospital power plants, pumps, motors, air handling equipment, air conditioning units, nearby rooms with exercise equipment or where exercise occurs, hallway foot traffic, elevators, parking lots, roads, subways, trains, and heliports; otherwise, vibration will affect the image quality of the scanner.
- CT systems are sensitive to vibration and may display limited performance if exceeding the vibration limits listed below. The band of frequencies in which systems exhibit the most sensitivity appears at or near the resonant frequencies of the gantry and the patient table, the latter of which varies depending on patient mass and location. These frequencies fall within the following ranges:
 - Patient Table: 2 – 10 Hz
 - Gantry: 8 – 14 Hz
- It is the customer's responsibility to contract a vibration consultant or qualified engineer to verify that these specifications are met and implement an appropriate solution.
- The maximum steady state vibration transmitted through the floor should not exceed 2.5 mm/s² RMS maximum single frequency above ambient baseline from 0.5 to 80 Hz (measured in any 1 hour during a normal operating period).

IMPORTANT CUSTOMER READINESS ALERT

- This equipment involves the use of radioactive isotopes, including those sources necessary for equipment calibration. Appropriate regulatory compliance and licensing must be arranged by the customer early in the planning process and then demonstrated/available for equipment installation.
- Note: delivery path down corridors for gantry's and table must be evaluated prior to construction, as 90 degree turns require specific corridor width.

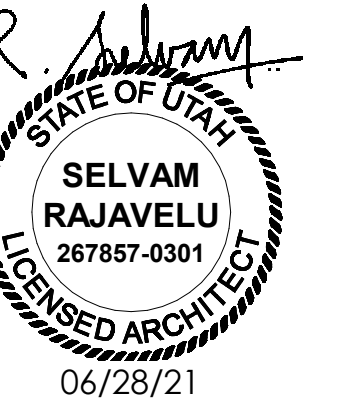
CUSTOMER SITE READINESS REQUIREMENTS

- Any deviation from these drawings must be communicated in writing to and reviewed by your local GE Healthcare Installation project manager prior to making changes.
- Make arrangements for any rigging, special handling, or facility modifications that must be made to deliver the equipment to the installation site. If desired, your local GE Healthcare Installation project manager can supply a reference list of rigging contractors.
- New construction requires the following;
 - Secure area for equipment,
 - Power for drills and other test equipment,
 - Capability for image analysis,
 - Restrooms.
- Provide for refuse removal and disposal (e.g. crates, cartons, packing)
- It is the customer's responsibility to contract a vibration consultant/engineer to implement site design modifications to meet the GE vibration specification. Refer to the system preinstallation manual for the vibration specification.



LEGEND					
A	GE Supplied	D	Available from GE		
B	GE Supplied/contractor installed	E	Equipment existing in room		
C	Customer/contractor supplied and installed	*	Item to be reinstalled from another site		
BY	ITEM	DESCRIPTION	MAX HEAT OUTPUT (btu)	WEIGHT (lbs)	
A	1	Discovery MI Gantry	28320	6383	
A	2	Patient Table	1023	1808	
A	3	Power Distribution Unit	3400	813	
A	4	PARC4	6824	540	
A	5	Annulus Phantom Safe	-	330	
A	6	Chiller	13649	320	
A	7	Power Distribution Box	-	66	
A	8	Operators Console	3625	144	
B	9	Main Disconnect Panel	-	46	
A	10	Uninterruptible Power Supply (14 kVA)	5122	619	
D	11	Operators Chair	-	-	
C	12	Counter top for equipment			
C	13	Lead glass window			
C	14	Minimum door opening for equipment delivery is 55 in. w x 80 in. h [1397mm x 2032mm], contingent on a 96 in. [2438mm] corridor width			
Exam Room Height					
Finished Ceiling Height				9'-0"	
For Accessory Sales: (866) 281-7545 Options 1, 2, 1, 2 or mail to: gehcaccessoriesales@ge.com					

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RADIATION PROTECTION LAYOUT

SHIELDING REQUIREMENTS SCALING

CHANGED PARAMETER	MULTIPLICATION FACTOR
mAs	new mAs/100
80 kV	0.24
100 kV	0.45
120 kV	0.71
140 kV	1.00
1 mm aperture	0.20
3 mm aperture	0.22
5 mm aperture	0.27
10 mm aperture	0.38
15 mm aperture	0.48
20 mm aperture	0.59
30 mm aperture	0.79
40 mm aperture	1.00

SHIELDING REQUIREMENTS:

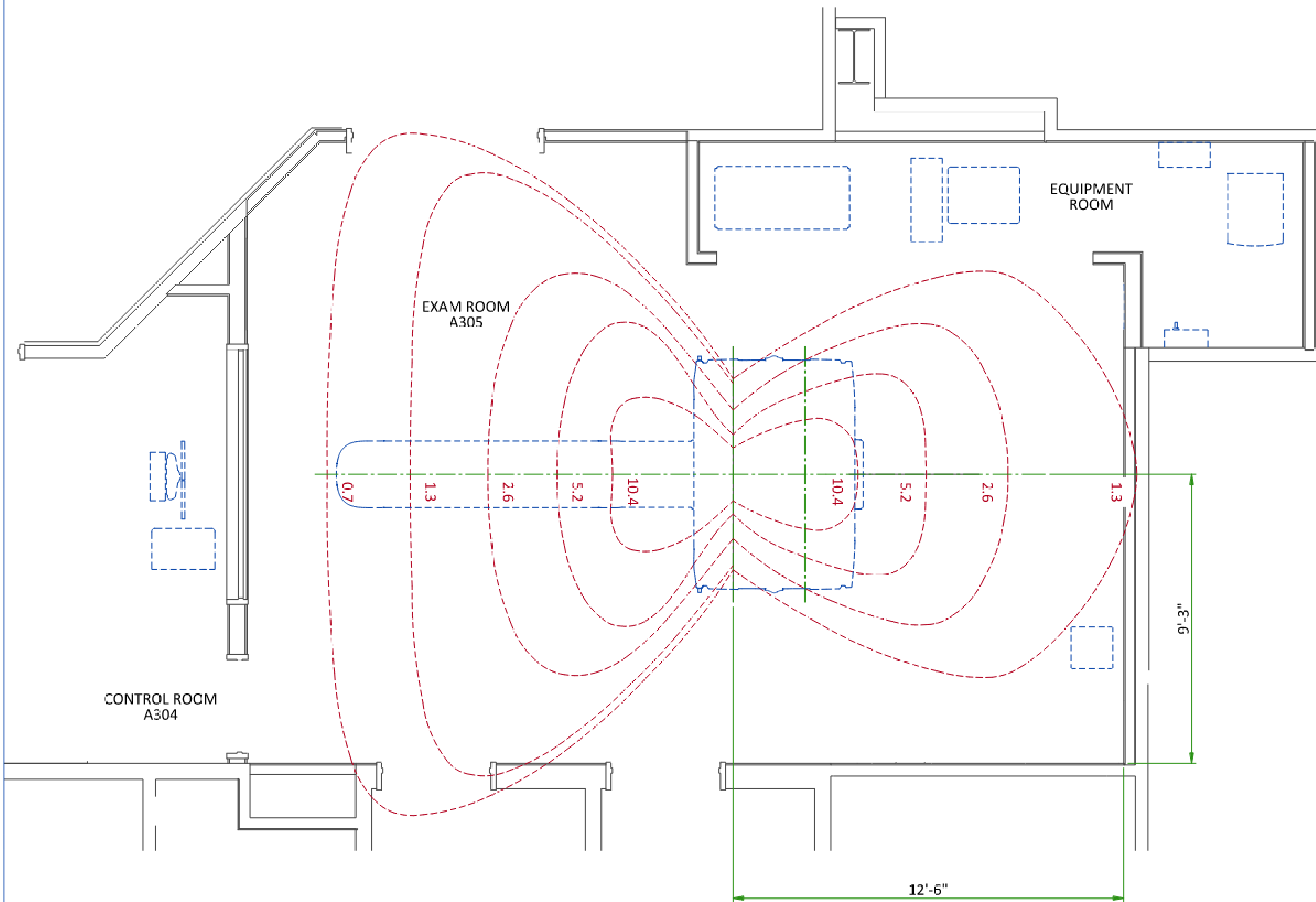
Engage a qualified radiological health physicist to review your scan room shielding requirements, taking into consideration:

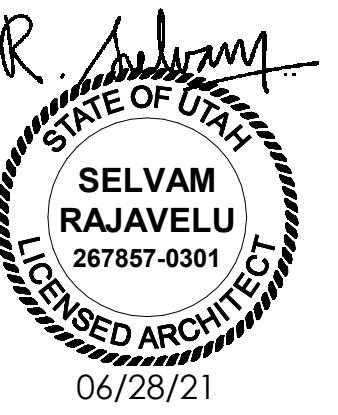
- Scatter radiation levels within the scanning room.
- Equipment placement.
- Weekly projected work-loads (number of patients/day technique (kvp*ma)).
- Materials used for construction of walls, floors, ceiling, doors, and windows.
- Activities in surrounding scan room areas.
- Equipment in surrounding scan room areas (e.g., film developer, film storage).
- For small and medium filter survey, the 20 cm water phantom should be placed on the phantom headholder inserted into the end of the patient table.

The four scatter surveys depict measured radiation levels within the scanning room at the indicated distanced, while scanning a 16 cm CTDI phantom for the Head Scan mode and 32 cm CTDI phantom for the Body Scan Mode. Use the mAs, kV and aperture scaling factors in the table shown here to adjust exposure levels to the scan technique used at the site.

For example: The exposure level for a 120 kV, 800 mAs, 1 sec scan at 50" (127 cm) away from the scan plane is: $10.4 \mu\text{Gy} \times 0.71 \times 800/100 = 59.1 \mu\text{Gy}$

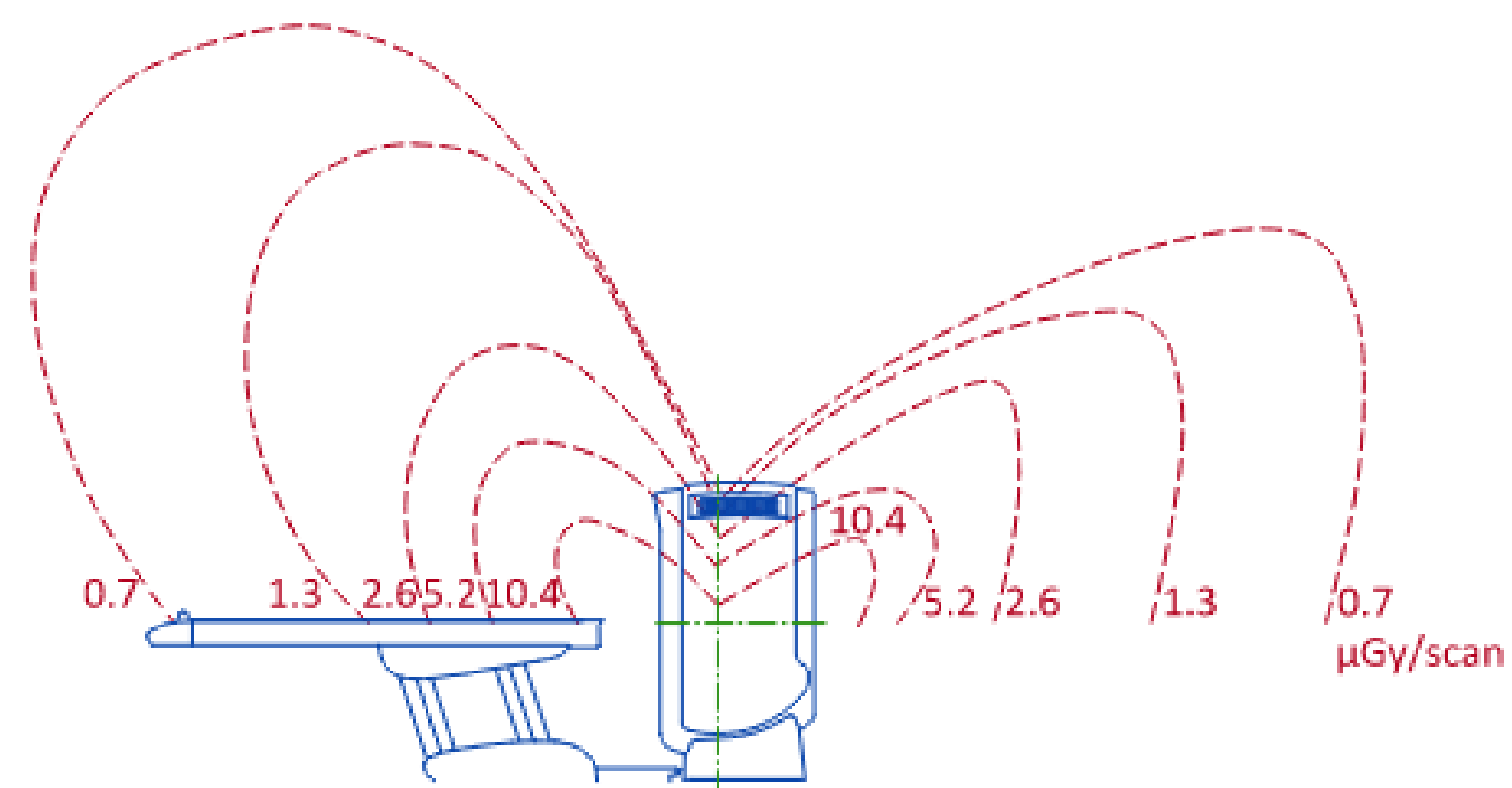
NOTE: Actual measurements can vary. Expected deviations equals $\pm 15\%$, expect for the 5 mA and 1.25mm techniques, where variations may be greater (up to a factor of 2), due to the inherent deviation in small values. The maximum deviation anticipated for tube output equals $\pm 40\%$.



