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THE MEDICAL CENTER OF AURORA

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

ISSUE DATE: 05 SEPTEMBER 2023
PROJECT #: 23-004

Classification of work complies with Level 1 Alterations - **2021 IEBC 602**

ISSUE FOR CONSTRUCTION

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City of Aurora Building Division
Project: *Imaging Replacements*
Address: *1501 S Potomac St*
Occupancy Group: *I2*
Construction Type: *UBC IA-SPK*
RSN: *1845534*
Permit: *2024 2477659-LT*

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 14, 2024
2021 INTERNATIONAL CODES & 2023 NEC

Code violations that are found during inspection are required to be corrected. Permit issuance does not grant approval of a code violation.

Field Inspection consultation is available upon request. Call 303-739-7420 to request a consultation

Structural plan review is limited to a general survey for code compliance. No review is implied nor was undertaken to verify structural adequacy.

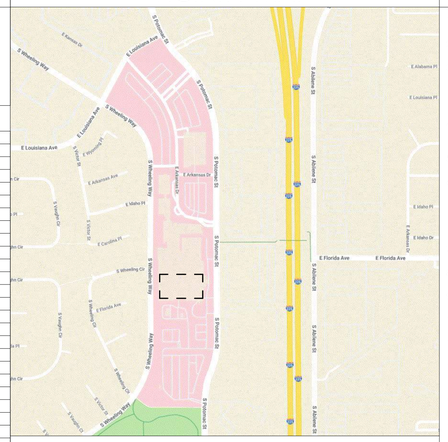
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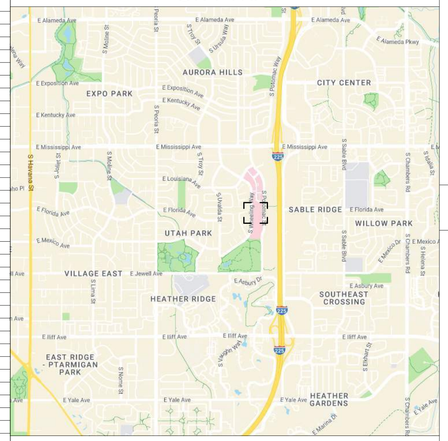
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VICINITY MAP



CITY MAP



DRAWING NUMBER KEY

DISCIPLINE

A	ARCHITECTURAL
C	CIVIL
L	LANDSCAPE
M	MECHANICAL
E	ELECTRICAL
P	PLUMBING
S	STRUCTURAL
K	KITCHEN
R	RADIOLOGY

XX/A.XXX

NUMBER OF PLAN, DETAIL, ETC. ON SHEET

DRAWING SERIES

GENERAL PROJECT NOTES

1. REFER TO COMPLETE SET OF ISSUED CONTRACT DOCUMENTS FOR APPLICABLE NOTES, ABBREVIATIONS, AND SYMBOLS.
2. DO NOT SCALE THE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, OBTAIN CLARIFICATION FROM THE ARCHITECT BEFORE CONTINUING.
3. DIMENSIONS SHOWN ON THE FLOOR PLANS FOR NEW CONSTRUCTION ARE TO THE FACE OF FINISH OF INTERIOR WALLS, TO CENTERLINE OF COLUMNS, AND TO FACE OF CONCRETE OR MASONRY WALLS, UNLESS NOTED OTHERWISE. DIMENSIONS IN RENOVATED AREAS ARE FROM FINISH FACE OF EXISTING WALLS TO FINISH FACE OF NEW STUD WALLS, UNLESS NOTED OTHERWISE.
4. FIELD MEASURE AND CONFIRM DIMENSIONS FOR OWNER-PROVIDED EQUIPMENT AND FURNISHINGS, COORDINATE WITH THE OWNER ON DELIVERY AND INSTALLATION OF OFCI EQUIPMENT.
5. FINISH FLOOR ELEVATIONS ARE TO TOP OF FINISHED FLOORING PRODUCT, NOTED BY "AFF" (ABOVE FINISH FLOOR), UNLESS NOTED OTHERWISE.
6. WHERE NEW GYPSUM BOARD PARTITIONS ARE A CONTINUATION OF AN EXISTING PARTITION OR COLUMN ENCASEMENT, THE FACE OF THE NEW GYPSUM BOARD SHALL BE ALIGNED WITH THE FACE OF THE EXISTING SURFACE. WHERE A ONE-HOUR PARTITION IS SHOWN AS A CONTINUATION OF A TWO-HOUR PARTITION OR COLUMN ENCASEMENT, THE FACE OF THE GYPSUM BOARD SHALL BE OFFSET AS REQUIRED TO PROVIDE FACE ALIGNMENT OF GYPSUM BOARD ON BOTH SIDES.
7. LEVEL FLOORS SO THAT THEY DO NOT EXCEED LISTED VENDOR TOLERANCES OR A 1/4" VARIANCE IN A 10'-0" RADIUS, WHICHEVER IS MORE STRINGENT.
8. PARTITION TYPES AND FIRE RESISTIVE RATINGS INDICATED ON A WALL ARE TO BE CONTINUOUS FOR THE LENGTH AND HEIGHT OF A PARTITION.
9. APPROVE FLOOR OUTLET LOCATIONS WITH ARCHITECT AND BUILDING MANAGEMENT PRIOR TO CORE DRILLING.
10. OPENINGS IN RATED WALL, FLOOR, CEILING, AND ROOF ASSEMBLIES SHALL BE SEALED WITH A FIRE RESISTANT JOINT SYSTEM OR PROTECTED WITH A FIRE RATED CHASE.
11. EXIT SIGNS AND SMOKE DETECTORS LOCATED IN CEILINGS SHALL BE POSITIONED AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
12. WHERE MATERIALS ARE APPLIED TO, OR ARE IN DIRECT CONTACT WITH WORK INSTALLED BY ANOTHER SUBCONTRACTOR, COMMENCEMENT OF WORK IMPLIES ACCEPTANCE OF THE SUBSTRATE AS SUITABLE FOR THE APPLICATION INTENDED.
13. ISOLATE DISSIMILAR METALS TO PREVENT GALVANIC CORROSION.
14. SEALANTS EXPOSED TO VIEW SHALL BE CUSTOM COLOR AS SELECTED BY THE ARCHITECT.
15. COORDINATE LOCATION OF SEALANT AND COMPATIBILITY OF SEALANTS WITH ADJACENT WORK, INCLUDING MATERIALS AND OTHER CONTIGUOUS SEALANTS.
16. CAULK AT JUNCTURE OF INTERIOR FACES OF DOOR FRAMES, VIEW WINDOW FRAMES, EXTERIOR WINDOW FRAMES, AND CABINET WORK WITH ADJACENT MATERIALS. MAINTAIN THE FIRE RATING OF CONSTRUCTION AROUND CABINETS, PANELS, AND BOXES RECESSED IN FIRE RATED WALL, FLOOR, AND CEILING ASSEMBLIES.
17. **DO NOT HANG (SUPPORT) ANY ITEMS FROM METAL ROOF DECK. IT IS ACCEPTABLE TO ATTACH (E.G. CEILING SYSTEM WIRE HANGERS) TO JOISTS AND/OR BEAMS. IF NO JOIST OR BEAM, PROVIDE A STEEL STRIP.**

GENERAL SYMBOLS LEGEND

COLUMN GRID DESIGNATION
1 | 1.2 | A
EXISTING GRID

DOOR TAG
XXX DOOR TAG

GLAZING TAG
GL-X GLAZING DESIGNATION PER SPECIFICATIONS

ARCHITECTURAL WOODWORK
24" CABINET WIDTH
A1 CABINET TYPE

WALL SECTION TAG
1 / A.XXX — SECTION DESIGNATION / SHEET NUMBER

INTERIOR ELEVATION TAG
XX / A.XXX / XX — SHEET NUMBER / ELEVATION DESIGNATION

DETAIL CALLOUT TAG
1 / AXXXX — SECTION DESIGNATION / SHEET NUMBER

ENLARGED PLAN / CALLOUT TAG
XX PLAN/DETAIL DESIGNATION
1 / A101 — SHEET NUMBER

NOTE TAGS
1 NOTE BY NUMBER
XX.XXX SPECIFICATION NOTE

PROJECT DESCRIPTION

THE PROJECT WILL CONSIST OF THREE SEPARATE AREAS OF CONSTRUCTION. IN THE EMERGENCY DEPARTMENT, THE EXISTING CT MACHINE WILL BE REPLACED WITH MINOR FINISHES IMPROVEMENTS TO THE SPACE INCLUDING AESTHETIC CEILING MODIFICATIONS. ELECTRICAL SERVICE TO THE ROOM WILL BE MODIFIED AS NECESSARY TO SUITE THE NEW EQUIPMENT. IN THE IMAGING DEPARTMENT, THE EXISTING CT ROOM WILL BE MODIFIED BY RELOCATING MILLWORK FROM ONE SIDE OF THE ROOM TO THE OTHER. CEILING MODIFICATIONS WILL INCLUDE LIGHTING REPLACEMENT, HVAC REDISTRIBUTION, AND ABOVE CEILING RACEWAY INSTALLATION. LASTLY, THE MRI ROOM #1 WILL UNDERGO A COMPLETE EQUIPMENT TEAR DOWN AND REFURBISHMENT. THE EXISTING MAGNET WILL BE SHIFTED A SHORT DISTANCE WITHIN THE ROOM AND EXISTING RF SHIELD WILL NEED TO BE MODIFIED TO ADAPT TO THE NEW RF PENETRATION PANEL.

ALL PROJECTS CANNOT COMMENCE CONCURRENTLY. IT IS SUGGESTED THAT THE SEQUENCE IS AS FOLLOWS:
1, ED CT AND MRI
2, ED COMPLETES
3, IMAGING CT AND MRI CONTINUE
4, MRI COMPLETES
5, IMAGING CT COMPLETES

TOTAL SQUARE FOOTAGES ARE AS FOLLOWS:
ED CT = 396 SF
IMAGINING CT = 516 SF
MRI = 852 SF

PROJECT DATA

- **CODES/ LAWS:**
  CITY OF AURORA:
  2021 INTERNATIONAL BUILDING CODE (IBC)
  2023 NATIONAL ELECTRICAL CODE (NEC)
  2021 INTERNATIONAL MECHANICAL CODE
  2021 INTERNATIONAL PLUMBING CODE
  2021 INTERNATIONAL FUEL GAS CODE
  2021 INTERNATIONAL FIRE CODE
  2021 INTERNATIONAL ENERGY CONSERVATION CODE

  STATE OF COLORADO:
  2018 COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT - HOSPITAL LICENSING RULES: 6-CCR 1011-1
  2012 NFPA 101 - LIFE SAFETY CODE
  FEDERAL:
  2010 AMERICANS WITH DISABILITIES ACT GUIDELINES
  2017 ICC / ANSI A117.1 ACCESSIBILITY CODE
- **OCCUPANCY CLASSIFICATION:**
  2021 IBC - GROUP I-2 CONDITION 2 (SECTION 308.3)
  2012 NFPA 101 - HEALTH CARE (CHAPTER 18/19)
- **PRINCIPAL OCCUPANCY TYPE:** HEALTHCARE, I-2 (396 SQFT), (516 SQFT), (852 SQFT)
- **CONSTRUCTION TYPE:**

  EXISTING: UBC - TYPE I-A, UNRESTRAINED, FULLY SPRINKLERED

  NEW: 2021 IBC - TYPE I-A, FULLY SPRINKLERED
  2012 NFPA - TYPE I (332)

ABBREVIATIONS LEGEND

ACC	ACCESSIBLE	NIC	NOT IN CONTRACT
AFF	ABOVE FINISHED FLOOR	NTS	NOT TO SCALE
APPROX	APPROXIMATE	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
ARCH	ARCHITECTURAL		
B.O.___	BOTTOM OF ___	OFOI	OWNER FURNISHED, OWNER INSTALLED
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	OPP	OPPOSITE
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	PERP	PERPENDICULAR
		PLBG	PLUMBING
CL	CENTER LINE	PLYWD	PLYWOOD
CLG	CEILING	RE:	REFER TO ___
CLR	CLEAR	REF	REFRIGERATOR
CMU	CONCRETE MASONRY UNIT	REINF	REINFORCE, REINFORCING
		RO	ROUGH OPENING
COORD	COORDINATE	ROW	RIGHT OF WAY
CORR	CORRIDOR	SCHED	SCHEDULE
DBL	DOUBLE	SF	SQUARE FOOT(FEET)
DEMO	DEMOLISH, DEMOLITION	SIM	SIMILAR
EA	EACH	SPEC	SPECIFICATION
ELEC	ELECTRIC(AL)	STC	SOUND TRANSMISSION CLASS
ELEV	ELEVATOR		
EQ	EQUAL	STD	STANDARD
(E), EXST	EXISTING	STL	STEEL
FF	FINISH FACE	STRUCT	STRUCTURAL
FF EL	FINISHED FLOOR ELEVATION	T	TREAD
		T&G	TONGUE & GROOVE
FLR	FLOOR	TEMP	TEMPORARY
FO	FINISHED OPENING	T.O.	TOP OF ___
FP	FIRE PROTECTION	TOPO	TOPOGRAPHY, TOPOGRAPHIC
FV	FIELD VERIFY		
GALV	GALVANIZED	TYP	TYPICAL
GYP BD	GYPSUM BOARD	UL	UNDERWRITER'S LABORATORIES
GYP PLAS	GYPSUM PLASTER		
INSUL	INSULATION	UNFIN	UNFINISHED
LAV	LAVATORY	UNO	UNLESS NOTED OTHERWISE
LVR	LOUVER	W/	WITH
MAX	MAXIMUM	W/O	WITHOUT
MECH	MECHANICAL	WC	WATER CLOSET
MFR	MANUFACTURER	WD	WOOD
MIN	MINIMUM	X	BY
MISC	MISCELLANEOUS		

SEPARATE FIRE ALARM PERMIT REQUIRED:
Due to the proposed work the general contractor is required to obtain the services of a fire alarm contractor to determine if a separate alarm permit is required. If it is determined that the spacing of the fire alarm devices is not in compliance, then a separate fire alarm permit is required. Approval of the documents is required prior to system installation or any request for inspection. A certificate of occupancy or final approval cannot be issued by the Building Division without this fire protection system. 2015 IFC, Section 105.7.6.

SEPARATE FIRE SPRINKLER PERMIT REQUIRED:
Due to the proposed work the general contractor is required to obtain the services of a fire sprinkler contractor to determine if a separate sprinkler permit is required. If it is determined that the spacing of the fire sprinkler heads is not incompliance, then a separate fire sprinkler permit is required. Approval of the documents is required prior to system installation or any requires for inspection. A Certificate of Occupancy or final approval cannot be issued by the Building Division without this fire protection system. 2021 IFC, Section 105.6.1

Provide fire extinguishers as required by the 2021 IFC Table 906.3[1] and 2019 NFPA 10. Plans must show and label the locations and types of fire extinguishers within the structure.

Consultation for fire extinguisher placement is available upon request. Call 303-739-7420 prior to final Life Safety inspection to verify proposed locations.

City of Aurora Building Division Reviewed for Code Compliance By: *SKirchner*
Date: *Oct 23, 2024*
2021INTERNATIONAL CODES&2023 NEC
FIRE/LIFE SAFETY REVIEW ONLY

MUST BE AVAILABLE ON SITE FULL SIZE AND IN COLOR FOR INSPECTIONS.

9/5/2023 11:04:24 AM

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

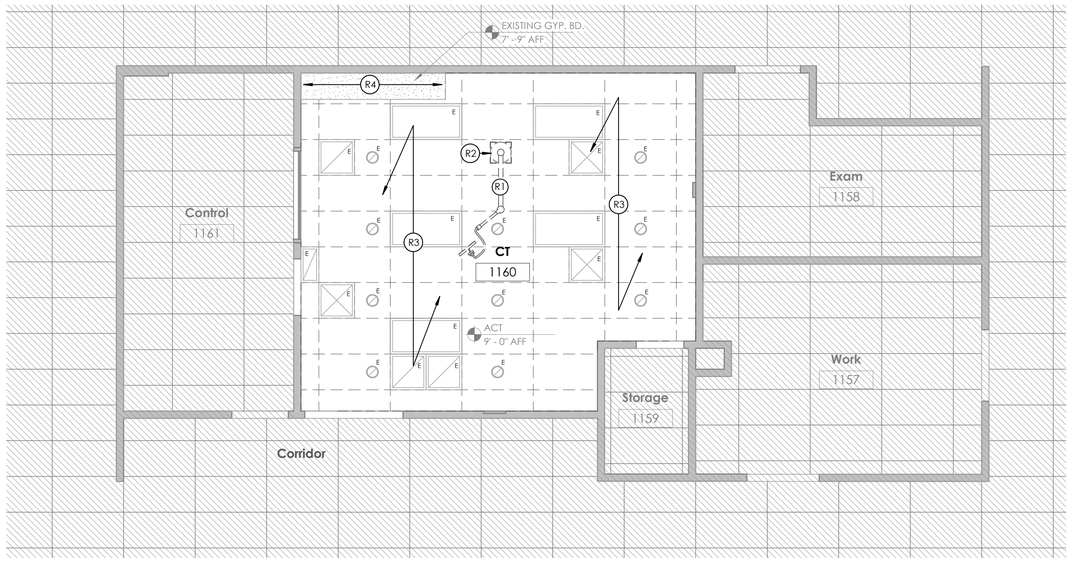
1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JL, JT
Checked by	JMN

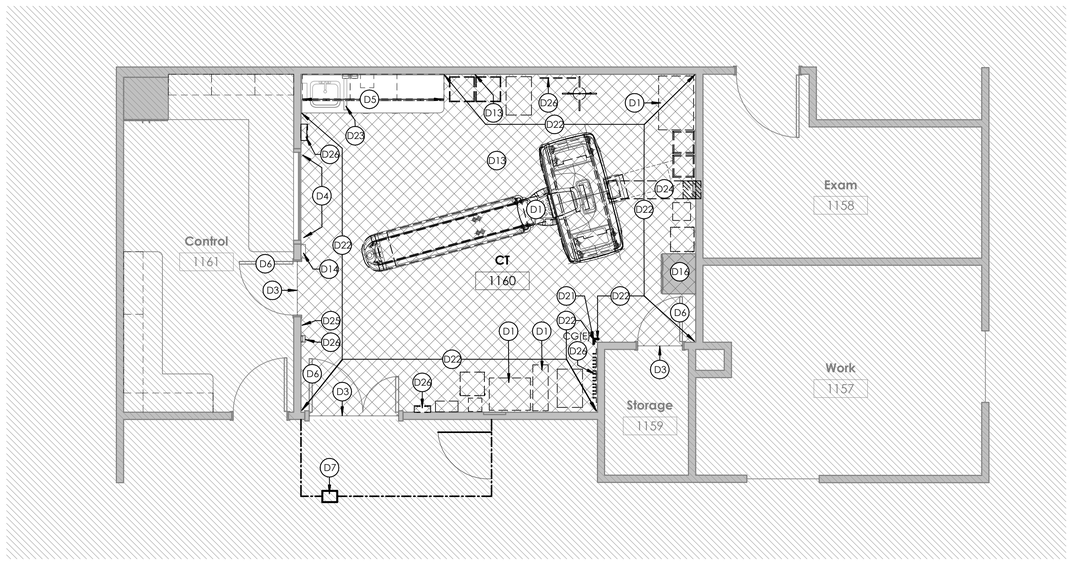
Sheet Title
COVER AND SHEET INDEX

Sheet Number
G.101

This sheet of drawings has not been reviewed for code compliance.



02- LEVEL 01 - DEMOLITION REFLECTED CEILING PLAN - ED CT
1/4" = 1'-0"



01- LEVEL 01 - DEMOLITION PLAN - ED CT
1/4" = 1'-0"

DEMOLITION KEYNOTES

- D1 GE EQUIPMENT TO BE REMOVED BY VENDOR.
- D2 DISCONNECT PANEL TO BE REMOVED BY GC/EC.
- D3 REMOVE FLOORING TO CENTERLINE OF DOORWAY.
- D4 PROTECT EXISTING WINDOW AND FRAME DURING CONSTRUCTION.
- D5 EXISTING CASEWORK TO REMAIN, PROTECT DURING CONSTRUCTION.
- D6 EXISTING DOOR SLAB, HARDWARE, AND FRAMES TO REMAIN. PROTECT DURING CONSTRUCTION.
- D7 AIR PRESSURE MONITOR. COORDINATE WITH FACILITY ICRA TEAM FOR TYPE AND RECORDING REQUIREMENTS.
- D8 FLOOR MOUNTED RACEWAY TO BE DEMOLISHED, PREPARE SURFACE.
- D9 TRENCH TO BE CUT INTO EXISTING SLAB FOR NEW RACEWAY AND ELECTRICAL CONDUITS.
- D10 REMOVE EMERGENCY POWER OFF. COORDINATE WITH ELECTRICAL.
- D11 REMOVE WALL MOUNTED RACEWAY AND REMOVE DAMAGED LEAD-LINED GYPSUM BOARD.
- D12 EXISTING EQUIPMENT TO BE REMOVED AND RETURNED TO FACILITY.
- D13 EXISTING MED GAS TO REMAIN, PROTECT DURING CONSTRUCTION
- D14 EXISTING THERMOSTAT TO REMAIN, PROTECT DURING CONSTRUCTION. RE: MECHANICAL
- D15 REMOVE EXISTING FLOOR FINISH AND BASE. PREPARE SURFACE FOR NEW FINISH.
- D16 REMOVE AND RETAIN EXISTING WALL MOUNTED EQUIPMENT. CONFIRM WITH FACILITY FOR REINSTALL, ALL OTHER ITEMS RETURN TO FACILITY STOCK.
- D17 ALL FE TO BE REMOVED AND RETAINED FOR RE-INSTALLATION.
- D18 DEMOLISH RAISED FLOOR AND FLOORING MATERIAL BELOW. PREPARE SURFACE FOR NEW FINISH
- D19 NOT IN SCOPE, PROTECT DURING CONSTRUCTION
- D20 REMOVE AUDIO EQUIPMENT. RE. ELECTRICAL
- D21 CONTRACTOR TO COORDINATE RETAINING CORNER GUARDS FOR REINSTALLATION.
- D22 EXISTING WALL PROTECTION TO REMAIN, PROTECT DURING CONSTRUCTION.
- D23 EXISTING SURFACE MOUNTED SPLASH GUARD TO REMAIN, PROTECT DURING CONSTRUCTION.
- D24 EXISTING FLOOR RACEWAY TO REMAIN.
- D25 EXISTING CODE BLUE TO REMAIN, PROTECT DURING CONSTRUCTION.
- D26 WALL MOUNTED EQUIPMENT TO BE REMOVED AND RETAINED FOR REINSTALLATION.
- D27 DEMOLISH SURFACE MOUNTED ELECTRICAL FIXTURE. PATCH AND REPAIR WALL.
- D28 EXISTING CRAC UNIT TO BE REMOVED/REPLACED.
- D29 PATIENT TRACKER SCREEN TO BE SALVAGED FOR REINSTALL IN THE MRI. COORDINATE WITH FACILITY.
- D30 REMOVE CASEWORK AND PREPARE FOR NEW.
- D31 REMOVE CODE BLUE AND PREPARE FOR RELOCATION.
- D32 REMOVE 5' OF EXISTING RF SHIELD AND HARVEST ALL SHIELDING PENETRATION PATHWAYS FOR REUSE.
- D33 CUT INTO GYPSUM BOARD FOR INSTALLATION OF HARD CONDUIT FOR EMERGENCY OUTLET.
- D34 CUT INTO GYPSUM BOARD FOR INSTALLATION OF VERTICAL RACEWAY.
- D35 COORDINATE GYPSUM BOARD REMOVAL. RE: ELECTRICAL
- D36 REMOVE AND RETAIN AUDIO EQUIPMENT FOR REINSTALLATION. COORDINATE WITH FACILITY.

DEMOLITION REFLECTED CEILING PLAN NOTES

- R1 PROTECT EXISTING BOOM IN PLACE. INJECTOR TO BE REMOVED BY FACILITY.
- R2 EXISTING MEDICAL SUPPORT MOUNTING AND PLATE TO REMAIN, PROTECT DURING CONSTRUCTION. CONTRACTOR TO VERIFY STRUCTURAL CONFORMITY WITH NEW GE ARM REQUIREMENTS.
- R3 ALL EXISTING CEILING FIXTURES TO BE SALAVAGED FOR REINSTALLATION. RE: ELECTRICAL AND MECHANICAL.
- R4 ALL EXISTING GYPSUM BOARDS SOFFIT TO REMAIN, PROTECT DURING CONSTRUCTION.
- R5 SPEAKER TO BE RETAINED FOR REINSTALLATION.
- R6 EXISTING BOOM TO BE REMOVED AND RETURNED TO FACILITY.
- R7 ALTERNATE SCOPES: 1- EXISTING MEDICAL SUPPORT TO BE DEMOED. CONTRACTOR TO VERIFY STRUCTURAL CONFORMITY WITH NEW GE ARM REQUIREMENTS. 2- REUSE EXISTING MEDICAL SUPPORT FOR NEW MONITOR ARM.
- R8 EXISTING X-RAY SIGN AND NURSE CALL DOME LIGHT TO REMAIN. PROTECT DURING CONSTRUCTION.
- R9 EXISTING SHIELD TO BE REMOVED. SHIELDING CONTRACTOR TO CONFIRM BOUNDARY. INSTALL EMERGENCY EXHAUST PORT.
- R10 SALVAGE 2'x4' EXISTING ACT PANELS FOR REINSTALL.

DEMOLITION GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS, VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
2. REFER TO SPECIFICATIONS FOR INTERIM LIFE SAFETY MEASURES.
3. CONSTRUCT TEMPORARY PARTITIONS AS REQUIRED BY PHASING TO MINIMIZE THE SPREAD OF DUST AND NOISE.
4. REMOVE EXISTING CONSTRUCTION AS INDICATED. TYPICAL WALL REMOVAL INCLUDES FINISHES AND MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS CONTAINED THEREIN. REMOVE DOORS, CASEWORK, WINDOWS, FRAMES, AND OTHER FIXTURES AS REQUIRED. AFTER REMOVAL OF PIPE CHASES, PATCH HOLES IN EXISTING FLOORS OR WALLS TO REMAIN TO MEET ORIGINAL FIRE PROTECTION AND STRUCTURAL REQUIREMENTS. PATCH ADJOINING WALLS.
5. WHERE NEW FINISHES ARE TO BE INSTALLED ON EXISTING SURFACES, REMOVE THE EXISTING FINISH AND PREPARE SURFACE TO RECEIVE THE NEW FINISH.
6. COORDINATE WITH THE OWNER ANY ITEMS TO BE STORED AND/OR RELOCATED.
7. SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR DEMOLITION OF UTILITIES.
8. COORDINATE ALL FLOOR CHANNELING AND CORING WITH NEW MECHANICAL, PLUMBING, AND ELECTRICAL DEMOLITION AND NEW CONSTRUCTION SCOPE. GENERAL SCOPE AREAS INDICATED ON THIS DRAWING.
9. VERIFY THAT EXIT EGRESS IS MAINTAINED FOR ALL OCCUPIED AREAS OF THE BUILDING THROUGHOUT CONSTRUCTION.
10. DEMOLITION WORK SHALL BE EXECUTED IN CONFORMANCE WITH ALL CODES AND AS SET FORTH BY ALL GOVERNING AUTHORITIES.
11. BRACE ALL EXISTING STRUCTURES OR STRUCTURAL ELEMENTS AS NECESSARY DURING DEMOLITION.
12. DO NOT CUT ANY STRUCTURAL WORK WITHOUT PRIOR APPROVAL FROM THE DESIGN TEAM.
13. THE EXISTING BUILDING ENVELOPE SHALL BE MAINTAINED IN A WATER TIGHT CONDITION AT ALL TIMES.
14. REPLACE OR REPAIR ANY EXISTING TO REMAIN FINISHES WHICH ARE DAMAGED DURING DEMOLITION, SUCH AS CEILING GRID, CEILING TILE, WALL COVERING, AND FLOOR COVERING.
15. NOTIFY THE DESIGN TEAM IMMEDIATELY IF THE REMOVAL OF MECHANICAL EXISTING TO REMAIN ELECTRICAL, PLUMBING SYSTEMS OR COMPONENTS WILL ADVERSELY AFFECT THE OPERATION OF MEP SYSTEM OUTSIDE THE LIMIT OF EXISTING TO BE REMOVED - RE: NOTE 5 OF DEMOLITION GENERAL NOTES.
16. SCHEDULE ALL DEMOLITION WITH THE OWNER.
17. REFER TO SPECIFICATIONS FOR INTERIM LIFE SAFETY MEASURES.
18. REMOVE EXISTING CONSTRUCTION AS INDICATED. TYPICAL CEILING INCLUDES FINISHES, MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS CONTAINED THEREIN. REMOVE CEILING TILES, GRID, AND OTHER FIXTURES AS REQUIRED. AFTER REMOVAL OF PIPE CHASES, PATCH HOLES IN EXISTING FLOORS, WALLS, AND CEILINGS TO REMAIN TO MEET ORIGINAL FIRE PROTECTION AND STRUCTURAL REQUIREMENTS.
19. REPLACE OR REPAIR ANY EXISTING TO REMAIN FINISHES WHICH ARE DAMAGED DURING DEMOLITION, SUCH AS CEILING GRID, CEILING TILE, WALL COVERING, AND FLOOR COVERING.
20. WHERE NEW FINISHES ARE TO BE INSTALLED ON EXISTING CEILING SURFACES, REMOVE THE EXISTING FINISH AND PREPARE SURFACE TO RECEIVE THE NEW FINISH.

