

Drawing Index

These sheets are a document set and should not be separated. Electrical information and references are contained on all sheets.

SITE READINESS

C1

EQUIPMENT LAYOUT

A1

(Equipment locations, heat loads, component weights, environmental specs)

STRUCTURAL LAYOUT

S1

(Structural support/mounting locations for floor/wall/ceiling, wall support elevations)

STRUCTURAL DETAILS

S2

(Floor and Ceiling loading information)

ELECTRICAL LAYOUT

E1

(Contractor supplied wiring, interconnect methods, junction point locations and descriptions)

ELECTRICAL SPECIFICATIONS

E2

(Maximum wiring run lengths, interconnect diagram, system power specifications)

ELECTRICAL DETAILS

E3

EQUIPMENT DETAILS

D1 THRU D2

These drawings indicate the placement and interconnection of the listed equipment components. These drawings are not construction or site preparation drawings. Customer remains ultimately responsible for preparing the site to accommodate the operation of such equipment in compliance with GE Healthcare's written specifications and all applicable federal, state, and/or local requirements.

* REQUIRED REFERENCE *

Optima NM/CT 640
Pre Installation Manual
5426783–1EN

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 Healthcare



Nuclear Medicine
Site Planning



imagination at work

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; 1. Secure area for equipment, 2. Power for drills and other test equipment, 3. Capability for image analysis, 4. Restrooms.
- Provide for refuse removal and disposal (e.g. crates, cartons, packing)
- Contact a radiation physicist or consultant to specify radiation containment requirements.

GE Equipment Delivery
Requirements

The items on the GE Healthcare Site Readiness Checklist are REQUIRED to facilitate equipment delivery to the IS site. Equipment will not be delivered if these requirements are not satisfied.

GE Healthcare Site Readiness Checklist Rev 19					
Before using this document ensure you have the latest Rev from MyWorkshop on DOC0422752					
GEHC Global Order # : _____			Customer: _____		
GEHC PMI : _____			FE / Installer: _____		
The customer is responsible for proper site preparation regardless of any GEHC measurements/inspections/assessments.					
		Inspection Date:			
GEHC Minimum Requirements		Storage ready?	PMI is item ready?	FE is item ready?	Comments If "N", enter comments or action plan
1	MR Magnet Delivery Requirements: Ensure cryogen venting system is available for magnet connection as defined by GEHC Pre-Installation Manual (PIM) requirements, exhaust fan system is installed and operational, 480V power, and chilled water supply is available 24x7 that meets system cooling requirements. External connectivity is available for magnet monitoring and phone service is available during delivery. Surface mount vibromat installed where required. Magnet room final flooring is in place.				
2	MR RF Screen Room Requirements: RF Screen Room is tested with copy of Test Report, emailed to 86skincoe@ge.com, that it is compliant with GEHC specifications. Dock Bolt and magnet anchors (if applicable) installed using 2 part anchor. For HDx systems, blower box mount bolts installed by RF vendor using 2 part anchors				
3	State Regulatory Requirements: Facility registration number provided for states of <u>IL, KY, HI, RI, SC, TX, LA, WA</u> . X-ray shielding plan and state acknowledgment letter provided to installer for <u>AR, DC, NC, SC, CO</u>				
4	Site Drawing Requirements: Final version of equipment network and antenna, installation drawings (including red lined versions) verified to match actual room and has been provided to installer.				
5	Surface Penetration Requirements: Customer/Contractor scheduled to provide required drilling or cutting into floors, ceilings, and walls, OR surface penetration permit available and posted in the room when GEHC will perform the work.				
6	Pre-Delivery Route Requirements: The equipment delivery route from the truck to the final destination within the facility has been reviewed with all key stakeholders to safely meet the minimum requirements for equipment access, and all communications/notifications have occurred. Arrangements have been made for special handling (elevator, rigging, floor protection, fork lift, rollback truck, etc)				
7	Finished Room Requirements: Rooms that will contain equipment, including storage areas not in scan suite, are dust free. Provisions taken to maintain a dust free room. Precautions must be taken to prevent dust from entering rooms containing equipment when construction is incomplete in adjacent areas. All walls primed (final coat not needed on Day 1). Shielding, doors, and windows are to be installed. No contractor work being done during or after the installation that will cause dust in the installation areas or potential equipment damage. Room security to prevent unauthorized access and theft has been discussed with customer. The customer is aware of these security issues, implications and responsibility. For Storage: Room must meet PIM requirements for storage.				
8	Electrical Requirements: Lockable (LOTO) Main Disconnect Panel (MDPI) is installed per GE guidelines and system power is available. Conduits, electrical cable ducting/dividers/cable trays, and access flooring is installed in proper location and height. Surface floor duct and load-side wires can be installed at time of system installation. Validate outlet location and requirements meet specifications for device/equipment.				
9	HVAC Requirements: The HVAC/Chilled Water systems designed to maintain the environment per spec/PIM is at running state and appears to provide the desired environmental conditions including location of vents, temperature and humidity for system operation.				
10	Flooring Requirements: Floor is clean and prepared for final floor covering. Floor levelness/flatness is measured and within tolerance, and there are no visible defects per GEHC specifications. Confirm customer anchoring plan aligns with designed floor thickness. Final flooring installed where required for network racks.				
11	Ceiling Requirements: Unistrut (or equivalent) location, levelness and spacing is measured (or vendor confirmed) and consistent with the requirement of the installation drawings. Ensure unistrut and rails are not used as mounting surfaces. Ceiling grid is installed. Permanent lighting is installed and operational. HVAC diffusers are installed and connected to ductwork. Ceiling tiles installed per PIM discretion.				
12	Staging Requirements: Space has been identified to support the active installation process only. This area meets PIM/project book requirements. Storage space has been identified, if needed. This secured space would be used to store equipment indefinitely. If offsite, transportation plan has been developed at customer expense. This space must meet PIM requirements.				
13	Network Connectivity: Hardware for network connectivity/network drop is in place prior to delivery with specified network firewall configuration where required. Site Surveys for wireless mobile XR units have been completed.				
14	Medical Gases Requirements: Systems (hard piped or portable) in place to allow testing and calibration of equipment (anesthesia), including ventilation.				

GE Healthcare



Healthcare Project Implementation – Design Center
Milwaukee, Wisconsin
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SHEET TITLE: SITE READINESS
MODALITY TYPE: OPTIMA NM/CT 640

THIS PLAN IS SUBMITTED TO SUGGEST LOCATION OF GE HEALTHCARE EQUIPMENT AND ASSOCIATED APPARATUS, ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS. IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM DETAILS TO GE HEALTHCARE REQUIREMENTS. HOWEVER, THE COMPANY CANNOT ACCEPT ANY LIABILITY FOR CONSTRUCTION ERRORS, OMISSIONS, OR DELAYS, OR FOR ANY DAMAGES RESULTING THEREFROM.

PROJECT TITLE:

7–84f
TYPICAL FINAL

PROJECT	REVISION
7–84f	00
DATE: 08.Oct.15	
DRAWN BY: RET	
CHECKED BY: CPC	

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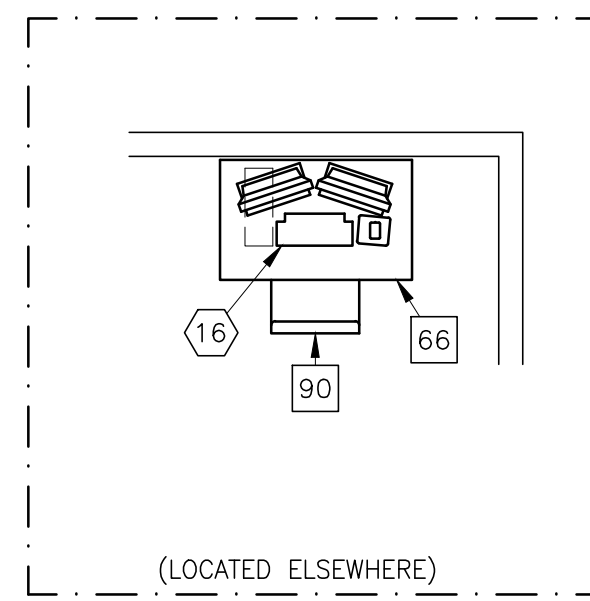
SHEET

C1

GE EQUIPMENT LISTING							EQUIPMENT CROSS REFERENCE CHART		
EQUIPMENT ON ORDER FROM GE HEALTHCARE, INSTALLED BY GE HEALTHCARE, PER : NEITHER A QUOTE OR CON WAS ISSUED AT THE DATE OF THESE DRAWINGS							P = PREAPPROVAL C = CALCULATIONS/ SEISMIC STATUS PENDING APPROVAL S = SPECIFICATIONS ONLY		
NOTE: LOCAL CONDITIONS MAY DICTATE THAT ITEMS IDENTIFIED IN THIS CATEGORY BE INSTALLED BY OTHERS.									
ITEM NO.	QUANTITY ORDERED	REFER TO SHEET "D"							
	ITEM DESCRIPTION (* = EXISTING/REINSTALL)	WEIGHT	HEAT OUTPUT (PER HOUR)	DETAIL NO.	STRC PLAN	ELEC PLAN			
1	OPTIMA NM/CT 640 GANTRY (NUCLEAR)	4828 lbs	4501 btu						
2	OPTIMA NM/CT 640 COLLIMATOR CART	727 lbs		B640C	-	NMC	S		
3	EMO PUSHBUTTON			B81058	-	EMO	-		
4	ESTOP PUSHBUTTON			B81061	-	ESTOP	-		
5	OPTIMA NM/CT 640 TABLE	1245 lbs	682 btu	B640A	-	NMT	S		
6	TABLE SWING PLATE FOR COLLIMATOR EXCHANGE				-		-		
7	OPTIMA NM/CT 640 ACQUISITION WORKSTATION ON MOBILE CART	44 lbs	255 btu	B4305G	0	AC	-		
8	OPTIMA NM/CT 640 GANTRY (CT)	1984 lbs	3139 btu	B640B B640D B640E B640G B640H B640K B640P B640Q BOS777	-	CTT	S		
9	LIMIT OF TABLE TRAVEL				-		-		
OPTIONS:									
10	R-WAVE TRIGGER	6 lbs		H2505EG	-	ECG	S		
11	STORAGE CABINET (EMPTY CABINET WEIGHT)	99 lbs		M33005	-		-		
12	IVY MOBILE CART	13 lbs		B4305R	-		-		
13	6 KVA UPS	125 lbs	1959 btu	B640M	-	UPS	-		
14	TRANSFORMER FOR 6 KVA UPS	77 lbs	1000 btu	B640N	-	TRAN	-		
15	TABLE EXTENDER			B81059	-		-		
16	XELERIS WORKSTATION	55 lbs	255 btu	M1014AW	.		S		