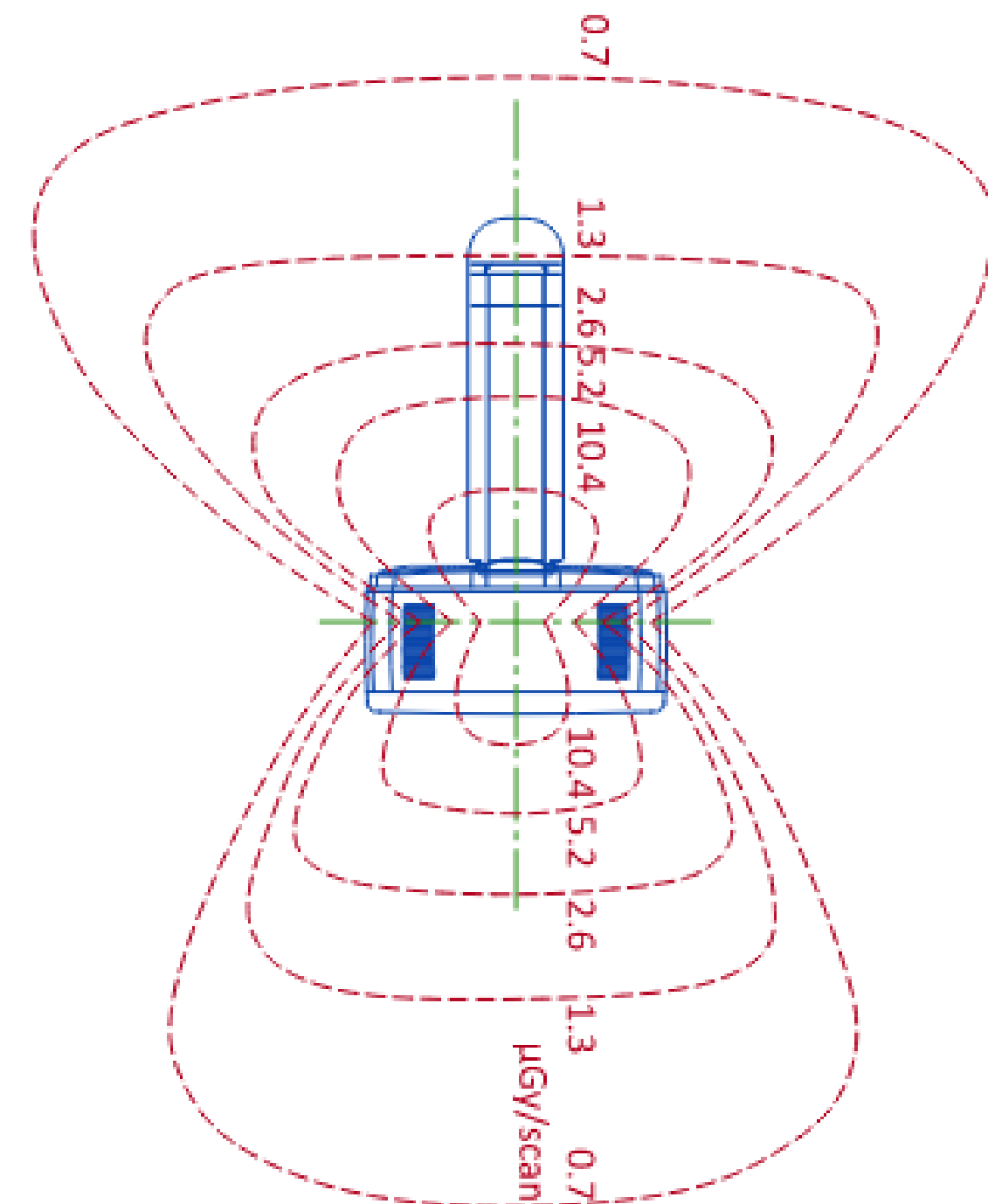


RADIATION SCATTER - HEAD PHANTOM

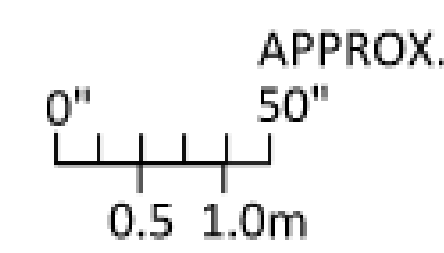
NOTE: 140 kV
100 mAs/scan
1 sec
40mm aperture



Elevation



Plan View



RADIOACTIVE ISOTOPES

RADIOACTIVE ISOTOPES AND RADIOPROTECTION

Since the system produces X-ray radiation and involves the use of radioactive isotopes, compliance with Nuclear Regulatory Commission regulations (or country similar regulatory requirements), must be adhered to and all permissions obtained well in advance.

It is Customer's responsibility consult a qualified radiological health physicist for radiation protection requirements for the walls, floor, ceiling, doors, window glass, etc.(lead content and thickness) and warning lights and signs, in accordance with local requirements.

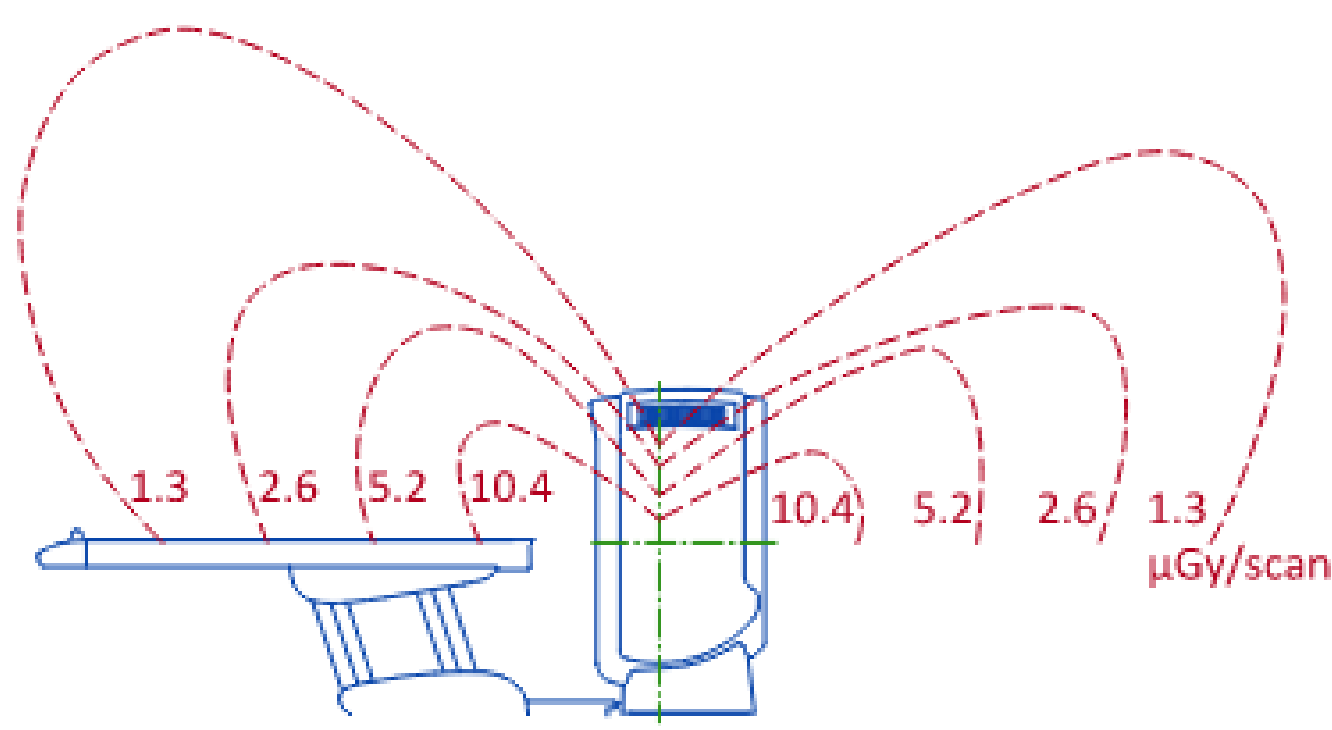
It is essential that regulatory compliance and preparations are completed early so that required source materials can be obtained prior to installation, including calibration sources and isotopes. These sources and isotopes may have fairly long delivery lead times and a short half-life, so that it may not be advisable to store them over long periods of time.

RADIOACTIVE SOURCE - ISOTOPE

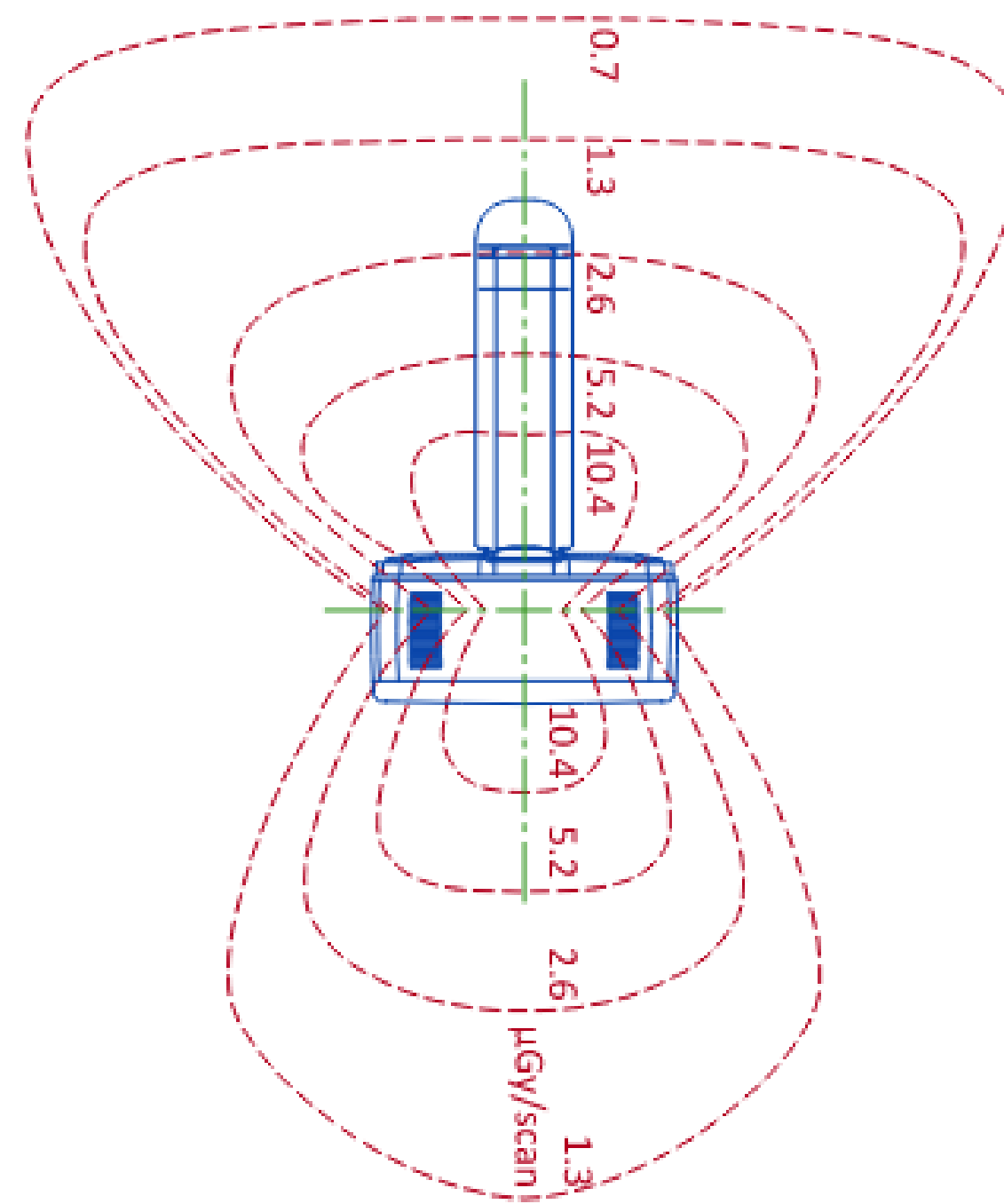
The PET/CT system uses one radioactive source during calibration and the Daily QA Check.	
Isotope	Ge-68
Activity level	55 MBq ± 20%
Typical Positron Emitting Isotopes include	Fluorine 18
	Carbon 11
	Nitrogen 13
	Oxygen 15
It is customer's responsibility provide isotopes for system calibration and prepare the required doses.	

RADIATION SCATTER - BODY PHANTOM

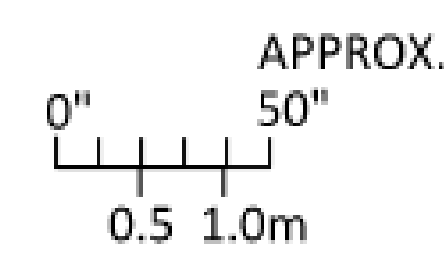
NOTE: 140 kV
100 mAs/scan
1 sec
40mm aperture