DEMOLITION LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING GYPSUM BOARD TO BE REMOVED. GC TO VERIFY WALL THICKNESS.
- EXISTING PARTITION TO BE REMOVED
- OUT OF SCOPE
- EXISTING FLOOR SLAB TO BE REMOVED WITHIN AREA INDICATED
- EXISTING FLOOR TO BE REMOVED WITHIN AREA INDICATED.
- ICRA CONTAINMENT WALL DIAGRAMATIC LOCATION
- EPO EMERGENCY POWER OFF

DEMOLITION REFLECTED CEILING PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING PARTITION TO BE REMOVED
- OUT OF SCOPE
- EXISTING SUPPLY DIFFUSER TO BE REMOVED, RE: MECHANICAL
- EXISTING RETURN DIFFUSER TO BE REMOVED, RE: MECHANICAL
- EXISTING LIGHT FIXTURE TO BE REMOVED, RE: MECHANICAL
- EXISTING CAN LIGHT TO BE REMOVED, RE: MECHANICAL
- EXISTING SUPPLY DIFFUSER TO BE RELOCATED, RE: MECHANICAL
- EXISTING RETURN DIFFUSER TO BE RELOCATED, RE: MECHANICAL
- EXISTING LIGHT FIXTURE TO BE RELOCATED, RE: MECHANICAL
- EXISTING CAN LIGHT TO BE RELOCATED, RE: MECHANICAL

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

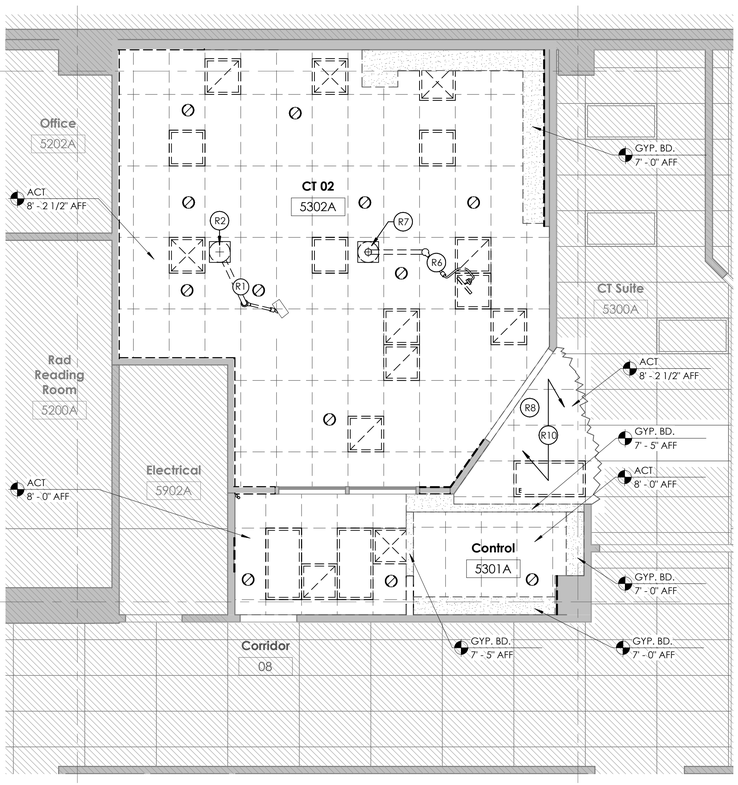
Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JL, JT
Checked by	JMN

Sheet Title
DEMOLITION REFLECTED CEILING & FLOOR PLAN

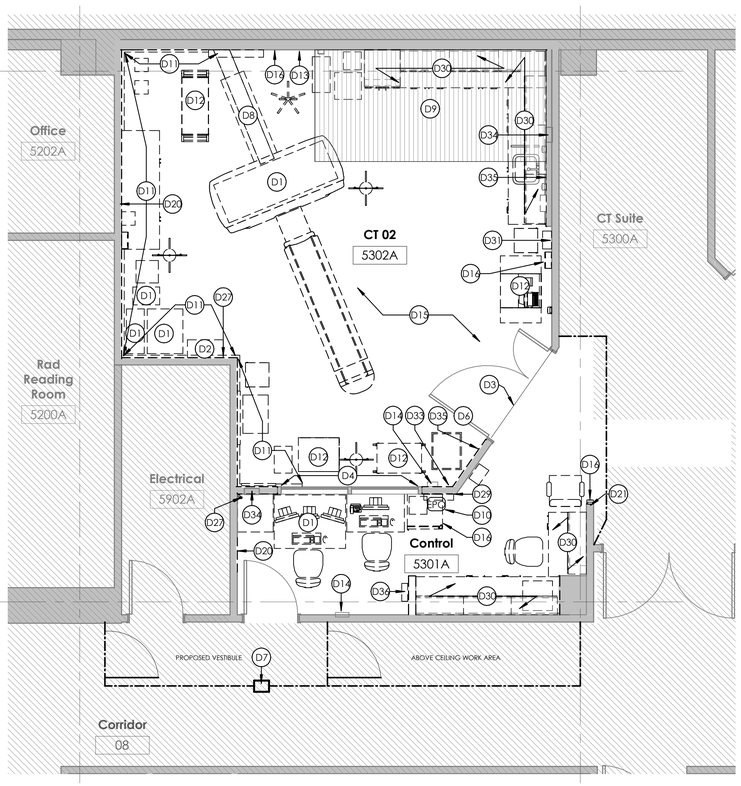
Sheet Number
D.201A

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02- LEVEL 01 - DEMOLITION REFLECTED CEILING PLAN - IMAGING CT
1/4" = 1'-0"



01 - LEVEL 01 - DEMOLITION PLAN - IMAGING CT
1/4" = 1'-0"

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DEMOLITION KEYNOTES

- D1 GE EQUIPMENT TO BE REMOVED BY VENDOR.
- D2 DISCONNECT PANEL TO BE REMOVED BY GC/EC.
- D3 REMOVE FLOORING TO CENTERLINE OF DOORWAY.
- D4 PROTECT EXISTING WINDOW AND FRAME DURING CONSTRUCTION.
- D5 EXISTING CASEWORK TO REMAIN, PROTECT DURING CONSTRUCTION.
- D6 EXISTING DOOR SLAB, HARDWARE, AND FRAMES TO REMAIN. PROTECT DURING CONSTRUCTION.
- D7 AIR PRESSURE MONITOR. COORDINATE WITH FACILITY ICRA TEAM FOR TYPE AND RECORDING REQUIREMENTS.
- D8 FLOOR MOUNTED RACEWAY TO BE DEMOLISHED, PREPARE SURFACE.
- D9 TRENCH TO BE CUT INTO EXISTING SLAB FOR NEW RACEWAY AND ELECTRICAL CONDUITS.
- D10 REMOVE EMERGENCY POWER OFF, COORDINATE WITH ELECTRICAL.
- D11 REMOVE WALL MOUNTED RACEWAY AND REMOVE DAMAGED LEAD-LINED GYPSUM BOARD.
- D12 EXISTING EQUIPMENT TO BE REMOVED AND RETURNED TO FACILITY.
- D13 EXISTING MED GAS TO REMAIN, PROTECT DURING CONSTRUCTION
- D14 EXISTING THERMOSTAT TO REMAIN, PROTECT DURING CONSTRUCTION. RE: MECHANICAL
- D15 REMOVE EXISTING FLOOR FINISH AND BASE. PREPARE SURFACE FOR NEW FINISH.
- D16 REMOVE AND RETAIN EXISTING WALL MOUNTED EQUIPMENT. CONFIRM WITH FACILITY FOR REINSTALL, ALL OTHER ITEMS RETURN TO FACILITY STOCK.
- D17 ALL FE TO BE REMOVED AND RETAINED FOR RE-INSTALLATION.
- D18 DEMOLISH RAISED FLOOR AND FLOORING MATERIAL BELOW. PREPARE SURFACE FOR NEW FINISH
- D19 NOT IN SCOPE. PROTECT DURING CONSTRUCTION
- D20 REMOVE AUDIO EQUIPMENT. RE. ELECTRICAL
- D21 CONTRACTOR TO COORDINATE RETAINING CORNER GUARDS FOR REINSTALLATION.
- D22 EXISTING WALL PROTECTION TO REMAIN, PROTECT DURING CONSTRUCTION.
- D23 EXISTING SURFACE MOUNTED SPLASH GUARD TO REMAIN, PROTECT DURING CONSTRUCTION.
- D24 EXISTING FLOOR RACEWAY TO REMAIN.
- D25 EXISTING CODE BLUE TO REMAIN, PROTECT DURING CONSTRUCTION.
- D26 WALL MOUNTED EQUIPMENT TO BE REMOVED AND RETAINED FOR REINSTALLATION.
- D27 DEMOLISH SURFACE MOUNTED ELECTRICAL FIXTURE. PATCH AND REPAIR WALL.
- D28 EXISTING CRAC UNIT TO BE REMOVED/REPLACED.
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- D30 REMOVE CASEWORK AND PREPARE FOR NEW.
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DEMOLITION LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING GYPSUM BOARD TO BE REMOVED. GC TO VERIFY WALL THICKNESS.
- EXISTING PARTITION TO BE REMOVED
- OUT OF SCOPE
- EXISTING FLOOR SLAB TO BE REMOVED WITHIN AREA INDICATED
- EXISTING FLOOR TO BE REMOVED WITHIN AREA INDICATED.
- ICRA CONTAINMENT WALL DIAGRAMATIC LOCATION
- EPO EMERGENCY POWER OFF

DEMOLITION REFLECTED CEILING PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING PARTITION TO BE REMOVED
- OUT OF SCOPE
- EXISTING SUPPLY DIFFUSER TO BE REMOVED, RE: MECHANICAL
- EXISTING RETURN DIFFUSER TO BE REMOVED, RE: MECHANICAL
- EXISTING LIGHT FIXTURE TO BE REMOVED, RE: MECHANICAL
- EXISTING CAN LIGHT TO BE REMOVED, RE: MECHANICAL
- EXISTING SUPPLY DIFFUSER TO BE RELOCATED, RE: MECHANICAL
- EXISTING RETURN DIFFUSER TO BE RELOCATED, RE: MECHANICAL
- EXISTING LIGHT FIXTURE TO BE RELOCATED, RE: MECHANICAL
- EXISTING CAN LIGHT TO BE RELOCATED, RE: MECHANICAL

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

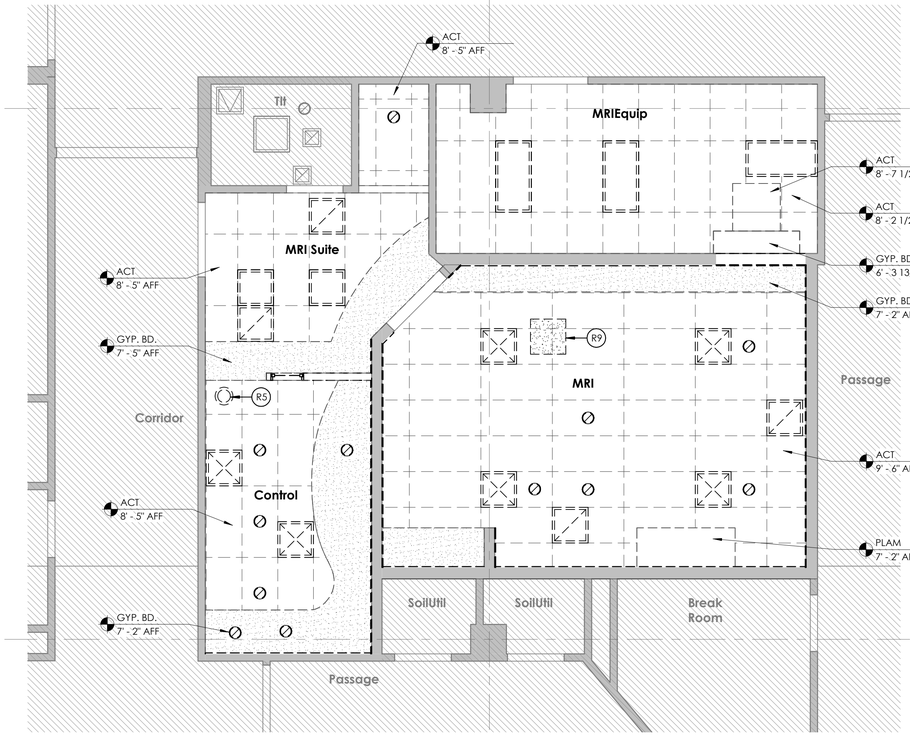
1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JT
Checked by	JMN

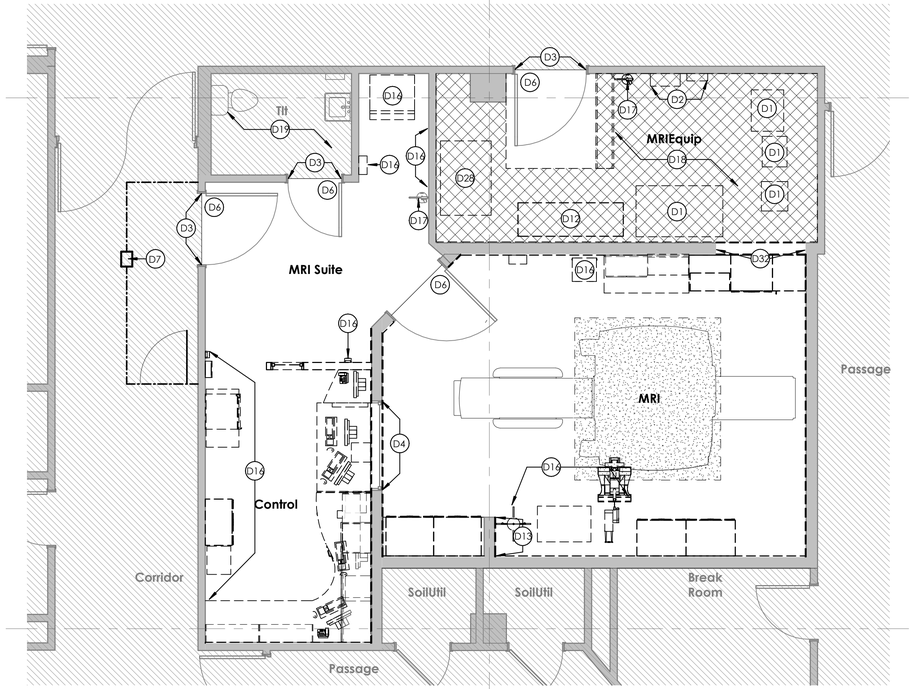
Sheet Title
DEMOLITION REFLECTED CEILING & FLOOR PLAN

Sheet Number
D.201B

This sheet of drawings has not been reviewed for code compliance.



02- LEVEL 01 - DEMOLITION REFLECTED CEILING PLAN - MRI
1/4" = 1'-0"



01- LEVEL 01 - DEMOLITION PLAN - MRI
1/4" = 1'-0"

DEMOLITION KEYNOTES

- D1 GE EQUIPMENT TO BE REMOVED BY VENDOR.
- D2 DISCONNECT PANEL TO BE REMOVED BY GC/EC.
- D3 REMOVE FLOORING TO CENTERLINE OF DOORWAY.
- D4 PROTECT EXISTING WINDOW AND FRAME DURING CONSTRUCTION.
- D5 EXISTING CASEWORK TO REMAIN, PROTECT DURING CONSTRUCTION.
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- D7 AIR PRESSURE MONITOR. COORDINATE WITH FACILITY ICRA TEAM FOR TYPE AND RECORDING REQUIREMENTS.
- D8 FLOOR MOUNTED RACEWAY TO BE DEMOLISHED. PREPARE SURFACE.
- D9 TRENCH TO BE CUT INTO EXISTING SLAB FOR NEW RACEWAY AND ELECTRICAL CONDUITS.
- D10 REMOVE EMERGENCY POWER OFF. COORDINATE WITH ELECTRICAL.
- D11 REMOVE WALL MOUNTED RACEWAY AND REMOVE DAMAGED LEAD-LINED GYPSUM BOARD.
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- D17 ALL FE TO BE REMOVED AND RETAINED FOR RE-INSTALLATION.
- D18 DEMOLISH RAISED FLOOR AND FLOORING MATERIAL BELOW. PREPARE SURFACE FOR NEW FINISH
- D19 NOT IN SCOPE, PROTECT DURING CONSTRUCTION
- D20 REMOVE AUDIO EQUIPMENT. RE. ELECTRICAL
- D21 CONTRACTOR TO COORDINATE RETAINING CORNER GUARDS FOR REINSTALLATION.
- D22 EXISTING WALL PROTECTION TO REMAIN, PROTECT DURING CONSTRUCTION.
- D23 EXISTING SURFACE MOUNTED SPLASH GUARD TO REMAIN, PROTECT DURING CONSTRUCTION.
- D24 EXISTING FLOOR RACEWAY TO REMAIN.
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- R1 PROTECT EXISTING BOOM IN PLACE. INJECTOR TO BE REMOVED BY FACILITY.
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2. REFER TO SPECIFICATIONS FOR INTERIM LIFE SAFETY MEASURES.
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12. DO NOT CUT ANY STRUCTURAL WORK WITHOUT PRIOR APPROVAL FROM THE DESIGN TEAM.
13. THE EXISTING BUILDING ENVELOPE SHALL BE MAINTAINED IN A WATER TIGHT CONDITION AT ALL TIMES.
14. REPLACE OR REPAIR ANY EXISTING TO REMAIN FINISHES WHICH ARE DAMAGED DURING DEMOLITION, SUCH AS CEILING GRID, CEILING TILE, WALL COVERING, AND FLOOR COVERING.
15. NOTIFY THE DESIGN TEAM IMMEDIATELY IF THE REMOVAL OF MECHANICAL EXISTING TO REMAIN ELECTRICAL, PLUMBING SYSTEMS OR COMPONENTS WILL ADVERSELY AFFECT THE OPERATION OF MEP SYSTEM OUTSIDE THE LIMIT OF EXISTING TO BE REMOVED - RE: NOTE 5 OF DEMOLITION GENERAL NOTES.
16. SCHEDULE ALL DEMOLITION WITH THE OWNER.
17. REFER TO SPECIFICATIONS FOR INTERIM LIFE SAFETY MEASURES.
18. REMOVE EXISTING CONSTRUCTION AS INDICATED. TYPICAL CEILING INCLUDES FINISHES, MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS CONTAINED THEREIN. REMOVE CEILING TILES, GRID, AND OTHER FIXTURES AS REQUIRED. AFTER REMOVAL OF PIPE CHASES, PATCH HOLES IN EXISTING FLOORS, WALLS, AND CEILINGS TO REMAIN TO MEET ORIGINAL FIRE PROTECTION AND STRUCTURAL REQUIREMENTS.
19. REPLACE OR REPAIR ANY EXISTING TO REMAIN FINISHES WHICH ARE DAMAGED DURING DEMOLITION, SUCH AS CEILING GRID, CEILING TILE, WALL COVERING, AND FLOOR COVERING.
20. WHERE NEW FINISHES ARE TO BE INSTALLED ON EXISTING CEILING SURFACES, REMOVE THE EXISTING FINISH AND PREPARE SURFACE TO RECEIVE THE NEW FINISH.

DEMOLITION LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING GYPSUM BOARD TO BE REMOVED. GC TO VERIFY WALL THICKNESS.
- EXISTING PARTITION TO BE REMOVED
- OUT OF SCOPE
- EXISTING FLOOR SLAB TO BE REMOVED WITHIN AREA INDICATED
- ICRA CONTAINMENT WALL DIAGRAMATIC LOCATION
- EPO EMERGENCY POWER OFF

DEMOLITION REFLECTED CEILING PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING PARTITION TO BE REMOVED
- OUT OF SCOPE
- EXISTING SUPPLY DIFFUSER TO BE REMOVED, RE: MECHANICAL
- EXISTING RETURN DIFFUSER TO BE REMOVED, RE: MECHANICAL
- EXISTING LIGHT FIXTURE TO BE REMOVED, RE: MECHANICAL
- EXISTING CAN LIGHT TO BE REMOVED, RE: MECHANICAL
- EXISTING SUPPLY DIFFUSER TO BE RELOCATED, RE: MECHANICAL
- EXISTING RETURN DIFFUSER TO BE RELOCATED, RE: MECHANICAL
- EXISTING LIGHT FIXTURE TO BE RELOCATED, RE: MECHANICAL
- EXISTING CAN LIGHT TO BE RELOCATED, RE: MECHANICAL

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAPP
401729
LICENSED ARCHITECT
04/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JAV
Checked by	JMN

Sheet Title
DEMOLITION REFLECTED CEILING & FLOOR PLAN

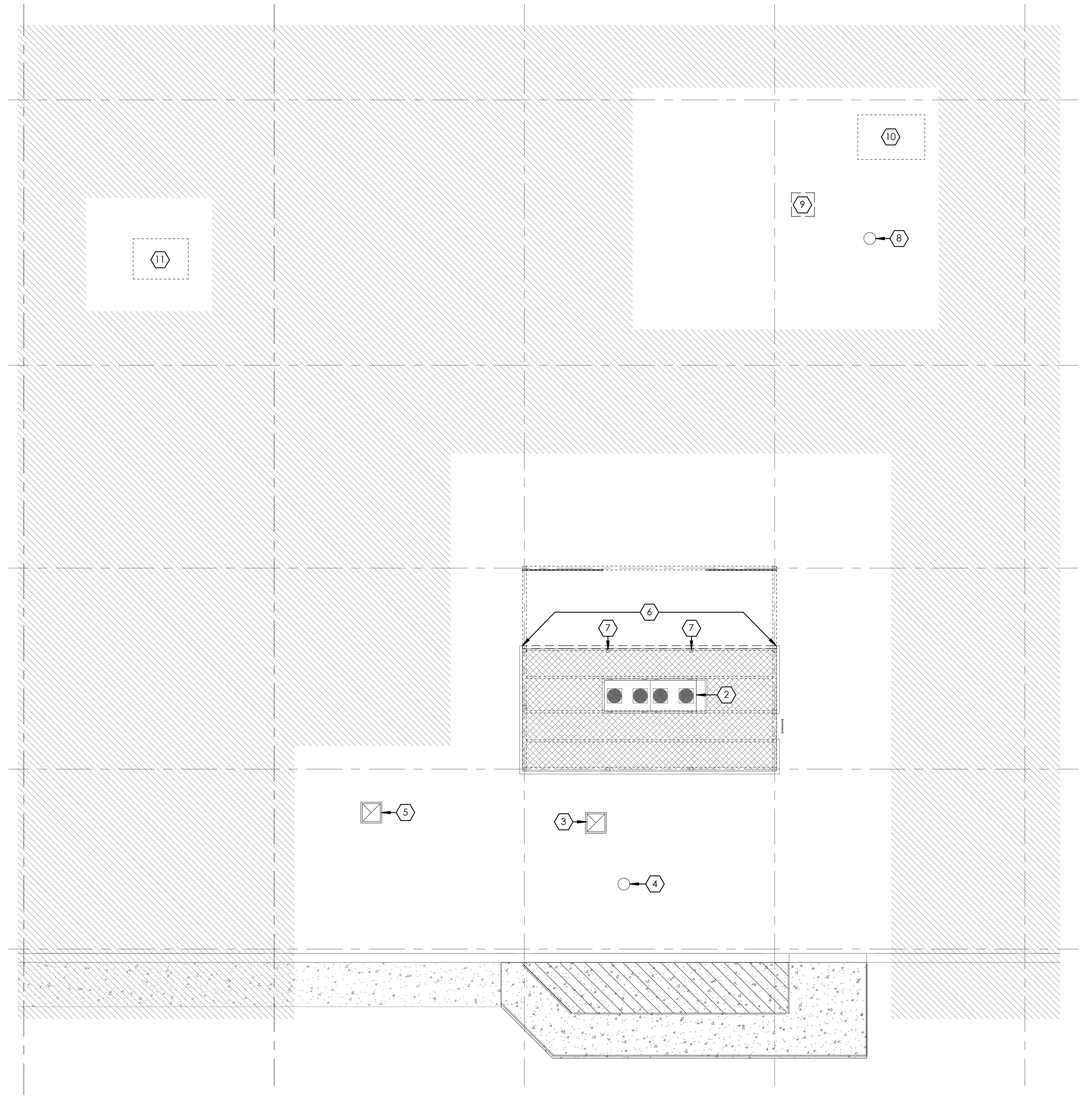
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RSN 1845534 Permit # 2024 2477659-LTPage 5 of 121

This sheet of drawings has not been reviewed for code compliance.



01 - DEMOLITION ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

1. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL FOR LOCATIONS OF PIPING, CURBS, VENTS, DUCTS, FANS AND OTHER ITEMS ON THE ROOF SURFACE.
2. CUT EXISTING ROOF AS REQUIRED FOR NEW CONSTRUCTION. FLASH IN WITH NEW ROOFING MATERIAL TO MATCH EXISTING UNLESS OTHERWISE NOTED.COMPLY WITH ALL REQUIREMENTS OF MANUFACTURER OF EXISTING ROOF TO MAINTAIN EXISTING WARRANTY.
3. ALL ROOF FLASHING TO BE IN ACCORDANCE WITH MANUFACTUER'S RECOMMENDATIONS AND DETAILS IN COMPLIANCE WITH THE WARRANTY.

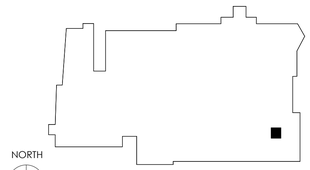
ROOF PLAN LEGEND

- EXISTING EXTERIOR WALL/PARAPET TO REMAIN
- GRATING RE: STRUCTURAL
- OUT OF SCOPE
- ROOF PATCH TO MATCH EXISTING
- EXISTING CONCRETE

ROOF PLAN KEYNOTES

1. EXISTING MECHANICAL SCREEN WALL TO BE REMOVED AND RETAINED FOR REINSTALL.
2. EXISTING MRI 2 CHILLER TO REMAIN, RE: MECHANICAL.
3. EXISTING MRI 2 EMERGENCY EXHAUST FAN TO REMAIN.
4. EXISTING MRI 2 QUENCH VENT TO REMAIN.
5. EXISTING EXHAUST FAN TO REMAIN.
6. REMOVE EXISTING SCREEN WALL PANELS, RETAIN FOR REUSE ON SCREEN WALL EXTENSION.
7. EXISTING STRUCTURE TO BE MODIFIED, RE: STRUCTURAL FOR INSTRUCTIONS.
8. EXISTING MRI 1 QUENCH VENT LOCATION. PROTECT PIPING AND ROOF PENETRATION DURING DEMOLITION OF VENDOR EQUIPMENT, RE: MECHANICAL.
9. CUT NEW OPENING IN ROOF TO PROVIDE FOR NEW EXHAUST FAN, RE: MEHANICAL FOR OPENING. RE: STUCTURAL FOR REINFORCING DURING OPENING. REMOVE ROOF BALLAST FROM AREA AND DO NOT STOCKPILE BALLAST WITHIN THE STRUCTURAL BAY UNDER DURRESS.
10. EXISTING MRI CHILLER TO BE REMOVED. REMOVE POWER FEEDS, CURBS AND ALL APPURTENANCES. PREPARE FOR ROOF PATCH.
11. EXISTING ROOF TOP UNIT TO BE REMOVED, RE: MECHANICAL. REMOVE ASSOCIATED CURB AND POWER PENETRATIONS. PREPARE FOR INFILL.

KEY PLAN



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DEMOLITION ROOF PLAN

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POST-INSTALLED ANCHORS/REINFORCING STEEL SPECIAL INSPECTIONS

ITEM	FREQUENCY	STANDARD	CRITERIA
ADHESIVE ANCHORS, REINFORCING STEEL ANCHORED INTO HARDENED CONCRETE			
- PRIOR TO START OF WORK	-	ICC-ES REPORT	REVIEW CONTRACTOR'S INSTALLATION PROCEDURE
- PRIOR TO INSTALLATION OF ANCHOR	EACH ANCHOR	ICC-ES REPORT	VERIFY TYPE, DIAMETER, LENGTH, FINISH, AND BASE MATERIAL. VERIFY SOLID GROUTED AREA AROUND ANCHORS IN GROUTED MASONRY
- DURING INSTALLATION OF ANCHOR	C	ICC-ES REPORT	CONTINUOUS INSPECTION REQUIRED REGARDLESS IF PERIODIC INSPECTION IS PERMITTED BY ICC-ES REPORT. VERIFY HOLE DIMENSIONS, HOLE CLEANING, ANCHOR EMBEDMENT, EDGE DISTANCES AND SPACING
- AFTER INSTALLATION OF ATTACHED ASSEMBLY	100% VISUAL	-	VERIFY NUMBER, EDGE DISTANCES, AND ANCHOR FLUSH WITH AND PERPENDICULAR TO THE RECEIVING SURFACE
- CURE TIME	100% VISUAL	-	VERIFY FULL CURE TIME HAS ELAPSED PRIOR TO APPLICATION OF TORQUE OR LOAD TO ANCHOR

POST-INSTALLED ANCHOR/REINFORCING STEEL TESTING

ITEM	FREQUENCY	STANDARD	CRITERIA
EXPANSION ANCHORS, SLEEVE ANCHORS, SCREW ANCHORS			
- TORQUE TEST	100%	-	TEST ANCHOR WITH CALIBRATED TORQUE WRENCH TO 100% OF THE INSTALLATION TORQUE NOTED IN ICC-ES REPORT. ATTAIN SPECIFIED TORQUE WITHIN 1/2 TURN OF THE NUT
ADHESIVE ANCHORS, REINFORCING STEEL ANCHORED INTO HARDENED CONCRETE			
- TENSION TEST	FIRST 3 AND 1% OF REMAINING	ASTM E488 STATIC TENSION	TEST THE INSTALLATION OF THE FIRST 3 OF EACH TYPE, BASE MATERIAL, AND POSITION (DOWN, HORIZONTAL, OVERHEAD). OBSERVE ASTM E488 MINIMUM EDGE DISTANCES FOR DETERMINING TEST LOCATIONS. SUBMIT PROPOSED TEST LOCATIONS AND REQUESTS FOR REQUIRED TENSION TEST LOAD VALUES TO ENGINEER

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC

Structural plan review is limited to a general survey for code compliance. No review is implied nor was undertaken to verify structural adequacy.

Code violations that are found during inspection are required to be corrected. Permit issuance does not grant approval of a code violation.

QUALITY ASSURANCE GENERAL NOTES STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS AND TESTING

1) GENERAL:
1A) SCOPE OF WORK:
- THE OWNER WILL ENGAGE A QUALIFIED INSPECTION AND TESTING AGENCY(S) TO PERFORM SPECIAL INSPECTIONS AND TESTING FOR ALL STRUCTURAL MEMBERS AND ASSEMBLIES AS NOTED HEREIN
- SPECIAL INSPECTIONS ARE IN ADDITION TO INSPECTIONS BY THE AUTHORITY HAVING JURISDICTION REQUIRED BY IBC 2021 SECTIONS 110
- SPECIAL INSPECTOR SHALL SUBMIT AN INSPECTION REPORT TO THE OWNER AND GENERAL CONTRACTOR WITHIN TWO (2) DAYS OF COMPLETING THE INSPECTION, DEVIATIONS AND DEFICIENCIES IN WORK SHALL BE BROUGHT TO THE ATTENTION OF THE SUB-CONTRACTOR AND GENERAL CONTRACTOR IMMEDIATELY AND PRIOR TO THE INSPECTOR LEAVING THE SITE FOR THE DAY
- SPECIAL INSPECTIONS AND TESTING ARE APPLICABLE TO ALL REVISIONS AND/OR FUTURE WORK ADDED BY AMENDMENTS TO THESE DOCUMENTS

1B) DEFINITIONS:
- SPECIAL INSPECTOR: THE AGENCY ENGAGED BY THE OWNER AND APPROVED BY THE AUTHORITY HAVING JURISDICTION TO ACT AS THE DESIGNATED REPRESENTATIVE TO PERFORM INSPECTIONS
- SPECIAL INSPECTION: INSPECTION PERFORMED BY THE SPECIAL INSPECTOR ACCORDING TO IBC 2021 SECTION 1704 TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS
- (P) PERIODIC INSPECTION: THE PART-TIME OR INTERMITTENT OBSERVATION BY THE SPECIAL INSPECTOR OF THE WORK BEING PERFORMED, SPECIAL INSPECTOR SHALL BE PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED, OBSERVATION OF ALL WORK (100% VISUAL) SHALL BE MADE AT THE COMPLETION OF THE WORK
- (C) CONTINUOUS INSPECTION: THE FULL-TIME OBSERVATION BY THE SPECIAL INSPECTOR OF WORK BEING PERFORMED. SPECIAL INSPECTOR SHALL BE PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. OBSERVATION OF ALL WORK (100% VISUAL) SHALL BE MADE AT THE COMPLETION OF THE WORK.