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ASSIGNED BY THE HOSPITAL, NET ADMIN IF CONNECTING TO THE HOSPITAL LAN	HOSTNAME	IP	AE TITLE	DICOM PORT
ACQUISITION HOST				
PROCESSING HOST				
HARD COPY HOST				
LAN NET MASK				
GATEWAY TO OTHER NETWORKS				
OTHERS				
HUB OR SWITCH				
<ul style="list-style-type: none"> • PREPARE ADEQUATE NETWORK SOCKETS IN THE PROPER LOCATIONS TO SUPPORT ALL ACQUISITION, LOCAL AND REMOTE WORKSTATION. • DEPARTMENT MUST ASSIGN DEDICATED IP ADDRESSES (NOT DHCP) NOTE THE ADDRESSES BELOW FOR THE ACQUISITION, LOCAL AND REMOTE WORKSTATIONS. • PREPARE BROADCAST CONNECTIVITY LINE AND DEDICATED IP ADDRESSES FOR INSITE CONNECTIVITY. • REFER TO TABLE ON A1 PAGE 				



ITEM NO.	ITEM DESCRIPTION (* INDICATES EXISTING)
60	MOBILE RADIATION SHIELD
61	COUNTER TOP WITH SINK, BASE AND WALL CABINETS
62	X-RAY ON WARNING LIGHT - AVAILABLE FROM GE. SUPPLY CALL: 800-200-9760 GE CAT. NO. WXIABWW-OF-XIU
63	MINIMUM DOOR OPENING FOR EQUIPMENT DELIVERY IS 55.1" V x 91" W (1399mm x 2311mm). CONTINGENT ON A 96" (2438mm) CORRIDOR WIDTH. NOTE: DISMOUNTED DETECTOR SHIPPING OPTION (GE CAT. NO. H2506TR). MINIMUM DOOR WIDTH IS 43.3" W (1109mm)
64	DOOR LIMIT SWITCH (REQUIRED IN SOUTH CAROLINA. OTHERWISE NEEDED ONLY IF REQUIRED BY STATE/LOCAL CODES)
65	OPTIONAL WALL PROTECTION FROM COLLIMATOR CART. ALSO, FINISHED FLOORING COULD BE SUBJECT TO DAMAGE DURING MOVEMENT AND BEING PARKED FOR A LONG PERIOD. SUFFICIENT FLOORING MUST BE USED TO PREVENT DAMAGE.
66	TABLE
67	SHELF

90	OPERATORS CHAIR
91	X-RAY ROOM WARNING LIGHT CONTROL PANEL REFERENCE JUNCTION POINT 'WLC' ON SHEET 'E1' FOR DETAILED DESCRIPTION -E4502RL FOR WARNING LIGHT CONTROL ONLY.
92	MAIN DISCONNECT CONTROL CALL: 800-200-9760 GE CAT. NO. GEX640NM25A480V

- o THE REQUIRED CEILING HEIGHT INDICATED ON THESE PLANS IS TO ENSURE EQUIPMENT FUNCTION IS NOT INHIBITED. CONSULT WITH YOUR LOCAL GEHC IS SPECIALIST REGARDING ACCEPTABILITY OF OTHER CEILING HEIGHTS.
- o CHECK ALL DOOR OPENINGS AND HALLWAYS FROM DELIVERY LOCATION TO WHERE EQUIPMENT IS TO BE INSTALLED TO ENSURE THE ROUTE PHYSICALLY AND STRUCTURALLY WILL ACCOMMODATE THE EQUIPMENT AS SHIPPED.
- o RADIATION PROTECTION REQUIREMENTS ARE NOT INDICATED ON THIS PLAN. WHERE NEEDED PER NATIONAL OR LOCAL CODE THEY SHALL BE SPECIFIED BY A QUALIFIED RADIOLOGICAL PHYSICIST.
- o THE DEVELOPMENT OF THE EQUIPMENT LAYOUT, ROOM DIMENSIONS, MECHANICAL AND ELECTRICAL SUGGESTIONS IS PRECIPITATED UPON THE BEST INFORMATION OBTAINABLE FROM THE SITE, COUPLED WITH THE CUSTOMER'S KNOWN DESIRES. ARCHITECTURAL OR ELECTRICAL CHANGES INCLUDING RELOCATION OF EQUIPMENT ILLUSTRATED ON THIS DRAWING IS ALLOWED ONLY WITH NOTIFICATION, IN WRITING, AND REVIEW BY GEHC SEHC PARTNER. EQUIPMENT OPERATION, SERVICEABILITY, AND RESTRICTING CABLE LENGTHS, ETC., MAKE THIS ESSENTIAL FOR A PROPER IS. GEHC RESERVES THE RIGHT TO MAKE ON THE JOB CHANGES BECAUSE OF CUSTOMER REQUIREMENTS AND/OR OBSTACLES IN CONSTRUCTION, ETC..
- o ALL WORK TO BE IN COMPLIANCE WITH NATIONAL AND LOCAL BUILDING SAFETY CODES.
- o DIMENSIONS ARE TO FINISHED SURFACES OF ROOM

- o AMBIENT OPERATING TEMPERATURE: 64° TO 79° F, (18° TO 26° C) MAXIMUM ALLOWABLE TEMPERATURE CHANGE OF 5° F (3° C)/HOUR, MAXIMUM ROOM TEMPERATURE GRADIENT 5° F (3° C).
- o HUMIDITY: TO 60 PERCENT NON-CONDENSING, MAXIMUM ALLOWABLE CHANGE OF 5 PERCENT/HOUR.
- o ALTITUDE: NOT TO EXCEED 7875 FT. (2400M) ABOVE SEA LEVEL.
- o THE ENVIRONMENT FOR THE ELECTRONICS CABINET MUST BE CONTROLLED SO THE ABOVE RESTRICTIONS ARE NOT EXCEEDED.
- o DO NOT RESTRICT THE AIR INTAKE OR AIR EXHAUST OF THE SYSTEM COMPONENTS.
- o ENVIRONMENTAL CONDITIONS LISTED ABOVE MUST BE MAINTAINED AT ALL TIMES INCLUDING FOR EXAMPLE OVERNIGHT, WEEKENDS, AND HOLIDAYS.

- o Gantry must be located in ambient static magnetic fields of less than one Gauss to guarantee specified imaging performance. Ambient ac magnetic fields must be below 0.01 Gauss peak.
- o Computer equipment must be located in ambient static magnetic fields of less than ten Gauss to guarantee data integrity.
- o Multifunction camera equipment must be located in ambient static magnetic fields of less than three Gauss to obtain specified geometric linearity.
- o Console equipment must be located in ambient static magnetic fields of less than ten Gauss to obtain specified geometric linearity.

Healthcare Project Implementation – Design Center
 Milwaukee, Wisconsin

SHEET TITLE: EQUIPMENT LAYOUT

MODALITY TYPE: OPTIMA NM/CT 640

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PROJECT TITLE:

7-84f
TYPICAL FINAL

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7-84f	00
DATE: 08.Oct.15	
DRAWN BY:	RET
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REVISION HISTORY:

SHEET

A1

TYPICAL WALL SUPPORT ELEVATIONS

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

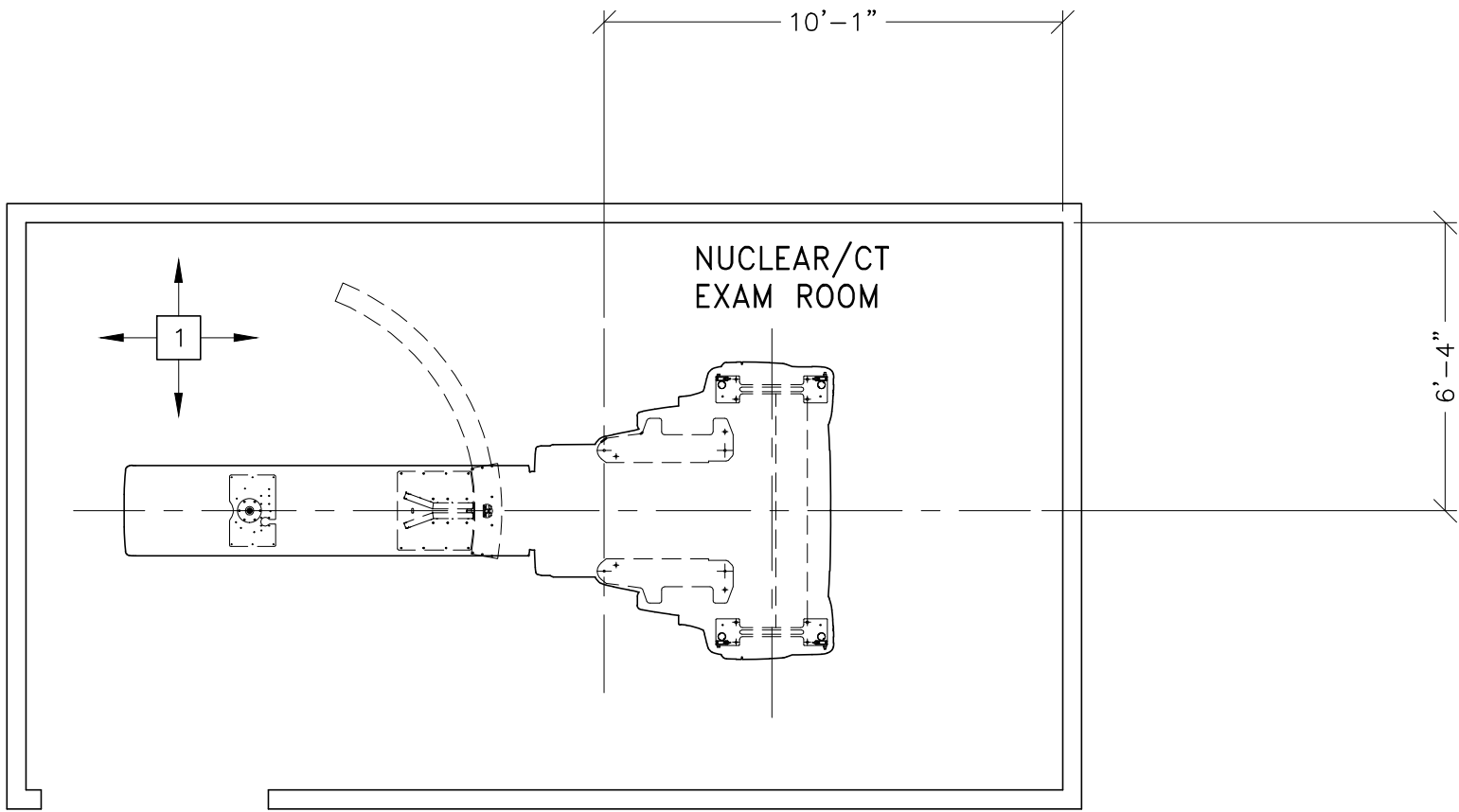
STRUCTURAL LAYOUT

RECOMMENDED CEILING HEIGHT = 8'-0"