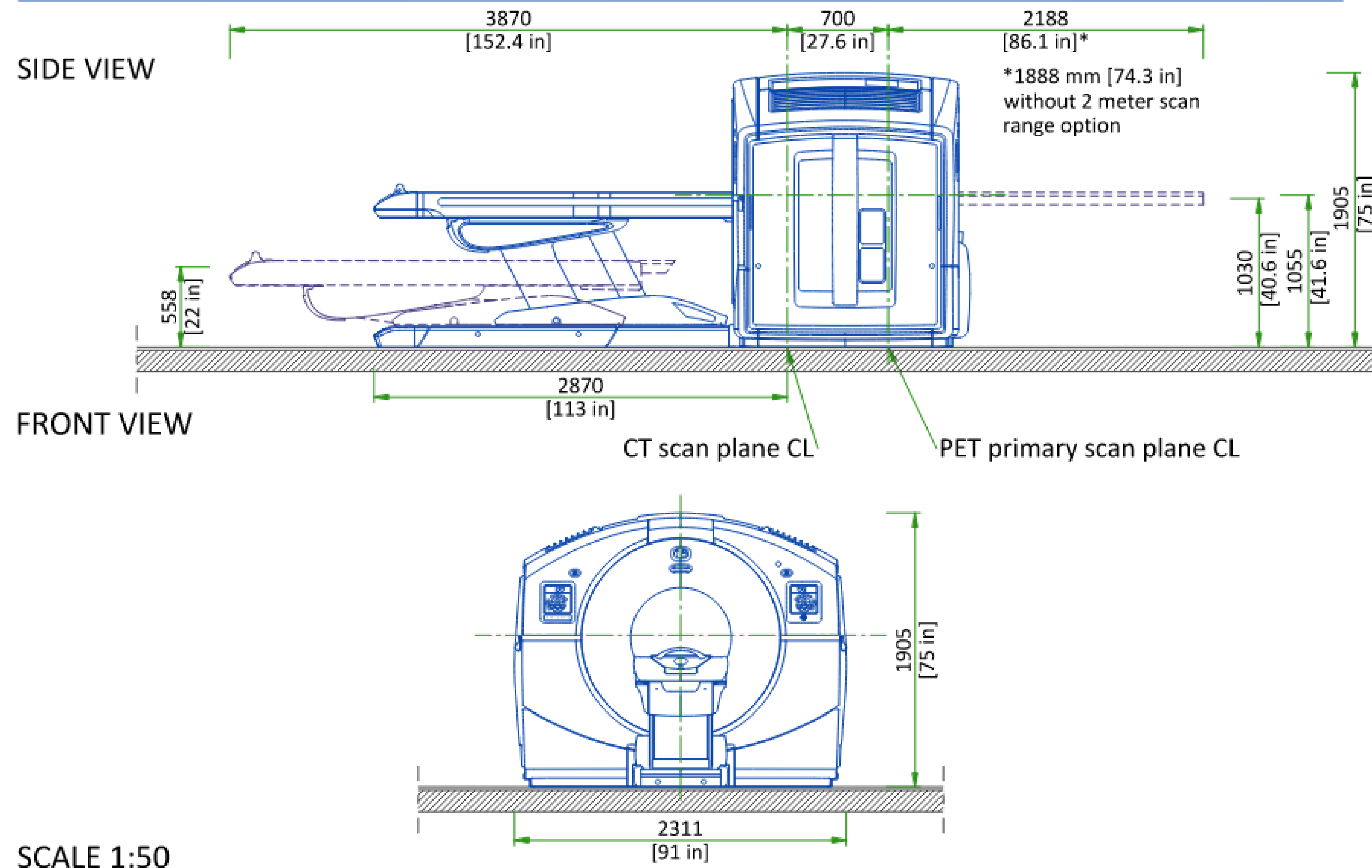
Elevation



Plan View

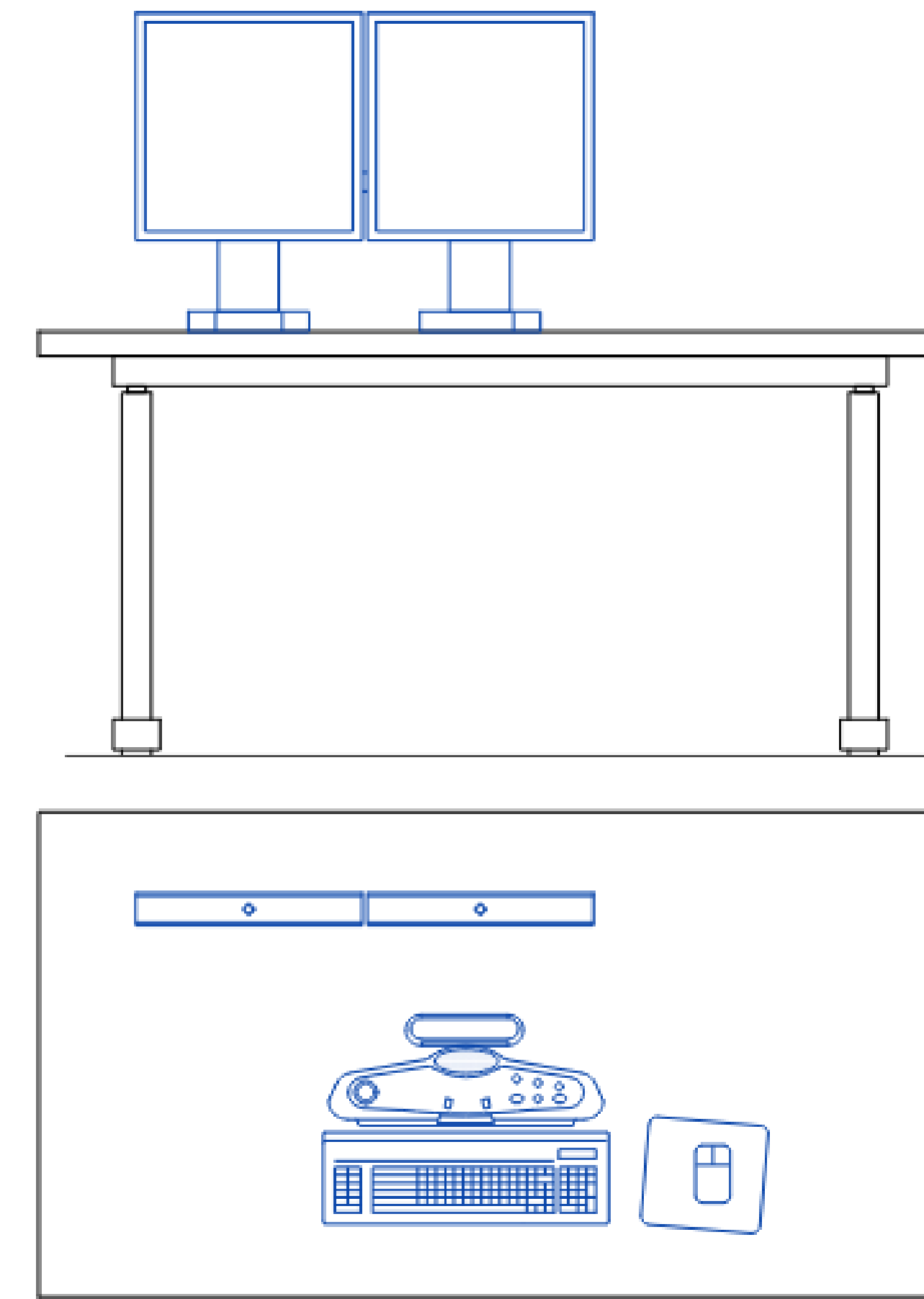


GANTRY WITH PATIENT TABLE

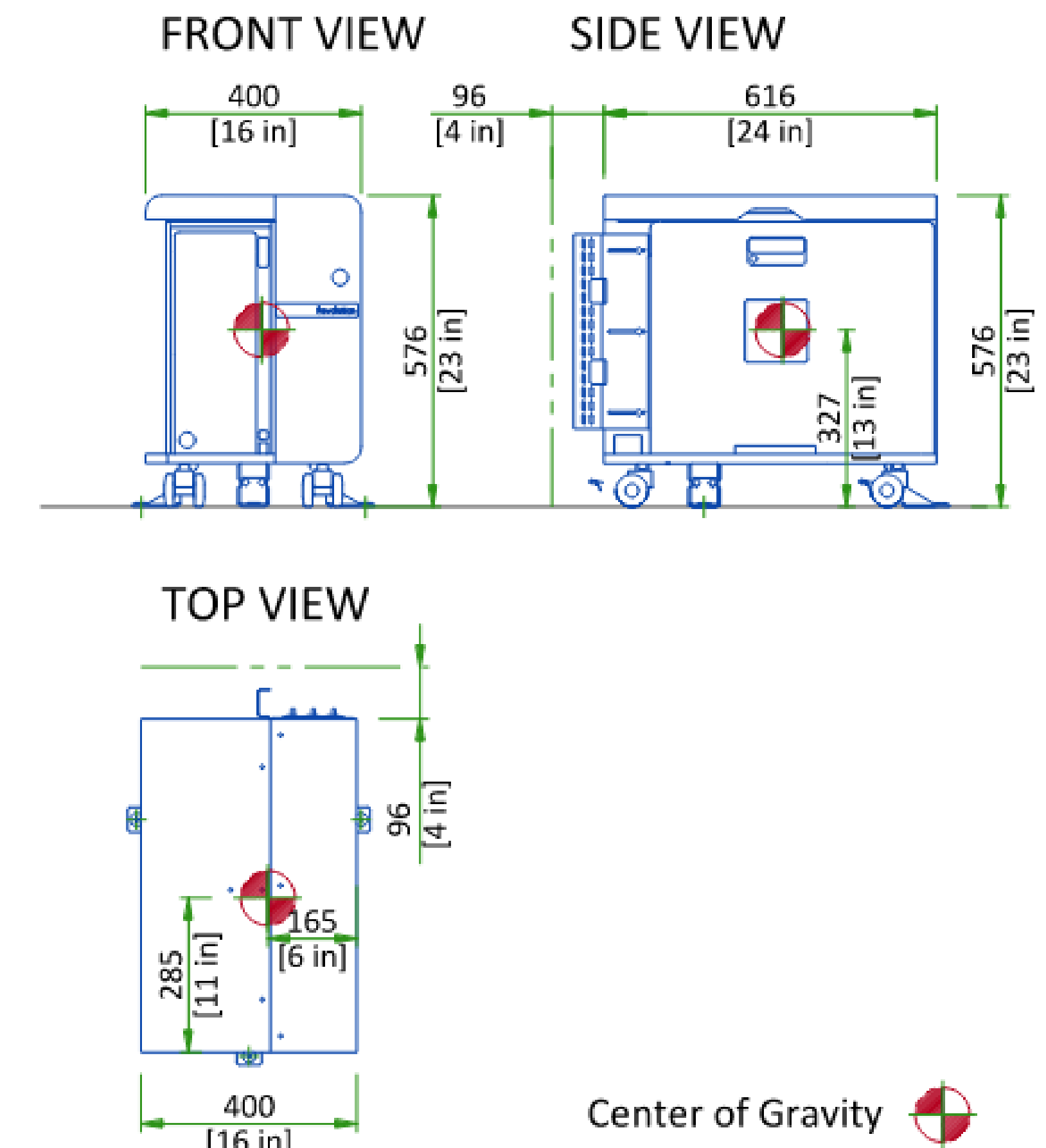


CT CONSOLE

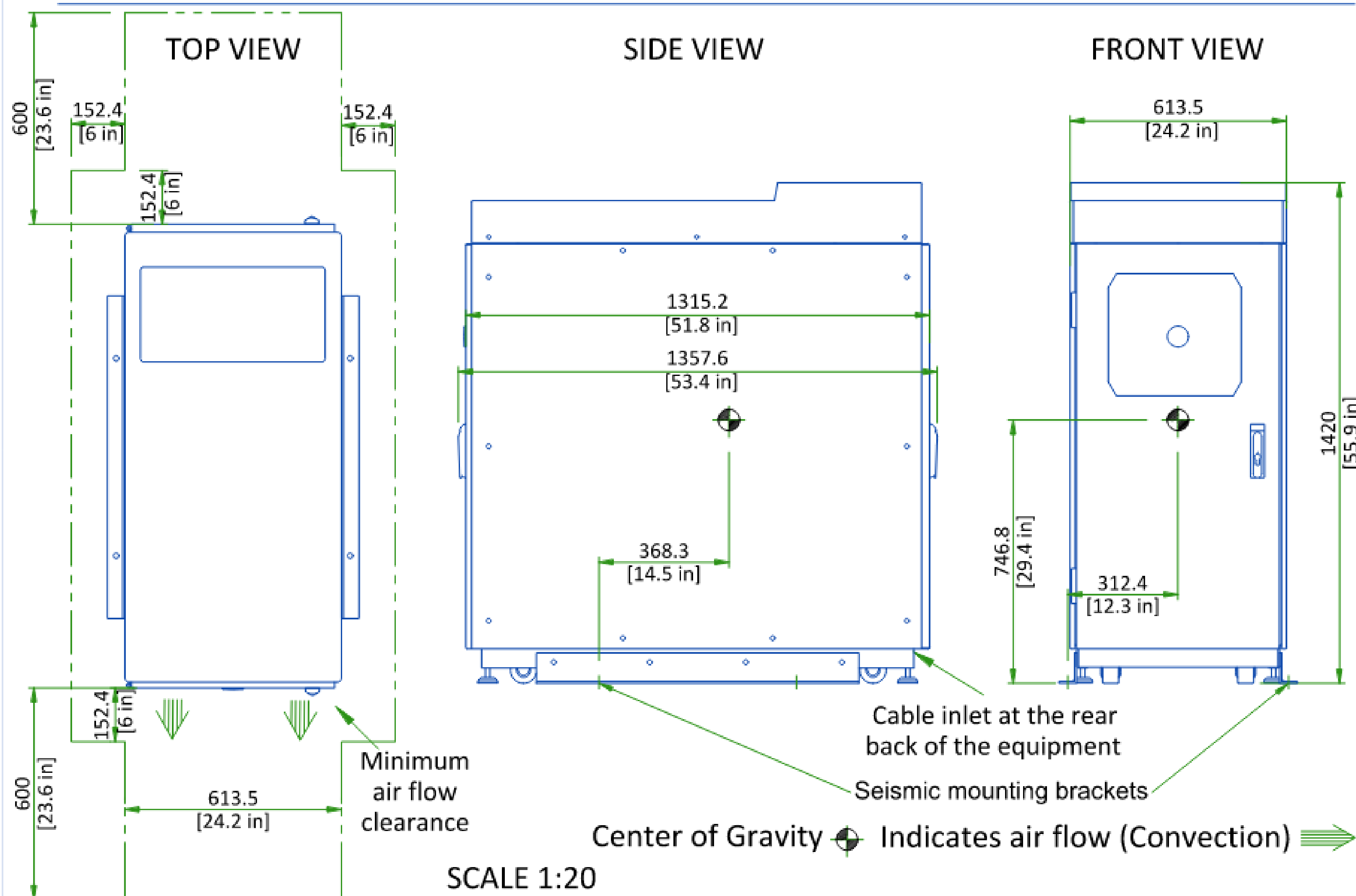
CUSTOMER SUPPLIED TABLE



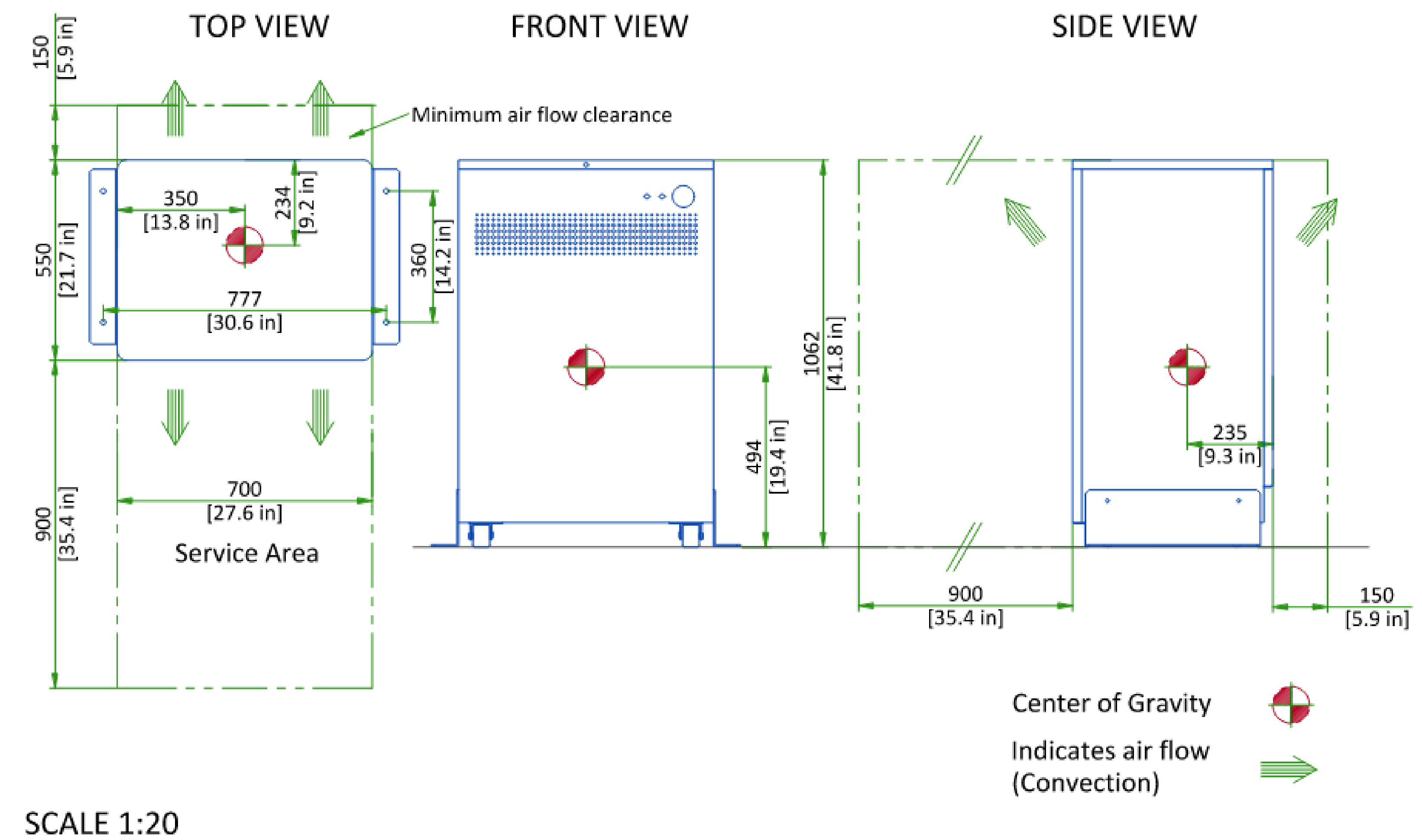
CONSOLE DIMENSIONS

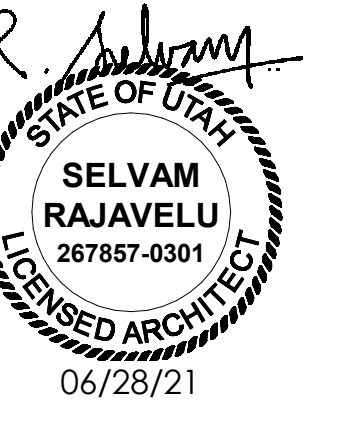


PARC4 RECONSTRUCTION CABINET



POWER DISTRIBUTION UNIT (PDU)