1C) DEFICIENCIES IN WORK:
- CORRECT DEFICIENCIES IN WORK THAT TESTS AND INSPECTIONS INDICATE DO NOT COMPLY WITH THE CONTRACT DOCUMENTS AND REFERENCED STANDARDS
- ALL COST OF ADDITIONAL TESTING AND/OR INSPECTIONS FOR CORRECTIVE WORK SHALL BE BORNE BY THE CONTRACTOR

STRUCTURAL STEEL INSPECTIONS

ITEM	INSPECTION TASK	STANDARD	CRITERIA/REMARKS
- PRIOR TO FABRICATION OR ERECTION	PERFORM	AISC 360, CHAPTER N	REVIEW MATERIAL TEST REPORTS AND CERTIFICATIONS FOR STRUCTURAL STEEL, FASTENERS, ANCHOR RODS, HEADED STUD...
PRIOR TO WELDING			
- REVIEW MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AND WELDING PROCEDURE SPECIFICATIONS	PERFORM	AISC 360, CHAPTER N	-
- FIT UP OF WELDS, INCLUDING JOINT GEOMETRY, AND CONFIGURATIONS AND FINISH OF ACCESS HOLES	OBSERVE	AISC 360, CHAPTER N	-
- MATERIAL IDENTIFICATION	OBSERVE	AISC 360, CHAPTER N	-
- WELDER IDENTIFICATION SYSTEM	OBSERVE	AISC 360, CHAPTER N	-
DURING WELDING			
- USE OF QUALIFIED WELDERS	OBSERVE	AISC 360, CHAPTER N	-
- CONTROL AND HANDLING OF WELDING CONSUMABLES	OBSERVE	AISC 360, CHAPTER N	-
- NO WELDING OVER CRACKED TACK WELDS	OBSERVE	AISC 360, CHAPTER N	-
- WELDING TECHNIQUES - SINGLE PASS WELDS	OBSERVE	AISC 360, CHAPTER N	-
AFTER WELDING			
- WELDS CLEANED	OBSERVE	AISC 360, CHAPTER N	-
- SIZE, LENGTH, AND LOCATION OF WELDS	PERFORM	AISC 360, CHAPTER N	-
- WELDS MEET VISUAL ACCEPTANCE CRITERIA	PERFORM	AISC 360, CHAPTER N, AWS D1.1	WHERE INSPECTOR OBSERVES QUESTIONABLE WELDS, NON-DESTRUCTIVE TESTING SHALL BE PERFORMED
- REPAIR ACTIVITIES	PERFORM	AISC 360, CHAPTER N	-
- DOCUMENT ACCEPTANCE OR REJECTION OF WELDED MEMBER OR JOINT	PERFORM	AISC 360, CHAPTER N	-

OBSERVE - OBSERVE THESE ITEMS ON A RANDOM BASIS
PERFORM - THESE INSPECTIONS SHALL BE PERFORMED FOR EACH WELDED CONNECTION, EACH BOLTED CONNECTION, AND EACH ITEM, PRIOR TO ACCEPTANCE

CONCRETE NOTES

1) GENERAL:
1A) ALL WORK SHALL CONFORM WITH ACI 301-16, UNLESS NOTED OTHERWISE IN DRAWINGS OR PROJECT SPECIFICATIONS.
1B) DETAIL BARS IN ACCORDANCE WITH THE DRAWINGS AND ACI PUBLICATION SP-66 (2004): "ACI DETAILING MANUAL"

2) STRUCTURAL CONCRETE MIX REQUIREMENTS:
2A) SEE 'CONCRETE MIX TABLE'

CONCRETE MIX TABLE

CONC MIX TYPE	INTENDED USE	28 DAY STRENGTH f'c (KSI)	CONC WEIGHT	MAX W/C RATIO, INCLUDING FLY ASH	MAX AGGREGATE SIZE, IN (ASTM C33)	TOTAL AIR CONTENT (%)
1	INTERIOR SLAB-ON-GRADE	4	NWC	0.50	3/4	ENTRAINED AIR

CONCRETE MIX TABLE NOTES:
PROPORTIONS OF MATERIALS IN CONCRETE MIX SHALL BE ESTABLISHED TO:
- PROVIDE THE MINIMUM COMPRESSIVE STRENGTH AS INDICATED IN THE MIX TABLE. DO NOT EXCEED THE MAXIMUM WATER-CEMENT RATIO NOTED.

USE TYPE I / II PORTLAND CEMENT UNLESS NOTED OTHERWISE.

CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT THE CONCRETE MIX SUPPLIED IS COMPATIBLE WITH THE REQUIRED FLOOR FINISHES.

2B) PROVIDE WORKABILITY AND CONSISTENCY FOR SLAB FINISHING AND TO PERMIT CONCRETE TO BE WORKED READILY INTO FORMS AND AROUND REINFORCEMENT UNDER CONDITIONS OF PLACEMENT TO BE EMPLOYED WITHOUT SEGREGATION OR EXCESSIVE BLEEDING. CONTRACTOR SHALL SELECT APPROPRIATE SLUMP. USE ADMIXTURES AS REQUIRED TO OBTAIN DESIRED RESULTS

REINFORCING MATERIAL TABLE

REINF ELEMENT	ASTM	Fy (KSI)	Fu (KSI)	COMMENTS
TYP REINFORCING	A615	60	90	-
WELDED & FIELD BENT REINF	A706	60	80	-
WELDED WIRE REINFORCING, SMOOTH	A1064	65	75	-

STEEL NOTES

1) CONNECTIONS:
1A) PROVIDE CONNECTIONS AS SHOWN IN DETAILS HEREIN.

2) STEEL MATERIALS:
2A) SEE 'STEEL MATERIAL TABLE'

3) WELDING REQUIREMENTS:
3A) WELDERS: HAVE IN POSSESSION CURRENT EVIDENCE OF PASSING THE APPROPRIATE AWS. QUALIFICATION TESTS.

4B) SUBMITTALS
4A) SUBMIT DETAILED SHOP DRAWINGS AND PRODUCT DATA FOR STRUTURAL STEEL INCLUDING FASTENERS, WELDS AND FINISH.

STEEL MATERIAL TABLE

STEEL ELEMENT	ASTM/TYPE	Fy (KSI)	Fu (KSI)	COMMENTS
BOLTS	F3125 - TYPE A325 OR F1852	-	120	BOLTS ARE 3/4"Ø UNO, USE TENSION-CONTROLLED WHERE POSSIBLE
OTHER SHAPES	A36	36	58	-
PLATES	A36	36	58	-
RECT HSS	A500 GR C	50	62	-
WELDING ELECTRODES	E70	-	-	PER AWS

POST-INSTALLED ANCHOR NOTES

1) PERSONNEL REQUIREMENTS:
1A) THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. SUBMIT DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE PASSED THE TRAINING COURSE PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.

1B) PERSONNEL WHO WILL INSTALL HORIZONTAL OR UPWARDLY INCLINED ADHESIVE ANCHORS IN CONCRETE THAT SUPPORT SUSTAINED TENSION LOADS SHALL BE CERTIFIED BY THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM. THESE ANCHORS ARE DESIGNATED WITH A (CERT) AFTER THE ANCHOR CALL OUT. SUBMIT DOCUMENTED CONFIRMATION THAT PERSONNEL HAVE PASSED THE TRAINING COURSE PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.

2) INSTALLATION REQUIREMENTS:
2A) ALL POST-INSTALLED ANCHORS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND PER MANUFACTURER'S ON-SITE TRAINING.

2B) ALL ADHESIVE ANCHORS AND ADHESIVE ANCHORED REINFORCEMENT DESIGNS ARE FOR INSTALLATION IN THE FOLLOWING CONDITIONS, UNLESS NOTED OTHERWISE. WRITTEN APPROVAL MUST BE RECEIVED FROM ENGINEER PRIOR TO INSTALLATION IN ALTERNATE CONDITIONS.
- DRY CONCRETE, UNLESS NOTED OTHERWISE.
- ANCHOR HOLES TO BE HAMMER DRILLED AND CLEANED.
- CONCRETE MUST BE AT LEAST 21 DAYS OLD BEFORE INSTALLATION OF ANCHORS.
- HOLES TO BE CLEANED AND PREPARED IN STRICT ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS AND EVALUATION REPORT PRIOR TO ADHESIVE INJECTION.

2C) THE POSITION OF EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE SHALL BE LOCATED PRIOR TO INSTALLING POST INSTALLED ANCHORS OR REINFORCEMENT. EXISTING REINFORCEMENT SHALL BE LOCATED USING A SCANNER, GPR, X-RAY, CHIPPING OR OTHER MEANS. DO NOT DAMAGE OR CUT EXISTING REINFORCEMENT.

GENERAL NOTES AND DESIGN CRITERIA

1) CODES AND STANDARDS:
1A) GENERAL DESIGN
- INTERNATIONAL BUILDING CODE 2021 WITH CITY OF AURORA AMENDMENTS

1B) LOADS
- ASCE/SEI 7-16 "MINIMUM DESIGN LOAD FOR BUILDINGS AND OTHER STRUCTURES"
- AS NOTED IN EQUIPMENT SUPPLIER DRAWINGS

1C) CONCRETE
- ACI 318-19 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"

1D) STEEL
-ANSI/AISC 360-16 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" LOAD AND RESISTANCE FACTOR DESIGN

2) SEISMIC LOADS:
- SEISMIC DESIGN CATEGORY = C
- RISK CATEGORY = IV
- EARTHQUAKE IMPORTANCE FACTOR, Ie = 1.50
- MAPPED SPECTRAL RESPONSE ACCELERATION, Ss = 19.6 %g
- MAPPED SPECTRAL RESPONSE ACCELERATION, S1 = 5.60 %g
- DESIGN SPECTRAL RESPONSE COEFFICIENT, SDs = 0.21
- DESIGN SPECTRAL RESPONSE COEFFICIENT, SD1 = 0.089
- SOIL SITE CLASS = D
- NONBUILDING STRUCTURE TYPE: ALL OTHER SELF-SUPPORTING STRUCTURES, TANKS, OR VESSELS NOT COVERED ABOVE OR BY REFERENCE STANDARDS THAT ARE NOT SIMILAR TO BUILDINGS
- RESPONSE MODIFICATION FACTOR, R = 2.5 (HVAC CHILLERS)
- SEISMIC DESIGN FORCE, Fp = 0.089Wp

3) WIND LOADS:
- RISK CATEGORY = IV
- BASIC ULTIMATE WIND SPEED, Vult = 120 mph
- BASIC NOMINAL WIND SPEED, Vasd = 93 mph
- EXPOSURE CATEGORY = B

4) SNOW LOADS:
4A) SNOW LOAD = 30.0 psf
- SNOW EXPOSURE FACTOR, Ce = 1.0
- SNOW LOAD IMPORTANCE FACTOR, Is = 1.2
- THERMAL FACTOR, Ct = 1.20

5) GRAVITY LOADS:
- CATWALKS FOR MAINTENANCE AND SERVICE ACCESS LIVE LOAD = 40 PSF

6) EXISTING STRUCTURES:
6A) CONTRACT DOCUMENTS HAVE BEEN PREPARED USING AVAILABLE DRAWINGS. THE AVIALABLE DRAWINGS INCLUDE EXISTING INFORMATION BASED ON A RENOVATION COMPLETED IN 2020. THE ORIGINAL EXISTING BUIDLING DRAWINGS FOR THIS STRUCTURE WERE NOT AVAILABLE AND WERE NOT USED IN THE CREATION OF THESE CONTRACT DOCUMENTS.
6B) DURING CONSTRUCTION, THE CONTRACTOR MAY ENCOUNTER EXISTING CONDITIONS WHICH ARE NOT KNOWN OR ARE AT VARIANCE WITH PROJECT DOCUMENTATION. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ALL CONDITIONS NOT PER THE CONTRACT DOCUMENTS.
6C) PREPARE DIMENSIONAL DRAWINGS OF ALL CONDITIONS NOT PER THE CONTRACT DOCUMENTS.
6D) CONTRACTOR SHALL FIELD VERIFY ALL EXISTING STRUCTURAL CONDITIONS PRIOR TO SUBMITTING SHOP DRAWINGS OR FABRICATION OF ANY ELEMENTS.
6E) CONTRACTOR SHALL MAKE ALLOWANCE FOR THE RESOLUTION OF SUCH DISCOVERIES IN THE CONSTRUCTION SCHEDULE.

7) SUBMITTALS AND SUBSTITUTIONS:
7A) SUBMITTALS: SUBMITTALS
- PRODUCT DATA
- CONCRETE MIX DESIGN
- WELDING CERTIFICATES
- SHOP AND ERECTION DRAWINGS. SHOW LOCATION, FABRICATION, AND ASSEMBLY OF STRUCTURAL STEEL COMPONENTS. SHOP AND ERECTION DRAWINGS OF DEFERRED SUBMITTAL ITEMS, SHOWING THE LOCATION, FABRICATION AND ASSEMBLY OF STRUCTURAL COMPONENTS. SEE THE DEFERRED SUBMITTAL NOTES FOR ADDITIONAL CRITERIA.

FOUNDATION NOTES

1) DESIGN CRITERIA:
1A) IBC 2021 TABLE 1806.2 PRESUMPTIVE ALLOWABLE LOAD BEARING VALUE = 1500 PSF.

1B) GENERAL CONTRACTOR SHALL ENGAGE A GEOTECHNICAL ENGINEER TO INSPECT ONSITE MATERIALS PRIOR TO INSTALLING FOUNDATIONS. ONSITE INVESTIGATION SHALL REVIEW FOR ADEQUACY IF ONSITE MATERIALS AND PROVIDE RECOMMENDATIONS TO ACHIEVE THE ALLOWABLE VALUES AND SETTLEMENT PERFORMANCE STATED ABOVE.

DEFERRED SUBMITTALS

1) GENERAL:
1A) THE FOLLOWING PORTIONS OF THE STRUCTURAL DESIGN WILL NOT BE SUBMITTED AT THE TIME OF PERMIT APPLICATION. WHEN RECEIVED AND REVIEWED, THESE DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL BY THE CONTRACTOR:
- MEDICAL EQUIPMENT AND ITS ANCHORAGE TO STRUCTURE
- OVERHEAD UNISTRUT SUPPORTS FOR MEDICAL BOOMS AND MONITORS, ETC.
- GUARDRAIL AND ITS ANCHORAGE TO STRUCTURE
- ANCHORAGE, BRACING AND ATTACHMENT OF REQUIRED ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE SPRINKLER, PIPING, AND OTHER EQUIPMENT AND SYSTEMS.

1B) CONNECTION OF DEFERRED SUBMITTAL ITEMS TO PRIMARY STRUCTURE BY DEFERRED SUBMITTAL SUPPLIER. DEFERRED SUBMITTAL SUPPLIER TO PROVIDE CONNECTIONS AND FRAMING ARRANGEMENT TO AVOID LOADING WHICH EXCEEDS THE CAPACITY OF THE ELEMENT BEING ATTACHED TO.

1C) SUBMIT STAMPED STRUCTURAL CALCULATIONS FOR ALL DEFERRED SUBMITTAL ITEMS PRIOR TO OR CONCURRENTLY WITH DRAWINGS OR PRODUCT DATA. INCLUDE ANALYSIS OF ATTACHMENT TO PRIMARY STRUCTURE. INCLUDE CURRENT ICC REPORT WITH ALL PROPRIETARY STRUCTURAL ELEMENTS AND ANCHORS/FASTENERS.

1D) POWDER ACTUATED FASTENERS (PAF) INTO CONCRETE OR CMU SHALL NOT BE USED TO RESIST TENSION LOADS. POWDER ACTUATED FASTENERS SHALL NOT BE USED TO RESIST GRAVITY LOADS WHICH INCLUDE BRICK VENEER.

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COLORADO LICENSED
MATTHEW D. DEZORT
09/05/2023
PROFESSIONAL ENGINEER

23-004 TMCA Imaging Replacements

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Aurora, CO 80012

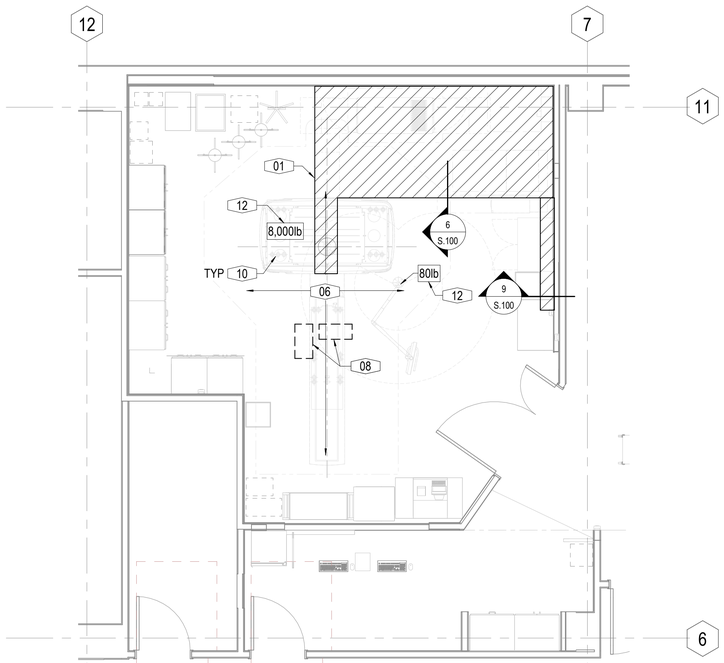
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Date	5 SEPTEMBER 2023
Project Number	23-004
Drawn by	AA, RS
Checked by	RS, MD

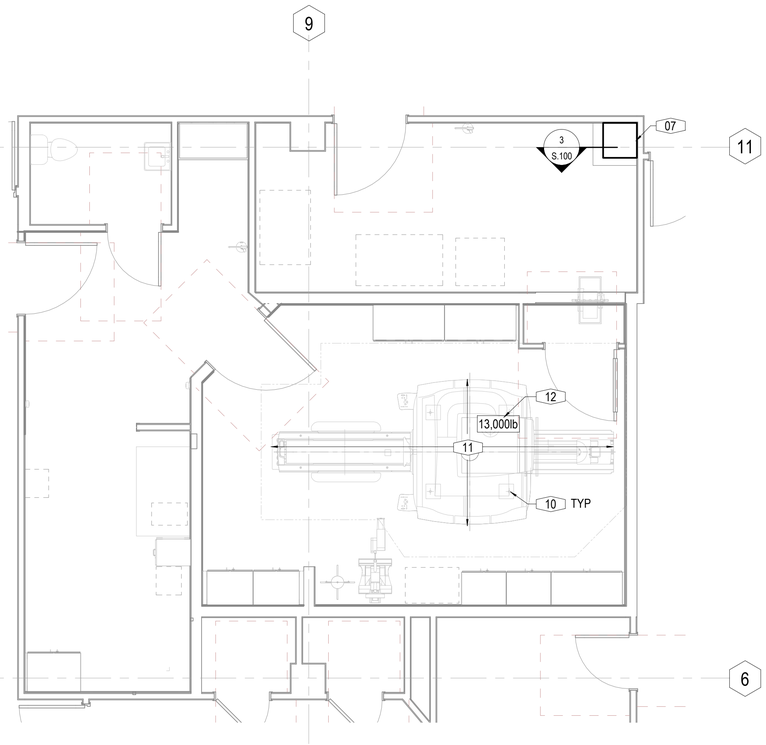
Sheet Title
GENERAL NOTES & QUALITY ASSURANCE

Sheet Number
S.001

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DESIGNERS: Ashok Mani Aryal
LEAD REVIT TECH: Ashok Mani Aryal
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FILE PATH: Autodesk Docs://23-004 TMCA Imaging Replacements/23.09TS TMCA - ED CT_Imaging CT_MRI.rvt
MM, JOB #: 23-004
PRINCIPAL: Dan Mullins
EOR: Matthew Dezort
PROJECT MANAGER: Rado Stanchev





City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
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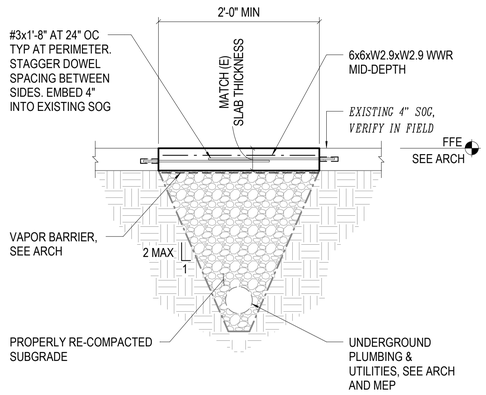
Structural plan review is limited to a general survey for code compliance. No review is implied nor was undertaken to verify structural adequacy.

1 LEVEL 01 - FOUNDATION PLAN - IMAGING CT

1/4" = 1'-0"

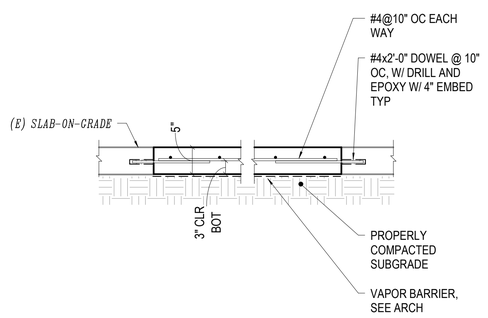
2 LEVEL 01 - FOUNDATION PLAN - MRI

1/4" = 1'-0"



9 TYP UNDERGROUND TRENCHING DETAIL

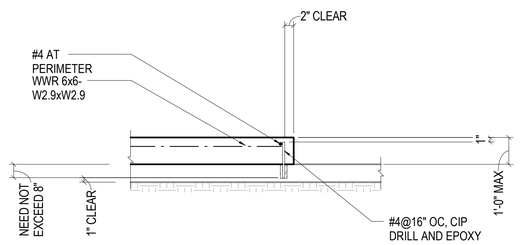
3/4" = 1'-0"



NOTES:
1. PROTECT OPEN SLAB EXCAVATIONS SUCH THAT SOIL MOISTURE CONTENT IS MAINTAINED UNTIL NEW SLAB IS IN PLACE.
2. REFER TO ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR BELOW GRADE CONDUIT AND LOCATIONS AND EXTENTS OF SLAB CUT AND INFILL.

6 SLAB-ON-GRADE INFILL AT MEDICAL EQUIPMENT

3/4" = 1'-0"



NOTES:
1. SEE ARCHITECT FOR SIZE, THICKNESS, AND LOCATIONS
2. WWR TO MATCH THAT OF SLAB OR 6x6-W2.9xW2.9 WHERE SLAB WWR NOT IDENTIFIED

3 SLAB-ON-GRADE CURB/EQUIPMENT PAD

3/4" = 1'-0"

PLAN NOTES

1) SLAB ON GRADE:
1A) SEE ARCH AND MECH DRAWINGS FOR SLAB SLOPES, DEPRESSIONS, SAWCUT EXTENTS, FILLS, PADS AND CURBS NOT SHOWN ON THE STRUCTURAL DRAWINGS.

1B) SEE ARCH DRAWINGS FOR VAPOR RETARDER LOCATIONS. INSTALL VAPOR RETARDER DIRECTLY UNDER SLAB PER RECOMMENDATIONS OF PCA AND ACI 302.1R-04. TAKE PRECAUTIONS TO MINIMIZE SLAB CURLING. GRIND SLAB TO ACHIEVE SPECIFIED FLOOR FLATNESS AND LEVELNESS VALUES.

1C) INFILL SLAB-ON-GRADE CONTROL JOINTS TO MATCH LOCATIONS OF EXISTING CONTROL JOINTS AND AT 10'-0" MAX SPACING EACH WAY, BUT NOT MORE THAN A 1:1.5 LENGTH TO WIDTH RATIO.

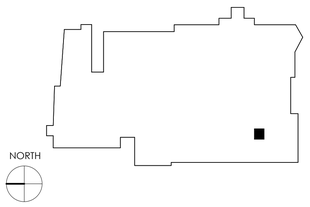
2) STRUCTURAL DESIGN FOR MEDICAL EQUIPMENT SUPPORTS IS BASED ON THE EQUIPMENT DRAWINGS PREPARED BY GE HEALTHCARE DATED 08/04/2023. CONTRACTOR TO NOTIFY ENGINEER IF THE FINAL EQUIPMENT LOCATIONS OR EQUIPMENT WEIGHTS CHANGE ON THE FINAL EQUIPMENT DRAWINGS BY GE HEALTHCARE.

2A) EXISTING ABOVE CEILING UNISTRUT FRAMES TO BE REVIEWED AND VERIFIED BY CONTRACTOR FOR ADEQUACY TO SUPPORT NEW BOOM EQUIPMENT. CONTRACTOR TO NOTIFY ENGINEER IF THE UNISTRUT FRAME IS NOT ADEQUATE TO SUPPORT NEW EQUIPMENT BOOM.

KEYNOTE LEGEND

KEY VALUE	KEYNOTE TEXT
01	SLAB-ON-GRADE REMOVAL AND REPLACEMENT FOR UNDERGROUND TRENCHES, SEE ARCHITECTURAL & MEP DRAWINGS FOR EXTENTS OF TRENCHING REQUIRED. WIDTH OF SLAB ON GRADE REMOVAL IS MEANS AND METHODS BY CONTRACTOR.
02	REMOVE (E) SCREEN WALL POST AND SALVAGE BY UNBOLTING FROM THE BASE AND RELOCATE AS SHOWN ON PLAN.
03	REMOVE (E) SCREEN WALL AND HORIZONTAL HSS SCREEN WALL GIRTS AND SALVAGE. RELOCATE EXISTING SCREEN WALL PANELS AND EXISTING HORIZONTAL GIRTS AT NEW SCREEN WALL LOCATION INDICATED ON PLAN.
04	RELOCATE (E) SCREEN WALL AND SCREEN WALL HSS3x3 GIRTS TO THIS SIDE. SEE ARCH FOR SCREEN WALL DETAILS.
05	GUARDRAIL AND ALL ITS REQUIREMENTS, SEE ARCH.
06	CONTRACTOR FIELD VERIFY EXISTING SLAB-ON-GRADE ON WHICH EQUIPMENT IS TO BE INSTALLED IS 4" MINIMUM THICKNESS USING NON-DESTRUCTIVE TESTING AND SERIES OF CORES DURING DEMOLITION PHASE OF THE PROJECT, SEE ARCH. CONTRACTOR FIELD VERIFY FLOOR SLAB ON WHICH EQUIPMENT IS TO BE INSTALLED IS LEVEL TO 1/4" IN 10'-0". IF THESE REQUIREMENTS ARE NOT MET, REMOVE AND REPLACE SLAB-ON-GRADE PER DETAIL 6/S.100.
07	CONCRETE PAD, SEE ARCH FOR LOCAITON AND DIMENSIONS.
08	INFILL EXISTING OVERHEAD ROOF PENETRATIONS FROM REMOVED DUCT WORK PER DETAIL 9/S.500.
09	NEW EXHAUST FAN PENETRATION THROUGH THE ROOF, SEE MECH.
10	CONTRACTOR COORDINATE MEDICAL EQUIPMENT ANCHOR LOCATIONS, QUANTITIES AND EQUIPMENT PADS WITH EQUIPMENT SUPPLIER. POST-INSTALLED ANCHORS SHALL BE INSTALLED PER ALL MANUFACTURER'S REQUIREMENTS.
11	CONTRACTOR FIELD VERIFY EXISTING MRI SLAB THICKNESS USING NON-DESTRUCTIVE TESTING AND PROVIDE TO ENGINEER FOR REVIEW. CONTRACTOR FIELD VERIFY USING NON-DESTRUCTIVE TESTING THAT THE EXISTING MRI SLAB DOES NOT CONTAIN ANY METALLIC REINFORCEMENT.
12	WEIGHT OF MEDICAL EQUIPMENT USED IN DESIGN. CONTRACTOR VERIFY EQUIPMENT WEIGHT DOES NOT EXCEED DESIGN EQUIPMENT WEIGHT.
13	RELOCATE (E) HSS5x5 POSTS AND GIRTS TO THIS SIDE.
14	LOCATE CHANNELS AS REQUIRED FOR CHILLER CONNECTION.

KEY PLAN



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No.	Description	Date

COLORADO LICENSED MATTHEW R. JOSEPH 09/05/2023 47105 PROFESSIONAL ENGINEER

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

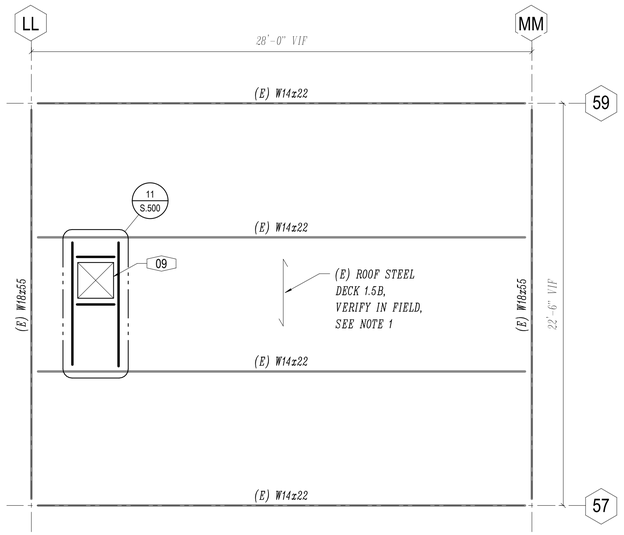
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Checked by	RS, MD

Sheet Title
FOUNDATION PLAN & DETAILS

Sheet Number
S.100

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DESIGNERS: Ashok Mani Aryal
LEAD REVIT TECH: Ashok Mani Aryal
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MM JOB #: 23-004
PRINCIPAL: Dan Mullins
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PROJECT MANAGER: Rado Stanchev



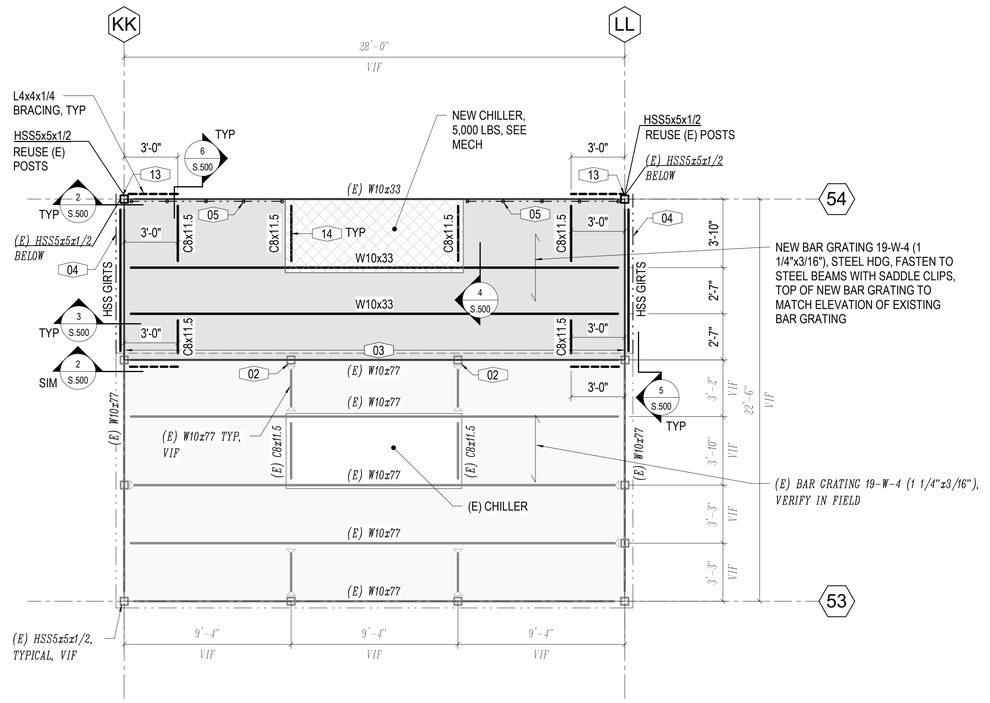
2 EXHAUST FAN - FRAMING PLAN

1/4" = 1'-0"

NORTH

NOTES:

1. TOP OF (E) ROOF SEEL = 114'-0" RELATIVE TO THE FIRST FLOOR SLAB ELEVATION = 100'-0".



1 ROOF EQUIPMENT PLATFORM - FRAMING PLAN

1/4" = 1'-0"

NORTH

NOTES:

1. PAINT ALL FIELD WELDS WITH ZINC RICH PAINT.
2. HDG: HOT DIP GALVANIZED ALL STEEL AND STEEL CONNECTION MATERIALS.
3. TOP OF (E) ROOF SEEL = 114'-0" RELATIVE TO THE FIRST FLOOR SLAB ELEVATION = 100'-0".
4. TOP OF NEW STEEL = 119'-0", UNLESS NOTED THUS (XXX'-XX").