STRUCTURAL SUPPORT METHODS

CUSTOMER/CONTRACTOR SUPPLIED AND INSTALLED ITEMS

ITEM NO.	ITEM DESCRIPTION (* INDICATES EXISTING)
<div><div></div></div>	
1	FLOOR LEVELNESS IN THE EXAM ROOM MUST BE LEVEL WITHIN 1/8 IN. [3 MM] OVER 120 IN. [3048MM]. FLOOR FLATNESS IN THE EXAM ROOM MUST HAVE NO DEVIATIONS GREATER THAN 3/16" [0.5 CM] OVER 60 IN. [150 CM]. REFER TO FULL SIZE FLOOR TEMPLATE FOR ALL DRILLING/ FLOOR PENETRATION REQUIREMENTS. IN ORDER TO ENABLE MOUNTING OF THE SYSTEM FLOOR ANCHORS CONCRETE FLOORS MUST HAVE A MINIMUM CURE STRENGTH OF FC = 4350 PSI (30MPa) AT 28 DAYS (CURING TIME) FOR 25/30 CONCRETE, AND MUST BE AT LEAST 140mm (5.5") THICK. IT IS THE CUSTOMERS RESPONSIBILITY TO HAVE APPROPRIATE TESTS PERFORMED TO DETERMINE AND MEASURE CONCRETE STRENGTH. IF THE OPTIMA NM/CT 640 SYSTEM IS INSTALLED ON A FLOOR TYPE THINNER THAN A 140mm (5.5") CONCRETE FLOOR, THE CUSTOMER SHALL, AT ITS EXPENSE, PROVIDE ACCEPTABLE ANCHORING AND MOUNTING METHODS THAT MEET ALL STRUCTURAL SPECIFICATIONS PROVIDED IN THE PRE-INSTALLATION MANUAL. VIBRATION REQUIREMENTS: THE MAXIMUM STEADY STATE VIBRATION TRANSMITTED THROUGH THE FLOOR SHOULD NOT EXCEED 0.001 PER METER SQUARED RMS MAXIMUM SINGLE FREQUENCY ABOVE AMBIENT BASELINE FROM 0.5 TO 80 Hz (MEASURED IN ANY 1 HOUR DURING A NORMAL OPERATING PERIOD). THE BEHAVIORAL CHARACTERISTICS MUST BE SUCH THAT ANY MEASURABLE TRANSIENT DISTURBANCE MUST ALSO BE MINIMIZED TO LESS THAN 0.01 PER METER SQUARED PEAK-TO-PEAK.



STRUCTURAL NOTES

- 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.
- FLOOR SLABS ON WHICH EQUIPMENT IS TO BE INSTALLED MUST BE LEVEL TO SPECIFICATIONS. (IF NOT SPECIFIED ELSEWHERE ON THIS SHEET THE FLOOR LEVELNESS SHOULD BE 1/8 IN. [3 MM] IN 10 FT. [3.05 M]).
- DIMENSIONS ARE TO FINISHED SURFACES OF ROOM.
- FOR SEISMIC REGIONS ENSURE SUPPORTS SPAN THREE MEMBERS.
- 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"

SHEET TITLE: STRUCTURAL LAYOUT

MODALITY TYPE: OPTIMA NM/CT 640

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PROJECT TITLE:

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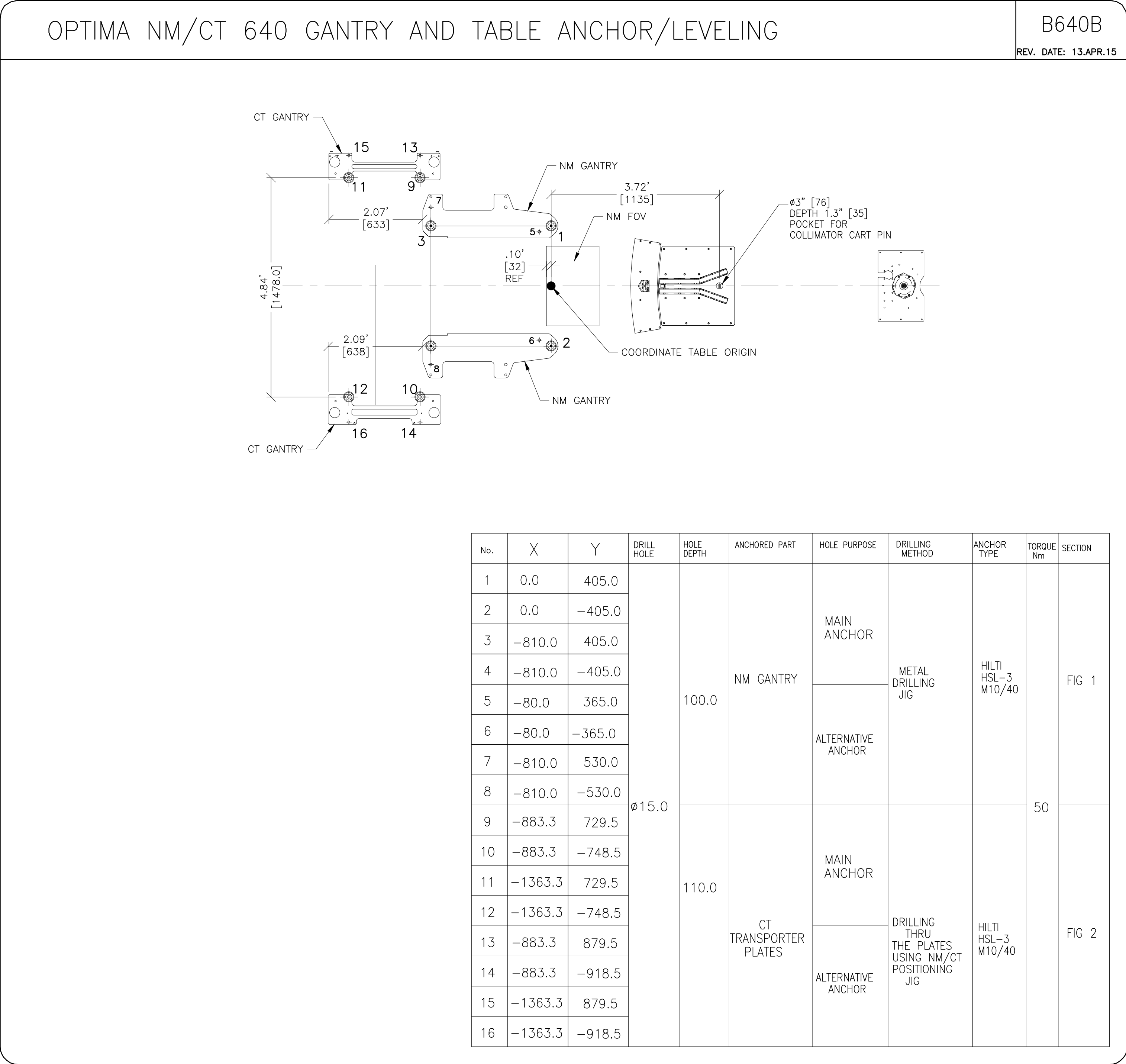
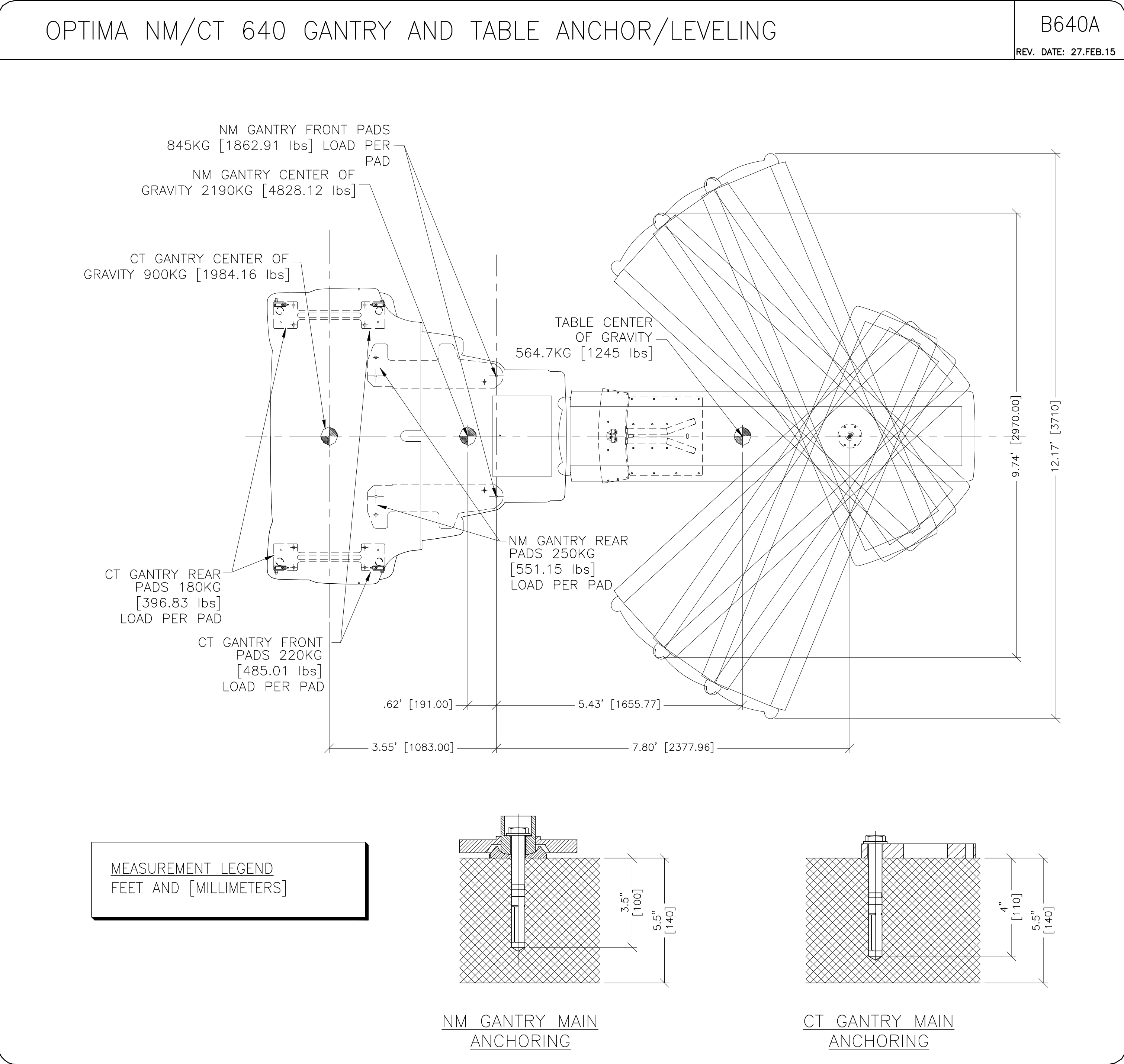
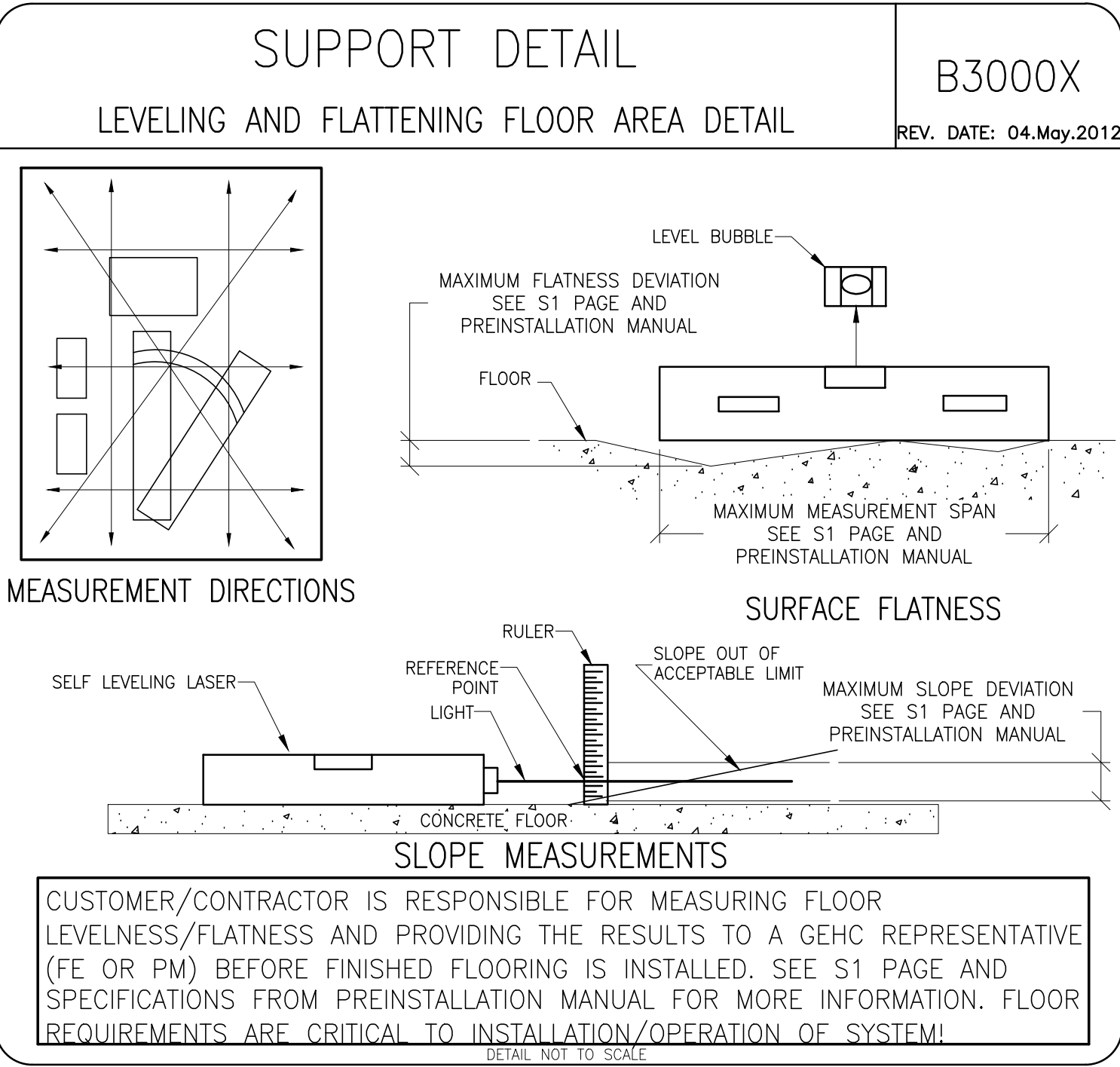
S1