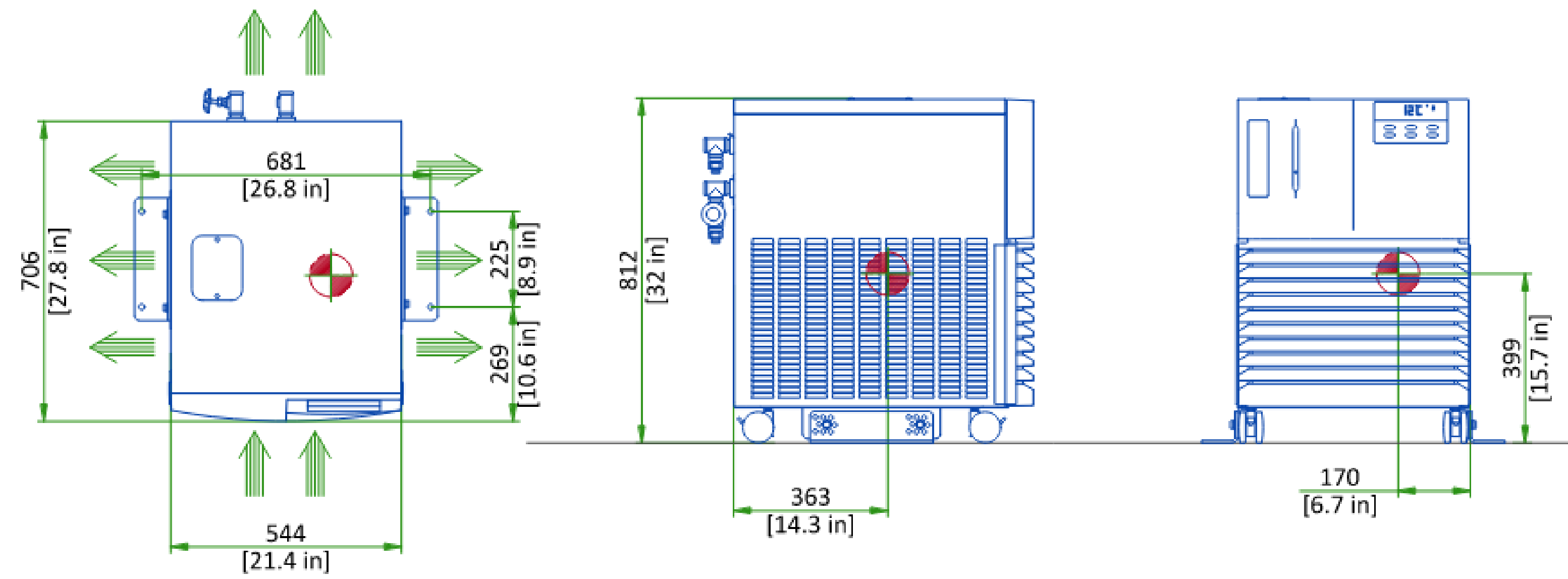


CHILLER

TOP VIEW

SIDE VIEW

FRONT VIEW



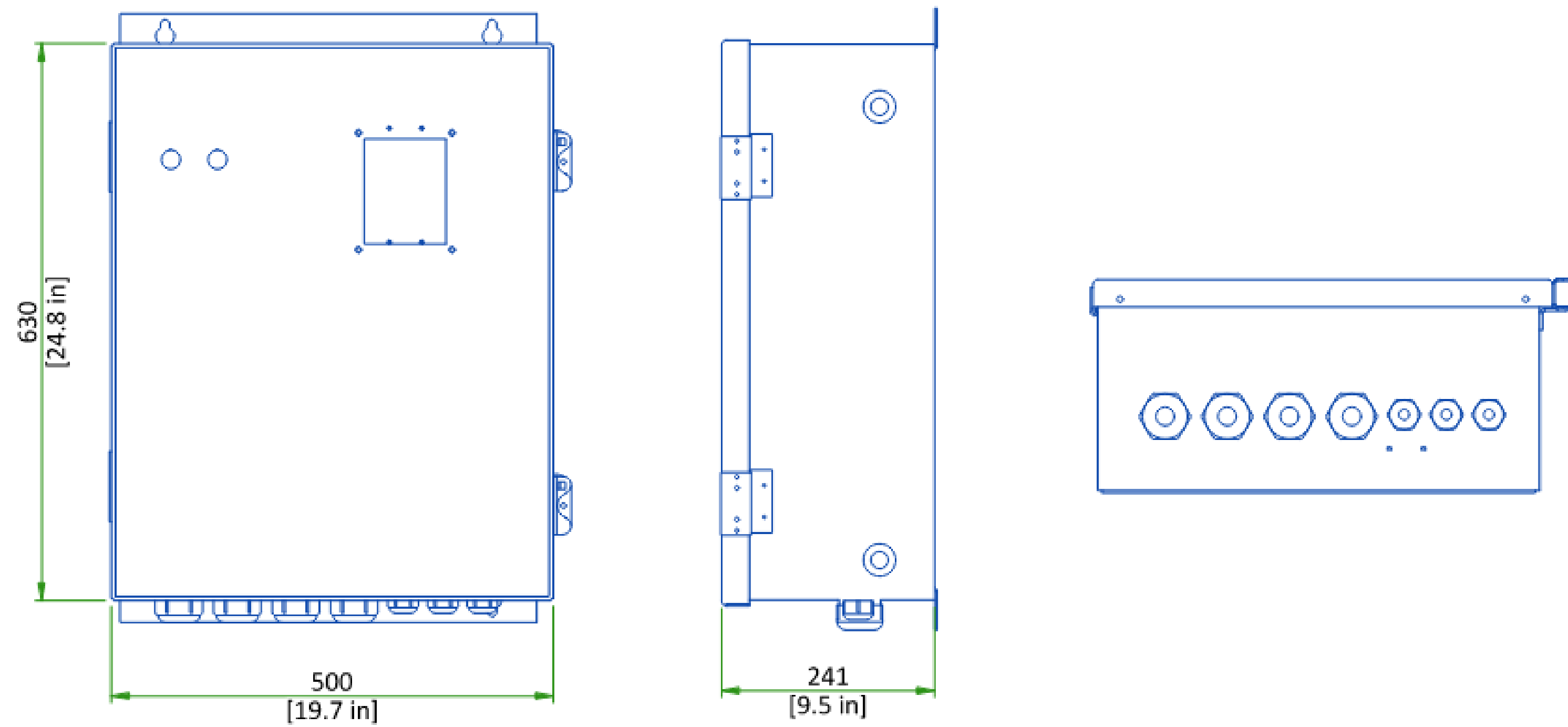
SCALE 1:20

CHILLER PDB

FRONT VIEW

SIDE VIEW

BOTTOM VIEW



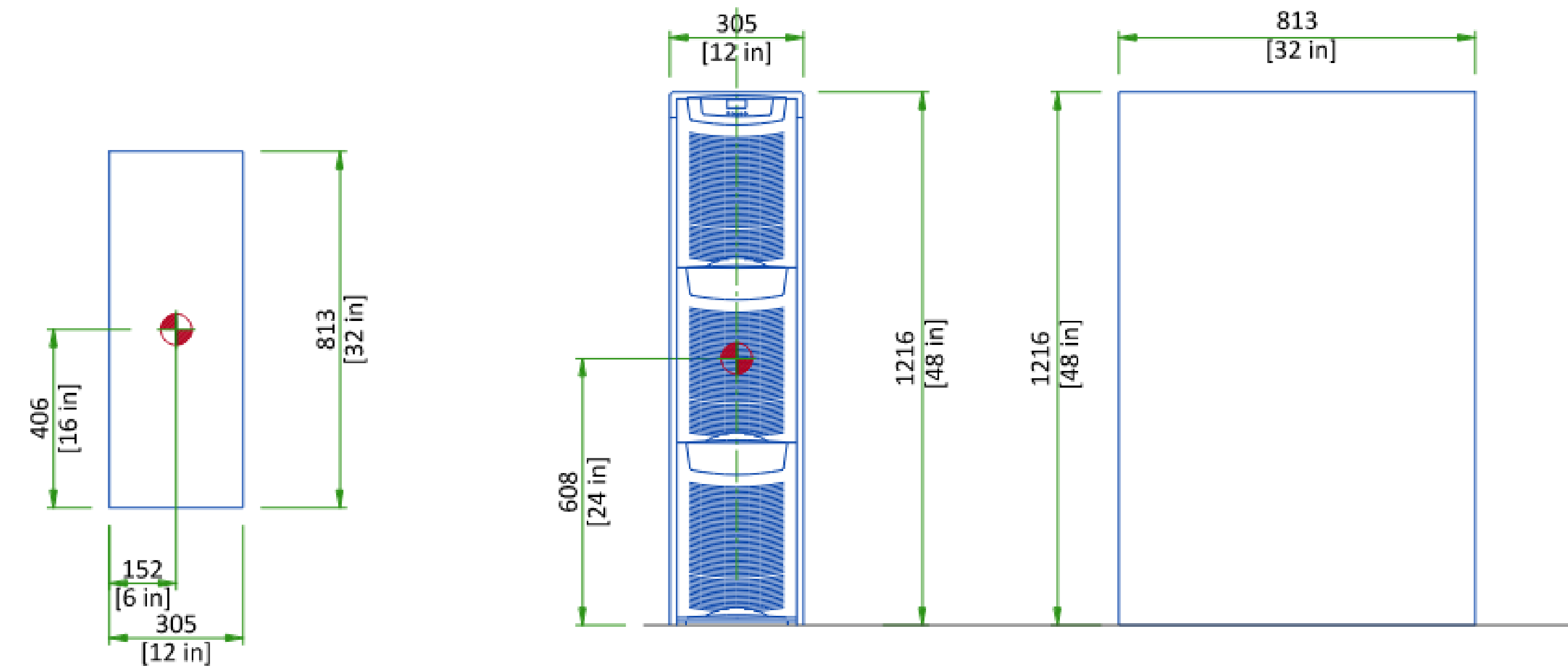
SCALE 1:10

UNINTERRUPTIBLE POWER SUPPLY

TOP VIEW

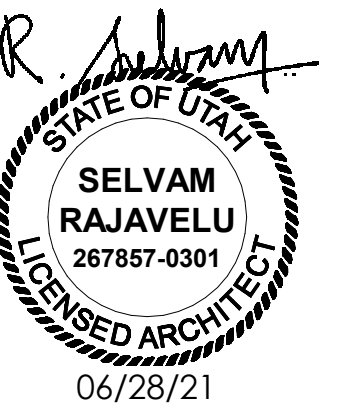
FRONT VIEW

SIDE VIEW



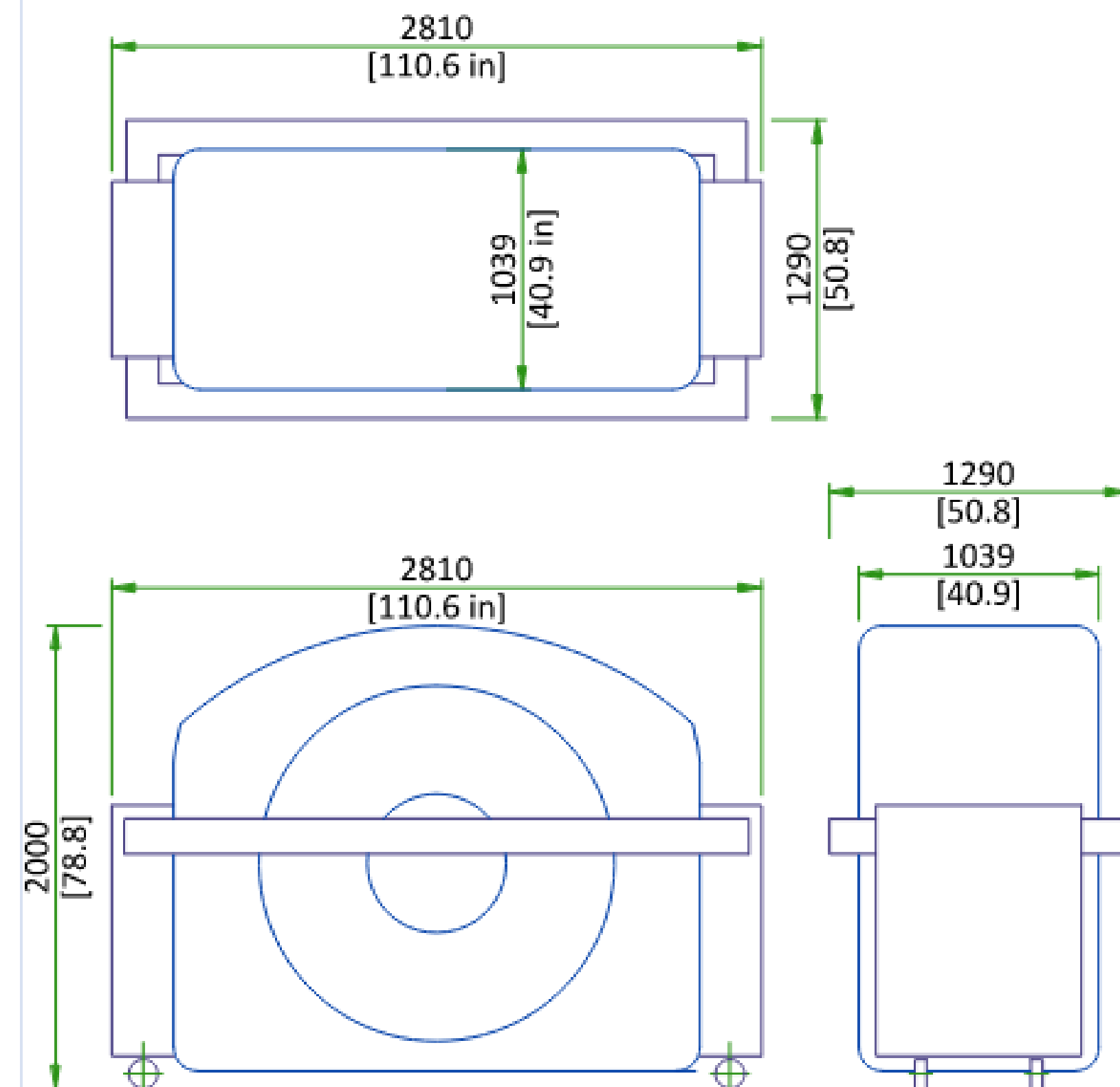
SCALE 1:20

Center of Gravity



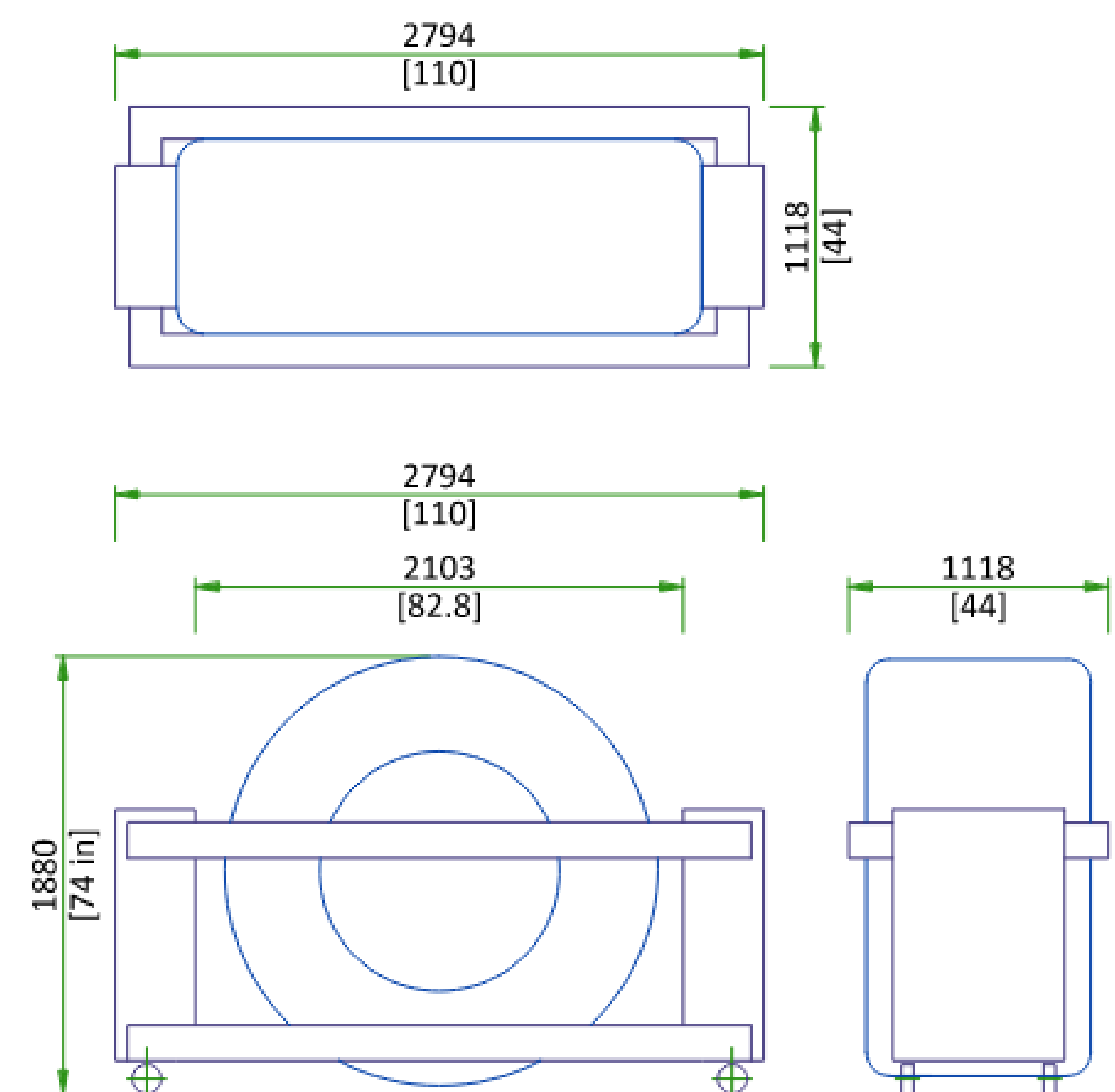
SHIPPING DOLLY DIMENSIONS FOR GANTRY

CT GANTRY



Weight with dollies and side rails = 2050 kg [4520 lbs]

PET IMAGE RING FOR WELDMENT GANTRY



Weight with dollies and side rails = 1204 kg [2654.3 lbs]

DELIVERY

- **THE CUSTOMER/CONTRACTOR SHOULD:**
- Provide an area adjacent to the installation site for delivery and unloading of the GE equipment.
- Ensure that the dimensions of all doors, corridors, ceiling heights are sufficient to accommodate the movement of GE equipment from the delivery area into the definitive installation room.
- Ensure that access routes for equipment will accommodate the weights of the equipment and any transportation, lifting and rigging equipment.
- Ensure that all necessary arrangements for stopping and unloading on public or private property not belonging to the customer have been made.

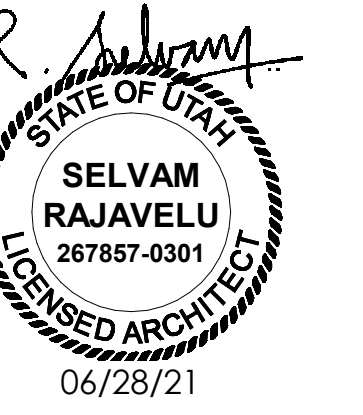
DIMENSIONS OF DELIVERY WITH DOLLY TRANSPORT EQUIPMENT

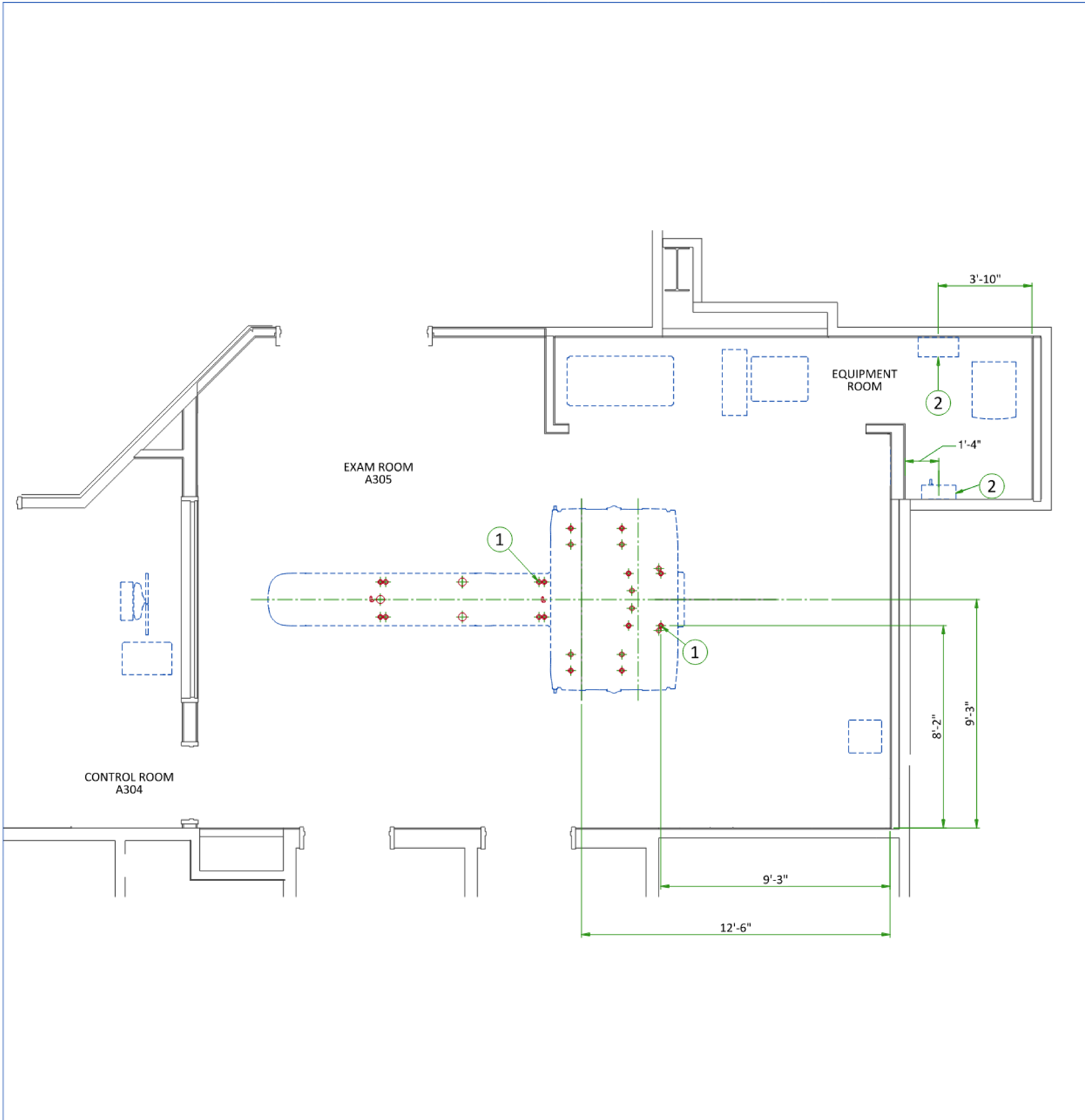
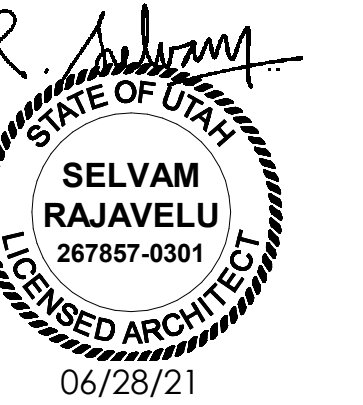
		mm	in	kg	lbs
CT GANTRY	LENGTH	2810	111	2050	4520
	WIDTH	1290	51		
	HEIGHT	2000	79		
PET WELDMENT GANTRY	LENGTH	2794	110	1204	2654.3
	WIDTH	1118	44		
	HEIGHT	1880	74		
PATIENT TABLE	LENGTH	3836	151	1241	2736
	WIDTH	864	34		
	HEIGHT	1410	55.5		

Above dimensions shown with side rails on. The minimum unobstructed hallway width is 1803 mm, the minimum clear doorway openings is 1067 mm to accommodate delivery of the system.

STRUCTURAL NOTES

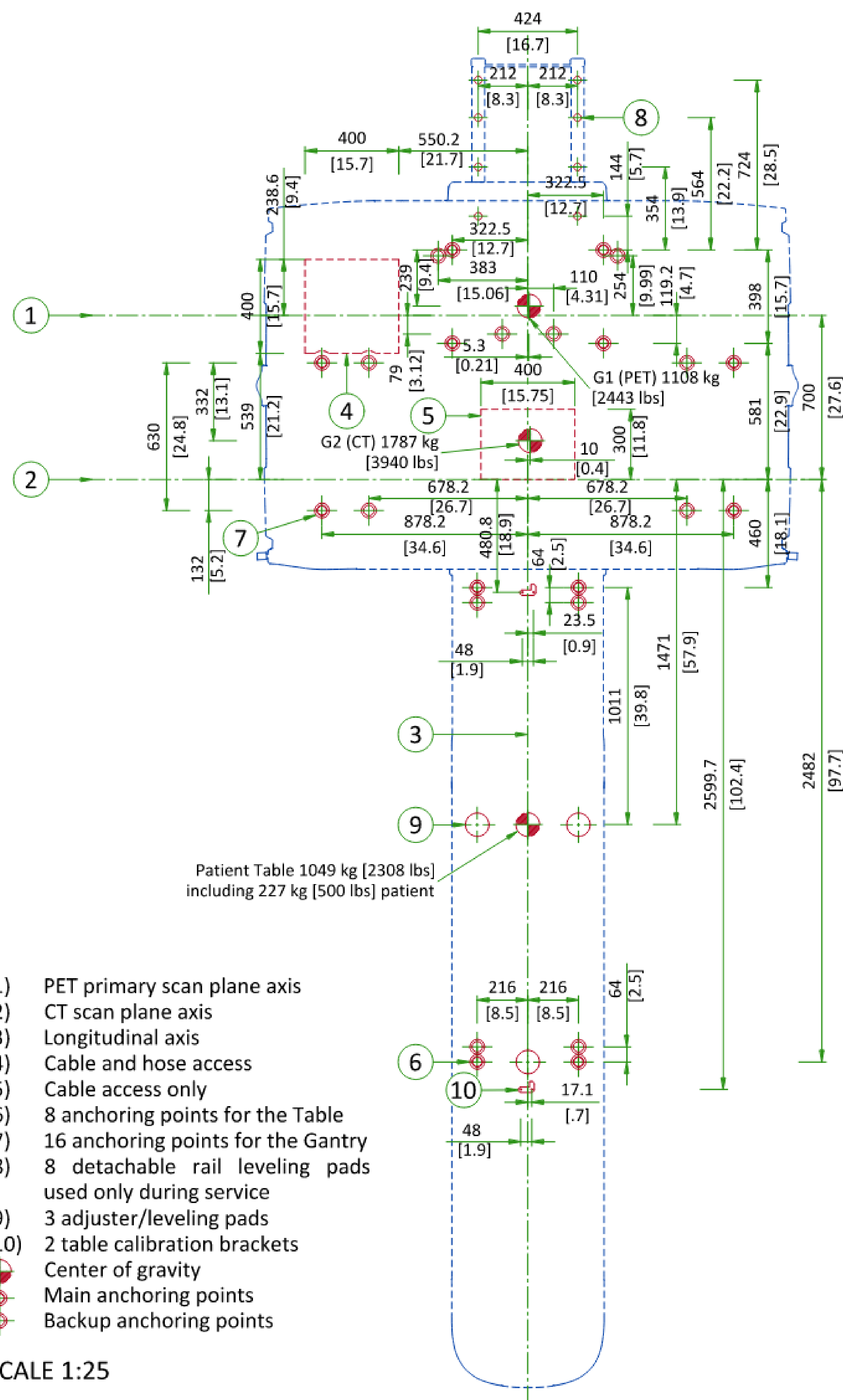