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City of Aurora Building Division
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Approved as Noted: Kirk Nagle
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STEEL NOTES

1) STRUCTURAL STEEL:

1A) PROVIDE CONNECTIONS AS INDICATED IN DETAILS HEREIN.
1B) WELDING REQUIREMENTS:

- WELDERS: HAVE IN POSSESSION CURRENT EVIDENCE OF PASSING THE APPROPRIATE AWS. QUALIFICATION TESTS.
- MINIMUM WELDS AISC SPECIFICATION, NOT LESS THAN 3/16" FILLET, CONTINUOUS UNLESS OTHERWISE NOTED.
- WELD SIZES AND LENGTHS CALLED FOR ON THE DRAWINGS ARE THE NET EFFECTIVE REQUIRED.

KEYNOTE LEGEND

KEY VALUE	KEYNOTE TEXT
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04	RELOCATE (E) SCREEN WALL AND SCREEN WALL HSS3x3 GIRTS TO THIS SIDE. SEE ARCH FOR SCREEN WALL DETAILS.
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08	INFILL EXISTING OVERHEAD ROOF PENETRATIONS FROM REMOVED DUCT WORK PER DETAIL 9/S.500.
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14	LOCATE CHANNELS AS REQUIRED FOR CHILLER CONNECTION.

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No.	Description	Date

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MATTHEW D. DEZORT
09/05/2023
44105
PROFESSIONAL ENGINEER

23-004 TMCA Imaging Replacements

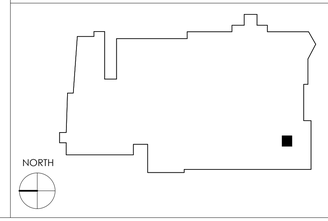
1501 S Potomac St.
Aurora, CO 80012

Issue	100% CD
Date	5 SEPTEMBER 2023
Project Number	23-004
Drawn by	AA, RS
Checked by	RS, MD

Sheet Title
ROOF FRAMING PLAN & DETAILS

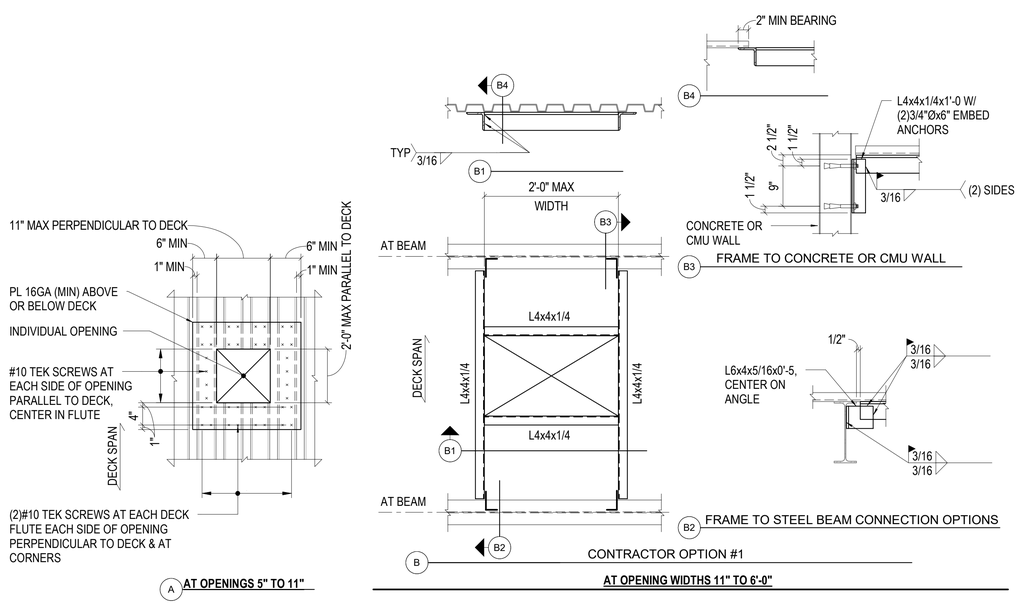
Sheet Number
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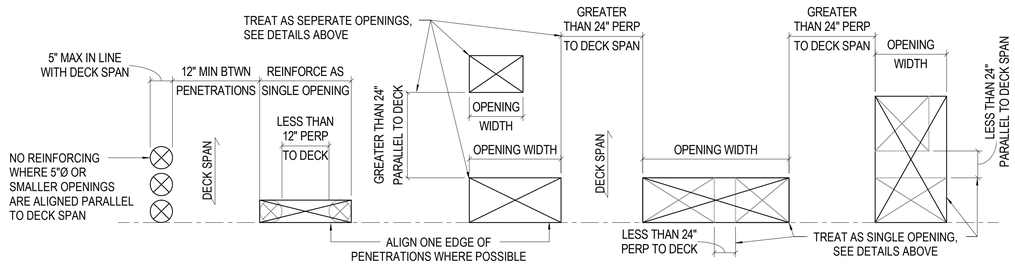
KEY PLAN



MM JOB #: 23-004
PRINCIPAL: Dan Mullins
EOR: Matthew Dezort
PROJECT MANAGER: Rebb Stanzhev

DESIGNERS: Ashok Mani Aryal
LEAD REVIT TECH: Ashok Mani Aryal
DATE PRINTED: 9/5/2023 1:28:41 PM
FILE PATH: Autodesk Docs://23-004 TMCA Imaging Replacements/23.0976 TMCA - ED CT_Imaging CT_MRI.rvt

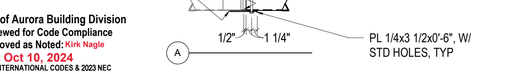




NOTES:
1. WHERE POSSIBLE ALIGN PENETRATIONS PARALLEL & PERPENDICULAR TO DECK SUCH THAT ONE EDGE OF PENETRATION ALIGNS IN EACH DIRECTION
2. AT OPENINGS LARGER THAN 5"Ø, TREAT ADJACENT OPENINGS AS A SINGLE LARGE OPENING IF EITHER:
   A. OPENINGS ARE ALIGNED PARALLEL TO DECK SPAN WITH LESS THAN 24" CLEAR OR
   B. OPENINGS ARE ALIGNED PERPENDICULAR TO DECK SPAN WITH LESS THAN 24" CLEAR

NOTES:
3. NO PENETRATION REINFORCING IS REQUIRED AT:
   A. INDIVIDUAL ISOLATED PENETRATIONS 5"Ø OR SMALLER
   B. PENETRATIONS 5"Ø OR SMALLER ALIGNED PARALLEL TO DECK SPAN
   C. PENETRATIONS 5"Ø OR SMALLER IF SPACED GREATER THAN 24" PERPENDICULAR TO DECK SPAN; IF SPACING BETWEEN OPENINGS PERPENDICULAR TO DECK SPAN DOES NOT EXCEED 24", REINFORCE AS A SINGLE OPENING

11 3/4" = 1'-0" TYPICAL SUPPORT AT ROOF DECK PENETRATIONS



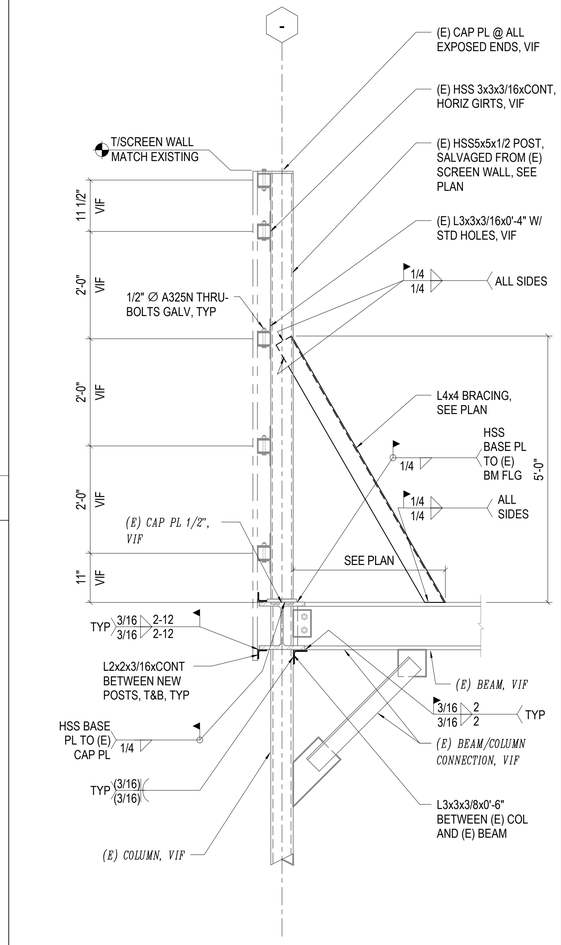
NOTES:
1. FOR ADDITIONAL REQUIREMENTS, SEE 6/S.500

4 3/4" = 1'-0" CHANNEL TO BEAM CONNECTION

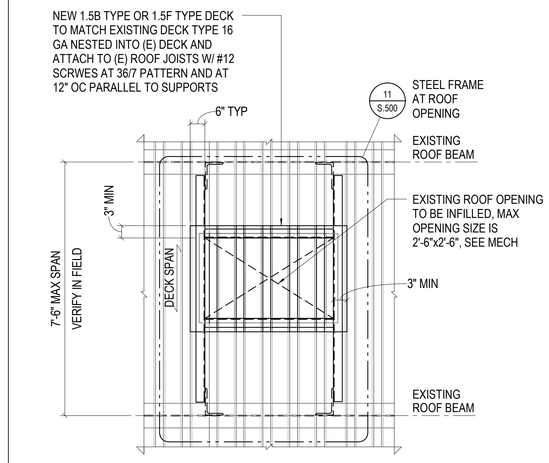
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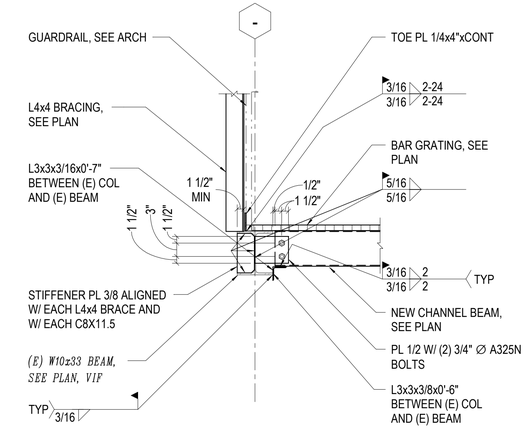
5 3/4" = 1'-0" EXISTING TO NEW GIRT CONNECTION



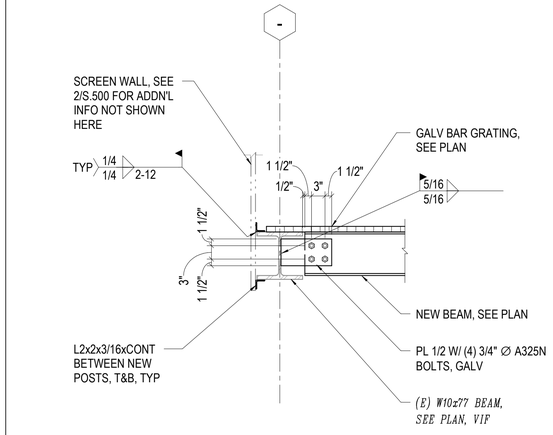
2 3/4" = 1'-0" NEW SCREEN WALL POST TO (E) BEAM CONNECTION



9 3/4" = 1'-0" TYP ROOF DECK PATCH



6 3/4" = 1'-0" HANDRAIL ATTACHMENT TO EDGE BEAM



3 3/4" = 1'-0" NEW BEAM TO (E) BEAM CONNECTION

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COLORADO LICENSED MATTHEW T. MARTIN 09/05/2023 PROFESSIONAL ENGINEER

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	100% CD
Date	5 SEPTEMBER 2023
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Drawn by	AA, RS
Checked by	MT, DM

Sheet Title
STEEL DETAILS

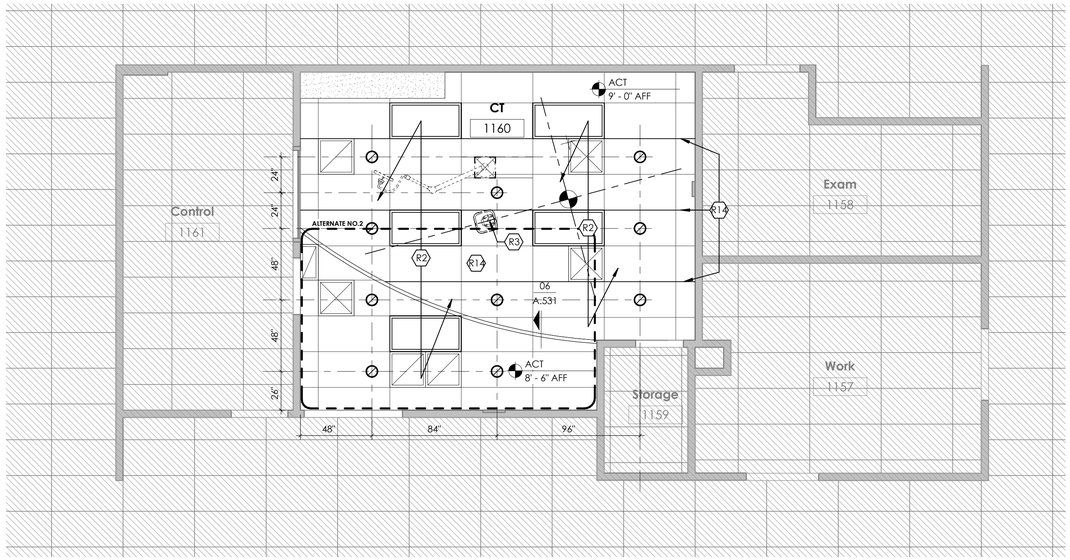
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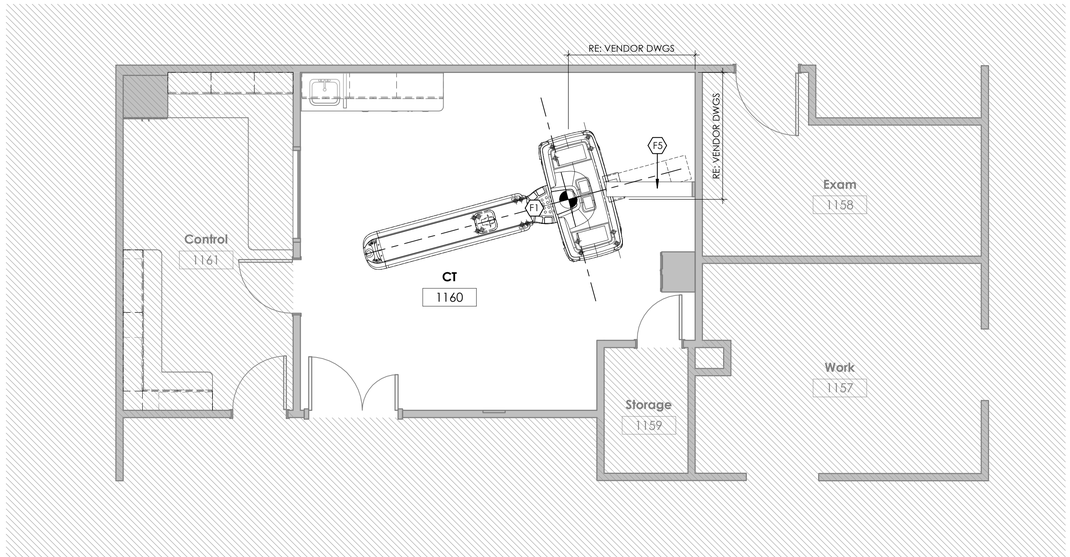
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M.M. JOB #: 23-004
PRINCIPAL: Dan Mullins
EOR: Matthew Dezort
PROJECT MANAGER: Radu Stanchev

City of Aurora Building Division
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R5	RE-INSTALL SALAVAGED 2'x4' ACT PANELS.
R6	INSTALL NEW INJECTOR.
R7	INSTALL NEW BOOM ARM.
R8	EXISTING INJECTOR ARM TO REMAIN.
R9	NON-FERROUS CABLE LADDER; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R10	NON-FERROUS FRAMING CABLE SUPPORT; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R11	CABBLE LADDER; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R12	CABLE TRAY FOR GRADIENT CABLES; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R13	PATCH FIREPROOFING ON EXISTING STRUCTURE AT ALL LOCATIONS WITHIN ROOM WHERE FIREPROOFING HAS BEEN REMOVED FROM ROOF STRUCTURE. INCLUDE FIREPROOFING FOR ANY NEW STRUCTURE ASSOCIATED WITH ROOF INFILL.
R14	MAIN T DIRECTION PREFERRED.



02- LEVEL 01 - REFLECTED CEILING PLAN - ED CT
1/4" = 1'-0"



01- LEVEL 01 - FLOOR PLAN - ED CT
1/4" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- OUT OF SCOPE
- SUSPENDED 2' x 2' ACOUSTICAL CEILING SYSTEM
- SUSPENDED 2' x 4' ACOUSTICAL CEILING SYSTEM
- GB — GYPSUM WALL BOARD CEILING
- GYPSUM BOARD FURR DOWN OVER WALL CABINET OR LOCKER
- PLASTIC LAMINATE SOFFIT OVER WALL CABINET OR LOCKER
- SOFFIT VENT
- CEILING TYPE / 1' - 0" AFF — CEILING HEIGHT DESIGNATION
- NEW RECESSED FLUORESCENT LIGHT FIXTURE
- R — RECESSED FLUORESCENT LIGHT FIXTURE TO BE RELOCATED
- EXISTING RECESSED FLUORESCENT LIGHT FIXTURE TO REMAIN
- NEW RECESSED FLUORESCENT LIGHT FIXTURE WITH CEILINGSCENES IMAGE LENS, IMAGE TO BE SELECTED FROM MANUFACTURER'S STANDARD SELECTIONS VIA SUBMITTAL
- SUPPLY AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- RETURN AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- EXHAUST AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- ACCESS PANEL
- SUPPLY STRIP DIFFUSER REF: MECHANICAL FOR ADDITIONAL INFORMATION
- UNDER COUNTER TASK LIGHTING
- EXIT SIGN W/ DIRECTION
- OTS — OPEN TO SHIELD
- WALL MOUNTED LIGHT
- OTS — OPEN TO STRUCTURE
- CHAIN PENDANT LIGHTS

FLOOR PLAN KEYNOTES

F1	MAINTAIN DIAGONAL ORIENTATION. RE: VENDOR DRAWINGS FOR ANGLE.
F2	INSTALL SALVAGED DOOR
F3	EXTEND FURRED OUT WALL
F4	INSTALL WALL MOUNTED SINK
F5	INSTALL RACEWAY IN EXISTING FLOOR TRENCH.
F6	EXTEND WALLS TO BOTTOM OF RF SHIELD. PROVIDE FIRE PILLOW INFILL FOR SMOKE/HEAT LIMITATION TO PLENUM FROM PEN PANEL CLOSET. AT CABLE TRAY/LADDER ENTRY.
F7	TOP OF WALL 48" AFF
F8	RF CONTRACTOR TO INSTALL (1) 1.5" WAVE GUIDE BELOW DESK AND WINDOW.
F9	INSTALL CODE BLUE.
F10	PATCH ALL HOLES AND BLEMISHES PRIOR TO RECEIVING NEW PAINT.
F11	PROVIDE PLYWOOD BACKING BEHIND DOOR. INSTALL NEW NON-FERROUS DOOR STOP AT THIS LOCATION.
F12	INSTALL VERTICAL RACEWAY WITHIN WALL CAVITY. REFER TO VENDOR DRAWINGS FOR RACEWAY SIZE.
F13	EXTEND ALL GYPSUM BOARD TO DECK. SEAL ALL PENETRATIONS WITH NON-RATED SEALANT. PREPARE FOR PAINT.
F14	RF CONTRACTOR TO PROVIDE ADDITIONAL WAVE GUIDE FOR DATA CABLING AND (2) RF FILTERS FOR COAXIAL CABLE.
F15	PROVIDE 1" PVC SLEEVE AT 18" AFF WITH BUSHING ON BOTH SIDES FOR PATIENT MONITOR HARD WIRE PASS THROUGH.
F16	REPLACE DOOR TRIM TO REDUCE ARTIFACTS AS INDICATED ON SHIELDING REPORT.
F17	PROVIDE SOLID SURFACE SILL ON TOP OF PARTIAL HEIGHT WALL.
F18	PROVIDE 2X2 STEEL TUBE END WALL SUPPORT INSIDE WALL.
F19	HOUSEKEEPING PAD FOR MECHANICAL PUMP PACKAGE. SIZE 4" LARGER THAN APPROVED/SPECIFIED EQUIPMENT. RE: MECHANICAL AND STRUCTURAL FOR FURTHER DETAIL.

REFLECTED CEILING PLAN KEYNOTES

R1	GC REFER TO ALTERNATES; BASE BID TO PROVIDE NEW MEDICAL SUPPORT INEXISTING LOCATION ENGINEERED TO NEW GE STRUCTURAL REQUIREMENTS. ALTERNATE SCOPE TO REUSE EXISTING UNISTRUT WITH NEW GC PROVIDED MOUNTING PLATE.
R2	RE-INSTALL SALAVAGED CEILING FIXTURES.
R3	NEW MEDICAL SUPPORT TO BE PROVIDED FOR GE CAMERA. RE: VENDOR DRAWINGS FOR MOUNTING CONFIGURATION.
R4	X-RAY IN USE SIGN AND NURSE CALL DOME LIGHT. EXISTING TO REMAIN.

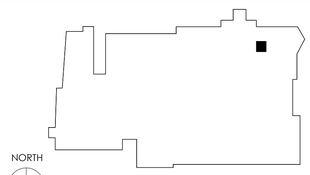
FLOOR PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS. WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
2. REFER TO SHEET G.101 FOR PROJECT GENERAL NOTES.
3. ALL PARTITIONS ARE TYPE "A41" UNLESS NOTED OTHERWISE.
4. DIMENSIONS SHOWN ON FLOOR PLANS FOR NEW CONSTRUCTION ARE TO THE FACE OF FINISH OF INTERIOR WALLS, TO CENTERLINE OF COLUMNS, AND TO THE FACE OF CONCRETE OR MANSONRY WALLS, UNLESS NOTED OTHERWISE. DIMENSIONS IN RENOVATED AREAS ARE FROM FINISH FACE OF EXISTING WALLS TO FINISH FACE OF NEW STUD WALLS, UNLESS NOTED OTHERWISE.
5. WHERE NEW GYPSUM BOARD PARTITIONS ARE A CONTINUATION OF AN EXISTING PARTITION OR COLUMN ENCASEMENT, THE FACE OF THE NEW GYPSUM BOARD SHALL BE ALIGNED WITH THE FACE OF THE EXISTING SURFACE. WHERE A ONE-HOUR PARTITION IS SHOWN AS A CONTINUATION OF A TWO-HOUR PARTITION OR COLUMN ENCASEMENT, THE FACE OF THE GYPSUM BOARD SHALL BE ALIGNED. STUDS SHALL BE OFFSET AND ADDITIONAL LAYERS OF GYPSUM BOARD SHALL BE PROVIDED AS REQUIRED FOR FACE ALIGNMENT OF GYPSUM BOARD.
6. SEE ARCHITECTURAL ENLARGED PLANS FOR TYPICAL MOUNTING HEIGHTS OF PLUMBING FIXTURES AND TOILET ACCESSORIES.
7. ALL LAVATORIES AND SINKS SHALL BE MOUNTED 1'- 3" MINIMUM FROM CENTERLINE OF THE FIXTURE TO THE FINISHED FACE OF THE ADJACENT PARTITION.
8. SEE OWNER-FURNISHED VENDOR DRAWINGS FOR CRITICAL DIMENSIONS WITHIN THE PROJECT SCOPE. REFERENCE DRAWING INDEX FOR LOCATION OF VENDOR DRAWINGS IN DRAWING SET.
9. REFER TO I.20x SERIES, "EQUIPMENT PLANS" FOR WALL PROTECTION LOCATIONS.
11. THE CONTRACTOR SHALL COMPARE THIS REFLECTED CEILING PLAN WITH ELECTRICAL LIGHTING PLANS, MECHANICAL SUPPLY, RETURN, AND EXHAUST PLANS. THE CONTRACTOR SHALL REPORT ANY OMISSIONS OR INCONSISTENCIES TO THE ARCHITECT.
12. SEE ELECTRICAL DRAWINGS FOR THE LOCATIONS OF CEILING MOUNTED SMOKE DETECTORS, SPEAKERS, EXIT SIGNAGE, FIRE ALARM DEVICES, WALL MOUNTED EXIT LIGHTS, ETC.
13. FOR FURTHER DIMENSIONS SEE ENLARGED PLANS, SECTIONS, ELEVATIONS, AND DETAILS.
14. COORDINATE GYPSUM BOARD FURR DOWN HEIGHTS WITH FULL HEIGHT CABINETS AND INTERIOR ELEVATIONS.
15. SPRINKLER HEAD LOCATIONS ARE NOT SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS.
16. 18" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE BOTTOM OF EXTENDED SPRINKLER HEADS AND THE TOP OF ANY FILES, SHELVING, LOCKERS, ETC.
17. THE CONTRACTOR SHALL VERIFY THAT ACCESS PANELS OF TYPE SPECIFIED ARE INSTALLED IN NON-ACCESSIBLE TYPE CEILINGS WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, PLUMBING, OR ELECTRICAL ITEMS MAY BE REQUIRED. ACCESS PANELS SHALL HAVE A FIRE RATING EQUAL TO THE RATING OF THE CEILING IN WHICH THEY OCCUR.
18. RELOCATE SUPPLY DRAIN AND VENT PIPES TO MAINTAIN SCHEDULED CEILING HEIGHTS. COORDINATE RELOCATIONS WITH MEP ENGINEERS.
19. WHERE EXISTING LAY-IN CEILINGS ARE TO REMAIN, THE CONTRACTOR SHALL REPLACE ANY DAMAGED TILES WITH MATERIALS THAT MATCH EXISTING COLOR, TEXTURE, PATTERN, ETC. IF UNIFORMITY CANNOT BE ACHIEVED, THE CONTRACTOR SHALL REPLACE THE ENTIRE CEILING WITHIN THE SPACE WITH NEW MATERIAL.
20. ALL CEILING ACCESSORIES ARE EXISTING TO BE RELOCATED

FLOOR PLAN LEGEND

- NEW CONSTRUCTION
- EXISTING TO REMAIN
- XXX — PARTITION TAG RE: A.501 FOR TYPE CHARTS
- FD — FLOOR DRAIN
- WALL REQUIRES LEAD SHIELDING RE: A.501SERIES FOR DETAILS
- OUT OF SCOPE
- EXISTING FLOOR DUCT/TRENCH TO BE REUSED
- NEW FLOOR CAVITY TO BE INFILLED
- PATCH BACK FLOORING FROM FACILITY ATTIC STOCK

KEY PLAN



PATH architecture + planning 21
1801 Broadway, Suite 200B
Denver, CO 80202
Tel: 720.878.4900
Email: jnap@path21arch.com
www.path21arch.com

Consultant Team

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ph: 303.225.6320

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12499 West Colfax Ave.
Lakewood, CO 80215
ph: 303.431.6100

No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAPP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JL, JT
Checked by	JMN

Sheet Title
REFLECTED CEILING & FLOOR PLAN

Sheet Number
A.201A

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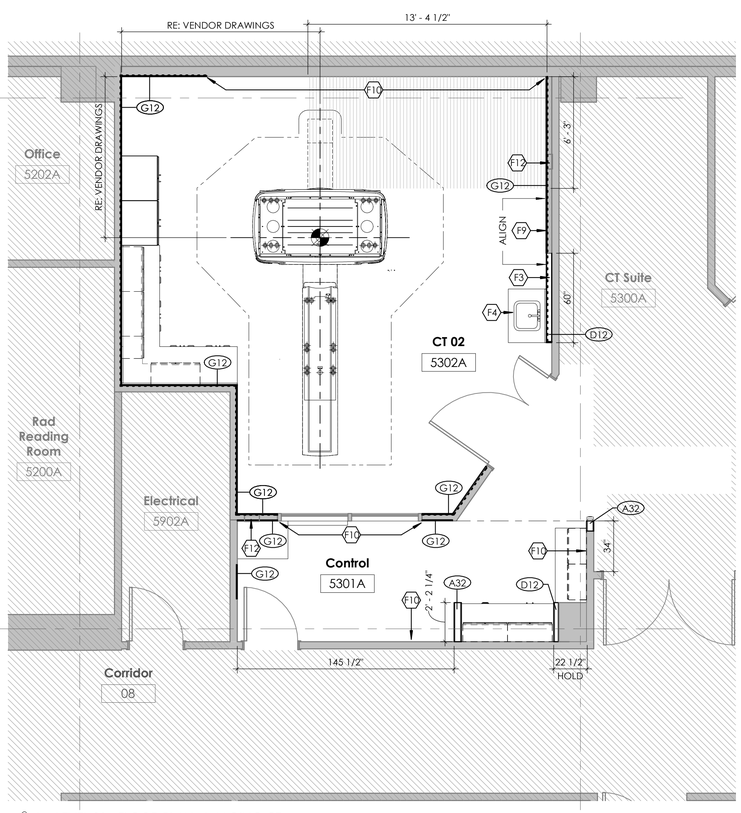
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RSN 1845534 Permit # 2024 2477659-LTPage 11 of 121

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC

R10	NON-FERROUS FRAMING CABLE SUPPORT; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R11	CABBLE LADDER; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R12	CABLE TRAY FOR GRADIENT CABLES; REFER TO VENDOR FOR SIZE REQUIREMENTS.
R13	PATCH FIREPROOFING ON EXISTING STRUCTURE AT ALL LOCATIONS WITHIN ROOM WHERE FIREPROOFING HAS BEEN REMOVED FROM ROOF STRUCTURE. INCLUDE FIREPROOFING FOR ANY NEW STRUCTURE ASSOCIATED WITH ROOF INFILL.
R14	MAIN T DIRECTION PREFERRED.