GE Healthcare



Healthcare Project Implementation – Design Center
Milwaukee, Wisconsin

RQ – 155446 PIM R2



GE Healthcare

Healthcare Project Implementation – Design Center Milwaukee, Wisconsin

SHEET TITLE: STRUCTURAL DETAILS

MODALITY TYPE: OPTIMA NM/CT 640

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PROJECT TITLE:

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PROJECT

7-84f

REVISION

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DATE:

08.Oct.15

DRAWN BY:

RET

CHECKED BY:

CPC

REVISION HISTORY:

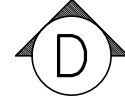
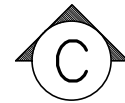
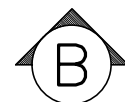
RQ - 155446

PIM R2

SHEET

S2

RECOMMENDED CEILING HEIGHT = 8'-0"

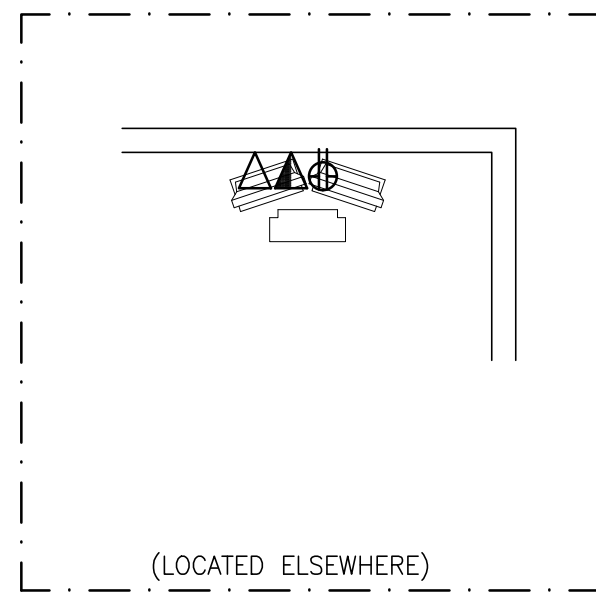


- o ALL JUNCTION BOXES, CONDUIT, DUCT, DUCT DIVIDERS, SWITCHES, CIRCUIT BREAKERS, CABLE TRAY, ETC., ARE TO BE SUPPLIED AND INSTALLED BY CUSTOMERS ELECTRICAL CONTRACTOR.
- o CONDUIT AND DUCT RUNS SHALL HAVE SWEEP RADIUS BENDS
- o CONDUITS AND DUCT ABOVE CEILING OR BELOW FINISHED FLOOR MUST BE INSTALLED AS NEAR TO CEILING OR FLOOR AS POSSIBLE TO REDUCE RUN LENGTH.
- o CEILING MOUNTED JUNCTION BOXES ILLUSTRATED ON THIS PLAN MUST BE INSTALLED FLUSH WITH FINISHED CEILING.
- o 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.
- o ALL OPENINGS IN ACCESS FLOORING ARE TO BE CUT OUT AND FINISHED OFF WITH GROMMET MATERIAL BY THE CUSTOMERS CONTRACTOR.
- o GENERAL CONTRACTOR TO INSERT PULL CORDS FOR ALL CABLE RUN CONDUITS BETWEEN THE EQUIPMENT ROOM AND THE OPERATORS CONTROL ROOM.
- o 10 FOOT PIGTAILS AT ALL JUNCTION POINTS.
- o ALL WIRING MUST BE THIN OR TFFN STRANDED COPPER THERMOPLASTIC 600 VOLT OR EQUIVALENT INSULATION. **ALUMINUM OR SOLID WIRES ARE NOT ALLOWED.**
- o GROUNDING IS CRITICAL TO EQUIPMENT FUNCTION AND PATIENT SAFETY. SITE MUST CONFORM TO WIRING SPECIFICATIONS SHOWN ON THIS PLAN.

NUCLEAR/CT EXAM ROOM

Dimensions and Equipment Layout:

- Overall Dimensions:**
 - Top: 10'-1"
 - Left: 2'-0"
 - Right: 1'-7"
 - Bottom: 0'-8"
- Internal Dimensions:**
 - Top Left: 7'-6"
 - Top Right: 3'-4"
 - Right Side (from top): 0'-1", 0'-5", 0'-9", 1'-1", 1'-2", 1'-4"
 - Bottom Left: 0'-3"
 - Bottom Center: 0'-8"
- Equipment and Features:**
 - Top Left:** SEO, ESTP, AC, ONE 4" CND. BELOW FLOOR.
 - Top Right:** TRAN UPS, ONE 2 1/2" CND. BELOW FLOOR.
 - Center:** NMT, ONE 3/4" CND. BELOW FLOOR.
 - Bottom Left:** DLK1, WLC, WL, EMO, ONE 1/2" CND. BELOW FLOOR.
 - Bottom Center:** ECG, ONE 3/4" CND. BELOW FLOOR.
 - Bottom Right:** CTT, NMC, ONE 2 1/2" CND. BELOW FLOOR.
 - Right Wall:** ONE 2 1/2" CND. BELOW FLOOR.
- Other Labels:** A, B, C (circled), and various dashed lines indicating paths or boundaries.



POINT		THE FOLLOWING MATERIALS ARE TO BE SUPPLIED AND INSTALLED BY THE CUSTOMER'S ELECTRICAL CONTRACTOR	
DESCRIPTION	QTY.	HARDWARE	DETAIL NO., SHT. E3
MAIN DISCONNECT AVAILABLE FROM GEHC, CALL 800-200-9760 EXTENSION 3925 OR LOCAL GE PROJECT MANAGER	1	30 AMP, 480V DISCONNECT WITH LOCKOUT, GEXPRO CAT. NO. GEX640NM25A80Y NOTE: THE GANTRY IS HARDWIRED.	ELEC-35
ACQUISITION MOBILE CART	1	EXTERNALLY CONNECTED	
CT GANTRY	1	SAME ROUTING AS 'NMC'	
DOOR SWITCH (NEEDED ONLY IF REQUIRED BY STATE/ LOCAL CODES)	1	ROOM DOOR INTERLOCK LIMIT SWITCH IN FRAME - NORMALLY OPEN (24V)	
ECG TRIGGER	1	SINGLE GANG BOX	
EMD PUSHBUTTON	1	EXTERNALLY CONNECTED	
ESTOP PUSHBUTTON	1	COVERPLATE 1 4 X 4 X 4 IN. BOX 3/4 IN. DIA CHASE NIPPLE	ELEC-8
NUCLEAR MEDICINE CAMERA	1	SAME ROUTING AS 'AC'	
PATIENT TABLE	1	SUITABLE BUSHING & LOCKNUT	ELEC-9
EMERGENCY OFF	1	OPENING IN CONDUIT MUST BE CUT FLUSH WITH FINISHED FLOOR	
UPS TRANSFORMER	1	SINGLE GANG 2 1/2 IN. DEEP FLUSH MOUNTED JUNCTION BOX.	ELEC-16
UPS CABINET	1	EXTERNAL CONNECTION	
WARNING LIGHT	1	2 1/2 IN. DIA. CHASE NIPPLE 6 X 6 X 4 IN. BOX 1 COVERPLATE	ELEC-8
WARNING LIGHT CONTROLLER AVAILABLE FROM GEHC, CALL 800-279-7925 OR LOCAL GE INSTALLATION PROJECT MGR	1	'X-RAY ON' INCANDESCENT LIGHT FIXTURE DO NOT USE FLUORESCENT FIXTURES GE CAT. NO. WX18W-DF-X1U	
WARNING LIGHT CONTROLLER	1	E4502RL WARNING LIGHT CONTROL OR EQUIVALENT MAX 24V CONTROLLER	ELEC-72



MODALITY TYPE: OPTIMA NM/CT 640

7-84f
TYPICAL FINAL

FISKE, J. H. 1974.