- Methods of support for the steelwork that will permit attachment to structural steel or through bolts in concrete construction should be favored. Do not use concrete or masonry anchors in direct tension.
- All units that are wall mounted or wall supported are to be provided with supports where necessary. Wall supports are to be supplied and installed by the customer or his contractors. See plan and detail sheets for suggested locations and mounting hole locations.
- All ceiling mounted fixtures, air vents, sprinklers, etc. To be flush mounted, or shall not extend more than 6,35mm (1/4") below the finished ceiling.
- Floor slabs on which equipment is to be installed must be level to 6.00mm (1/4") in 3050mm (10'-0")
- Dimensions are to finished surfaces of room.
- Customers contractor must provide all penetrations in post tension floors.
- Customers contractor must provide and install any non-standard anchoring. Documents for standard anchoring methods are included with GE equipment drawings for geographic areas that require such documentation.
- Customers contractor must provide and install hardware for "through the floor" anchoring and/or any bracing under access floors. This contractor must also provide floor drilling that cannot be completed because of an obstruction encountered while drilling by the GE installer such as rebar etc.
- It is the customer's responsibility to perform any floor or wall penetrations that may be required. The customer is also responsible for ensuring that no subsurface utilities (e.g., electrical or any other form of wiring, conduits, piping, duct work or structural supports (i.e. post tension cables or rebar)) will interfere or come in contact with subsurface penetration operations (e.g. drilling and installation of anchors/screws) performed during the installation process. To ensure worker safety, GE installers will perform surface penetration operations only after the customer's validation and completion of the "GE surface penetration permit"