02- LEVEL 01 - REFLECTED CEILING PLAN - IMAGING CT
1/4" = 1'-0"



01- LEVEL 01 - FLOOR PLAN - IMAGING CT
1/4" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- OUT OF SCOPE
- SUSPENDED 2' x 2' ACOUSTICAL CEILING SYSTEM
- SUSPENDED 2' x 4' ACOUSTICAL CEILING SYSTEM
- GB — GYPSUM WALL BOARD CEILING
- GYPSUM BOARD FURR DOWN OVER WALL CABINET OR LOCKER
- PLASTIC LAMINATE SOFFIT OVER WALL CABINET OR LOCKER
- CEILING TYPE / 1' - 0" AFF — CEILING HEIGHT DESIGNATION
- NEW RECESSED FLUORESCENT LIGHT FIXTURE
- E — RECESSED FLUORESCENT LIGHT FIXTURE TO BE RELOCATED
- EXISTING RECESSED FLUORESCENT LIGHT FIXTURE TO REMAIN
- NEW RECESSED FLUORESCENT LIGHT FIXTURE WITH CEILINGSCENES IMAGE LENS. IMAGE TO BE SELECTED FROM MANUFACTURER'S STANDARD SELECTIONS VIA SUBMITTAL
- SUPPLY AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- RETURN AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- EXHAUST AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- ACCESS PANEL
- SUPPLY STRIP DIFFUSER REF: MECHANICAL FOR ADDITIONAL INFORMATION
- EXIT SIGN W/ DIRECTION
- OTS — OPEN TO SHIELD
- WALL MOUNTED LIGHT
- OTS — OPEN TO STRUCTURE
- CHAIN PENDANT LIGHTS

FLOOR PLAN KEYNOTES

F1	MAINTAIN DIAGONAL ORIENTATION. RE: VENDOR DRAWINGS FOR ANGLE.
F2	INSTALL SALVAGED DOOR
F3	EXTEND FURRED OUT WALL
F4	INSTALL WALL MOUNTED SINK
F5	INSTALL RACEWAY IN EXISTING FLOOR TRENCH.
F6	EXTEND WALLS TO BOTTOM OF RF SHIELD. PROVIDE FIRE PILLOW INFILL FOR SMOKE/HEAT LIMITATION TO PLENUM FROM PEN PANEL CLOSET. AT CABLE TRAY/LADDER ENTRY.
F7	TOP OF WALL 48" AFF
F8	RF CONTRACTOR TO INSTALL (1) 1.5" WAVE GUIDE BELOW DESK AND WINDOW.
F9	INSTALL CODE BLUE.
F10	PATCH ALL HOLES AND BLEMISHES PRIOR TO RECEIVING NEW PAINT.
F11	PROVIDE PLYWOOD BACKING BEHIND DOOR. INSTALL NEW NON-FERROUS DOOR STOP AT THIS LOCATION.
F12	INSTALL VERTICAL RACEWAY WITHIN WALL CAVITY. REFER TO VENDOR DRAWINGS FOR RACEWAY SIZE.
F13	EXTEND ALL GYPSUM BOARD TO DECK. SEAL ALL PENETRATIONS WITH NON-RATED SEALANT. PREPARE FOR PAINT.
F14	RF CONTRACTOR TO PROVIDE ADDITIONAL WAVE GUIDE FOR DATA CABLING AND (2) RF FILTERS FOR COAXIAL CABLE.
F15	PROVIDE 1" PVC SLEEVE AT 18" AFF WITH BUSHING ON BOTH SIDES FOR PATIENT MONITOR HARD WIRE PASS THROUGH.
F16	REPLACE DOOR TRIM TO REDUCE ARTIFACTS AS INDICATED ON SHIELDING REPORT.
F17	PROVIDE SOLID SURFACE SILL ON TOP OF PARTIAL HEIGHT WALL.
F18	PROVIDE 2X2 STEEL TUBE END WALL SUPPORT INSIDE WALL.
F19	HOUSEKEEPING PAD FOR MECHANICAL PUMP PACKAGE. SIZE 4" LARGER THAN APPROVED/SPECIFIED EQUIPMENT. RE: MECHANICAL AND STRUCTURAL FOR FURTHER DETAIL.

REFLECTED CEILING PLAN KEYNOTES

R1	GC REFER TO ALTERNATES: BASE BID TO PROVIDE NEW MEDICAL SUPPORT INEXISTING LOCATION ENGINEERED TO NEW GE STRUCTURAL REQUIREMENTS. ALTERNATE SCOPE TO REUSE EXISTING UNISTRUT WITH NEW GC PROVIDED MOUNTING PLATE.
R2	RE-INSTALL SALAVAGED CEILING FIXTURES.
R3	NEW MEDICAL SUPPORT TO BE PROVIDED FOR GE CAMERA. RE: VENDOR DRAWINGS FOR MOUNTING CONFIGURATION.
R4	X-RAY IN USE SIGN AND NURSE CALL DOME LIGHT. EXISTING TO REMAIN.
R5	RE-INSTALL SALAVAGED 2'x4' ACT PANELS.
R6	INSTALL NEW INJECTOR.
R7	INSTALL NEW BOOM ARM.
R8	EXISTING INJECTOR ARM TO REMAIN.
R9	NON-FERROUS CABLE LADDER; REFER TO VENDOR FOR SIZE REQUIREMENTS.

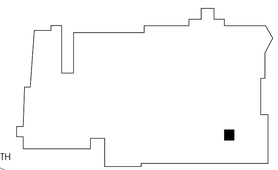
FLOOR PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
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6. SEE ARCHITECTURAL ENLARGED PLANS FOR TYPICAL MOUNTING HEIGHTS OF PLUMBING FIXTURES AND TOILET ACCESSORIES.
7. ALL LAVATORIES AND SINKS SHALL BE MOUNTED 1'- 3" MINIMUM FROM CENTERLINE OF THE FIXTURE TO THE FINISHED FACE OF THE ADJACENT PARTITION.
8. SEE OWNER-FURNISHED VENDOR DRAWINGS FOR CRITICAL DIMENSIONS WITHIN THE PROJECT SCOPE. REFERENCE DRAWING INDEX FOR LOCATION OF VENDOR DRAWINGS IN DRAWING SET.
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11. THE CONTRACTOR SHALL COMPARE THIS REFLECTED CEILING PLAN WITH ELECTRICAL LIGHTING PLANS, MECHANICAL SUPPLY, RETURN, AND EXHAUST PLANS. THE CONTRACTOR SHALL REPORT ANY OMISSIONS OR INCONSISTENCIES TO THE ARCHITECT.
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20. ALL CEILING ACCESSORIES ARE EXISTING TO BE RELOCATED

FLOOR PLAN LEGEND

- NEW CONSTRUCTION
- EXISTING TO REMAIN
- XXX — PARTITION TAG RE: A.501 FOR TYPE CHARTS
- WALL REQUIRES COPPER SHIELDING RE: A.501 SERIES FOR DETAILS
- WALL REQUIRES LEAD SHIELDING RE: A.501 SERIES FOR DETAILS
- OUT OF SCOPE
- EXISTING FLOOR DUCT/TRENCH TO BE REUSED
- NEW FLOOR CAVITY TO BE INFILLED. PROVIDE VAPOR BARRIER MEMBRANE UNDER ALL NEW CONCRETE, TIE INTO EXISTING MEMBRANE IF AVAILABLE. IF NOT, TUCK UNDER EXISTING SLAB BY 6". RE: STRUCTURAL.

KEY PLAN



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12499 West Colfax Ave.
Lakewood, CO 80215
ph: 303.431.6100

No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JT
Checked by	JMN

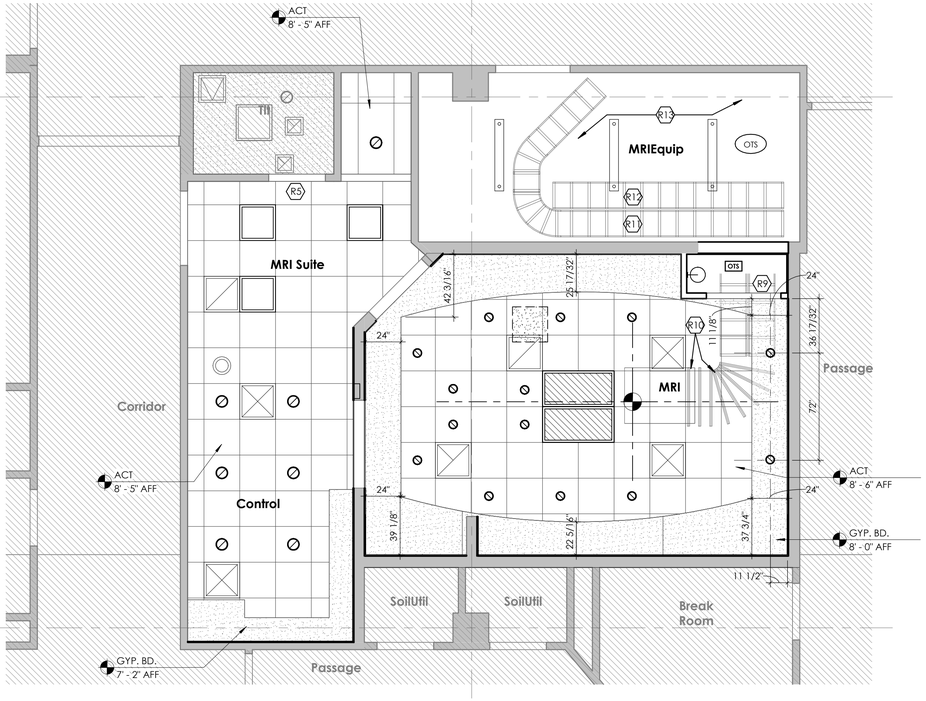
Sheet Title
REFLECTED CEILING & FLOOR PLAN

Sheet Number
A.201B

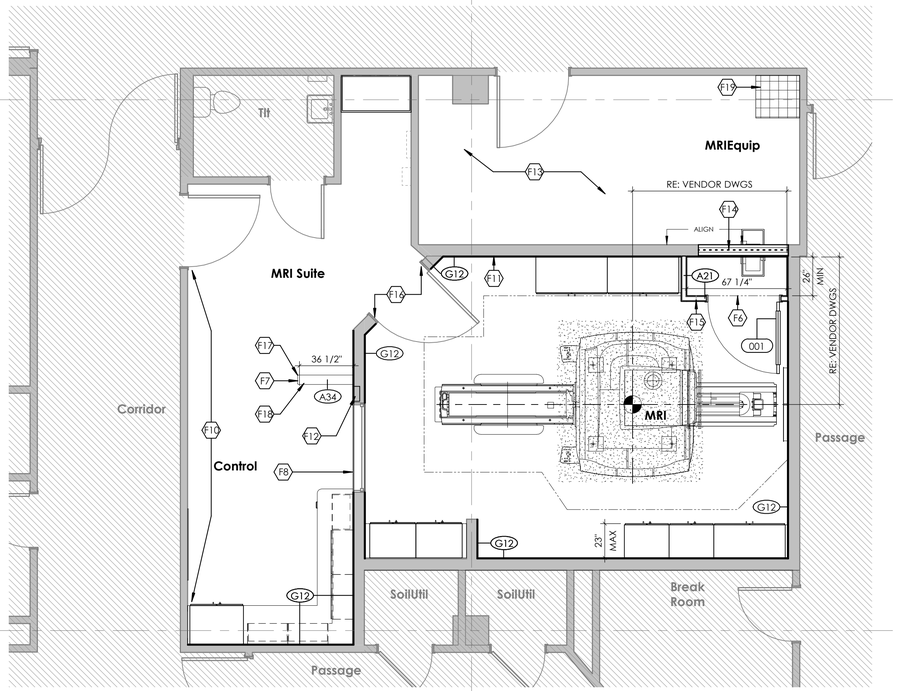
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02- LEVEL 01 - REFLECTED CEILING PLAN - MRI
1/4" = 1'-0"



01- LEVEL 01 - FLOOR PLAN - MRI
1/4" = 1'-0"

9/5/2023 11:03:40 AM

R5 RE-INSTALL SALAVAGED 2'x4' ACT PANELS.

R6 INSTALL NEW INJECTOR.

R7 INSTALL NEW BOOM ARM.

R8 EXISTING INJECTOR ARM TO REMAIN.

R9 NON-FERROUS CABLE LADDER; REFER TO VENDOR FOR SIZE REQUIREMENTS.

R10 NON-FERROUS FRAMING CABLE SUPPORT; REFER TO VENDOR FOR SIZE REQUIREMENTS.

R11 CABBLE LADDER; REFER TO VENDOR FOR SIZE REQUIREMENTS.

R12 CABLE TRAY FOR GRADIENT CABLES; REFER TO VENDOR FOR SIZE REQUIREMENTS.

R13 PATCH FIREPROOFING ON EXISTING STRUCTURE AT ALL LOCATIONS WITHIN ROOM WHERE FIREPROOFING HAS BEEN REMOVED FROM ROOF STRUCTURE. INCLUDE FIREPROOFING FOR ANY NEW STRUCTURE ASSOCIATED WITH ROOF INFILL.

R14 MAIN T DIRECTION PREFERRED.

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC

REFLECTED CEILING PLAN LEGEND

- OUT OF SCOPE
- SUSPENDED 2' x 2' ACOUSTICAL CEILING SYSTEM
- SUSPENDED 2' x 4' ACOUSTICAL CEILING SYSTEM
- GB GYPSUM WALL BOARD CEILING
- GYPSUM BOARD FURR DOWN OVER WALL CABINET OR LOCKER
- PLASTIC LAMINATE SOFFIT OVER WALL CABINET OR LOCKER
- SOFFIT VENT
- CEILING TYPE / 1' - 0" AFF — CEILING HEIGHT DESIGNATION
- NEW RECESSED FLUORESCENT LIGHT FIXTURE
- RECESSED FLUORESCENT LIGHT FIXTURE TO BE RELOCATED
- EXISTING RECESSED FLUORESCENT LIGHT FIXTURE TO REMAIN
- NEW RECESSED FLUORESCENT LIGHT FIXTURE WITH CEILINGSCENES IMAGE LENS. IMAGE TO BE SELECTED FROM MANUFACTURER'S STANDARD SELECTIONS VIA SUBMITTAL
- SUPPLY AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- RETURN AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- EXHAUST AIR GRILLE REF: MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION
- ACCESS PANEL
- SUPPLY STRIP DIFFUSER REF: MECHANICAL FOR ADDITIONAL INFORMATION
- UNDER COUNTER TASK LIGHTING
- EXIT SIGN W/ DIRECTION
- OTS OPEN TO SHIELD
- WALL MOUNTED LIGHT
- OTS OPEN TO STRUCTURE
- CHAIN PENDANT LIGHTS

FLOOR PLAN KEYNOTES

F1 MAINTAIN DIAGONAL ORIENTATION. RE: VENDOR DRAWINGS FOR ANGLE.

F2 INSTALL SALVAGED DOOR

F3 EXTEND FURRED OUT WALL

F4 INSTALL WALL MOUNTED SINK

F5 INSTALL RACEWAY IN EXISTING FLOOR TRENCH.

F6 EXTEND WALLS TO BOTTOM OF RF SHIELD. PROVIDE FIRE PILLOW INFILL FOR SMOKE/HEAT LIMITATION TO PLENUM FROM PEN PANEL CLOSET. AT CABLE TRAY/LADDER ENTRY.

F7 TOP OF WALL 48" AFF

F8 RF CONTRACTOR TO INSTALL (1) 1.5" WAVE GUIDE BELOW DESK AND WINDOW.

F9 INSTALL CODE BLUE.

F10 PATCH ALL HOLES AND BLEMISHES PRIOR TO RECEIVING NEW PAINT.

F11 PROVIDE PLYWOOD BACKING BEHIND DOOR. INSTALL NEW NON-FERROUS DOOR STOP AT THIS LOCATION.

F12 INSTALL VERTICAL RACEWAY WITHIN WALL CAVITY. REFER TO VENDOR DRAWINGS FOR RACEWAY SIZE.

F13 EXTEND ALL GYPSUM BOARD TO DECK. SEAL ALL PENETRATIONS WITH NON-RATED SEALANT. PREPARE FOR PAINT.

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F15 PROVIDE 1" PVC SLEEVE AT 18" AFF WITH BUSHING ON BOTH SIDES FOR PATIENT MONITOR HARD WIRE PASS THROUGH.

F16 REPLACE DOOR TRIM TO REDUCE ARTIFACTS AS INDICATED ON SHIELDING REPORT.

F17 PROVIDE SOLID SURFACE SILL ON TOP OF PARTIAL HEIGHT WALL.

F18 PROVIDE 2X2 STEEL TUBE END WALL SUPPORT INSIDE WALL.

F19 HOUSEKEEPING PAD FOR MECHANICAL PUMP PACKAGE. SIZE 4" LARGER THAN APPROVED/SPECIFIED EQUIPMENT. RE: MECHANICAL AND STRUCTURAL FOR FURTHER DETAIL.

REFLECTED CEILING PLAN KEYNOTES

R1 GC REFER TO ALTERNATES: BASE BID TO PROVIDE NEW MEDICAL SUPPORT INEXISTING LOCATION ENGINEERED TO NEW GE STRUCTURAL REQUIREMENTS. ALTERNATE SCOPE TO REUSE EXISTING UNISTRUT WITH NEW GC PROVIDED MOUNTING PLATE.

R2 RE-INSTALL SALAVAGED CEILING FIXTURES.

R3 NEW MEDICAL SUPPORT TO BE PROVIDED FOR GE CAMERA. RE: VENDOR DRAWINGS FOR MOUNTING CONFIGURATION.

R4 X-RAY IN USE SIGN AND NURSE CALL DOME LIGHT, EXISTING TO REMAIN.

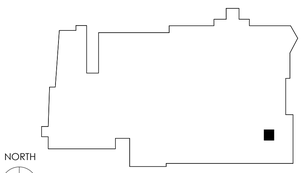
FLOOR PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
2. REFER TO G0.00 FOR PROJECT GENERAL NOTES.
3. ALL PARTITIONS ARE TYPE "A41" UNLESS NOTED OTHERWISE.
4. DIMENSIONS SHOWN ON FLOOR PLANS FOR NEW CONSTRUCTION ARE TO THE FACE OF FINISH OF INTERIOR WALLS, TO CENTERLINE OF COLUMNS, AND TO THE FACE OF CONCRETE OR MANSONRY WALLS, UNLESS NOTED OTHERWISE. DIMENSIONS IN RENOVATED AREAS ARE FROM FINISH FACE OF EXISTING WALLS TO FINISH FACE OF NEW STUD WALLS, UNLESS NOTED OTHERWISE.
5. WHERE NEW GYPSUM BOARD PARTITIONS ARE A CONTINUATION OF AN EXISTING PARTITION OR COLUMN ENCASEMENT, THE FACE OF THE NEW GYPSUM BOARD SHALL BE ALIGNED WITH THE FACE OF THE EXISTING SURFACE. WHERE A ONE-HOUR PARTITION IS SHOWN AS A CONTINUATION OF A TWO-HOUR PARTITION OR COLUMN ENCASEMENT, THE FACE OF THE GYPSUM BOARD SHALL BE ALIGNED. STUDS SHALL BE OFFSET AND ADDITIONAL LAYERS OF GYPSUM BOARD SHALL BE PROVIDED AS REQUIRED FOR FACE ALIGNMENT OF GYPSUM BOARD.
6. SEE ARCHITECTURAL ENLARGED PLANS FOR TYPICAL MOUNTING HEIGHTS OF PLUMBING FIXTURES AND TOILET ACCESSORIES.
7. ALL LAVATORIES AND SINKS SHALL BE MOUNTED 1'- 3" MINIMUM FROM CENTERLINE OF THE FIXTURE TO THE FINISHED FACE OF THE ADJACENT PARTITION.
8. SEE OWNER-FURNISHED VENDOR DRAWINGS FOR CRITICAL DIMENSIONS WITHIN THE PROJECT SCOPE. REFERENCE DRAWING INDEX FOR LOCATION OF VENDOR DRAWINGS IN DRAWING SET.
9. REFER TO I.20x SERIES, "EQUIPMENT PLANS" FOR WALL PROTECTION LOCATIONS.
11. THE CONTRACTOR SHALL COMPARE THIS REFLECTED CEILING PLAN WITH ELECTRICAL LIGHTING PLANS, MECHANICAL SUPPLY, RETURN, AND EXHAUST PLANS. THE CONTRACTOR SHALL REPORT ANY OMISSIONS OR INCONSISTENCIES TO THE ARCHITECT.
12. SEE ELECTRICAL DRAWINGS FOR THE LOCATIONS OF CEILING MOUNTED SMOKE DETECTORS, SPEAKERS, EXIT SIGNAGE, FIRE ALARM DEVICES, WALL MOUNTED EXIT LIGHTS, ETC.
13. FOR FURTHER DIMENSIONS SEE ENLARGED PLANS, SECTIONS, ELEVATIONS, AND DETAILS.
14. COORDINATE GYPSUM BOARD FURR DOWN HEIGHTS WITH FULL HEIGHT CABINETS AND INTERIOR ELEVATIONS.
15. SPRINKLER HEAD LOCATIONS ARE NOT SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS.
16. 18" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE BOTTOM OF EXTENDED SPRINKLER HEADS AND THE TOP OF ANY FILES, SHELVING, LOCKERS, ETC.
17. THE CONTRACTOR SHALL VERIFY THAT ACCESS PANELS OF TYPE SPECIFIED ARE INSTALLED IN NON-ACCESSIBLE TYPE CEILINGS WHERE SERVICE OR ADJUSTMENT TO MECHANICAL, PLUMBING, OR ELECTRICAL ITEMS MAY BE REQUIRED. ACCESS PANELS SHALL HAVE A FIRE RATING EQUAL TO THE RATING OF THE CEILING IN WHICH THEY OCCUR.
18. RELOCATE SUPPLY DRAIN AND VENT PIPES TO MAINTAIN SCHEDULED CEILING HEIGHTS. COORDINATE RELOCATIONS WITH MEP ENGINEERS.
19. WHERE EXISTING LAY-IN CEILINGS ARE TO REMAIN, THE CONTRACTOR SHALL REPLACE ANY DAMAGED TILES WITH MATERIALS THAT MATCH EXISTING COLOR, TEXTURE, PATTERN, ETC. IF UNIFORMITY CANNOT BE ACHIEVED, THE CONTRACTOR SHALL REPLACE THE ENTIRE CEILING WITHIN THE SPACE WITH NEW MATERIAL.
20. ALL CEILING ACCESSORIES ARE EXISTING TO BE RELOCATED

FLOOR PLAN LEGEND

- NEW CONSTRUCTION
- EXISTING TO REMAIN
- XXX PARTITION TAG RE: A.501 FOR TYPE CHARTS
- FD FLOOR DRAIN
- PROVIDE RF SHIELDING. SHIELDING SHALL CONTAIN NO SEAMS. GC TO COORDINATE WITH SHIELDING INSTALLER.
- OUT OF SCOPE
- EXISTING FLOOR DUCT/TRENCH TO BE REUSED
- NEW FLOOR CAVITY TO BE INFILLED
- PROVIDE NON-FERROUS FLOOR SHIELDING. SHIELDING UNDER MAGNET SHALL CONTAIN NO SEAMS. GC TO COORDINATE WITH SHIELDING INSTALLER.

KEY PLAN



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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAPP
401729
LICENSED ARCHITECT
04/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

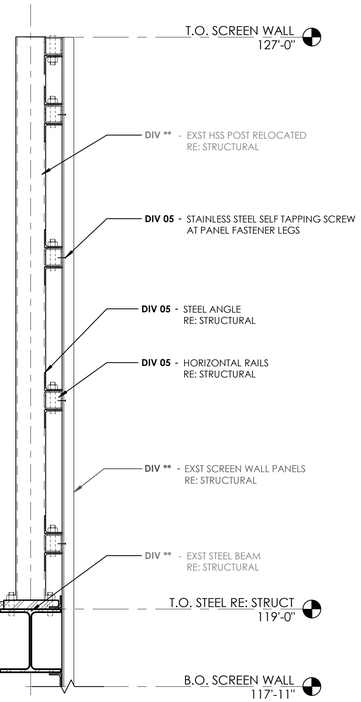
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Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JAV
Checked by	JMN

Sheet Title
REFLECTED CEILING & FLOOR PLAN

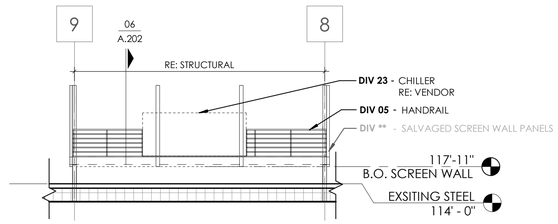
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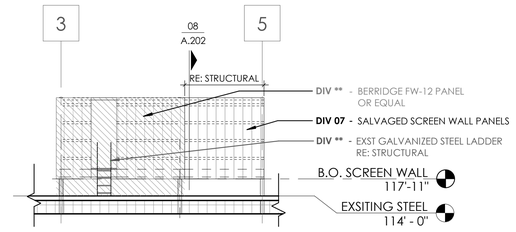
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Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



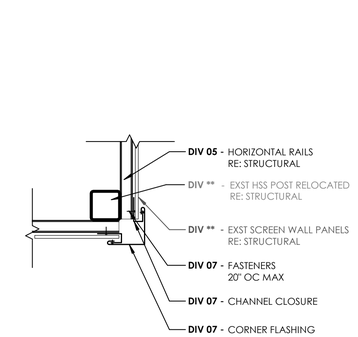
08- MECHANICAL SCREEN WALL SECTION
1" = 1'-0"



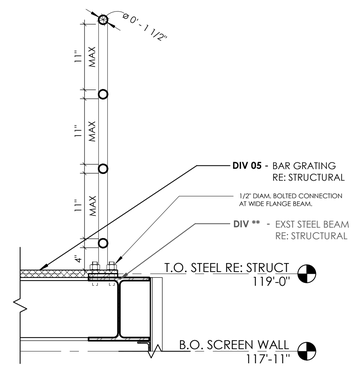
04- SCREEN WALL - NORTH ELEVATION
1/8" = 1'-0"



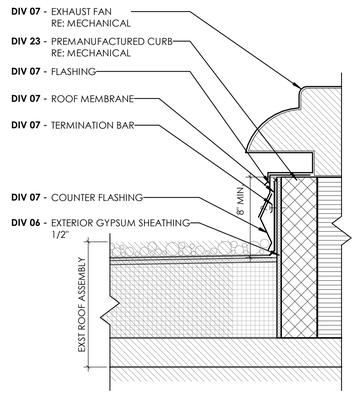
02- SCREEN WALL - WEST ELEVATION
1/8" = 1'-0"



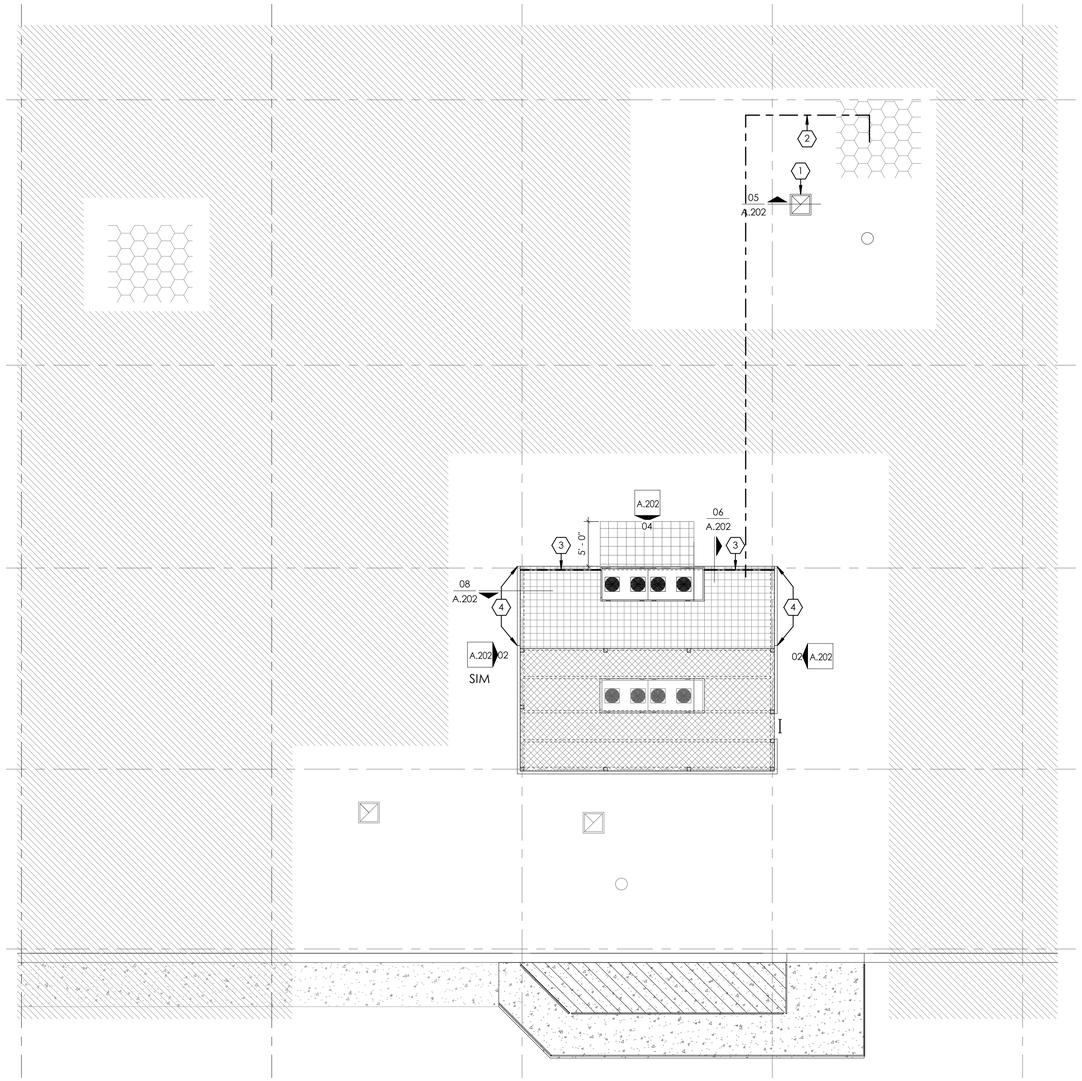
07- SCREEN WALL - CORNER DETAIL
1" = 1'-0"



06- HANDRAIL @ MECHANICAL SCREEN
1" = 1'-0"



05- CURB DETAIL @ EXHAUST FAN
1 1/2" = 1'-0"



01- ROOF PLAN
1/8" = 1'-0"

ROOF PLAN GENERAL NOTES

1. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL FOR LOCATIONS OF PIPING, CURBS, VENTS, DUCTS, FANS AND OTHER ITEMS ON THE ROOF SURFACE.
2. CUT EXISTING ROOF AS REQUIRED FOR NEW CONSTRUCTION. FLASH IN WITH NEW ROOFING MATERIAL TO MATCH EXISTING UNLESS OTHERWISE NOTED.COMPLY WITH ALL REQUIREMENTS OF MANUFACTURER OF EXISTING ROOF TO MAINTAIN EXISTING WARRANTY.
3. ALL ROOF FLASHING TO BE IN ACCORDANCE WITH MANUFACTUER'S RECOMMENDATIONS AND DETAILS IN COMPLIANCE WITH THE WARRANTY.

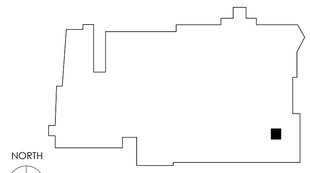
ROOF PLAN LEGEND

- EXISTING EXTERIOR WALL/PARAPET TO REMAIN
- X"/12" — ROOF SLOPE RISE PER 12 INCHES OF RUN
- CHILLED WATER PIPING ROUTE FROM NEW CHILLER TO EQUIPMENT ROOM. REFER TO MECHANICAL FOR SURFACE PLACED ROOF SUPPORTS.
- PATCH ROOFING AT MECHAINCAL UNIT REMOVAL WITH LIKE MATERIAL. PROVIDE NEW MEMBRANE AND ROOF BALLAST AT PATCH.
- OUT OF SCOPE
- EXISTING BAR GRATING
- NEW BAR GRATING
- 24" X 24" PAVERS SET TO ROOF MEMBRANE WITHIN EQUIPMENT SERVICE CLEARANCE BELOW MINIMUM.

ROOF PLAN KEYNOTES

1. NEW EXHAUST FAN PENETRATION FOR MRI. COORDINATE STRUCTURAL DECK REINFORCEMENT WITH STRUCTURAL ENGINEERING DRAWINGS AND SIZE REQUIREMENTS WITH MECHANICAL DOCUMENTS. PROVIDE ROOF PATCH AND 8" MINIMUM FLASHING TO CURB. PROVIDE NEW BALLAST AROUND NEW OPENING.
2. PROVIDE NEW PIPING BOOT AT ALL NEW PIPING PENETRATIONS.
3. STRUCTURAL KICKER, RE: STRUCTURAL.
4. TRIM AT TOP BOTTOM AND SIDES OF PANELS. EXISTING PANELS TO BE RE-USED FROM SALVAGE.