DATE: 08.Oct.15
DRAWN BY: RET
CHECKED BY: CPC

E1


FEEDER TABLE – OPTIMA NM/CJT 640





- o CALCULATIONS BASED UPON NOMINAL VOLTAGE, WIRE SIZE IN AWG.
- o RECOMMENDED FEEDER SIZES FROM DISTRIBUTION TRANS. TO POWER DISTRIBUTION UNIT.
- o THE GROUNDING CONDUCTOR () WILL BE A MINIMUM. THIS GROUND WILL RUN FROM THE EQUIPMENT BACK TO THE GROUND BATTERY OR GROUNDING POINT AND ALWAYS TRAVEL IN THE SAME CONDUIT WITH THE FEEDERS AND NEUTRAL.
- o NEUTRAL MUST BE TERMINATED AT THE MAIN DISCONNECT PANEL.
- o FOR A FULL SYSTEM UPS REFER TO ELECTRICAL DETAILS FOR UPS FEEDER WIRES.

POWER SUPPLY VOLTAGE

RUN LENGTH IN FEET	342-418 380	360-440 400	378-482 420	398-484 440	414-506 440	432-528 480
	FEEDER	GND	FEEDER	GND	FEEDER	GND
50	6	6	6	6	6	6
100	6	6	6	6	6	6
150	4	4	4	4	4	4
200	4	4	4	4	4	4
250	4	4	4	4	4	4
300	4	4	4	4	4	4
350	4	4	4	4	4	4
400	4	4	4	4	4	4

REV. DATE: 16.Sep.14

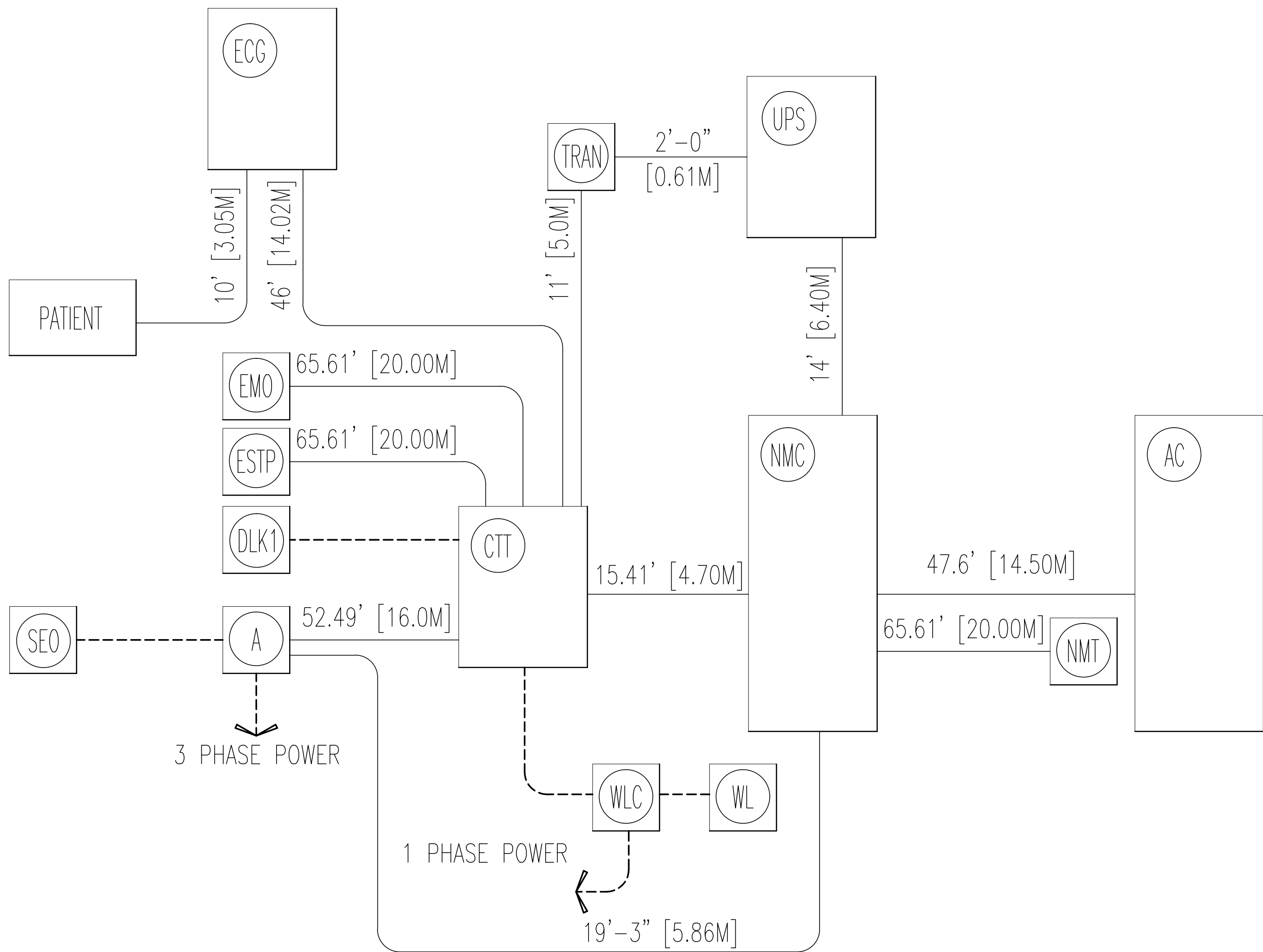
ADDITIONAL CONDUIT RUNS OPTIMA NM/CT 640 (BY CONTRACTOR)			
CONDUITS REQUIRED FOR BASE SYSTEM (CONDUITS ARE LOCATED ABOVE CEILING)			
			
			REV DATE: 09/01/2014
WL	TO	WLC	ONE 1/2" CND.
A	TO	SEO	ONE 1/2" CND.
A	TO	FEEDER	ONE CND. AS REQ'D
WLC	TO	120-v 1ø POWER	CND. AS REQ'D
NOTE: SEE E2 PAGE FOR MAXIMUM RUN LENGTHS			

	DUPLEX HOSPITAL GRADE, DEDICATED OUTLET 120-V, SINGLE PHASE OUTLET SAME FEEDER CIRCUIT AS "A" PANEL
	DUPLEX HOSPITAL GRADE, DEDICATED OUTLET 120-V, SINGLE PHASE OUTLET 20 AMP
	DEDICATED TELEPHONE LINE(S) (SEE ELECTRICAL DETAIL ELEC-1 OR ELEC-67)
	NETWORK OUTLET (SEE ELECTRICAL DETAILS ELEC-83 AND ELEC-84 OR ELEC-87)

WIRE RUN, FROM - TO	QUANTITY, WIRE SIZE/COLOR
WLC > 1 PHASE	1-ND. 14 BLACK, 1-ND. 14 WHITE, 1-ND. 14 GREEN
490-V > A	3-BLACK, 1-WHITE, 1-GREEN - REFER TO FEEDER TABLE
WLC > WLC	2-ND. 14 BLACK, 1-ND. 14 RED, 1-ND. 14 WHITE
A > SED	1-ND. 14 BLACK, 1-ND. 14 WHITE, 1-ND. 14 GREEN
CTT > DLK1	1-ND. 14 BLACK, 1-ND. 14 WHITE, 1-ND. 14 GREEN
CTT > WLC	1-ND. 14 BLACK, 1-ND. 14 WHITE, 1-ND. 14 GREEN

THIS SHEET IS PART OF THE DOCUMENT SET LISTED ON SHEET C1 AND SHOULD NOT BE SEPARATED

INTERCONNECT DIAGRAM



POWER SPECIFICATIONS

OPTIMA NM/CT 640

(REV. DATE 04-Jun-2012)

VOLTAGE

PRIMARY SOURCE IS REQUIRED FOR ALL INSTALLATIONS. RANGE OF LINE VOLTAGES: NOMINAL LINE VOLTAGE OF 380 TO 480, 3 PHASE, 50 OR 60 HZ. REQUIRED POWER SUPPLY: WYE CONNECTED. MAXIMUM DAILY VOLTAGE VARIATION MUST FALL WITHIN ONE OF THE RANGES IN TABLE A.

PHASE-BALANCE.

VOLTAGE TRANSIENT OR IMPULSE ON THE INCOMING POWER MUST BE HELD TO A MINIMUM. TRANSIENTS CAUSED BY LIGHTNING SURGES, LOAD SWITCHING, STATIC ELECTRICITY ETC. CAN CAUSE SCAN ABORTS OR, IN EXTREME INSTANCES, COMPONENT FAILURE IN THE COMPUTER SUBSYSTEM.

POWER DEMAND

CONTINUOUS POWER DEMAND = 10 KVA

TABLE A ALLOWABLE INPUT VOLTAGES/ CURRENT DEMAND

NOMINAL VOLTAGE	ABSOLUTE RANGE	CURRENT (AMPS)		MINIMUM STANDARD OVERCURRENT PROTECTION
		MOMENTARY	CONTINUOUS	
380	342-418	28	16	30-A
400	360-440	28	16	30-A
420	378-462	26	15	28-A
440	396-484	25	14	27-A
460	414-506	24	13	26-A
480	432-528	23	12	25-A

(ALL CALCULATIONS BASED UPON NOMINAL VOLTAGE)

PHASE-TO-PHASE VOLTAGES MUST BE WITHIN +2 PERCENT OF THE LOWEST PHASE-TO-PHASE VOLTAGE. MAXIMUM ALLOWABLE TRANSIENT VOLTAGE SHOULD BE LIMITED TO 1500V PEAK.

TABLE B MAXIMUM MOMENTARY POWER DEMAND.

DEMAND	OPTIMA NM/CT 640
KVA*	19
POWER FACTOR AT	0.85

* DEMAND INCLUDES POWER FOR ENTIRE CT SYSTEM. LINE VOLTAGE REGULATION AT MAXIMUM POWER DEMAND MUST BE LESS THAN OR EQUAL TO 6 PERCENT.

DISTRIBUTION TRANSFORMER

FOR A SINGLE UNIT INSTALLATION, THE MINIMUM TRANSFORMER SIZE IS 24 KVA, WITH 2.4% RATED REGULATION AT UNITY POWER FACTOR. RESULTANT MAXIMUM ALLOWABLE FEEDER REGULATION IS 3.4%.

NOTE: THE CT SYSTEM MUST NOT BE POWERED IN A MULTIPLE INSTALLATION WHERE FILM CHANGERS ARE USED. FILM CHANGERS UTILIZE A LARGE NUMBER OF HIGH POWERED, CLOSELY SPACED EXPOSURES WHICH MAY COINCIDE WITH THE CT SCAN.