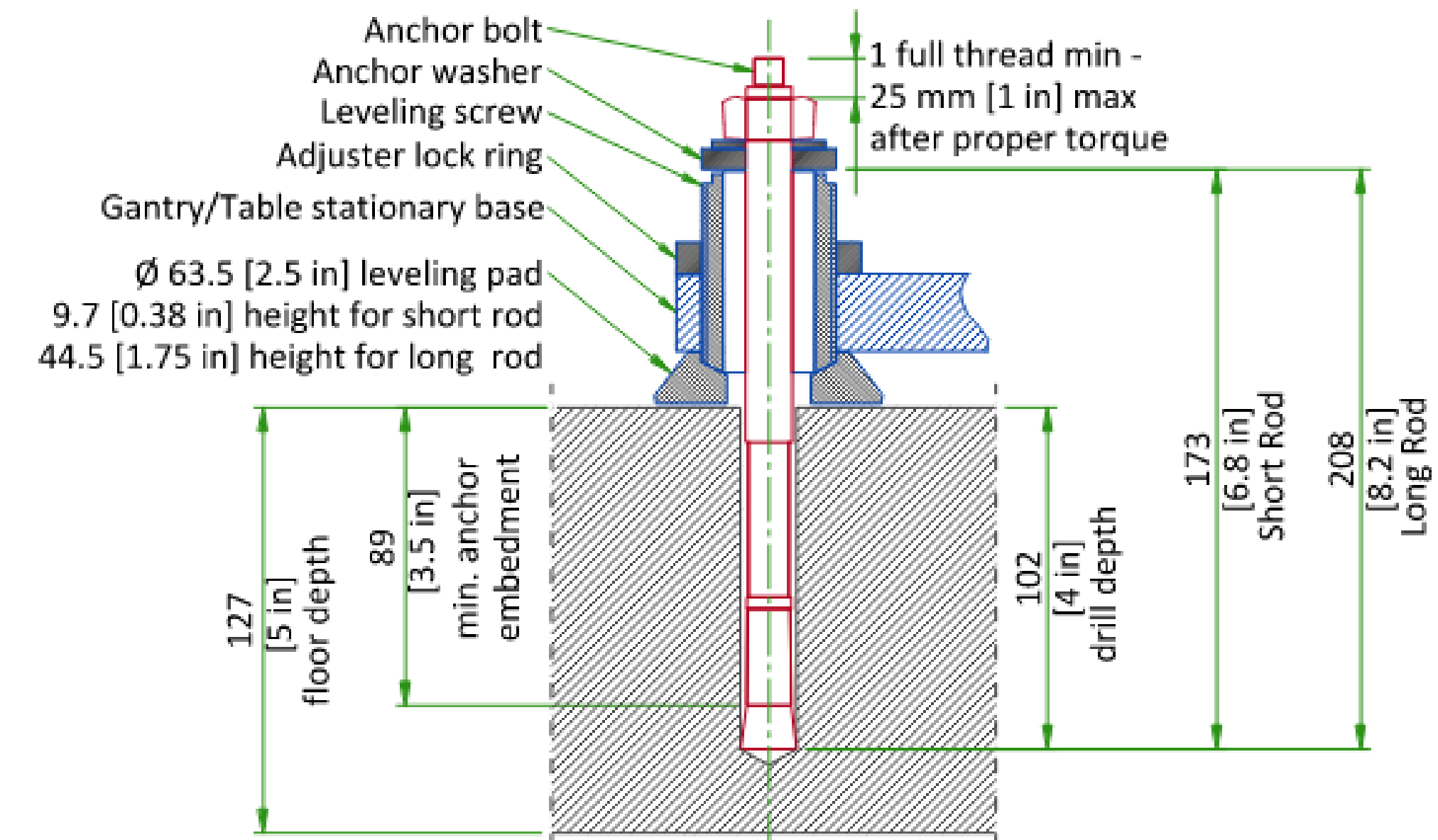
ITEM	DESCRIPTION
(CONTRACTOR SUPPLIED & INSTALLED)	
1	Floor contact area for discovery gantry and patient table. see detail on Structural Detail sheets for more information.
2	Support Backing, locate as shown

ANCHORING/LOADING DISTRIBUTION TO THE FLOOR



ANCHORING AND FLOOR REQUIREMENTS

GE SUPPLIED GANTRY ANCHORS (2106573)



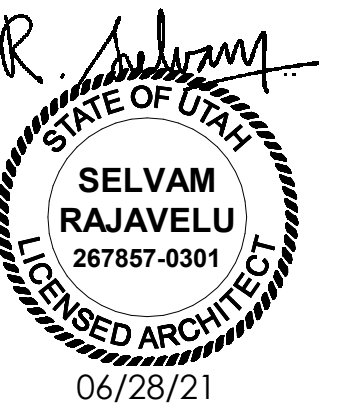
FINISHED FLOOR REQUIREMENTS

- Installation requires a finish floor in the scan and control rooms.
- The floor surface in the scan room directly under the gantry and table must be level.
- The floor shall be no greater than 6 mm [0.25 in] out of level over a 3048 mm [10 ft] range, with level defined as the horizontal surface between the highest and lowest points.
- The floor shall have a minimum concrete thickness of 127 mm [5 in].
- Shims should not be used to compensate for a floor that does not meet this requirement.
- These requirements apply to all installation types.

NOT TO SCALE

NOTES:

If the concrete floor has a floor covering installed over it (such as floor tile), 15 openings 101.6 mm [4 in] in diameter will be cut into the floor covering to ensure the table and gantry rest on the concrete. (Openings are cut during installation.)



TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS

	EXAM ROOM			CONTROL ROOM			TECHNICAL ROOM		
	Min	Recommended	Max	Min	Recommended	Max	Min	Recommended	Max
Temperature	18°C	22°C	26°C	18°C	22°C	26°C	18°C	22°C	26°C
	64°F	72°F	79°F	64°F	72°F	79°F	64°F	72°F	79°F
Temperature gradient	≤ 3°C/h			≤ 3°C/h			≤ 3°C/h		
	≤ 5.4°F/h			≤ 5.4°F/h			≤ 5.4°F/h		
Relative humidity (1)	30% to 60%			30% to 60%			30% to 60%		
Humidity gradient	≤ 5%/h			≤ 5%/h			≤ 5%/h		

STORAGE CONDITIONS

Temperature	0°C to +30°C	+32°F to +86°F
Relative humidity (1)	≤ 70% RH	
Temperature gradient	≤ 3°C/h	≤ 5.4°F/h
Humidity gradient	≤ 5%/h	

Material should not be stored for more than 6 month.

(1) Non-condensing

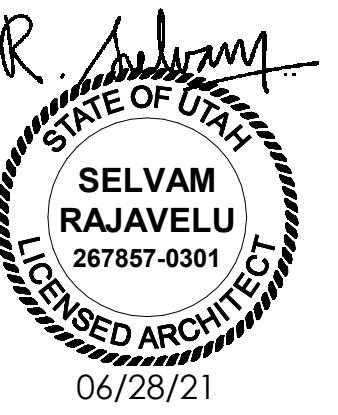
AIR RENEWAL

According to local standards. The HVAC system should be designed to provide 5 air changes per hour to maintain adequate air quality and temperature.

NOTE : In case of using air conditioning systems that have a risk of water leakage it is recommended not to install it above electric equipment or to take measures to protect the equipment from dropping water.

HEAT DISSIPATION

ROOM	DESCRIPTION	Max (kW)	Max (btu)
Exam Room	PET Gantry	2.8	9554
	CT Gantry	5.5	18766
	Patient table	0.3	1024
	TOTAL	9	29344
Exam room or Technical room*	Power distribution unit (CT PDU)	1.0	3400
	PARC 4 (Reconstruction Cabinet)	2.0	6824
	Partial UPS	0.88	3000
	Chiller	4.0	13649
	TOTAL	8	26873
Control Room or Reporting Room	Operator console	0.84	2860
	LCD Monitor (2 units, 170 BTU/50 Watts each)	0.1	340
	Peripheral Media Tower (PMT)	0.13	425
	TOTAL	1	3625
*Technical Room is not mandatory, the placements of these elements are recommended in the Exam Room.			
WARNING This chart contains only the principal components of the PET/CT system and does not include information about non-GE supplied equipment.			



ELECTRICAL NOTES

1. All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag all wires at both ends. Wire runs must be continuous copper stranded and free from splices.
 - 1.1. Aluminum or solid wires are not allowed.
2. Wire sizes given are for use of equipment. Larger sizes may be required by local codes.
3. It is recommended that all wires be color coded, as required in accordance with national and local electrical codes.
4. Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or national codes.
5. Convenience outlets are not illustrated. Their number and location are to be specified by others. Locate at least one convenience outlet close to the system control, the power distribution unit and one on each wall of the procedure room. Use hospital approved outlet or equivalent.
6. General room illumination is not illustrated. Caution should be taken to avoid excessive heat from overhead spotlights. Damage can occur to ceiling mounting components and wiring if high wattage bulbs are used. Recommend low wattage bulbs no higher than 75 watts and use dimmer controls (except MR). Do not mount lights directly above areas where ceiling mounted accessories will be parked.
7. Routing of cable ductwork, conduits, etc., must run direct as possible otherwise may result in the need for greater than standard cable lengths (refer to the interconnection diagram for maximum usable lengths point to point).
8. Conduit turns to have large, sweeping bends with minimum radius in accordance with national and local electrical codes.
9. A special grounding system is required in all procedure rooms by some national and local codes. It is recommended in areas where patients might be examined or treated under present, future, or emergency conditions. Consult the governing electrical code and confer with appropriate customer administrative personnel to determine the areas requiring this type of grounding system.
10. The maximum point to point distances illustrated on this drawing must not be exceeded.
11. Physical connection of primary power to GE equipment is to be made by customers electrical contractor with the supervision of a GE representative. The GE representative would be required to identify the physical connection location, and insure proper handling of GE equipment.
12. GEHC conducts power audits to verify quality of power being delivered to the system. The customer's electrical contractor is required to be available to support this activity.

- All junction boxes, conduit, duct, duct dividers, switches, circuit breakers, cable tray, etc., are to be supplied and installed by customers electrical contractor.
- Conduit and duct runs shall have sweep radius bends
- Conduits and duct above ceiling or below finished floor must be installed as near to ceiling or floor as possible to reduce run length.
- Ceiling mounted junction boxes illustrated on this plan must be installed flush with finished ceiling.
- All ductwork must meet the following requirements:
 1. Ductwork shall be metal with dividers and have removable, accessible covers.
 2. Ductwork shall be certified/rated for electrical power purposes.
 3. Ductwork shall be electrically and mechanically bonded together in an approved manner.
 4. PVC as a substitute must be used in accordance with all local and national codes.
- All openings in raceway and access flooring are to be cut out and finished off with grommet material by the customers contractor.
- General contractor to insert pull cords for all cable run conduits between the equipment room and the operators control room.
- 10 foot pigtailed at all junction points.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.

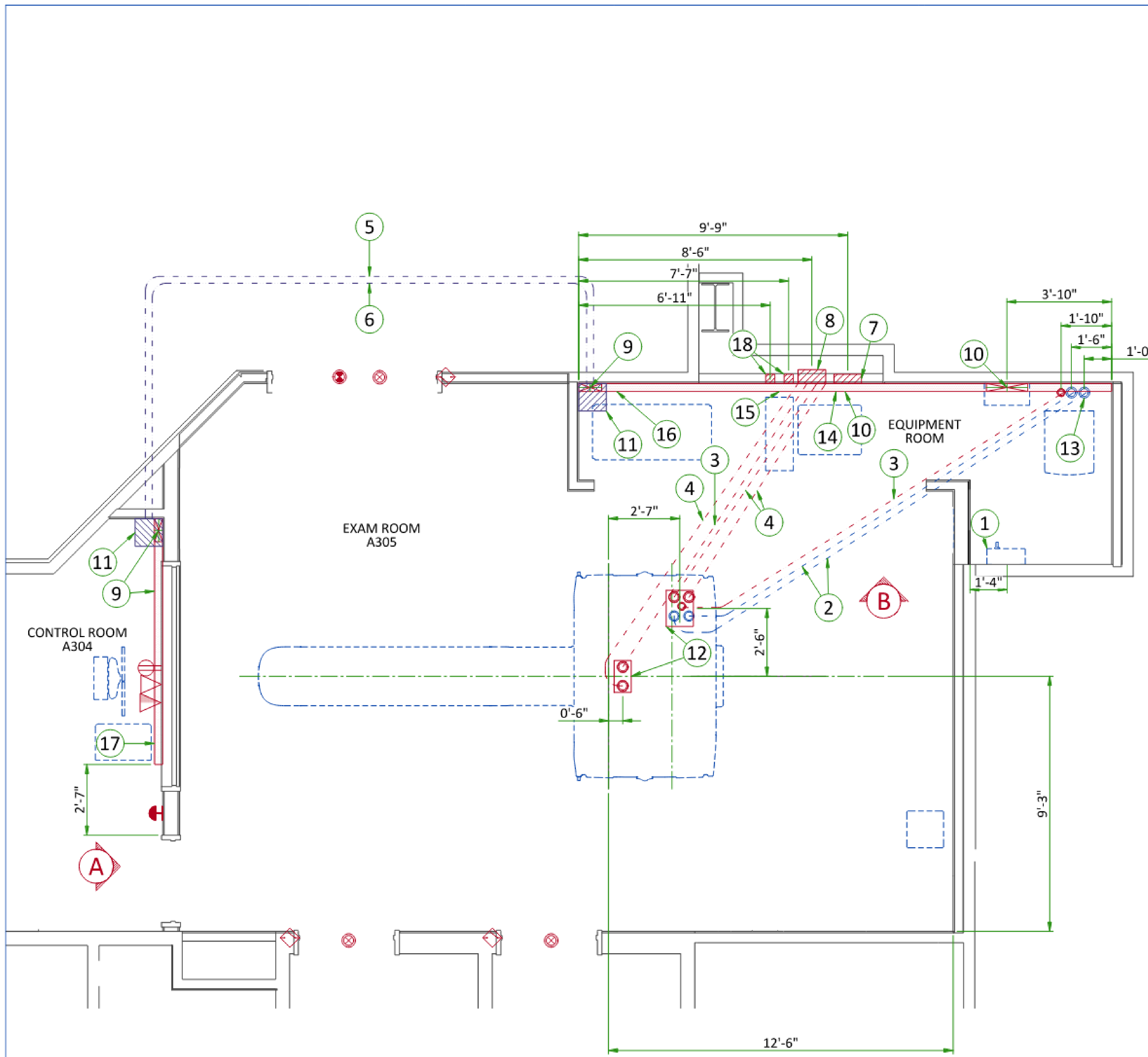
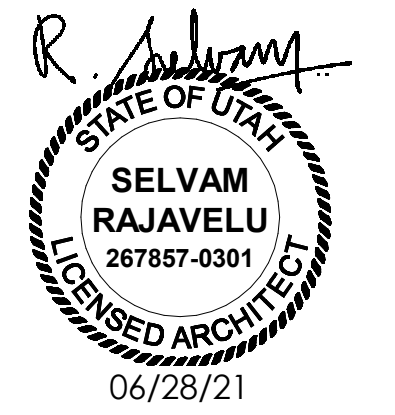
CONNECTIVITY REQUIREMENTS

Broadband Connections are necessary between customer's imaging devices and the GE Support Center, starting from the installation process to ensure full support from the Engineering Teams. GE provides remote maintenance and maximum availability for the customer's system, during the equipment's full lifetime. GE guarantees to keep the equipment at a maximum performance level.