KEY PLAN



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JOHN MENNO NAPP
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LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
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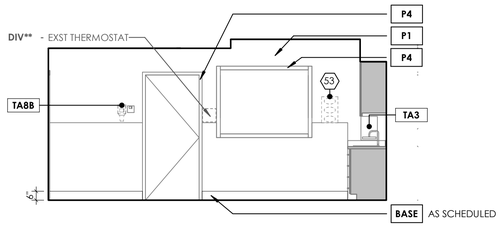
Sheet Title
ROOF PLAN, ELEVATIONS, AND DETAILS

Sheet Number
A.202

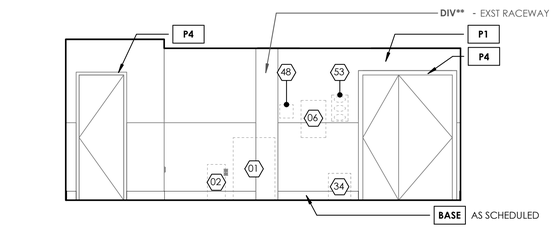
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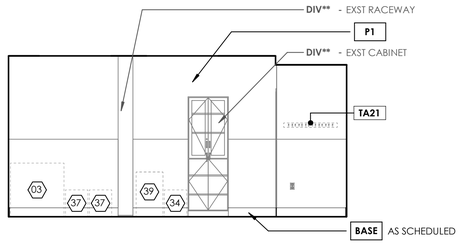
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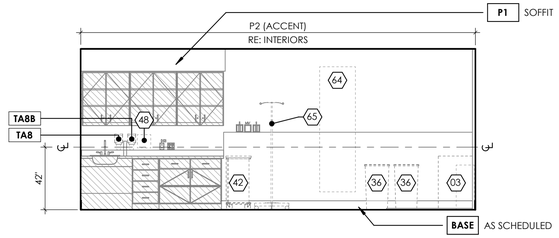
05- CT ED - NORTH ELEVATION
1/4" = 1'-0"



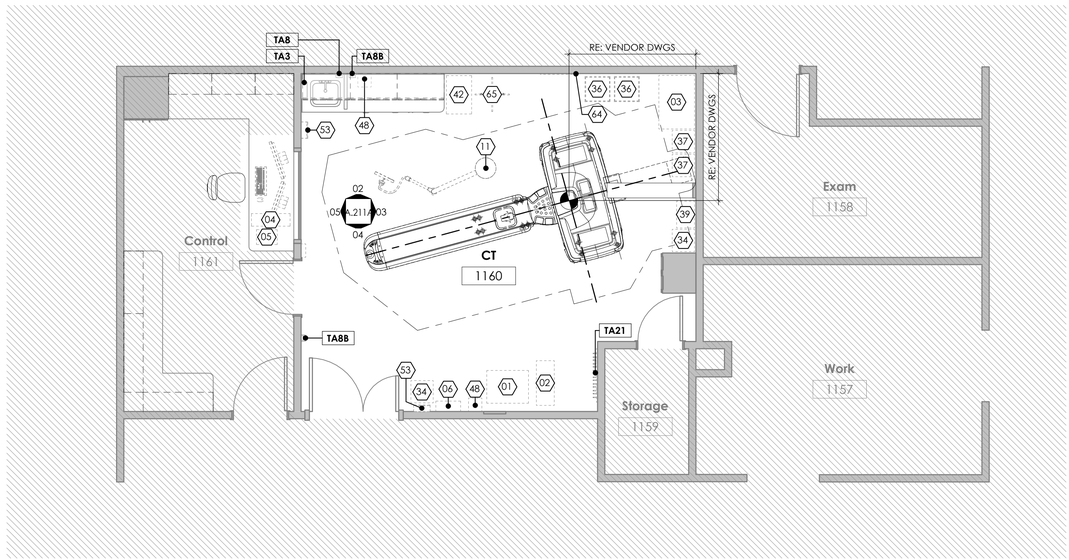
04- ED CT - WEST ELEVATION
1/4" = 1'-0"



03- ED CT - SOUTH ELEVATION
1/4" = 1'-0"



02- ED CT - EAST ELEVATION
1/4" = 1'-0"



01- LEVEL 01 - EQUIPMENT PLAN - ED CT
1/4" = 1'-0"

61	MEDRAD MONITOR, EXST	OFOI
62	MONITOR STAND, EXST	OFOI
63	CRASH CART, EXST	OFOI
64	TRANSFER BOARD, EXST	OFCI
65	IV POLE, EXST	OFOI
66	WHITE BOARD, EXST	OFCI
67	CD BURNER, EXST	OFOI
68	AUDIO MIXER, EXST	OFOI
69	MEDRAD MONITOR	OFOI
70	FIRE EXTINGUISHER, EXST	OFOI
71	TACK BOARD, EXST	OFCI

EQUIPMENT PLAN KEYNOTES

01	POWER DISTRIBUTION UNIT, ED CT	VFVI
02	PARTIAL UPS, ED CT	VFVI
03	STORAGE CABINET, ED CT	VFVI
04	STANDALONE CONSOLE, ED CT	VFVI
05	POWER BOX, ED CT	VFVI
06	MAIN DISCONNECT PANEL, ED CT	VFCI
07	POWER DISTRIBUTION UNIT, IMAGING CT	VFVI
08	PARTIAL UPS, IMAGING CT	VFVI
09	STORAGE CABINET, IMAGING CT	VFVI
10	MONITOR BOOM	VFVI
11	INJECTOR BOOM	OFCI
12	SYSTEMS CABINET IV, IMAGING CT	VFVI
13	OPEN CONSOLE	VFVI
14	MAIN DISCONNECT PANEL, IMAGING CT	VFCI
15	POWER, GRADIENT, RF CABINET, MRI	VFCI
16	WATER CHILLER, MRI	VFCI
17	MAGNET RUNDOWN UNIT, MRI	VFVI
18	OPERATOR CONSOLE, MRI	VFVI
19	CRYOGEN SENSOR RE: MECH FOR ROUGH IN REQ	VFCI
20	GE MRI CONTROL MONITOR	VFVI
21	GE SOUND SYSTEM - MRI	VFVI
22	MAGNET MONITOR, MRI	VFVI
23	MAIN DISCONNECT PANEL, MRI	VFCI
24	DC LIGHTING CONTROLLER, MRI	VFCI
25	A/C UNIT, EXST, MRI	CFCI
26	MONITOR -PATIENT TRACKER, EXST	OFOI
27	CART SHELVED, EXST	OFOI
28	MAYO STAND, EXST	OFOI
29	CORK BOARD, EXST	OFCI
30	PRINTER - LARGE, EXST	OFOI
31	MONITOR, EXST	OFOI
32	DESK PHONE, EXST	OFOI
33	REFRIGERATOR, EXST	OFOI
34	WASTE CONTAINER -SMALL, EXST	OFOI
35	ADJUSTABLE DESK	OFOI
36	WASTE CONTAINER - LARGE, EXST	OFOI
37	BLUE WASTE CONTAINER, EXST	OFOI
38	BIOHAZARD CONTAINER - SMALL, EXST	OFOI
39	BIOHAZARD CONTAINER - LARGE, EXST	OFOI
40	SHARPS DISPOSAL CONTAINER, EXST	OFOI
41	PRINTER MRI - LARGE	OFOI
42	SOIL LINEN HAMPER, EXST	OFOI
43	SHRED BIN, EXST	OFOI
44	SUPPLIES CART, EXST	OFOI
45	INJECTOR WITH DISPLAY, EXST	OFOI
46	SHARPS DISPOSAL - WALL MOUNTED, EXST	OFCI
47	BLANKET WARMER, EXST	OFOI
48	EMESIS BAG CONTAINER, EXST	OFCI
49	SMALL SCANNER, EXST	OFOI
50	INJECTOR PUMP	OFOI
51	STEP STOOL, EXST	OFOI
52	CO2 TANK, EXST	OFOI
53	GLOVE HOLDER, EXST	OFCI
54	MONITOR -PATIENT MONITOR SYSTEM	OFOI
55	UNDERCOUNTER REFRIGERATOR	OFOI
56	MONITOR -CCTV MONITOR	OFOI
57	CT IMAGING CONTROL DESK	OFOI
58	PPE CONTAINER, EXST	OFCI
59	MEDITECH WORKSTATION, EXST	OFOI
60	PEDIATRIC CRASH CART, EXST	OFOI

EQUIPMENT PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS, VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
2. THE CONTRACTOR SHALL VERIFY AND COORDINATE CLEAR DIMENSIONS REQUIRED FOR OWNER FURNISHED EQUIPMENT THAT IS LOCATED WITHIN OR ADJACENT TO BUILT-IN CABINETS.
3. ALL GLOVE DISPENSERS ARE TO BE OWNER FURNISHED, CONTRACTOR INSTALLED.
4. CONTRACTOR SHALL PROVIDE BLOCKING/STRAPPING FOR ALL MOUNTING BRACKETS OF WALL HUNG EQUIPMENT. COORDINATE FURNISHED EQUIPMENT REQUIREMENTS AND VENDOR DRAWINGS.
5. ALL SINKS ARE TO RECEIVE "TA3" PAPER TOWEL DISPENSER AND "TA8" SOAP DISPENSER, UNLESS NOTED OTHERWISE.
6. ALL CEILING AND/OR WALL MOUNTED EQUIPMENT SHALL BE MOUNTED AT 80" CLEAR ABOVE FINISH FLOOR.
7. CONTRACTOR SHALL COORDINATE WITH THE OWNER ON THE DELIVERY AND INSTALLATION OF OWNER FURNISHED EQUIPMENT.
8. REFER TO ELEVATIONS FOR MODULAR CASEWORK LAYOUTS, NON-STANDARD SIZES, MODIFICATIONS, DOOR, DRAWER AND SHELF CONFIGURATIONS. RE DETAIL ON A.570 SERIES
9. COORDINATE WITH OWNER, EQUIPMENT PLANS AND ELECTRICAL DOCUMENTS FOR LOCATION OF ALL REQUIRED 2-1/2" GROMMETS AT ALL COUNTER TOP LOCATIONS.
10. PROVIDE PLASTIC LAMINATE FINISHED END PANELS AT ALL EXPOSED ENDS OF BASE AND UPPER CABINETS.
11. CONTRACTOR SHALL PROVIDE SECURE WALL ATTACHMENT FOR ALL CASEWORK TO BE PAINTED TO MATCH ADJACENT WALL COLOR.
12. FILLER STRIPS SHALL BE 1" MINIMUM. NOTIFY ARCHITECT CONCERNING AREAS SMALLER THAN 1".
13. ALL FILE CABINETS TO RECIEVE PENDIFLEX LETTER FILE INSERTS. REFER TO ELEVATIONS ON A.560 SERIES FOR NOTATION OF LOCKS.
14. CONTRACTOR TO PROVIDE LOCKS WHERE NOTED; NATIONAL #C8053-14A BRUSHED CHROME OR EQUAL SUBSTITUTE. KEY PER ELEVATION NOTES. UNLESS OTHERWISE INDICATED.
15. PROVIDE 4" RUBBER COVE BASE AT ALL CASEWORK KICKSPACES
16. PROVIDE 2" RADIUS CURVED EDGES AT ALL EXPOSED EDGES. RE DETAILS ON A.570 SERIES
17. PROVID 4" BACKSPLASH AT ALL SINK LOCATIONS.
18. REFER TO I.100 SERIES FOR CASEWORK FINISHES
19. PROVIDE IN-WALL TUBE SUPPORT FOR COUNTERTOP SUPPORT AT SPANS GREATER THAN 36" AND AS NOTED IN ELEVATIONS IN A.560 SERIES.
20. PROVIDE BLANK PANEL IN LIEU OF DRAWERS AT SINK LOCATIONS

EQUIPMENT PLAN LEGEND

- OUT OF SCOPE
- EQUIPMENT RE: SCHEDULE
- 1 / A.100 / 1 — INTERIOR ELEVATION TAG

TOILET ACCESSORY TAG

TA?? REFERS TO SPECIFICATIONS

*NOTE: TYPICAL MOUNTING HEIGHTS AND CLEARANCES ONLY - REFER TO FLOOR PLANS FOR ACTUAL FIXTURE ORIENTATION, WHERE APPLICABLE.

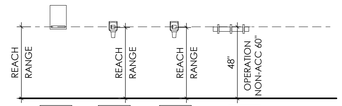
REACH RANGE (RR) TO OPERATION
RR: ≤ 48" AFF WHERE ≤ 20" COUNTER DEPTH

RR: ≤ 44" AFF WHERE >20"-25" COUNTER DEPTH W/ ACC KNEE SPACE BELOW

RR: ≤ 48" AFF WHERE COUNTERTOP W/ CABINET BELOW W/ 10" DEPTH & 34" MAX. HEIGHT

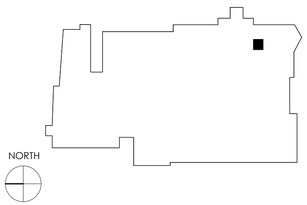
RR: ≤ 44" AFF WHERE COUNTERTOP W/ CABINET BELOW W/ > 10" - 24" DEPTH & 34" MAX. HEIGHT

RR: 15"-48" AFF WHERE NO COUNTERTOP



TA3	TA8A	TA8B	TA21
SURFACE MOUNTED PAPER TOWEL DISP	SURFACE MOUNTED SOAP DISP	SURFACE MOUNTED SANITIZER DISP	LEAD APRON RACK

KEY PLAN



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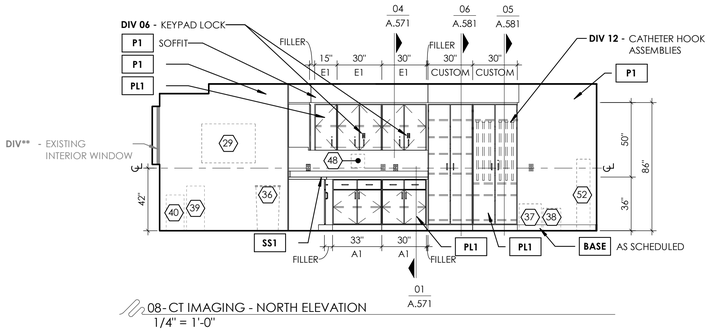
Issue	ISSUE FOR CONSTRUCTION
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Drawn by	JL, JT
Checked by	JMN

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EQUIPMENT PLAN & ELEVATIONS

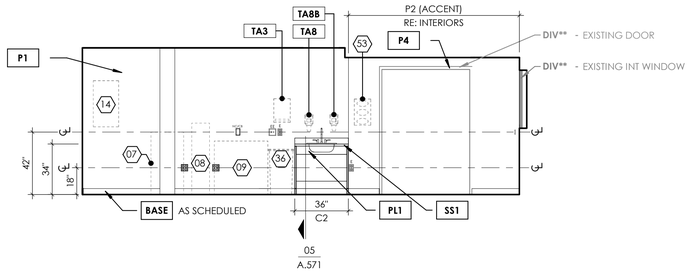
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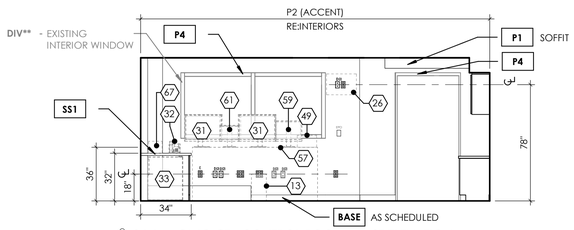
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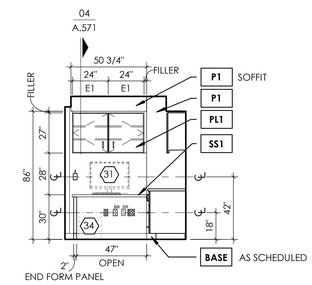
08- CT IMAGING - NORTH ELEVATION
1/4" = 1'-0"



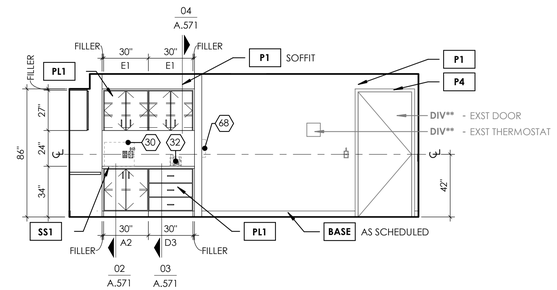
06- CT IMAGING - SOUTH ELEVATION
1/4" = 1'-0"



04- IMAGING CT - CONTROL ROOM - EAST ELEVATION
1/4" = 1'-0"

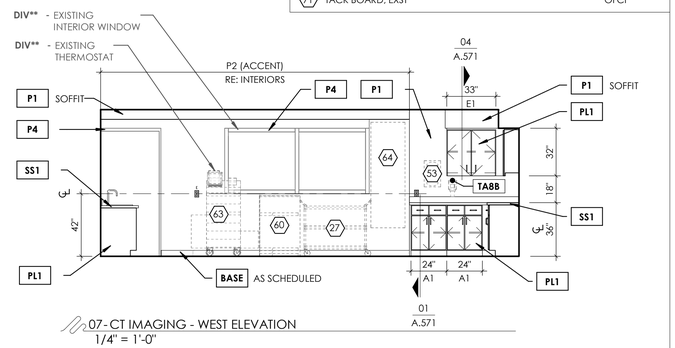


03- CT IMAGING - CONTROL ROOM - SOUTH ELEVATION
1/4" = 1'-0"

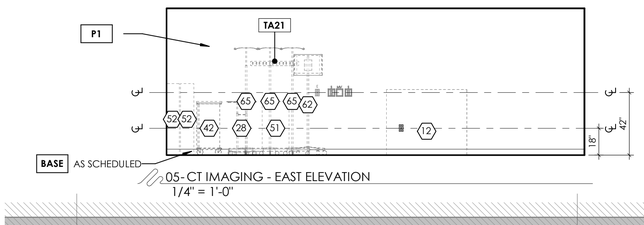


02- IMAGING CT - CONTROL ROOM - WEST ELEVATION
1/4" = 1'-0"

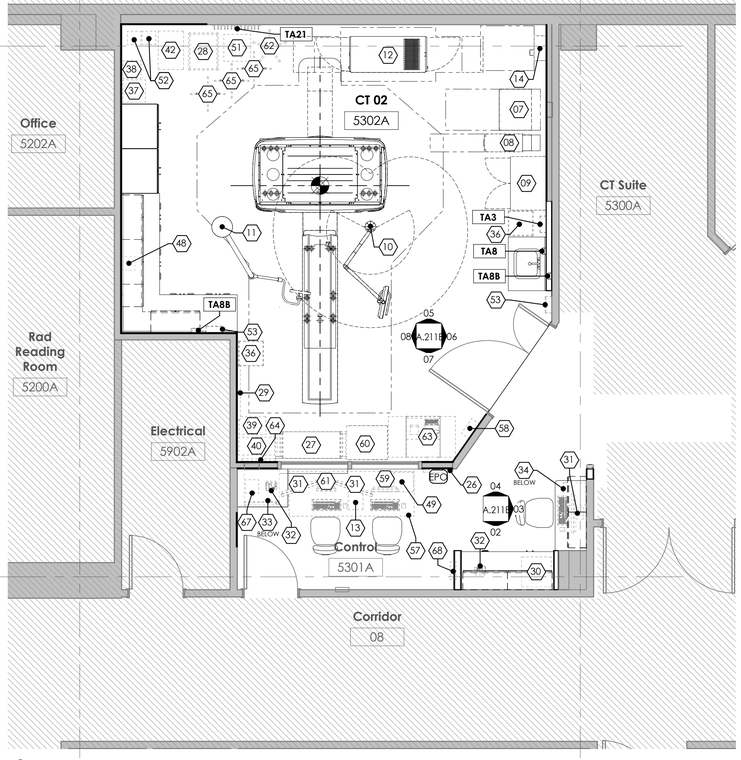
City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



07- CT IMAGING - WEST ELEVATION
1/4" = 1'-0"



05- CT IMAGING - EAST ELEVATION
1/4" = 1'-0"



01- LEVEL 01 - EQUIPMENT PLAN - IMAGING CT
1/4" = 1'-0"

61	MEDRAD MONITOR, EXST	OFOI
62	MONITOR STAND, EXST	OFOI
63	CRASH CART, EXST	OFOI
64	TRANSFER BOARD, EXST	OFCI
65	IV POLE, EXST	OFOI
66	WHITE BOARD, EXST	OFCI
67	CD BURNER, EXST	OFOI
68	AUDIO MIXER, EXST	OFOI
69	MEDRAD MONITOR	OFOI
70	FIRE EXTINGUISHER, EXST	OFOI
71	TACK BOARD, EXST	OFCI

EQUIPMENT PLAN KEYNOTES

01	POWER DISTRIBUTION UNIT, ED CT	VFVI
02	PARTIAL UPS, ED CT	VFVI
03	STORAGE CABINET, ED CT	VFVI
04	STANDALONE CONSOLE, ED CT	VFVI
05	POWER BOX, ED CT	VFVI
06	MAIN DISCONNECT PANEL, ED CT	VFCI
07	POWER DISTRIBUTION UNIT, IMAGING CT	VFVI
08	PARTIAL UPS, IMAGING CT	VFVI
09	STORAGE CABINET, IMAGING CT	VFVI
10	MONITOR BOOM	VFVI
11	INJECTOR BOOM	OFCI
12	SYSTEMS CABINET IV, IMAGING CT	VFVI
13	OPEN CONSOLE	VFVI
14	MAIN DISCONNECT PANEL, IMAGING CT	VFCI
15	POWER, GRADIENT, RF CABINET, MRI	VFCI
16	WATER CHILLER, MRI	VFCI
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19	CRYOGEN SENSOR RE: MECH FOR ROUGH IN REQ	VFCI
20	GE MRI CONTROL MONITOR	VFVI
21	GE SOUND SYSTEM - MRI	VFVI
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24	DC LIGHTING CONTROLLER, MRI	VFCI
25	A/C UNIT, EXST, MRI	CFCI
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27	CART SHELVED, EXST	OFOI
28	MAYO STAND, EXST	OFOI
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33	REFRIGERATOR, EXST	OFOI
34	WASTE CONTAINER -SMALL, EXST	OFOI
35	ADJUSTABLE DESK	OFOI
36	WASTE CONTAINER - LARGE, EXST	OFOI
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39	BIOHAZARD CONTAINER - LARGE, EXST	OFOI
40	SHARPS DISPOSAL CONTAINER, EXST	OFOI
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43	SHRED BIN, EXST	OFOI
44	SUPPLIES CART, EXST	OFOI
45	INJECTOR WITH DISPLAY, EXST	OFOI
46	SHARPS DISPOSAL - WALL MOUNTED, EXST	OFCI
47	BLANKET WARMER, EXST	OFOI
48	EMESIS BAG CONTAINER, EXST	OFCI
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50	INJECTOR PUMP	OFOI
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52	CO2 TANK, EXST	OFOI
53	GLOVE HOLDER, EXST	OFCI
54	MONITOR -PATIENT MONITOR SYSTEM	OFOI
55	UNDERCOUNTER REFRIGERATOR	OFOI
56	MONITOR -CCTV MONITOR	OFOI
57	CT IMAGING CONTROL DESK	OFOI
58	PPE CONTAINER, EXST	OFCI
59	MEDITECH WORKSTATION, EXST	OFOI
60	PEDIATRIC CRASH CART, EXST	OFOI

EQUIPMENT PLAN GENERAL NOTES

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18. REFER TO I.100 SERIES FOR CASEWORK FINISHES
19. PROVIDE IN-WALL TUBE SUPPORT FOR COUNTERTOP SUPPORT AT SPANS GREATER THAN 36" AND AS NOTED IN ELEVATIONS IN A.560 SERIES.
20. PROVIDE BLANK PANEL IN LIEU OF DRAWERS AT SINK LOCATIONS

EQUIPMENT PLAN LEGEND

- OUT OF SCOPE
- EQUIPMENT RE: SCHEDULE
- 1 / A.100 / 1 — INTERIOR ELEVATION TAG
- EPO — EMERGENCY POWER OFF

TOILET ACCESSORY TAG

TA?? REFERS TO SPECIFICATIONS

*NOTE: TYPICAL MOUNTING HEIGHTS AND CLEARANCES ONLY - REFER TO FLOOR PLANS FOR ACTUAL FIXTURE ORIENTATION, WHERE APPLICABLE.

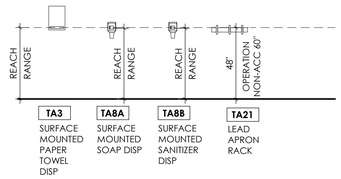
REACH RANGE (RR) TO OPERATION
RR: ≤ 48" AFF WHERE ≤ 20" COUNTER DEPTH

RR: ≤ 44" AFF WHERE >20"-25" COUNTER DEPTH W/ ACC KNEE SPACE BELOW

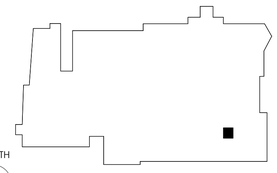
RR: ≤ 48" AFF WHERE COUNTERTOP W/ CABINET BELOW W/ 10" DEPTH & 34" MAX. HEIGHT

RR: ≤ 44" AFF WHERE COUNTERTOP W/ CABINET BELOW W/ > 10" - 24" DEPTH & 34" MAX. HEIGHT

RR: 15"-48" AFF WHERE NO COUNTERTOP



KEY PLAN



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www.path21arch.com

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Lakewood, CO 80215
ph: 303.431.6100

No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAPP
401729
LICENSED ARCHITECT
04/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JT
Checked by	JMN

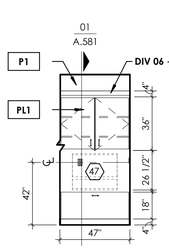
Sheet Title
EQUIPMENT PLAN & ELEVATIONS

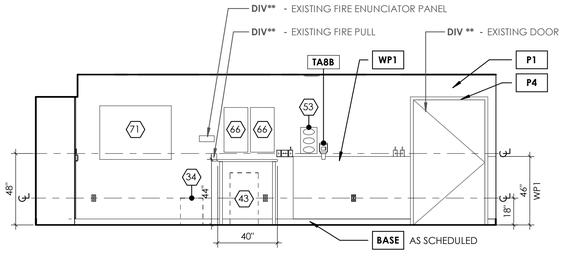
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A.211B

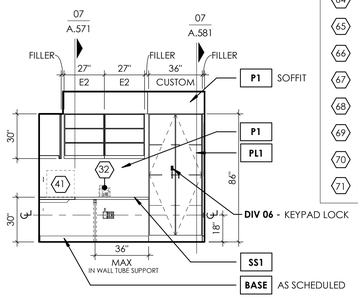
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9/5/2023 11:03:53 AM

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



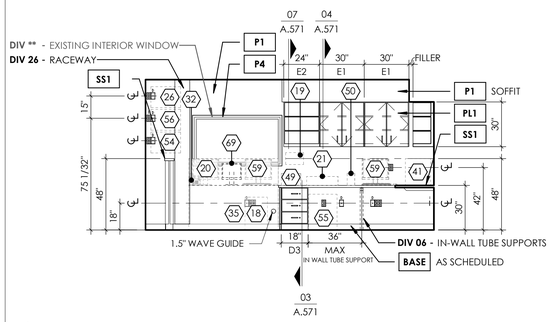


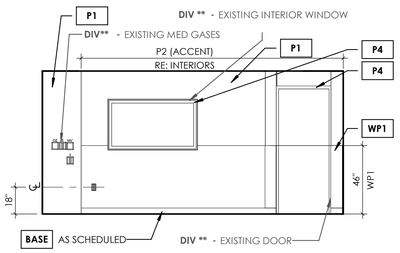


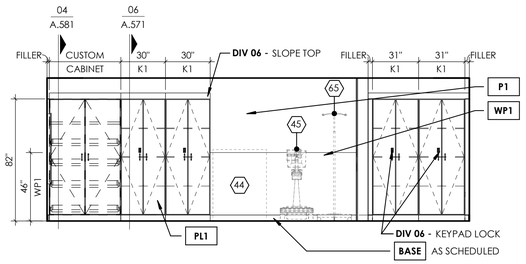
09- MRI SUITE 02 - EAST ELEVATION
1/4" = 1'-0"

08- MRI CONTROL - NORTH ELEVATION
1/4" = 1'-0"

07- MRI CONTROL - WEST ELEVATION
1/4" = 1'-0"



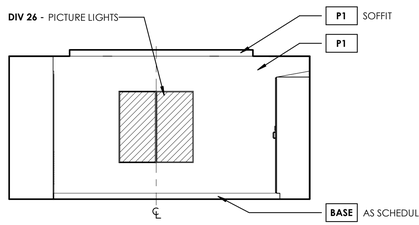




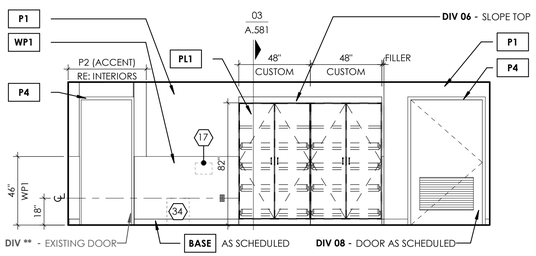
06- MRI CONTROL - SOUTH ELEVATION
1/4" = 1'-0"

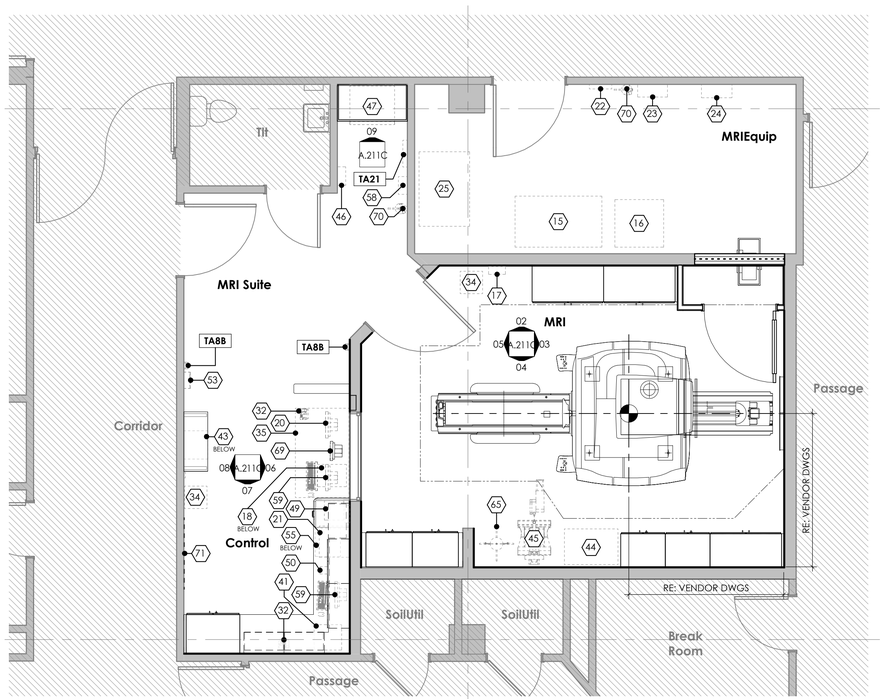
05- MRI - NORTH ELEVATION
1/4" = 1'-0"

04- MRI - WEST ELEVATION
1/4" = 1'-0"



03- MRI - SOUTH ELEVATION
1/4" = 1'-0"





02- MRI - EAST ELEVATION
1/4" = 1'-0"

01- LEVEL 01 - EQUIPMENT PLAN - MRI
1/4" = 1'-0"

9/5/2023 11:04:00 AM

61	MEDRAD MONITOR, EXST	OFOI
62	MONITOR STAND, EXST	OFOI
63	CRASH CART, EXST	OFOI
64	TRANSFER BOARD, EXST	OFCI
65	IV POLE, EXST	OFOI
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20. PROVIDE BLANK PANEL IN LIEU OF DRAWERS AT SINK LOCATIONS

EQUIPMENT PLAN LEGEND

OUT OF SCOPE

EQUIPMENT RE: SCHEDULE

1 / A.100 / 1 — INTERIOR ELEVATION TAG

1 / CR — CARD READER

TOILET ACCESSORY TAG

TOILET ACCESSORY TAG

TA?? REFERS TO SPECIFICATIONS

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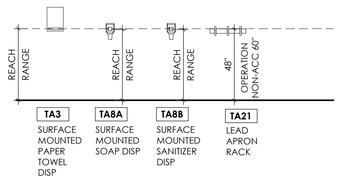
REACH RANGE (RR) TO OPERATION
RR: ≤ 48" AFF WHERE ≤ 20" COUNTER DEPTH

RR: ≤ 44" AFF WHERE >20"-25" COUNTER DEPTH W/ ACC KNEE SPACE BELOW

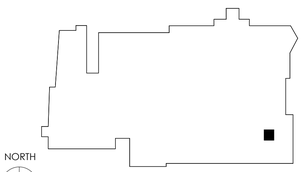
RR: ≤ 48" AFF WHERE COUNTERTOP W/ CABINET BELOW W/ 10" DEPTH & 34" MAX. HEIGHT

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RR: 15"-48" AFF WHERE NO COUNTERTOP



KEY PLAN



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Email: jnap@path21arch.com
www.path21arch.com

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Greenwood Village, CO 80112
ph: 303.225.6320

Structural
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Lakewood, CO 80215
ph: 303.431.6100

No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAPP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JAV
Checked by	JMN

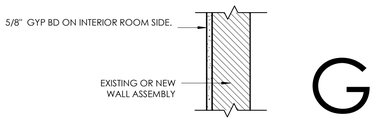
Sheet Title
EQUIPMENT PLAN & ELEVATIONS

Sheet Number
A.211C

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RSN 1845534 Permit # 2024 2477659-LTPage 17 of 121

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
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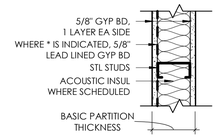
G

GYP BD TO 6" MIN. ABOVE CEILING UNO (G12)	
STUD SIZE	VARIES
BASIC PARTITION THICKNESS	5/8" GYP

D

NOTE:
1. STC'S ARE PREDICTED USING THE "INSUL" COMPUTER PROGRAM.
2. STC'S ARE BASED ON 0.018" THICK (25 GA) STUDS.
3. REFER TO A.500 SERIES FOR BRACING.