ELECTRICAL NOTES

- NOTE 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. **ALUMINUM OR SOLID WIRES ARE NOT ALLOWED.**
- NOTE 2: WIRE SIZES GIVEN ARE FOR USE OF EQUIPMENT. LARGER SIZES MAY BE REQUIRED BY LOCAL CODES.
- NOTE 3: IT IS RECOMMENDED THAT ALL WIRES BE COLOR CODED, AS REQUIRED IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.
- NOTE 4: CONDUIT SIZES SHALL BE VERIFIED BY THE ARCHITECT, ELECTRICAL ENGINEER OR CONTRACTOR, IN ACCORDANCE WITH LOCAL OR NATIONAL CODES.
- NOTE 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.
- NOTE 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.
- NOTE 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).**
- NOTE 8: CONDUIT TURNS TO HAVE LARGE, SWEEPING BENDS WITH MINIMUM RADIUS IN ACCORDANCE WITH NATIONAL AND LOCAL ELECTRICAL CODES.
- NOTE 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.
- NOTE 10: THE MAXIMUM POINT TO POINT DISTANCES ILLUSTRATED ON THIS DRAWING MUST NOT BE EXCEEDED.
- NOTE 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.
- NOTE 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.

DIAGRAM KEY

- CUSTOMER/CONTRACTOR SUPPLIED WIRING. ROUTE IN ADEQUATE CONDUIT OR RACEWAY.
- _____ GE FURNISHED CABLE RUNS. ROUTE IN EMPTY CONDUIT OR RACEWAY.
- 59' [18M] MAXIMUM RUN LENGTH BETWEEN JUNCTION POINTS. Feet [Meters]

SHEET TITLE: ELECTRICAL SPECIFICATIONS

MODALITY TYPE: OPTIMA NM/CT 640

PROJECT TITLE:

7-84f
TYPICAL FINAL

PROJECT	REVISION
7-84f	00
DATE:	08.Oct.15
DRAWN BY:	RET
CHECKED BY:	CPC

REVISION HISTORY:

SHEET

E2

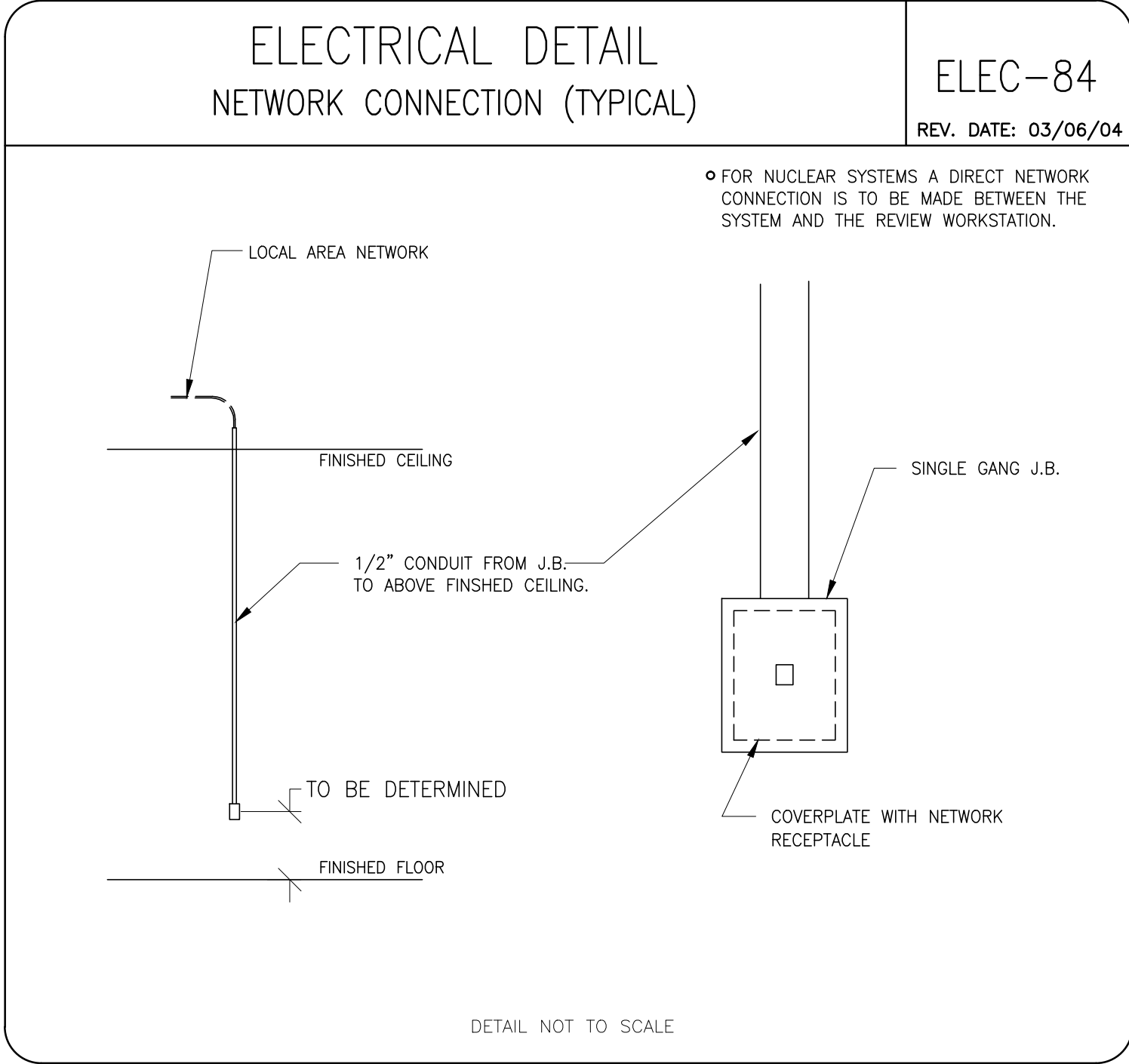
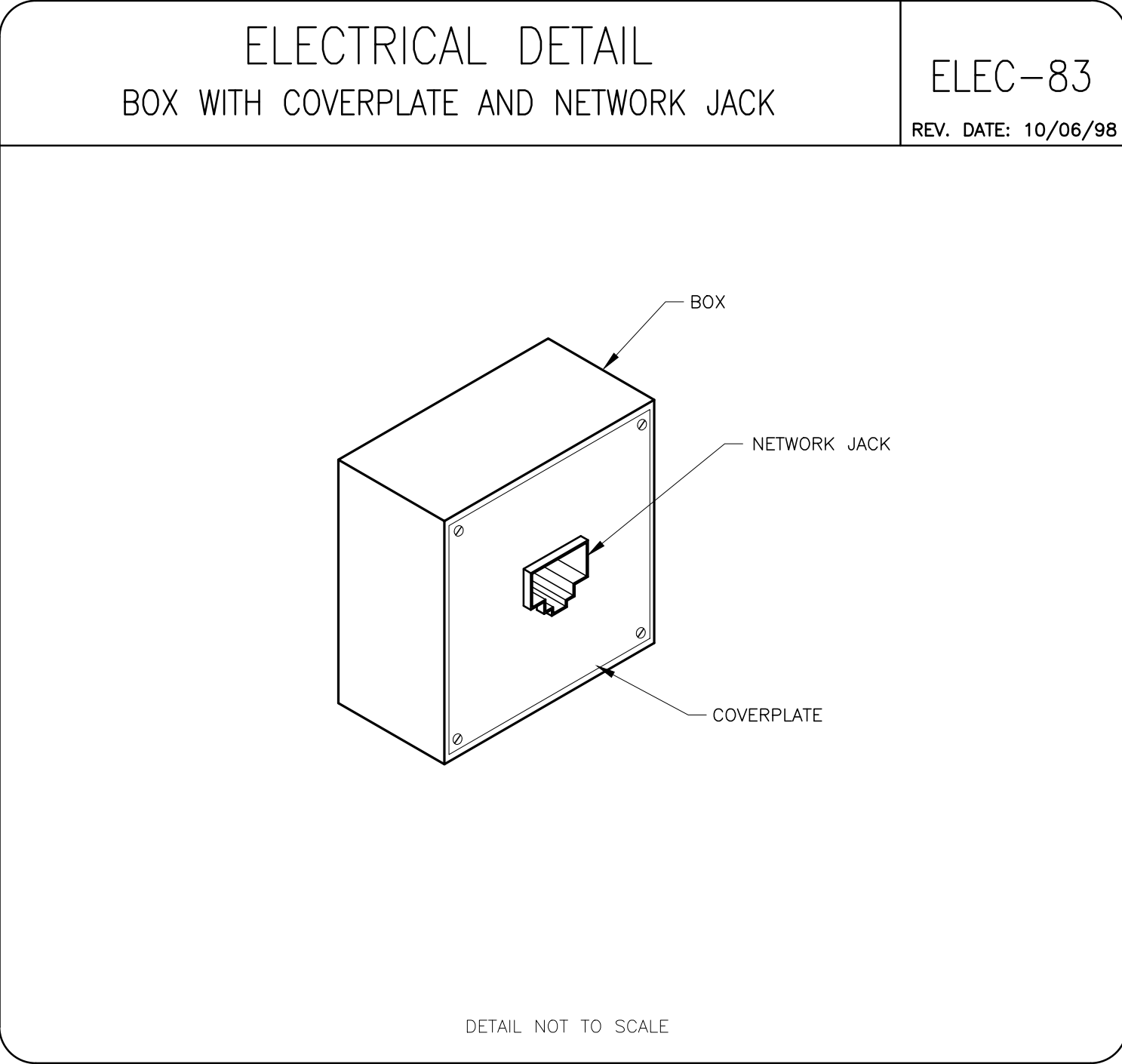
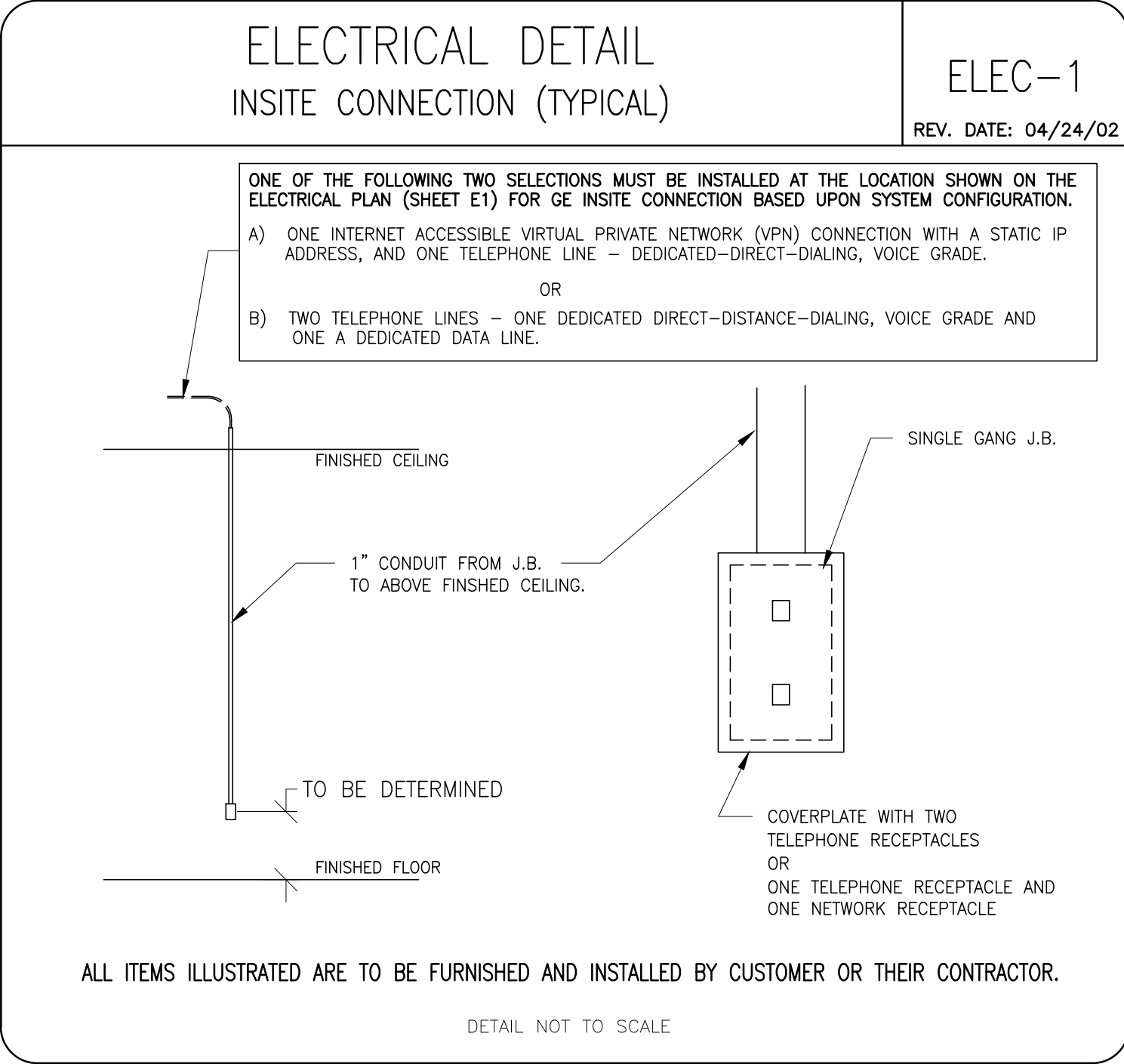
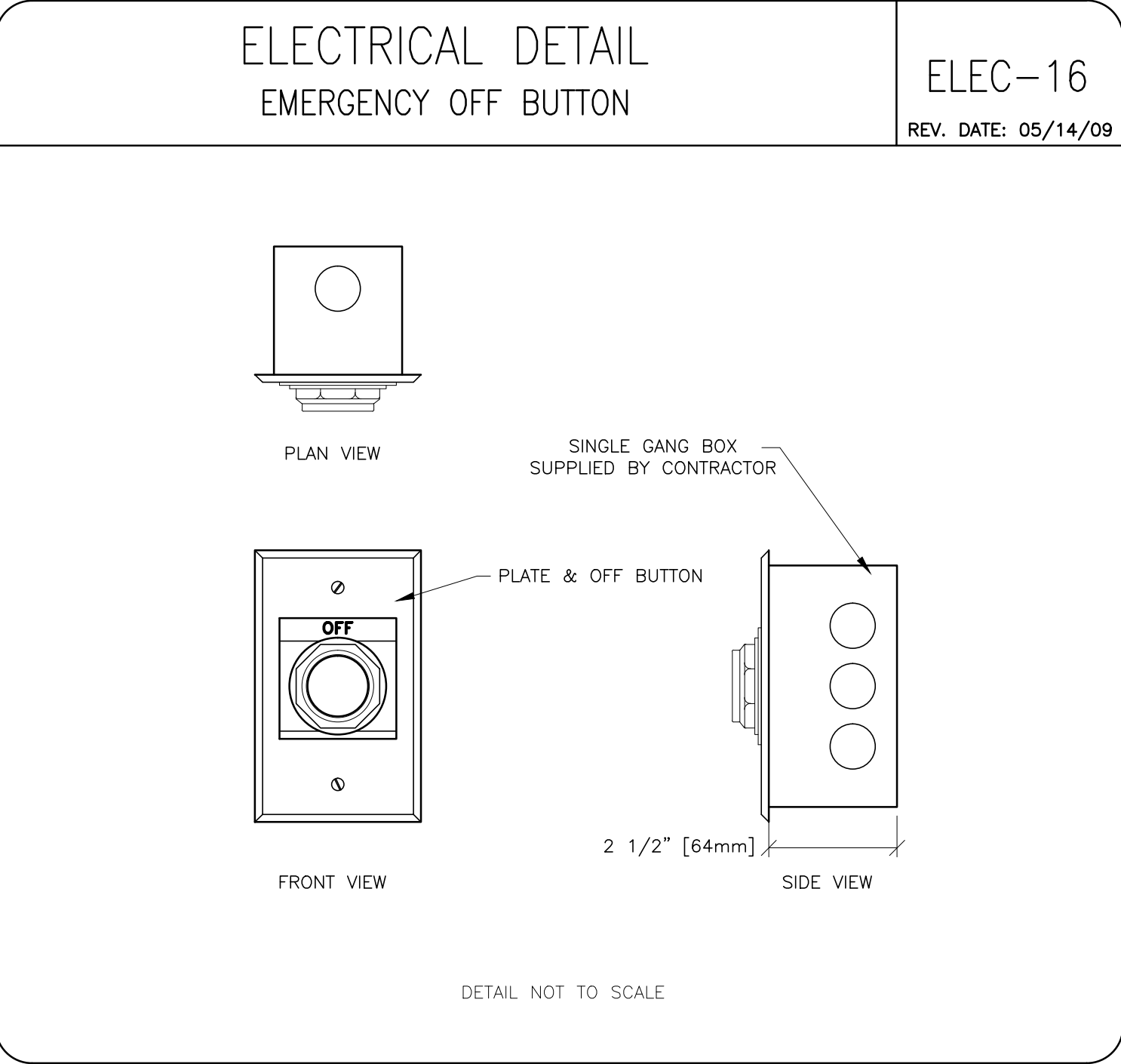
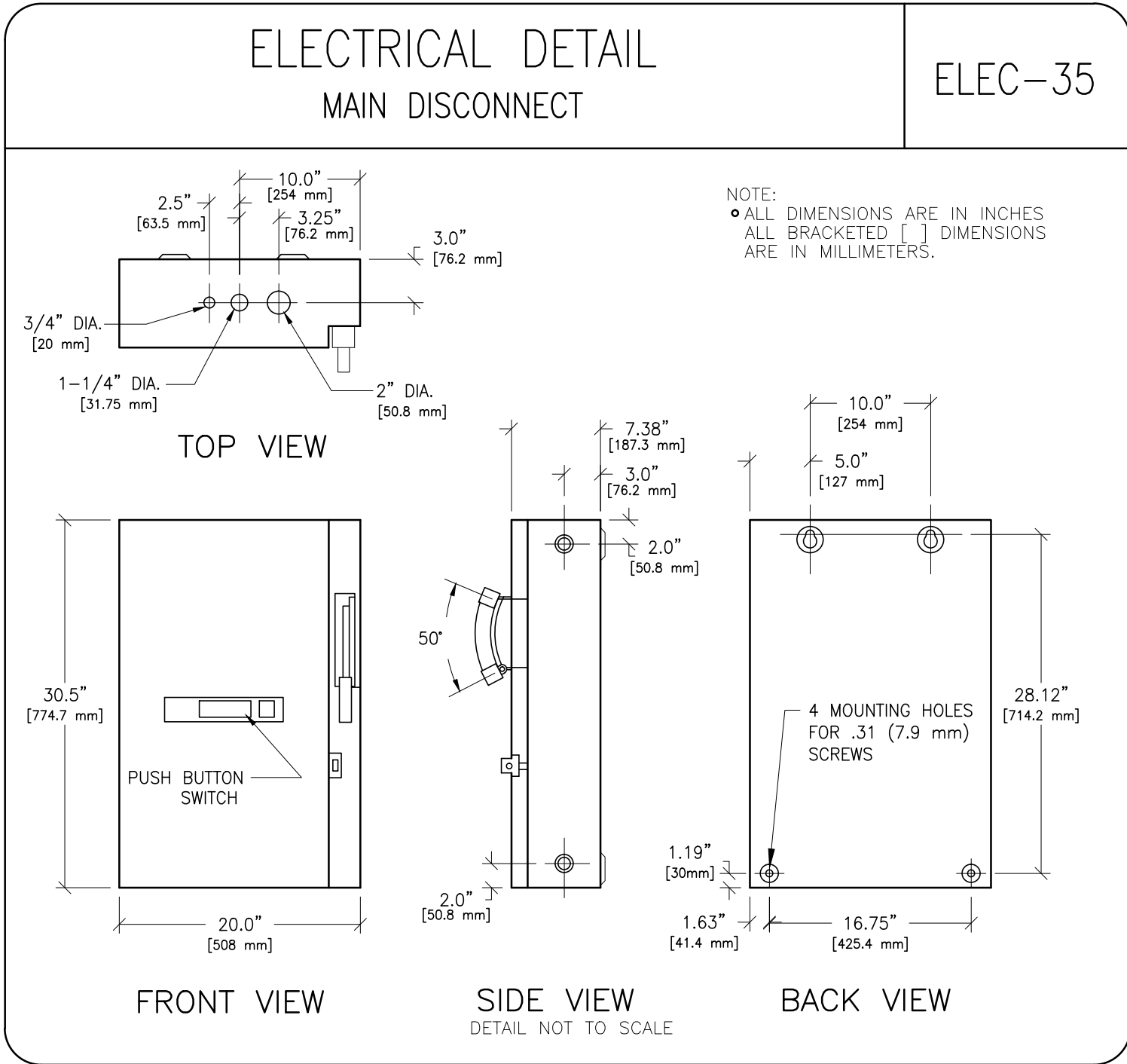
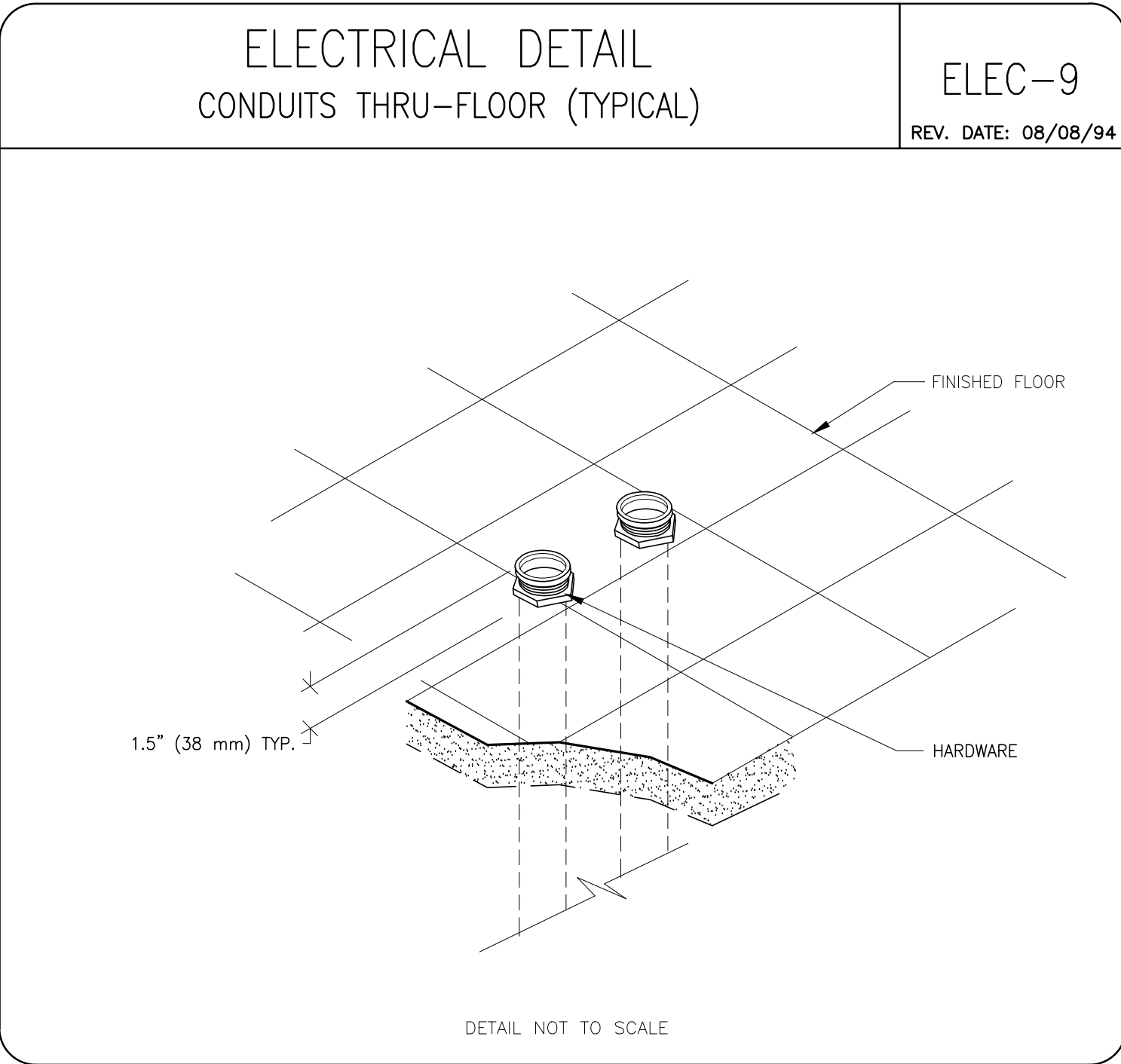
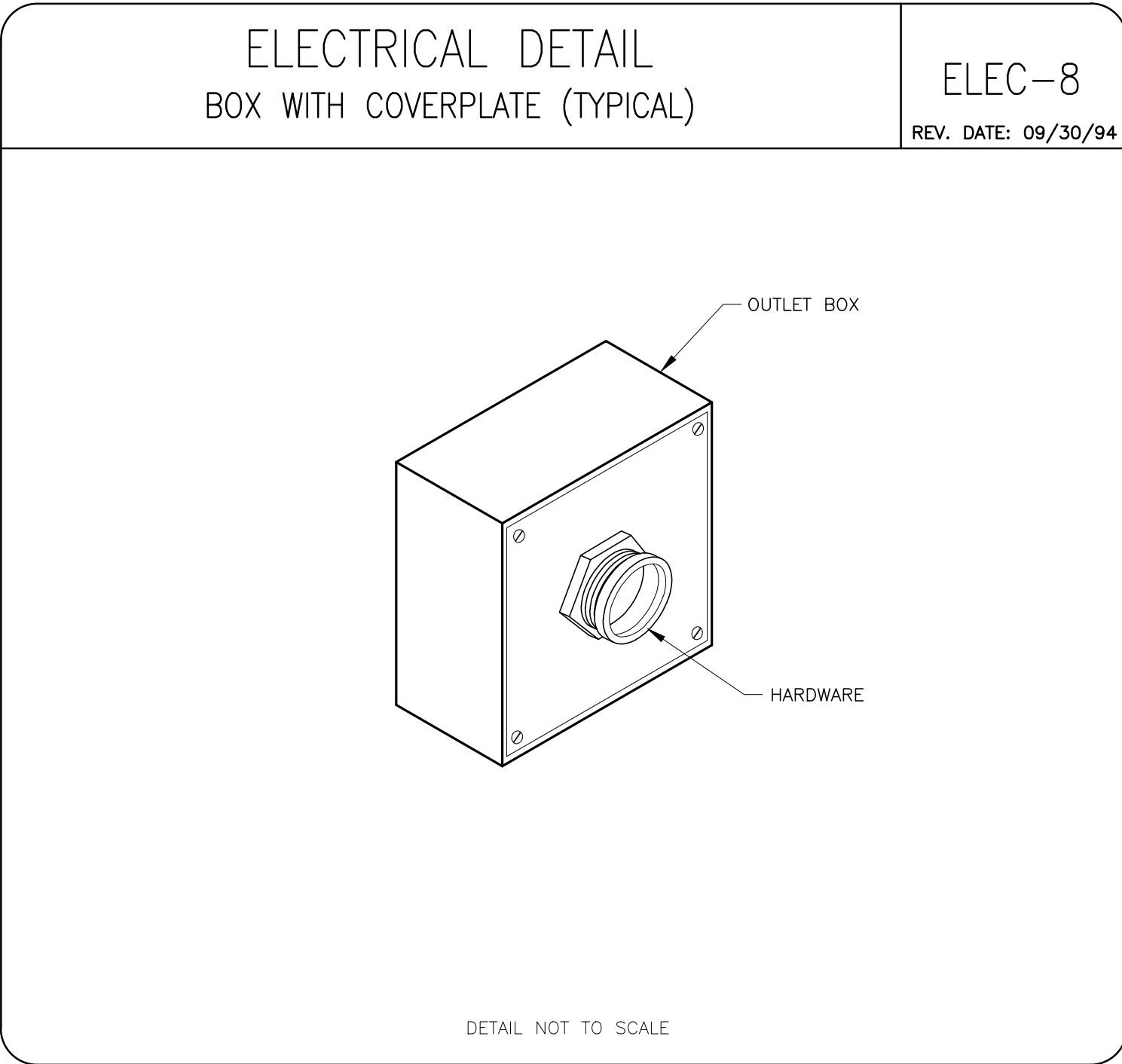
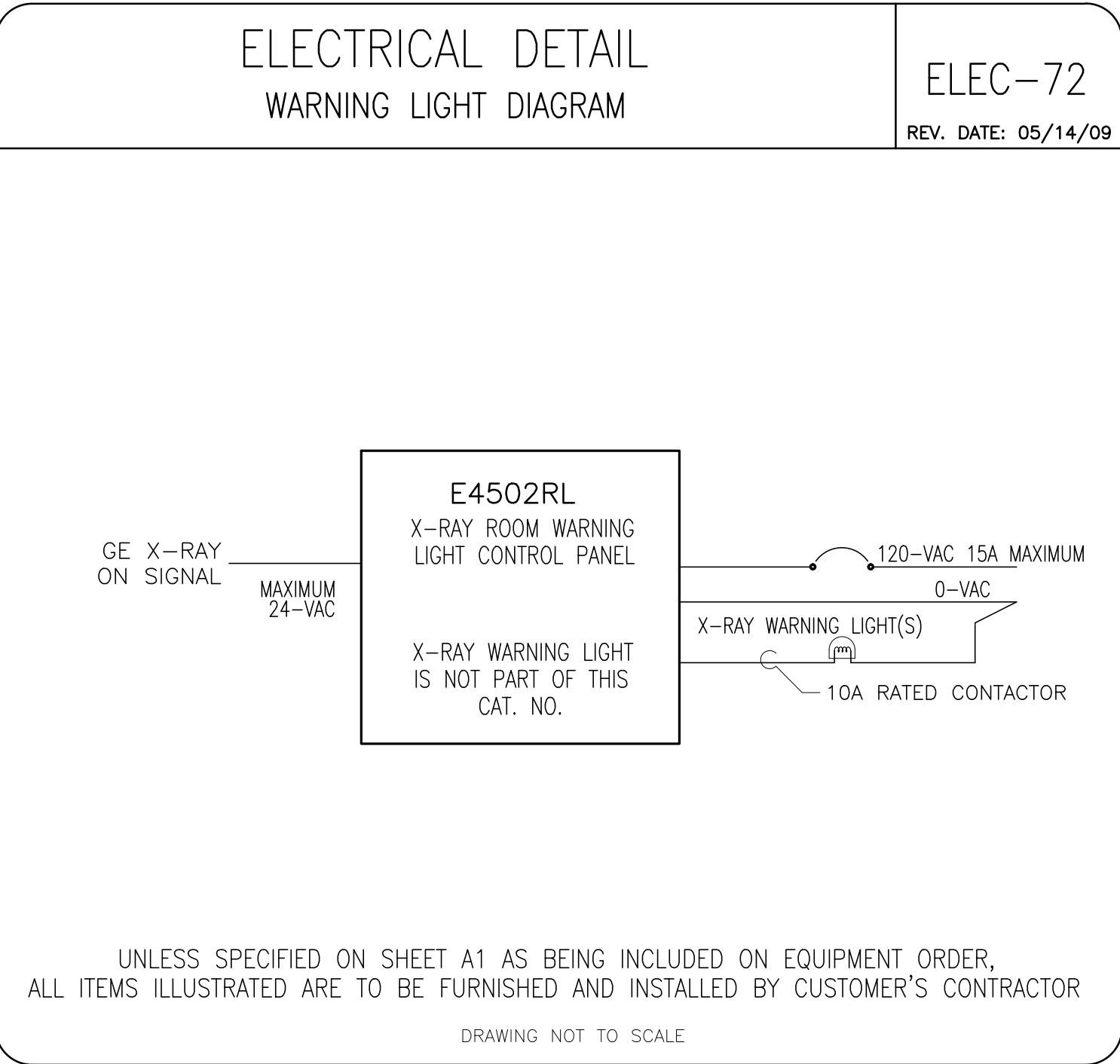
GE Healthcare



Healthcare Project Implementation - Design Center

Minneapolis, Wisconsin

PIM R2
RQ - 155446



GE Healthcare

Healthcare Project Implementation - Design Center Milwaukee, Wisconsin

ELECTRICAL DETAILS

MODALITY TYPE: OPTIMA NM/CT 640

THIS PLAN IS SUBMITTED TO SUGGEST LOCATION OF GE HEALTHCARE EQUIPMENT AND ASSOCIATED APPARATUS. ELECTRICAL WIRING DETAILS AND ROOM ARRANGEMENTS IN PREPARING THIS PLAN, EVERY EFFORT HAS BEEN MADE TO CONFORM DETAILS TO THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL FIRE PROTECTION ASSOCIATION CONSTRUCTION PRACTICES, AND THE COMPANY CANNOT ACCEPT RESPONSIBILITY FOR ANY DAMAGES RESULTING THEREFROM.

7-84f

TYPICAL FINAL

PROJECT TITLE:

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E3