Proactive and reactive maintenance are available through utilizing a wide range of digital tools. You may choose from the connectivity solutions listed below:

- Site-to-Site VPN/GE Solution
- Site-to-Site VPN/Customer Solution
- Connection through Dedicated Service Network
- Internet Access - connectivity for InSite 2.0

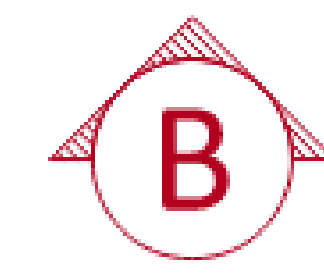
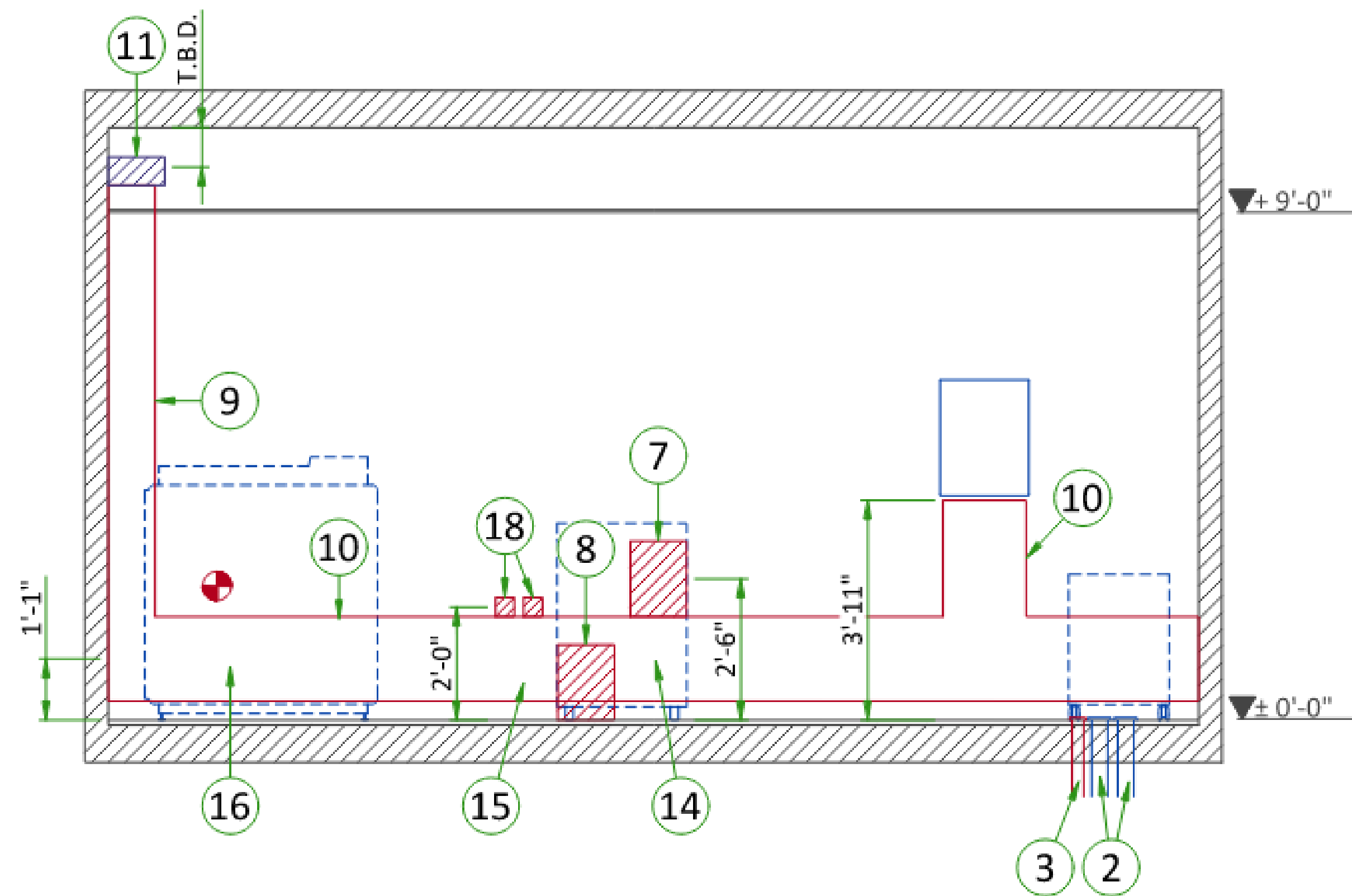
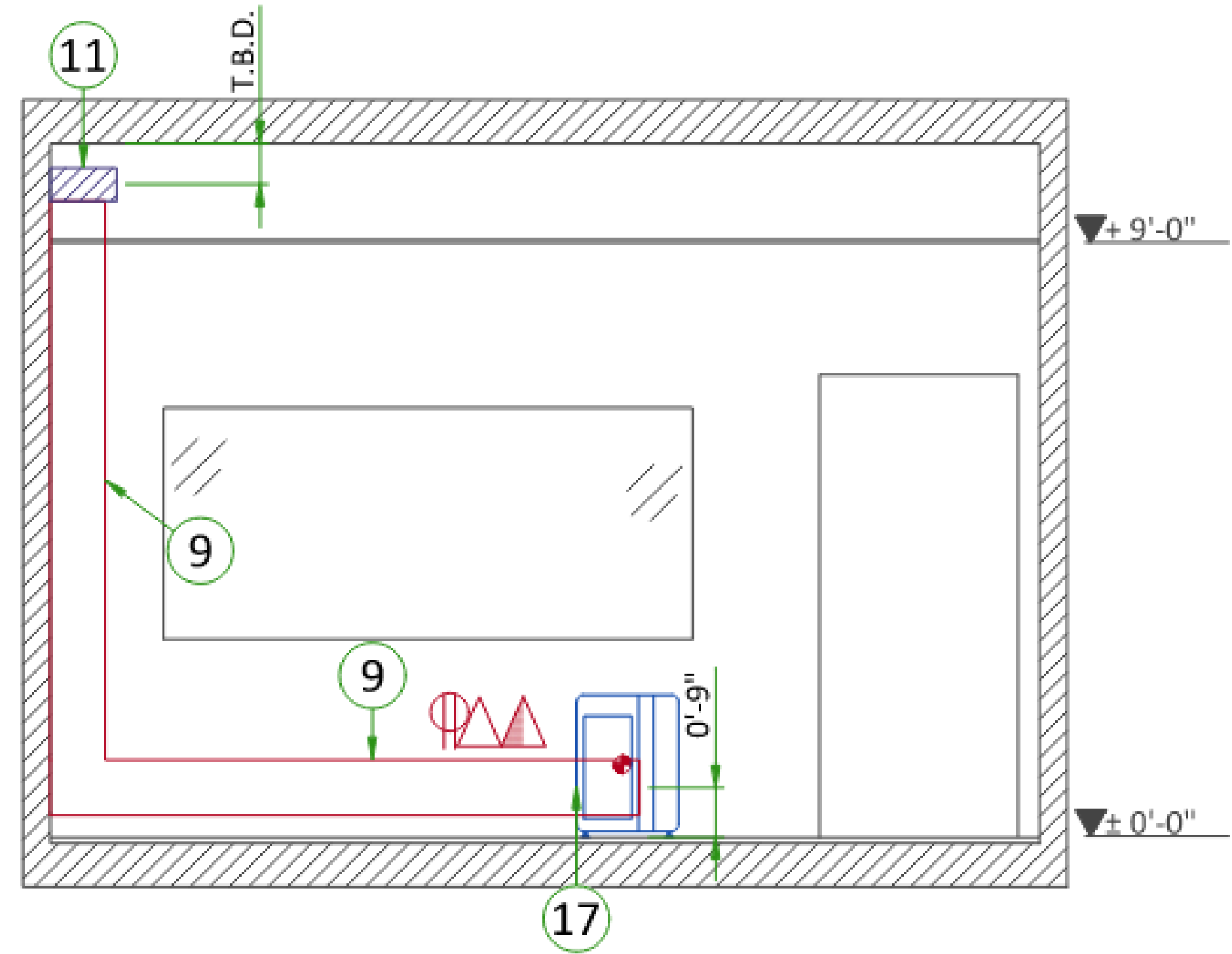
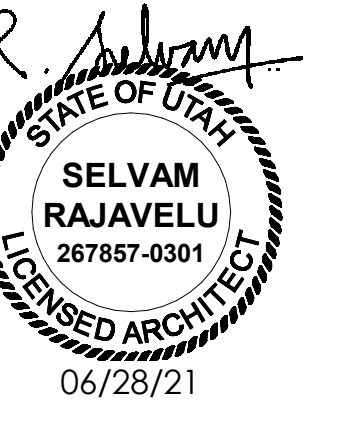
The requirements for these connectivity solutions are explained in the broadband solutions catalogue (separate document).

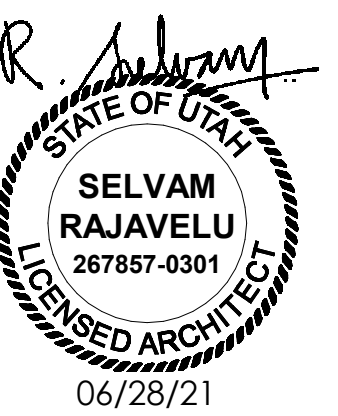


ITEM	DESCRIPTION
FLOOR	
1	Main disconnect panel (recommended 1 1/2m [60 in] floor to middle of panel)
2	75 [3"] conduit below floor for water lines
3	64 [2 1/2"] conduit below floor
4	89 [3 1/2"] conduit below floor
5	64 [2 1/2"] conduit above ceiling
6	89 [3 1/2"] conduit above ceiling
7	300 x 400 x 100 [12" x 16" x 4"] box for power distribution unit
8	300 x 400 x 150 [12" x 16" x 6"] box for power distribution unit
9	250 x 100 [10" x 3 1/2"] surface wall duct with minimum 2 dividers
10	450 x 100 [18" x 3 1/2"] surface wall duct with minimum 2 dividers
11	Box above ceiling, size per local code
12	Suitable bushings & lock nuts for Gantry
13	Suitable bushings & lock nuts for Chiller
14	Grommets opening for PDU
15	Grommets opening for UPS
16	Grommets opening for Systems Cabinet
17	Grommets opening for Console
18	100 x 100 x 100 [4" x 4" x 4"] box for UPS

ITEM	QTY	Outlet Legend for GE Equipment
△		Dedicated telephone line(s)
△		Network outlet
⊕		Duplex hospital grade, dedicated wall outlet 120-v, single phase power
⊕		System emergency off (SEO), (recommended height 1.2m [48"] above floor)
⊗		X-Ray room warning light control panel
⊗		X-Ray ON lamp (L1) - 24V
◇		Door interlock switch (needed only if required by state/local codes)

Additional Conduit Runs (Contractor Supplied and Installed)				
From (Bubble # / Item)	To (Bubble # / Item)	Qty	Size	
			In.	mm
3 Phase Power	#1 Main Disconnect	1	As req'd	As req'd
#1 Main Disconnect	Emergency Off	1	1/2	13
	#7 Power Distribution Unit	1	As req'd	As req'd
#7 Power Distribution Unit	Door Switch	1	1/2	13
	Warning Light	Warning Light Control	1	1/2
1			1/2	13
1 Phase Power		1	1/2	13
Options				
#1 Main Disconnect Panel	#18 UPS	1	1 1/4	30
#7 Power Distribution Unit		1	2	50





POWER REQUIREMENTS

POWER SUPPLY	3 PHASES+G 380V/400V/420V/440V/460V/480V ±10%
FREQUENCIES	50/60Hz ± 3Hz
MAXIMUM POWER DEMAND	100 kVA
AVERAGE POWER	30 kVA
POWER FACTOR	0.85

- Power supply should come into a System PDB (MDP) containing the protective units and controls.
- 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 A1 Main Disconnect.
- 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 Ω (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).