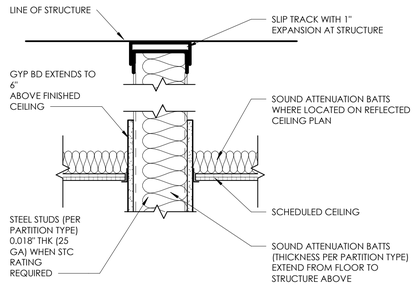
	D1_	STC	D2_	STC	D3_	STC	D4_	STC	D5_	STC	D6_	STC	D7_	STC	D8_	STC	D9_	STC
NON-RATED WITH GYP BD TO STRUCTURE ABOVE	D11	27	D21	29	D31	27	D41	30	D51	27	D61	30	D71	27	D81	31	D91	26
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	D12		D22		D32		D42		D52		D62		D72		D82		D92	
NON-RATED WITH STUDS & GYP BD TO FINISHED CEILING	D13		D23		D33		D43		D53		D63		D73		D83		D93	
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"		1 1/2"	
BASIC PARTITION THICKNESS	3 1/8"		3 1/8"		4 1/4"		4 1/4"		4 5/8"		4 5/8"		6 5/8"		6 5/8"		2 1/8"	
ACOUSTICAL INSULATION THICKNESS	-		2"		-		3"		-		3"		-		5 1/2"		1"	
ACOUSTICAL TEST NUMBER	NOTE 1		NOTE 1		NOTE 1		NOTE 1		NOTE 1		NOTE 1		NOTE 1		NOTE 1		NOTE 1	
FIRE TEST NUMBER (WHERE APPLICABLE)																		



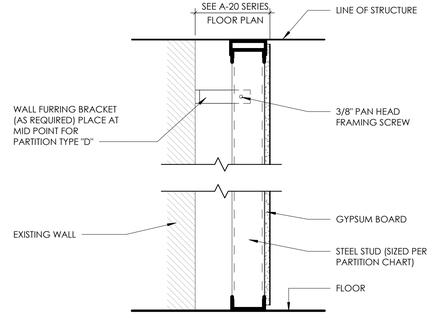
A

NOTE:
1. STC IS PREDICTED USING THE "INSUL" COMPUTER PROGRAM.
2. STC IS MODIFIED FROM THE REFERENCE.
3. STC IS BASED ON 0.018" THICK (25 GA) STUDS
4. WHERE AN * NEXT TO THE PARTITION TAG, A SINGLE LAYER OF LEAD LINED GYPSUM BOARD IN LIEU OF TYPE X GYPSUM BOARD ON THE PROCEDURE ROOM SIDE OF THE WALL. NOT TO BE USED FOR FIRE RATED WALLS.

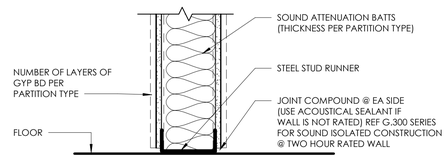
	A1_	STC	A2_	STC	A3_	STC	A4_	STC	A5_	STC	A6_	STC	A7_	STC	A8_	STC
1-HR RATED WITH GYP BD TO STRUCTURE ABOVE			A20	46	A30	39	A40	47	A50	39	A60	47	A70	40	A80	48
NON-RATED WITH GYP BD TO STRUCTURE ABOVE (SMOKE RESIST)	A11	39	A21	46	A31 (*)	39	A41 (*)	47	A51 (*)	39	A61 (*)	47	A71 (*)	40	A81 (*)	48
NON-RATED WITH GYP BD TO 6" ABOVE CEILING	A12		A22		A32 (*)		A42 (*)		A52 (*)		A62 (*)		A72 (*)		A82 (*)	
NON-RATED WITH STUDS & GYP BD TO FINISHED CEILING	A13		A23		A33		A43		A53		A63		A73		A83	
PARTIAL HEIGHT PARTITION. SEE FLOOR PLANS FOR HEIGHTS.	A14		A24		A34		A44		A54		A64		A74		A84	
STUD SIZE	2 1/2"		2 1/2"		3 5/8"		3 5/8"		4"		4"		6"		6"	
BASIC PARTITION THICKNESS	3 3/4"		3 3/4"		4 7/8"		4 7/8"		5 1/4"		5 1/4"		7 1/4"		7 1/4"	
ACOUSTICAL INSULATION THICKNESS	-		2"		-		3"		-		3"		-		5 1/2"	
ACOUSTICAL TEST NUMBER	SIM USG 860808		SIM SA 831001		SIM USG 860808		SIM USG 870717		SIM USG 860808		SIM SA 870717		SIM USG 860808 NOTE 3		SIM USG 870717 NOTE 4	
FIRE TEST NUMBER (WHERE APPLICABLE)	-		UL DES U419		UL DES U465		UL DES U465		UL DES U465		UL DES U465		UL DES U465		UL DES U465	



02 - PARTITION HEAD SECTION
1 1/2" = 1'-0"
@ NON-RATED W/ GYP BD TO 6" ABOVE CEILING



03 - PARTITION BRACING SECTION
1 1/2" = 1'-0"
@ FREE STANDING FURRING



01 - PARTITION FLOOR SECTION
1 1/2" = 1'-0"
WHERE STUDS & GYPSUM BOARD STOP AT THE FLOOR

PARTITION TYPE GENERAL NOTES

1. REFER TO FLOOR PLAN SERIES A.200 FOR LOCATION OF PARTITION TYPES. ALL PARTITIONS ARE TYPE " A41 " UNLESS NOTED OTHERWISE. NOT ALL PARTITION TYPES SHOWN IN SCHEDULE ARE UTILIZED.
2. REFER TO THE 1.200 SERIES FOR FINAL FINISHES ON PARTITIONS. PARTITION TYPES IN CHARTS REFER TO BASE WALL ONLY.
3. WHEN BLOCKING IS REQUIRED IN A PARTITION, USE A .033" (20 GA) STUD, MINIMUM.
4. AT WALLS WITHOUT TILE BEHIND SINKS AND LAVATORIES, PROVIDE ONE LAYER OF 5/8" GLASS MATT INTERIOR TYPE BOARD. AT WALLS WITHOUT TILE, GLASS MATT INTERIOR TYPE BOARD SHALL BE INSTALLED WITHIN 2'-0" OF ALL URINALS AND WATER CLOSETS, TO A HEIGHT OF 4'-0" AFF.
5. PROVIDE TILE BACKER GLASS MATT AT ALL WALLS IN TOILET ROOMS WITH SHOWER AND AT TILED WALLS OR WALL PANELS IN SHOWERS AND BATHTUBS.
6. PENETRATIONS IN LEAD-LINED PARTITIONS SHALL BE SEALED TO MEET LEAD SHIELDING REQUIREMENTS.
7. ALL LOAD BEARING WALLS SHALL BE CONSTRUCTED PER STRUCTURAL DRAWINGS AND SPECIFICATIONS.
8. PROVIDE FIRE TREATED WOOD BLOCKING, SHEET METAL OR STEEL BACKING IN PARTITIONS TO SUPPORT WALL MOUNTED ITEMS AND EQUIPMENT. FOR EXAMPLE, AT CABINETS, HANDRAILS, GUARDRAILS, TOILET PARTITIONS AND ACCESSORIES, WALL-MOUNTED EQUIPMENT, ETC.
9. "LINE OF STRUCTURE" AS SHOWN AT HEAD CONDITIONS OF PARTITION DETAILS DOES NOT INDICATE THE EXACT CONSTRUCTION CONDITION. REFER TO G.300 SERIES "CODE COMPLIANCE DETAILS" FOR ADDITIONAL INFORMATION ABOUT RATED PARTITIONS.
10. ISOLATE NON-LOAD BEARING FRAMING FROM STRUCTURAL ELEMENTS TO PREVENT THE TRANSFER OF LOAD TO PARTITION FRAMING. STOP STUD BELOW METAL RUNNER (TOP TRACK) TO ALLOW FOR VERTICAL EXPANSION. SET TOP TRACK 1" BELOW DEFLECTION TRACK. DO NOT ATTACH STUDS TO TOP TRACK. DO NOT ATTACH GYPSUM BOARD TO THE DEFLECTION TRACK. THIS MAY ALSO BE ACHIEVED, AT THE CONTRACTOR'S OPTION, BY UTILIZING THE PROPRIETARY SYSTEM DESCRIBED IN THE PROJECT MANUAL.
11. REFER TO DOOR AND WINDOW SCHEDULES FOR NOTES REGARDING STUDS AT OPENINGS.
12. REFER TO THE A.500 SERIES FOR HEAD OF WALL DETAILS FOR NON-RATED PARTITIONS.

ACOUSTICAL PARTITIONS

THE FOLLOWING NOTES APPLY TO ALL PARTITIONS DESIGNATED WITH A SOUND TRASMISSION CLASS (STC) RATING IN THE PARTITION SCHEDULE. REFER TO A.500 SERIES DETAILS FOR PARTITION TYPES WITH A DESIGNATED STC RATING.

1. ALL ACOUSTICALLY CLASSED PARTITIONS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE REFERENCED TEST.
2. STAGGER AND SEAL ALL JOINTS ON MULTIPLE GYPSUM BOARD LAYER PARTITIONS.
3. SEAL PARTITIONS TO BE AIR TIGHT AT FLOORS, SIDES, AND CEILINGS ON BOTH SIDES. SEAL WITH NON-HARDENING ACOUSTICAL SEALANT.
4. ALL BATTS AND BLANKETS IN RATED PARTITIONS MUST BEAR THE REQUIRED UL FIRE RESISTANCE CLASSIFICATION MARKING. REFER TO G.300 SERIES, "CODE COMPLIANCE DETAILS."
5. AT ACOUSTICALLY RATED PARTITIONS, DO NOT FILL THE STUD CAVITY DEPTH FULLY WITH SOUND BATTS. THE WIDTH OF THE SOUND BATTS SHOULD BE SLIGHTLY SMALLER THAN CAVITY TO AVOID BATT COMPRESSION; HOWEVER, THE ENTIRE LENGTH AND HEIGHT OF THE PARTITION SHOULD HAVE CONTINUOUS AND UNINTERRUPTED SOUND ATTENUATION BATTS.
6. SEAL ALL WALL INTERSECTIONS AND CONTROL JOINTS AT ACOUSTICALLY CLASSED PARTITIONS IN ACCORDANCE WITH DETAILS IN THE A.500 SERIES.
7. SEAL ALL CONDUIT, STRUCTURAL, DUCT, AND LARGE PIPE PENETRATIONS ACCORDING TO DETAILS IN THE A.500 SERIES TO MAINTAIN THE ACOUSTICAL RATING OF THE WALL. REFER TO SERIES G.300, "CODE COMPLIANCE DETAILS" IF THE PARTITION IS FIRE RATED.
8. OUTLETS ON OPPOSITE SIDES OF ACOUSTICALLY CLASSED PARTITIONS SHOULD BE SEPARATED BY A MINIMUM OF ONE STUD. SEAL OUTLETS IN ACCORDANCE WITH DETAILS IN THE A.500 SERIES TO MAINTAIN ACOUSTICAL RATING. REFER TO SERIES G.300, "CODE COMPLIANCE DETAILS" IF THE PARTITION IS FIRE RATED.
9. THE ARCHITECT SHALL OBSERVE THAT ALL BOXES REQUIRED TO BE ACOUSTICALLY SEALED ARE SEALED PRIOR TO CLOSING IN PARTITIONS AND INSTALLING DEVICES AND COVER PLATES.
10. "Z" FURRINGS OR RESILIENT CHANNELS ARE REQUIRED AT CMU WALLS TO MAINTAIN DESIGNATED STC.

FIRE RATED PARTITIONS

1. REFER TO G.300 SERIES "CODE COMPLIANCE DETAILS" FOR ADDITIONAL INFORMATION ON THRU PENETRATIONS AT RATED PARTITIONS, FIRE RESISTANT JOINT SYSTEMS, SLIP TRACKS AT NON-BEARING PARTITION CONNECTIONS TO STRUCTURE, AND WALL PRIORITY.
2. UL DESIGN REFERS TO FIRE RESISTANCE DIRECTORY'S MOST RECENT ISSUE.
3. CONSTRUCT RATED PARTITIONS BEFORE NON-RATED.
4. REFER TO G.300 SERIES FOR HEAD OF WALL DETAILS AT RATED PARTITIONS.

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

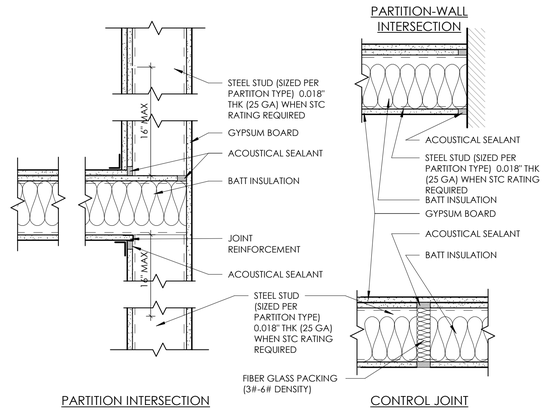
Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	PATH21
Checked by	JMN

Sheet Title
INTERIOR PARTITION TYPE CHARTS

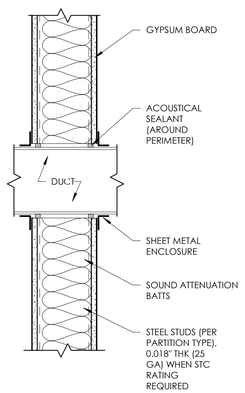
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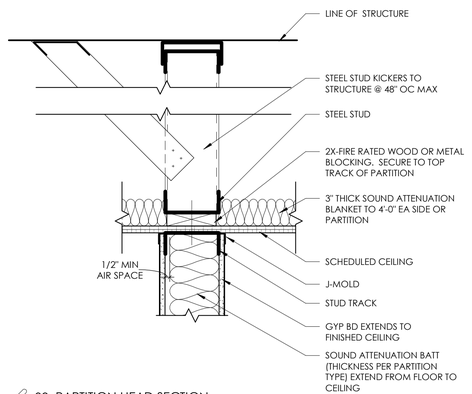
City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



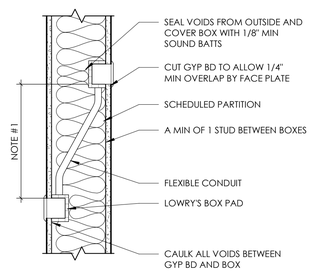
05- ACOUSTICAL PARTITION PLAN DETAILS
1 1/2" = 1'-0"



04- ACOUSTICAL PARTITION SECTION
1 1/2" = 1'-0"

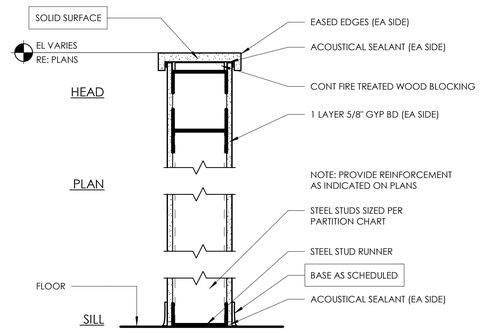


03- PARTITION HEAD SECTION
1 1/2" = 1'-0"
WHERE STUDS & GYPSUM BOARD STOP AT THE CEILING



NOTES:
1. 12" MINIMUM UNLESS NOTED OTHERWISE IN PARTITION CHART.
2. REFER TO G.300 SERIES FOR BACK TO BACK BOXES IN A RATED PARTITION.

02- ACOUSTICAL PARTITION PLAN DETAIL
1 1/2" = 1'-0"
@ BACK BOX INSTALLATION DETAIL @ NON-FIRE RATED PARTITION



01- PARTIAL HEIGHT PARTITION SECTION
1 1/2" = 1'-0"

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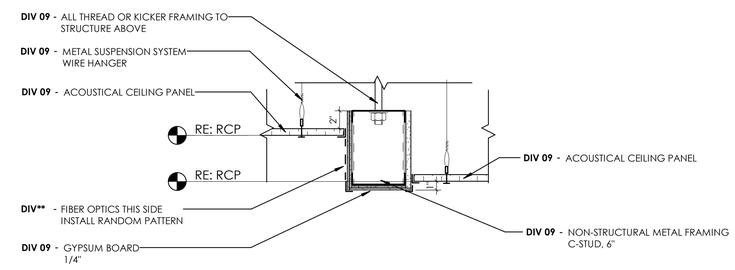
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Checked by	JMN

Sheet Title
INTERIOR PARTITION DETAILS

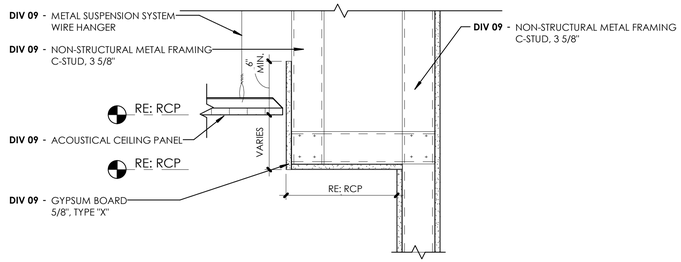
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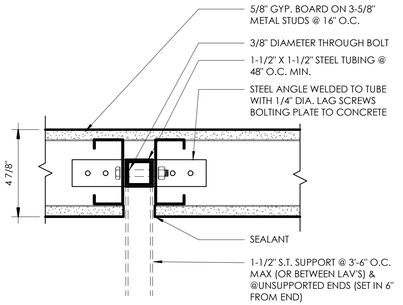
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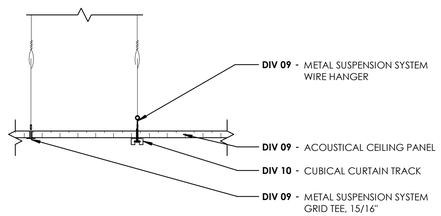
06- CEILING TRANSITION DETAIL
1 1/2" = 1'-0"



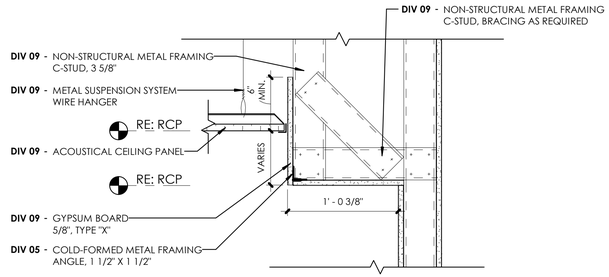
05- DETAIL @ FURR DOWN WITH CAN LIGHT
1 1/2" = 1'-0"



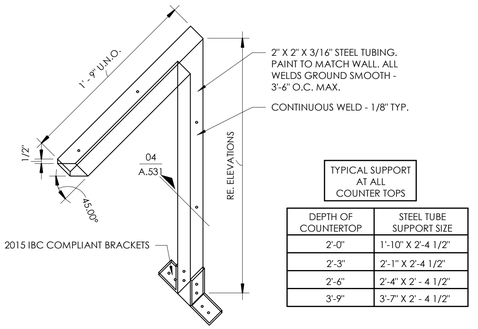
04- TYPICAL SECTION @ STEEL TUBE SUPPORT
3" = 1'-0"



03- CUBICLE TRACK AT CEILING
1 1/2" = 1'-0"



02- DETAIL @ FURR DOWN SOFFIT OVER MILLWORK
1 1/2" = 1'-0"



DEPTH OF COUNTERTOP	STEEL TUBE SUPPORT SIZE
2'-0"	1'-10" X 2'-4 1/2"
2'-3"	2'-1" X 2'-4 1/2"
2'-6"	2'-4" X 2' - 4 1/2"
3'-9"	3'-7" X 2' - 4 1/2"

01- STEEL TUBE SUPPORT ISOMETRIC
1 1/2" = 1'-0"

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
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LICENSED ARCHITECT
04/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

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Sheet Title

INTERIOR DETAILS

Sheet Number

A.531

RSN 1845534 Permit # 2024 2477659-LTPage 20 of 121

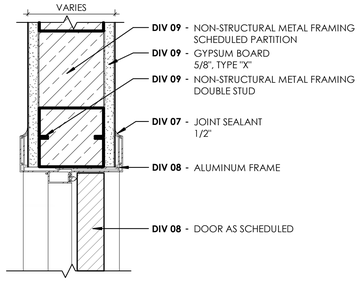
DOOR SCHEDULE

		DOOR							FRAME							
		SIZE									DETAILS					
DOOR NO	ROOM NAME	W	HT	THK	TYPE	MTL	FINISH	GLZ	TYPE	MTL	HEAD	JAMB	SILL	FIRE RATING	DOOR HARDWARE	REMARKS
001	MRI	4' - 0"	7' - 0"	0' - 1 3/4"	L	WD	STN2	N/A	A	AL	01/A.541	02/A.541	-		4.01	1, 2
Grand total: 1																

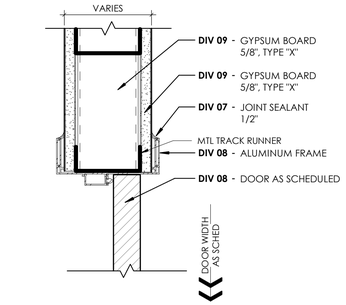
REMARKS

1. DOOR TO INCLUDE 24" TALL x 30" WIDE WOOD LOUVER AND ALL INSTALLATION PARTS TO BE NON-FERROUS. STAIN LOUVERS TO MATCH DOOR.
2. ALL FASTENERS TO BE NON-FERROUS AND MRI SAFE.

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
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2021 INTERNATIONAL CODES & 2023 NEC

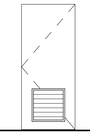


02- ALUMINUM JAMB DETAIL
3" = 1'-0"
@ TYP NON-RATED DOOR



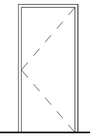
01- ALUMINUM HEAD DETAIL
3" = 1'-0"
@ TYP RATED/ NON-RATED DOORS

DOOR TYPES



L
LOUVERED

DOOR FRAME TYPES



A
RABBETED

DOOR SCHEDULE ABBREVIATIONS

MATERIAL:
WD - RED OAK DOOR
SR - SMOKE RESISTANT
(E) - EXISTING
NA - NOT APPLICABLE

FINISH:
*REFER TO FINISH LEGEND FOR MORE INFORMATION.
AL1 - ANODIZED ALUMINUM
AL2 - BRONZED ALUMINUM
PNT - PAINTED FINISH
STN - WOOD STAIN SHAKER CHERRY FINISH
PL - PLASTIC LAMINATE

HARDWARE MANUFACTURERS:
IVE - IVES
SCH - SCHLAGE
LCN - LCN
NGP - NATIONAL GUARD PRODUCTS
MCK - MCKINNEY
GLY - GLYNN-JOHNSON
RIX - RIXSON
SU - SECURITRON
VON - VON DUPRIN
BEST - BEST
PEM - PEMKO
ME - MATCH EXISTING

DOOR HARDWARE SCHEDULE

HW SET #1: PASSAGE WAY
DOOR: 001

QTY:	ITEM:	MODEL:	FINISH:	MFR:
6	HINGES	5BB1 4 1/2 x 4 1/2	626	IVE
2	DOOR PULL	8102HD-6	US26D	IVE
1	LOCKSET	480 SERIES W/THUMBTURN	US26D	SAR
1	KEYWAY	(MATCH EXISTING)	US26D	SAR
1	MANUAL FLUSH BOLT	3HJD8	STAINLESS	ROC
2	WALL BUMPER	WS406/407CVX	US32D	IVE
2	DOOR SILENCER	SR64	GRY	IVE

NOTE: ALL FASTENERS TO BE NON-FERROUS AND MRI SAFE.

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Checked by	JMN

Sheet Title
DOOR SCHEDULE

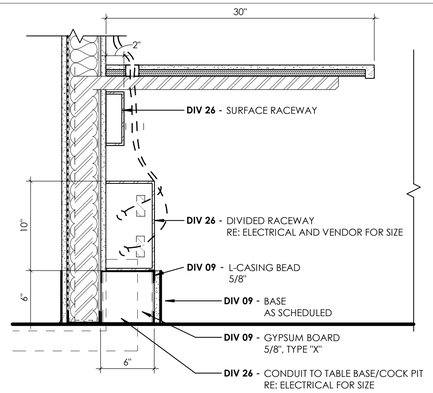
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A.541

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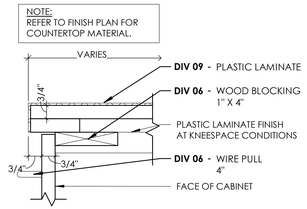
9/5/2023 11:04:54 AM

RSN 1845534 Permit # 2024 2477659-LTPage 21 of 121

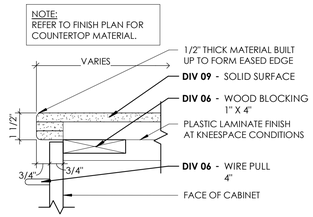
City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



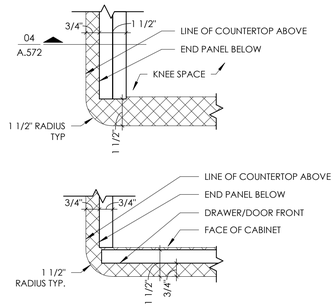
15 - WALL / COUNTERTOP DETAIL @ CONTROL ROOM
1 1/2" = 1'-0"



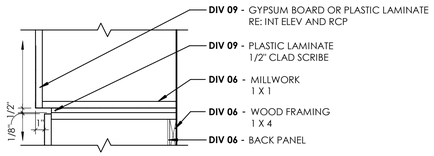
14 - SECTION DETAIL - PLASTIC LAMINATE
3" = 1'-0"



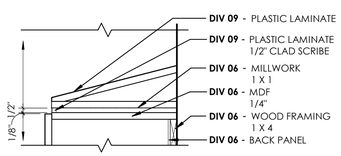
13 - SECTION DETAIL - SOLID SURFACE
3" = 1'-0"



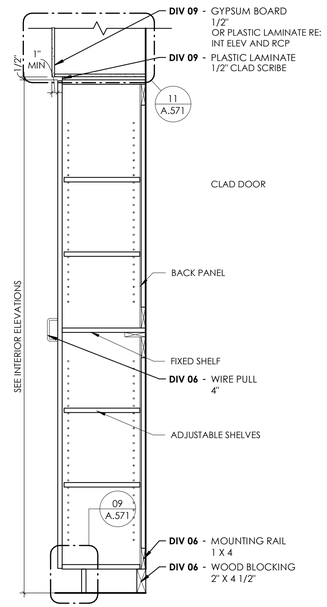
12 - PLAN DETAIL COUNTER TOP CORNER
3" = 1'-0"



11 - SOFFIT DETAIL
1 1/2" = 1'-0"



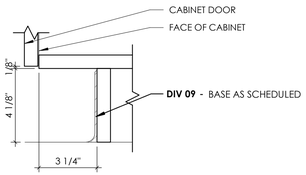
10 - SLOPE TOP DETAIL
1 1/2" = 1'-0"



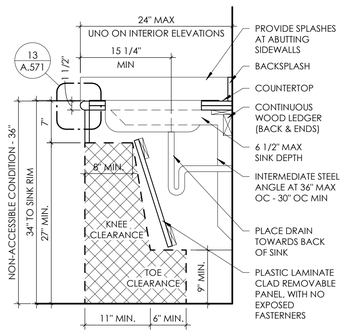
NOTES: REFER TO THIS TYPICAL DETAIL K1 FOR MATERIALS, DIMENSIONS AND DETAIL ENLARGEMENTS OF TYPE "K" FULL HEIGHT CABINETS.

IF CABINET HAS GLASS DOORS REFER TO DETAIL 07/A.572.

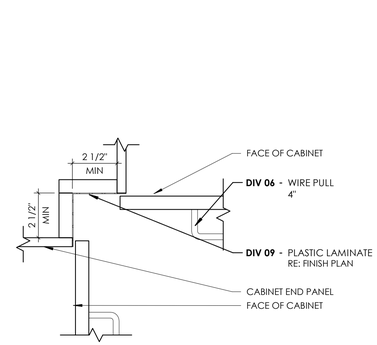
06 - K1 - FULL HEIGHT CABINET
1" = 1'-0" WITH DOORS



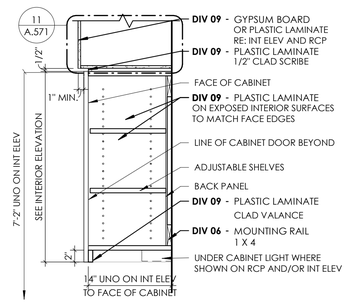
09 - SECTION DETAIL - TOEKICK
3" = 1'-0"



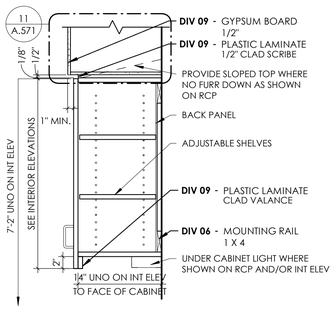
05 - C2 - ACCESSIBLE SINK
1" = 1'-0"



08 - PLAN DETAIL - INSIDE CORNER
3" = 1'-0"



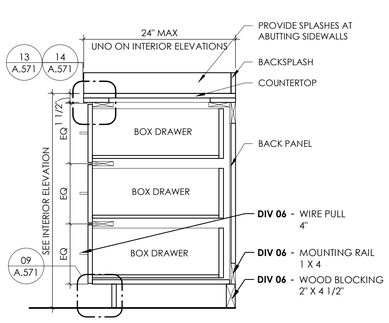
07 - E2 - UPPER CABINET
1" = 1'-0" WITHOUT DOORS



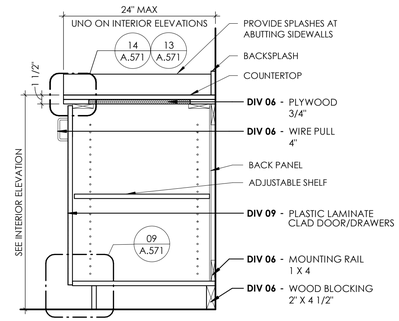
NOTE: REFER TO THIS TYPICAL DETAIL E1 FOR MATERIALS AND DIMENSIONS OF TYPE "E" UPPER CABINETS.