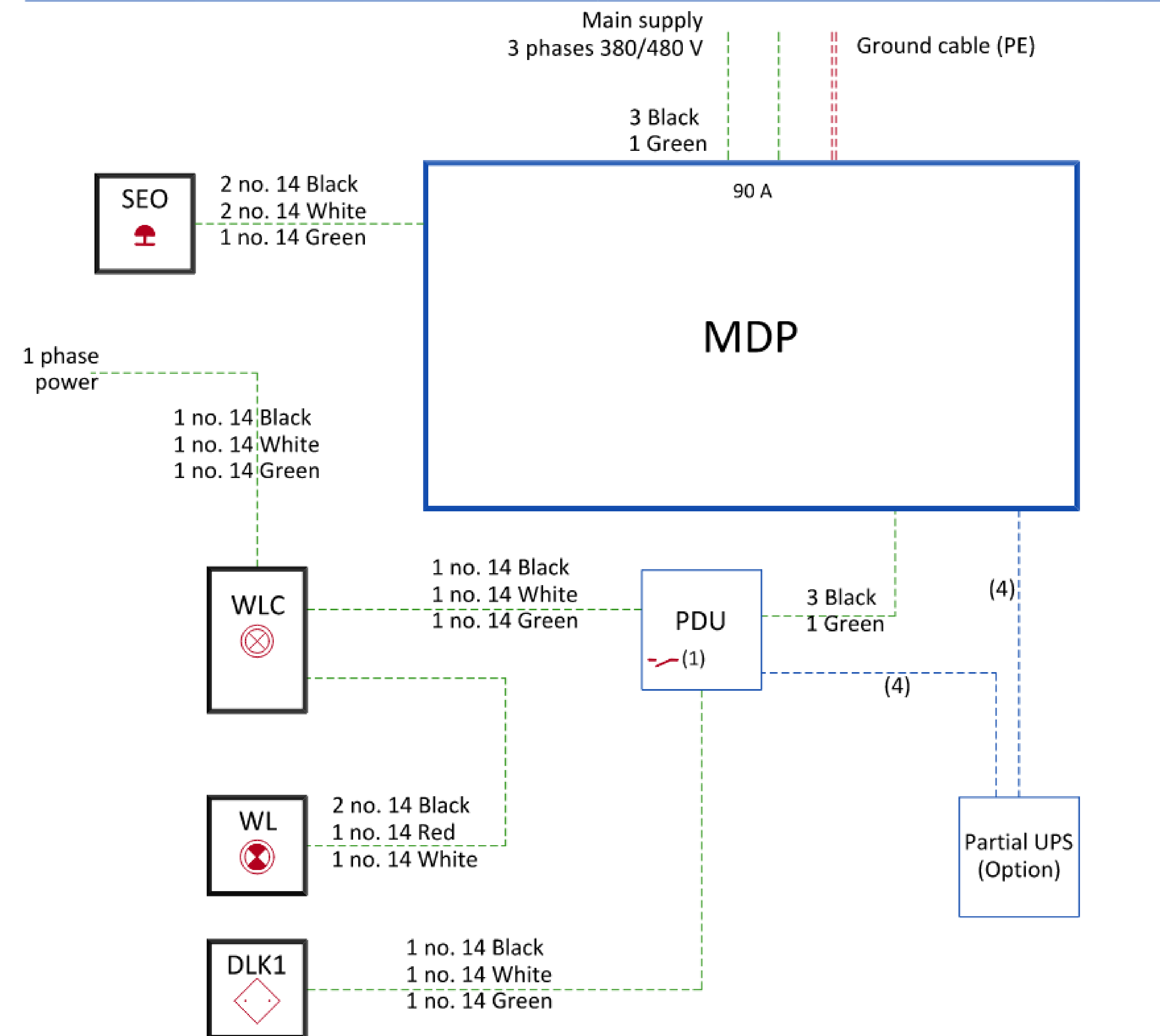
CABLEWAYS

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.

FEEDER TABLE								
MIN. FEEDER WIRE SIZE, AWG OR MCM (sq. mm)/VAC	MINIMUM FEEDER WIRE LENGTH - ft (m)							
	50 (15)	100 (30)	150 (46)	200 (61)	250 (76)	300 (91)	350 (107)	400 (122)
480 VAC	3 (30)	3 (30)	3 (30)	3 (30)	3 (30)	2 (35)	1 (45)	1 (45)
GENERAL NOTES								
In all cases qualified personnel must verify that the feeder (at the point of take-off) and the run to the CT-PET system meet all the requirements stated in the PIM								
For a single unit installation, the minimum transformer size is 125kVA, with 2.4% rated regulation at unity power factor. Resultant maximum allowable feeder regulation is 3.4%								
Grounding conductor will be a 1/0 minimum. this ground will run from the equipment back to the power source/main grounding point and always travel in the same conduit with the feeders								

POWER DISTRIBUTION



- MDP Main Disconnect Panel
- PDU Power distribution unit
- SEO Emergency OFF button (Control Room), located 1.50m (4.9') above floor
- WLC Warning Light Control
- WL Warning Light
- DLK1 Door Interlock Switch (needed only if required by state/local codes)

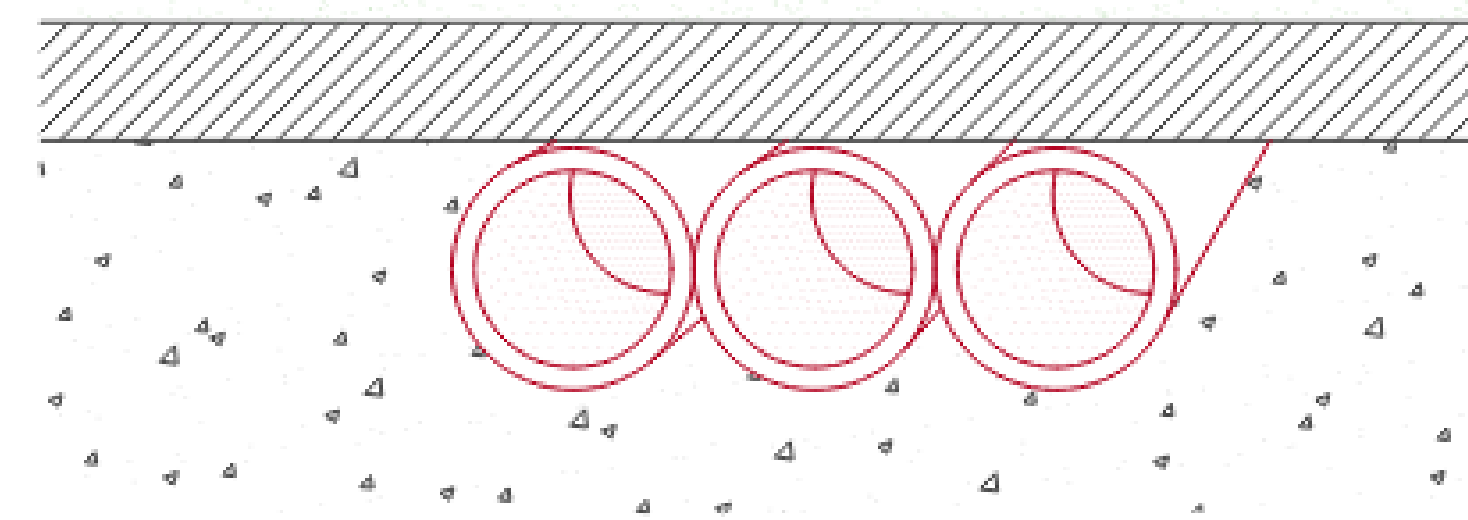
--- Cable SUPPLIED BY CUSTOMER
--- Cable SUPPLIED BY GE
--- Cable SUPPLIED BY GE
 Equipment SUPPLIED BY CUSTOMER
 Equipment SUPPLIED BY GE

Notes :

- Two dry contacts: "System ON" and "X-Ray ON", both released by PDU. Max. voltage = 30 V
- If length < 10 m (32.8') Cable with 2m (6.6') extra length on the floor behind the back of PDU
- Cable with 2m (6.6') extra length on the floor behind the back of PDU
- Cable delivered with partial UPS installed by GE (Option)

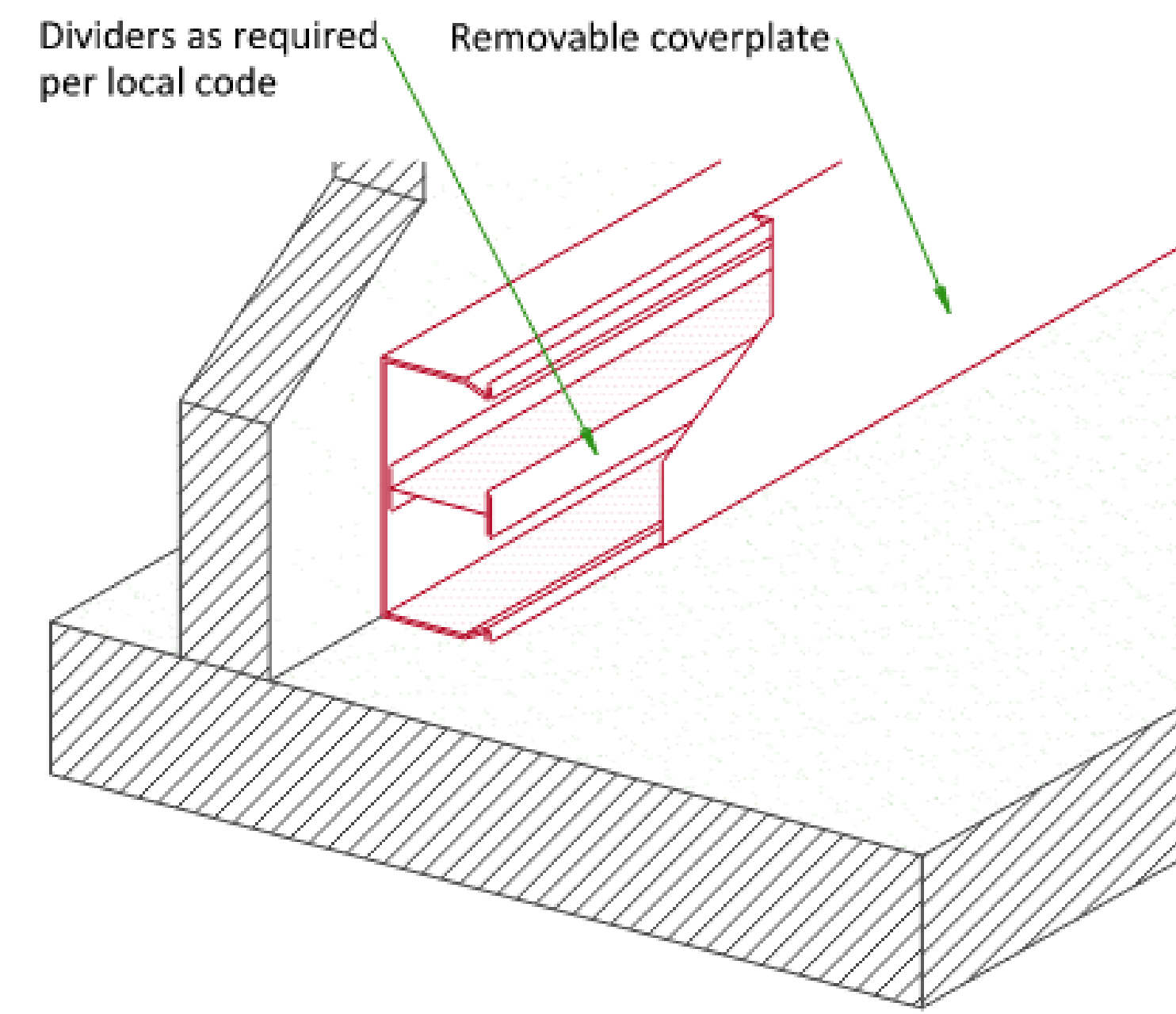
TYPICAL CABLE MANAGEMENT

CONDUIT IN THE FLOOR

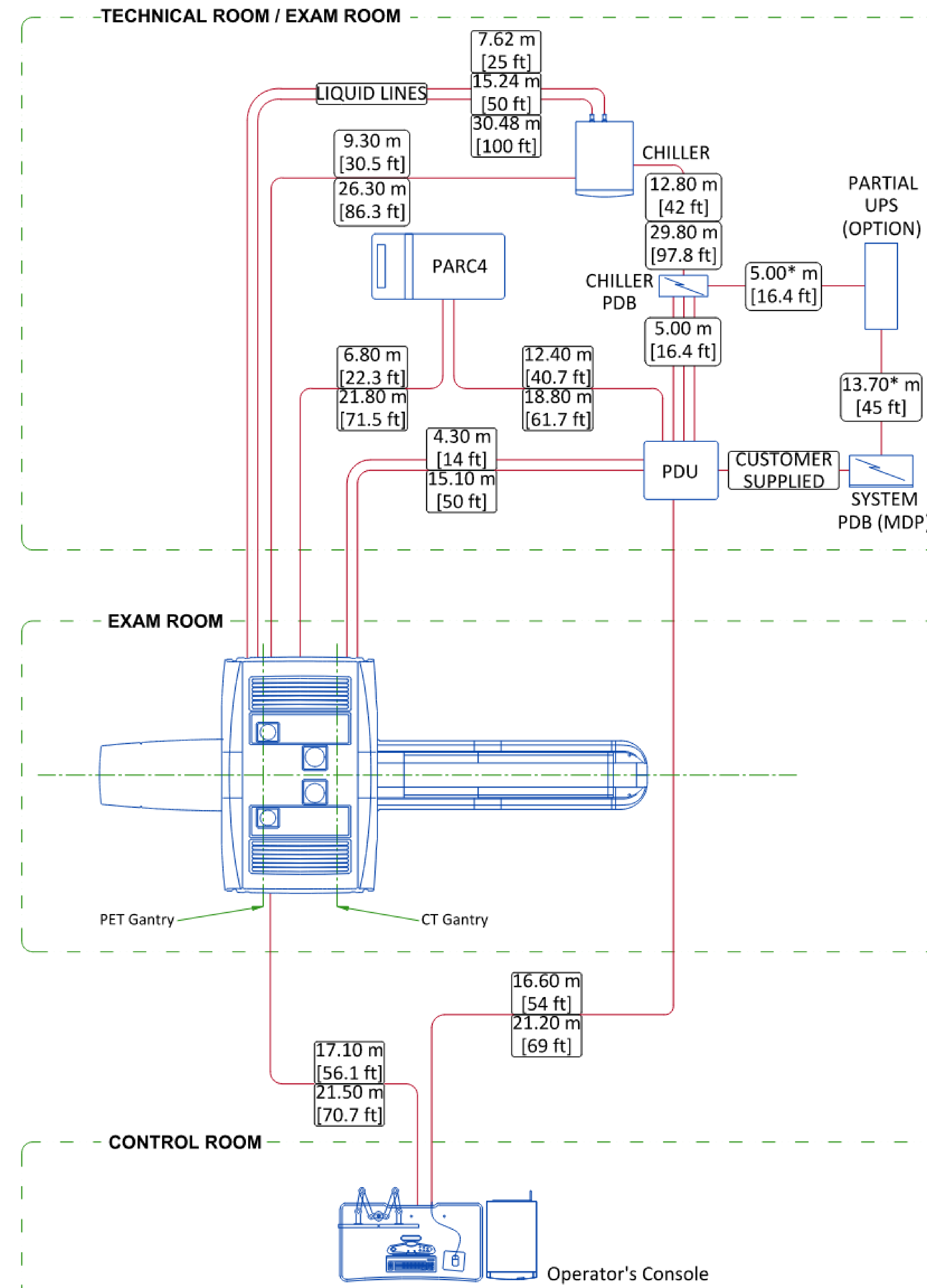


NOT TO SCALE

DUCT ON THE WALL



INTERCONNECTIONS



*18 m [59 ft] cable between Chiller PDB and UPS, 18.7 m [61.4 ft] cable between UPS and System PDB (MDP) available as Long Cable Collector Kit spare part