IF CABINET HAS GLASS DOORS REFER TO DETAIL 07/A.572

04 - E1 - UPPER CABINET
1" = 1'-0" WITH DOORS

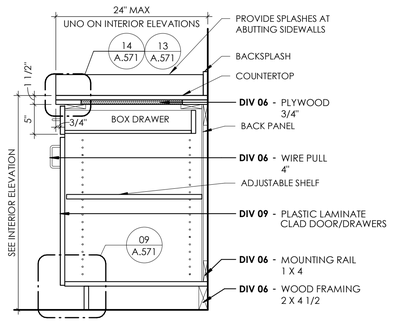


03 - D3 - BASE CABINET
1" = 1'-0" 3 BOX DRAWERS



NOTE: REFER TO THIS TYPICAL DETAIL A1 FOR MATERIALS, DIMENSIONS, ANDDETAIL ENLARGEMENTS OF TYPE "A" BASE CABINETS. REFER TO INTERIOR FINISH PLAN FOR COUNTERTOP MATERIAL. IF PLASTIC LAMINATE RE: 01/A.572, IF SSM RE: 02/A.572

02 - A2 - BASE CABINET
1" = 1'-0" WITH DOOR



NOTE: REFER TO THIS TYPICAL DETAIL A1 FOR MATERIALS, DIMENSIONS, ANDDETAIL ENLARGEMENTS OF TYPE "A" BASE CABINETS. REFER TO INTERIOR FINISH PLAN FOR COUNTERTOP MATERIAL. IF PLASTIC LAMINATE RE: 14 / A.571, IF SSM RE: 13 / A.571

01 - A1 - KNEE SPACE W/ DRAWER
1" = 1'-0" WITH DOOR & 1 DRAWER

ARCHITECTURAL CASEWORK GENERAL NOTES

ALL CASEWORK:

1. ALL SECTION DETAILS ON THIS SHEET MAY NOT APPLY TO THIS PROJECT.
2. REFER TO A.56X SERIES SHEETS FOR ARCHITECTURAL WOODWORK TYPES, WIDTHS, AND HEIGHTS.
3. FIELD VERIFY EXISTING DIMENSIONS PRIOR TO FABRICATION. NOTIFY ARCHITECT OF ANY CONFLICTS OR INCONSISTENCIES PRIOR TO FABRICATION.
4. VERIFY AND COORDINATE CLEAR DIMENSIONS REQUIRED FOR OWNER FURNISHED EQUIPMENT LOCATED WITHIN OR ADJACENT TO CABINETS.
5. COORDINATE INSTALLATION OF SINKS WITH ASSOCIATED PIPING, FITTINGS, AND WITH INSTALLATION OF ACCESSIBLE COVER PANELS.
6. REQUIRED SCRIBES AND FILLER PIECES SHALL BE INSTALLED TO ALLOW PROPER OPERATION OF DRAWERS/DOORS. THEY SHALL BE EVENLY DISTRIBUTED AND OF EQUAL WIDTH ALONG A SINGLE RUN OF CABINETS. THEY SHALL BE 3" WIDE, MAXIMUM, EXCEPT INSIDE CORNER FILLERS SHALL BE 2 1/2" WIDE, MINIMUM. REFER TO SERIES A.57X FOR TYPICAL CASEWORK DETAILS AND INSIDE CORNER DETAIL.
7. WHERE BASE CABINETS INTERSECT AT INSIDE CORNER CONDITION, PROVIDE WALL MOUNTED LEDGERS TO SUPPORT COUNTERTOP AT CORNERS. WHERE UPPER CABINETS INTERSECT AT INSIDE CORNER CONDITION, PROVIDE HORIZONTAL FILLER PANEL FLUSH WITH BOTTOM OF CABINETS.
8. PROVIDE PLASTIC SCREW COVERS TO CONCEAL SCREW HEADS AT ALL SEMI-EXPOSED CABINET SURFACES. ALL EXPOSED SCREWS SHALL BE COUNTERSUNK.
9. CORE MATERIAL FOR SHELVING GREATER THAN 30" WIDE SHALL BE 1" THICK.
10. REFER TO A.500 SERIES FOR TOILET ACCESSORY LEGEND AND MOUNTING HEIGHTS.
11. PROVIDE FILLER PANELS AS NEEDED BETWEEN BUILT-IN APPLIANCES AND ADJACENT CABINETS OR WALLS.
12. ALL VERTICAL JOINTS BETWEEN CABINETS SHALL BE BUTT JOINTS. THEY SHALL LOOK "SEAMLESS" AND BE COVERED IN PLASTIC LAMINATE.
13. ALL EXPOSED SURFACES ON CABINETS WITHOUT DOORS SHALL BE CLAD IN PLASTIC LAMINATE, UNLESS NOTED OTHERWISE. NO EXPOSED MELAMINE, UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS.

BASE CABINETS:

1. PROVIDE PLASTIC LAMINATE CLADDING ON ALL SURFACES OF BUILT-IN DESKS AT KNEE SPACES AND EXPOSED ENDS OF DESK, UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS.
2. PROVIDE SCHEDULED BASE ALONG BOTTOM OF EXPOSED FRONTS, BACKS, SIDES, AND ENDS OF ALL FIXED CABINETS, PEDESTALS, VERTICAL SUPPORT PANELS, AND KNEE SPACES, ETC. UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS.
3. ALL DRAWER LENGTHS SHALL BE 20", UNLESS NOTED OTHERWISE. ALL DRAWERS GREATER THAN 30" WIDE SHALL HAVE TWO PULLS.
4. ALL HORIZONTAL AND VERTICAL REVEALS SHALL BE 1/8".
5. ALL TOEKICK SPACES SHALL BE 4 1/8" TALL X 3 1/4" DEEP, UNLESS NOTED OTHERWISE. REFER TO SERIES A.57X FOR TYPICAL CASEWORK DETAILS.

COUNTERTOPS:

1. ALL COUNTERTOPS ARE TO BE 24" DEEP, UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS.
2. ALL OUTSIDE COUNTERTOP CORNERS TO BE 1 1/2" RADIUS (IN PLAN), UNLESS NOTED OTHERWISE. REFER TO SERIES A.57X FOR TYPICAL CASEWORK DETAILS AND COUNTERTOP CORNER DETAIL.
3. PROVIDE WALL MOUNTED BRACKETS, FIELD PAINTED, FOR SUPPORT OF COUNTERTOPS AT KNEE SPACES. COUNTERTOPS SHALL BE SUPPORTED 30" MINIMUM - 36" MAXIMUM O.C. COORDINATE LOCATION WITH KEYBOARD TRAYS AND CPU HOLDERS. REFER TO INTERIOR ELEVATIONS FOR LOCATIONS OF COUNTERTOP BRACKETS.
4. LOCATE GROMMETS AT BACK OF COUNTERTOPS EVERY 36" O.C. WITH A MINIMUM OF 1 PER KNEE SPACE, UNLESS NOTED OTHERWISE ON EQUIPMENT PLAN. COORDIANTE FINAL GROMMET LOCATIONS WITH OWNER, EXCEPTION: DO NOT PROVIDE GROMMETS AT ACCESSIBLE PORTION OF COUNTER, AS INDICATED ON EQUIPMENT PLAN.
5. REFER TO INTERIOR ELEVATIONS AND FINISH LEGEND FOR COUNTERTOP MATERIAL. ALL COUNTERTOPS AT SINKS TO BE SOLID SURFACE MATERIAL, UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS. REFER TO SERIES A.57X FOR SOLID SURFACE MATERIAL COUNTERTOP EDGE DETAIL AND FOR PLASTIC LAMINATE COUNTERTOP EDGE DETAIL.
6. ALL BACK AND SIDE SPLASHES SHALL BE 4" TALL X 3/4" THICK IF PLASTIC LAMINATE, 1/2" THICK IF SOLID SURFACE MATERIAL, UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS. ALL SPLASHES SHALL BE SCRIBED TO CONFORM TO THE SURFACE OF ABUTTING WALLS. ALL SPLASHES SHALL BE SEALED TO THE WALL WITH CLEAR SILICONE SEALANT. IF SOLID SURFACE, PROVIDE SPLASHES ON ALL REAR AND SIDE WALLS AT BASE CABINETS.

UPPER CABINETS:

1. TOP OF UPPER AND FULL HEIGHT CABINETS SHALL BE 7'-2" AFF, UNLESS NOTED OTHERWISE ON INTERIOR ELEVATIONS. REFER TO INTERIOR ELEVATIONS.
2. REFER TO SERIES A.220 AND A.560 FOR FURR DOWN LOCATIONS. WALL CABINETS WITHOUT A FURR DOWN ABOVE SHALL RECEIVE A CONTINUOUS 6" HIGH SLOPED PANEL, FINISHED TO MATCH CABINETS, UNLESS NOTED OTHERWISE.
3. WALL MOUNTED UPPER CABINETS SHALL INCLUDE ADJUSTABLE SHELVES, UNLESS NOTED OTHERWISE.

CABINET HEIGHT	NUMBER OF SHELVES
UP TO 24"	1
25" THROUGH 42"	2
43" THROUGH 48"	3

4. TOPS AND BOTTOMS OF WALL HUNG CABINETS SHALL BE 3/4" THICK WITH PLASTIC LAMINATE ON ALL EXPOSED SURFACES.
5. BACKS OF WALL HUNG CABINETS SHALL BE 1/4" THICK, UNLESS NOTED OTHERWISE. BACKS OF BASE CABINETS SHALL BE 1/4" THICK, UNLESS NOTED OTHERWISE.

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	PATH21
Checked by	JMN

Sheet Title

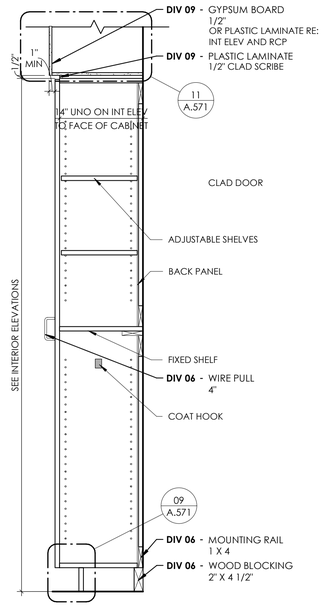
TYPICAL CASEWORK SECTIONS & DETAILS

Sheet Number

A.571

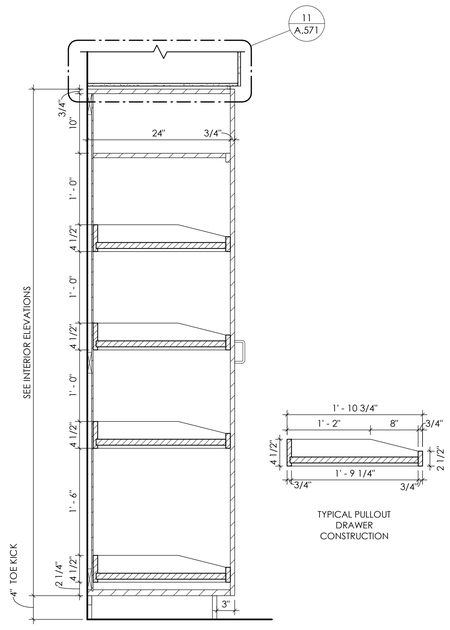
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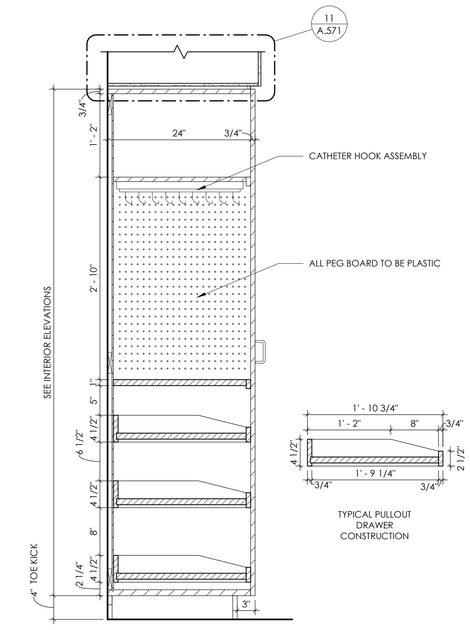


NOTES: REFER TO THIS TYPICAL DETAIL K1 FOR MATERIALS, DIMENSIONS AND DETAIL ENLARGEMENTS OF TYPE "K" FULL HEIGHT CABINETS.

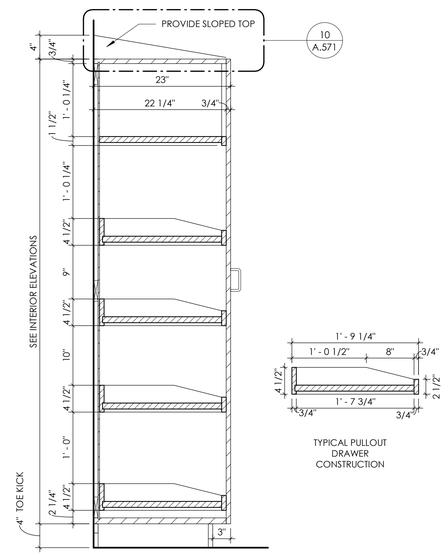
07 - CUSTOM K CW
1" = 1'-0"



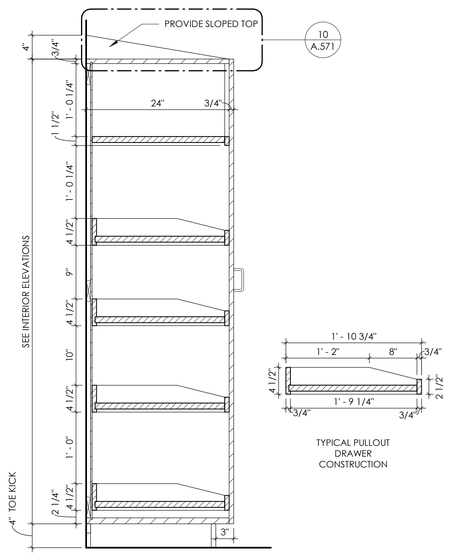
06 - CUSTOM CABINET- CT IMAGING
1" = 1'-0"



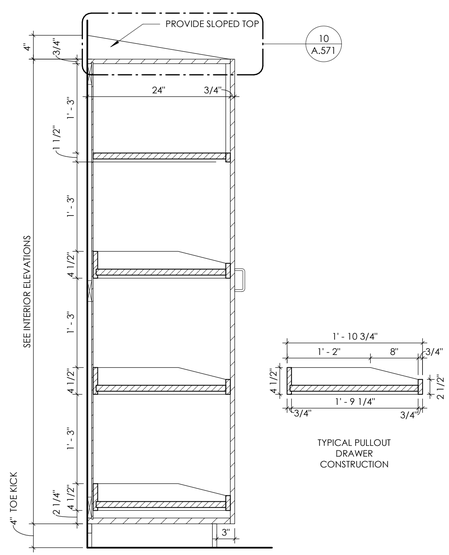
05 - CUSTOM CABINET- CATHETER HOOKS - CT IMAGING
1" = 1'-0"



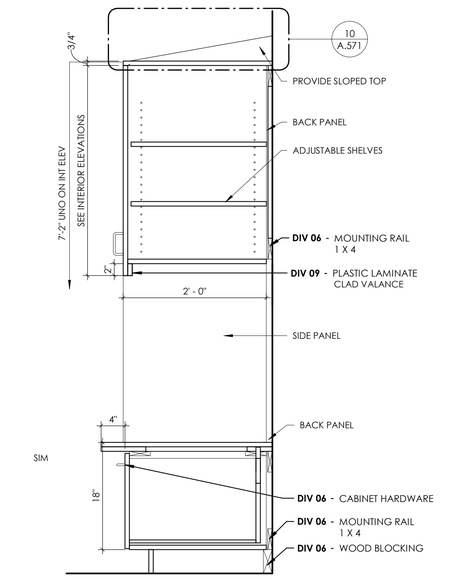
04 - CUSTOM MILLWORK - 4 DRAWER MRI
1" = 1'-0"



03 - CUSTOM MILLWORK 24" - 4 DRAWER MRI
1" = 1'-0"



02 - CUSTOM MILLWORK 3 DRAWER
1" = 1'-0"



NOTE: REFER TO THIS TYPICAL SECTION D1 FOR MATERIALS, DIMENSIONS AND DETAIL ENLARGEMENTS OF TYPE "D" BASE CABINETS. REFER TO INTERIOR FINISH PLAN FOR COUNTERTOP MATERIAL. REF 14 / A.571 IF PLASTIC LAMINATE, 13 / A.571IF SIM.

01 - CUSTOM CW
1" = 1'-0"
1 DRAWER

9/5/2023 11:04:58 AM

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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
04/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	PATH21
Checked by	JMN

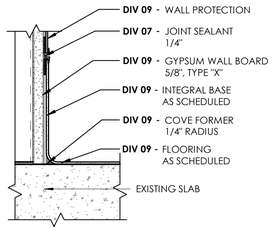
Sheet Title
CUSTOM CASEWORK SECTIONS & DETAILS

Sheet Number
A.581

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RSN 1845534 Permit # 2024 2477659-LTPage 23 of 121

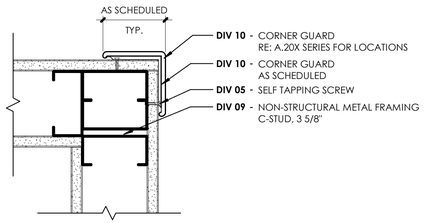
City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



07 - TYPICAL INTEGRAL BASE
3" = 1'-0"

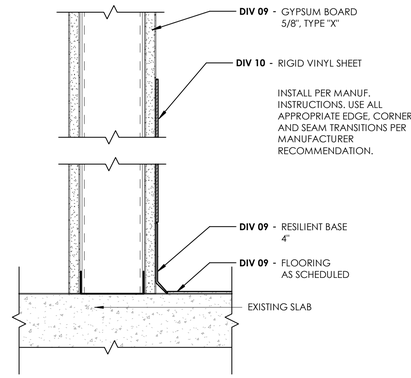
*NOTE: CORNER GUARD TO BE MOUNTED ABOVE SCHEDULED BASE TO 4'-6" A.F.F.

06 - CG2 - DOUBLE CORNER GUARD DETAIL
3" = 1'-0"

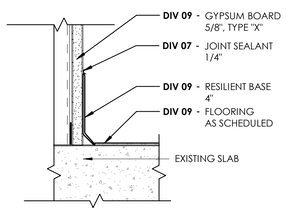


*NOTE: CORNER GUARD TO BE MOUNTED ABOVE SCHEDULE BASE

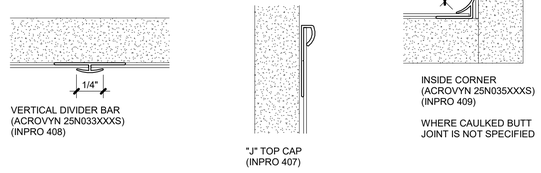
05 - CG1 SINGLE CORNER GUARD - DETAIL
3" = 1'-0"



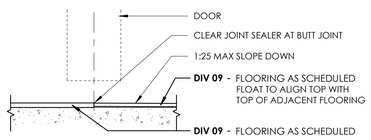
04 - WP4 - WALL PROTECTION DETAIL1
3" = 1'-0"



03 - RB1 - TYPICAL RUBBER BASE
3" = 1'-0"



02 - SHEET WALL PROTECTION TRIM PIECES
1'-0" = 1'-0"



01 - SHEET TO SHEET FLOORING TRANSITION
6" = 1'-0"

FINISH LEGEND

FLOORING

RESILIENT
VCT1
MANUF: ARMSTRONG
STYLE: STANDARD EXCELON IMPERIAL
COLOR: PEBBLE TAN 51928
SIZE: 1/8"

LVT2
MANUF: MANNINGTON
STYLE: SPACIA
COLOR: LINEAR STONE SHALE
SIZE: 12" X 18" X 0.096" THICK

SV1
MANUF: MANNINGTON
STYLE: BIOSPEC ARMOR
COLOR: SNOWY OWL
SIZE: 6' 6" X 30-58 SQ. YARDS X 0.100" THICK

SV2
MANUF: MANNINGTON
STYLE: BIOSPEC ARMOR
COLOR: LUNAR ROCK
SIZE: 6' 6" X 30-58 SQ. YARDS X 0.100" THICK

TRANSITIONS

TR1 RESILIENT TO EXISTING
MANUF: JOHNSONITE
STYLE: #CTA-XXX-C
COLOR: TO BE SELECTED DURING SUBMITTALS
SIZE: 1/4" TO 1/8"

WALL BASE

IB6
6" H INTEGRAL BASE

RB1
MANUF: MANNINGTON
STYLE: OPTIMUM EDGE
COLOR: TAUPESTONE 909
NOTE: MITER INSIDE CORNERS. DO NOT USE PREMOLDED OUTSIDE CORNERS

WALLS

PAINT
P1
MANUF: SHERWIN WILLIAMS
COLOR: DOVER WHITE SW6385
FINISH: SEMI-GLOSS

P2 (ACCENT)
MANUF: SHERWIN WILLIAMS
COLOR: BREEZY SW7616
FINISH: SEMI-GLOSS

P3
MANUF: SHERWIN WILLIAMS
COLOR: WORLDLY GRAY SW 7043
FINISH: SEMI-GLOSS

WALL PROTECTION

WP1 SHEET
MANUF: CS ACROVYN
STYLE: RIGID SHEET
SIZE: 42" X 10' X 0.060" THICK
COLOR: SLATE 209
FINISH: PEBLETTE TEXTURE
*INCLUDE MANUFACTURER TRIM PIECES AS REQUIRED
*IF STANDARD HEIGHT AFF, NOTE HERE, OR IF VARIES AROUND SPACE, LABEL ON ELEVATION

CG1 SINGLE CORNER GUARD
MANUF: CS ACROVYN
STYLE: SM-20
SIZE: (1) 3 X 3 X REFER TO DETAIL HEIGHT
COLOR: SLATE 209
INSTALL: RE: FINISH PLAN I.202

CG2 DOUBLE CORNER GUARD
MANUF: CS ACROVYN
STYLE: SM-20
SIZE: (2) 2 X 2 X REFER TO DETAIL HEIGHT
COLOR: SLATE 209

CG3 ANGLE CORNER GUARD
MANUF: CS ACROVYN
STYLE: SM-20
SIZE: (2) 2 X 2 X REFER TO DETAIL HEIGHT
COLOR: SLATE 209

CG(E)
EXISTING CORNER GUARD

CEILINGS

ACT1
MANUF: ARMSTRONG
TILE STYLE: DUNE SECOND LOOK
TILE MODEL: #2712
TILE SIZE: 24" X 48" X 5/8"
TILE COLOR: WHITE
GRID STYLE: 15/16" PRELUDE
GRID COLOR: WHITE

ACT2
MANUF: ARMSTRONG
TILE STYLE: CLEAN ROOM VL UNPERFORATED
TILE MODEL: #868
TILE SIZE: 24" X 24" X 1"
TILE COLOR: WHITE
GRID STYLE: 15/16" PRELUDE, GASKETED
GRID COLOR: WHITE
*NOTE: ALL GRID WITHIN MRI ENCLOSURE TO BE ALUMINUM.

GYP
P1 (SOFFIT)
MANUF: SHERWIN WILLIAMS
COLOR: DOVER WHITE SW6385
FINISH: LATEX SEMI-GLOSS

MILLWORK

PL1
MANUF: WILSONART
COLOR: SHAKER CHERRY 7935K-07
FINISH: TEXTURED GLOSS

PL2
MANF:WILSONART
COLOR/STYLE: PEARL SOAPSTONE
EDGE: PVC EDGE BONDING TO MATCH
*NOTE: REFER TO DETAILS TO BE INSTALLED AT ALL PLASTIC LAMINATE COUNTER TOPS
FINISH: FINE VELVET

PL3
MANUF: WILSONART
COLOR: NEOWALNUT 7991-38

SS1
MANUF: CORIAN
COLOR: CLAM SHELL
SIZE: 1/2" THICK

DOORS AND FRAMES

P4 (FRAMES)
MANUF: SHERWIN WILLIAMS
COLOR: TONY TAUPE SW7038
FINISH: SEMI-GLOSS

STN1 (DOORS, WHERE INDICATED IN THE SCHEDULE)
COLOR: STAIN, TO MATCH EXISTING DOOR, GOLDEN OAK
FINISH: FACTORY APPLIED
TYPE: UV WATER BASED

STN2 (DOORS, WHERE INDICATED IN THE SCHEDULE)
COLOR: SHAKER CHERRY FINISH
TYPE: UV WATER BASED

MISCELLANEOUS

(ME) MATCH EXISTING

(E) EXISTING TO REMAIN

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ph: 303.431.6100

No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAPP
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	PATH21
Checked by	JMN

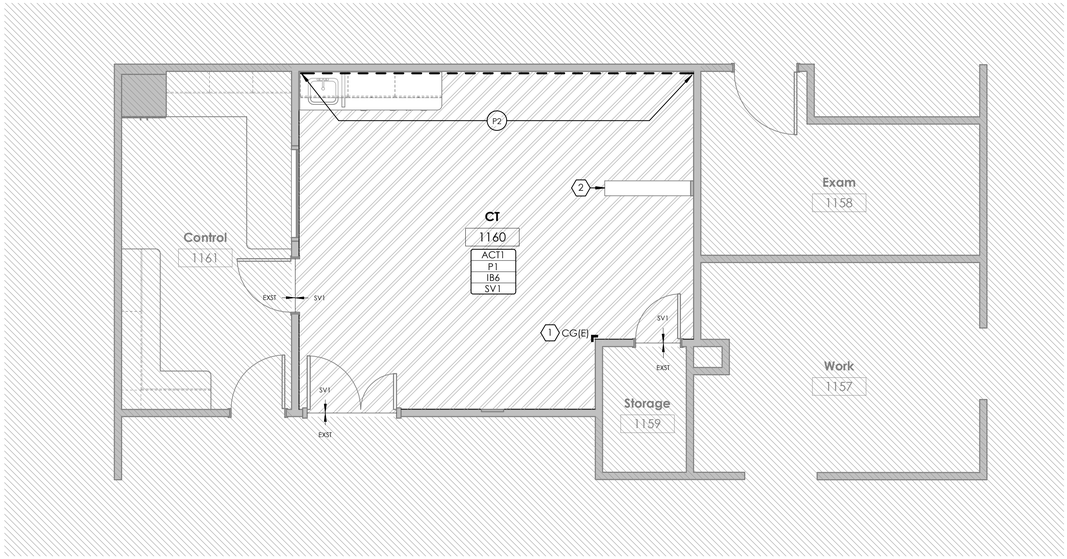
Sheet Title
INTERIOR LEGEND AND DETAILS

Sheet Number
I.101

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RSN 1845534 Permit # 2024 2477659-LTPage 24 of 121

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



01 - LEVEL 01 - FINISH PLAN - ED CT
1/4" = 1'-0"

FINISH PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
2. REFER TO INTERIOR FINISH LEGEND I.101 FOR FINISH MANUFACTURER AND COLOR INFORMATION.
3. REFER TO I.10x SERIES FOR FLOOR TRANSITION DETAILS.
4. REFER TO A.22x SERIES REFLECTED CEILING PLANS FOR LOCATION OF CEILING FINISHES AND CEILING HEIGHTS.

FINISH PLAN LEGEND

ROOM FINISH TAG (REFERENCE I.101 SHEET)

ACT	CEILING FINISH
P	WALL FINISH
RB	WALL BASE FINISH
SV	FLOOR FINISH

* DENOTES MULTIPLE FINISHES. PLEASE REFER TO ENLARGED PLANS, DETAILS AND/OR ELEVATIONS FOR MORE INFORMATION.

- (1) KEYNOTE
- OUT OF SCOPE
- (P4) PAINT ACCENT
- (CPT) FINISH TAG
- —WP1— SHEET/RAIL WALL PROTECTION RE: DETAILS ON SHEET I.101
- CG1 WALL PROTECTION CORNER GUARD RE: DETAILS ON SHEET I.101
- FLOORING TRANSITION

FINISH PATTERN LEGEND

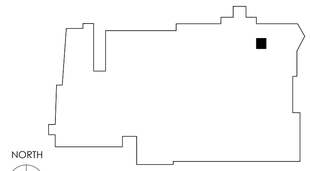
FLOOR FINISH

- SV1

FINISH PLAN KEYNOTES

1. CONTRACTOR TO COORDINATE REINSTALLATION OF CORNER GUARD. SAVE AND PROTECT DURING CONSTRUCTION.
2. PROVIDE SEALANT BEAD FROM FLOORING TO FLOOR DUCT.

KEY PLAN



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No.	Description	Date

STATE OF COLORADO
JOHN MENNO NAP
401729
LICENSED ARCHITECT
04/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JL
Checked by	JMN

Sheet Title
FINISH PLAN

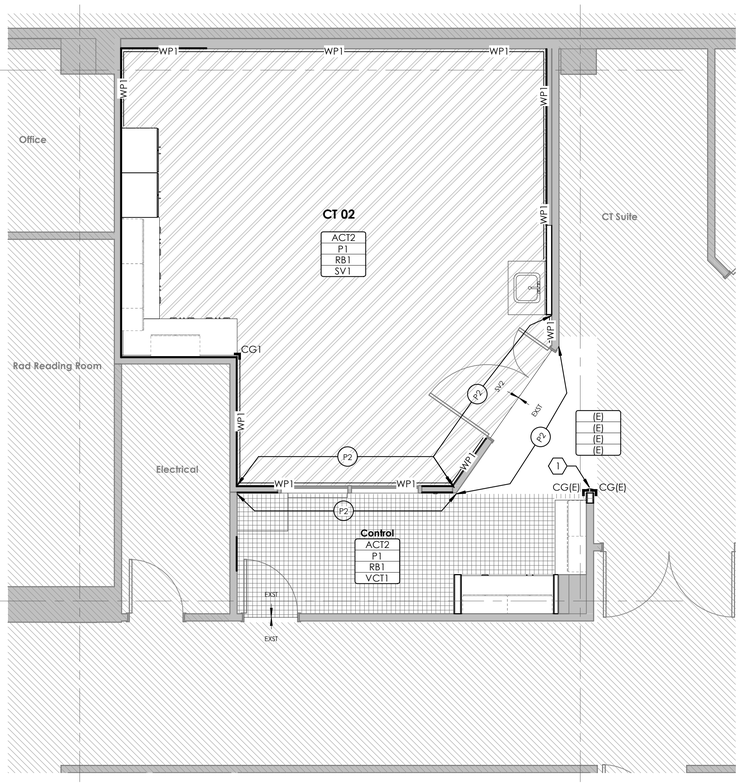
Sheet Number
I.201A

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RSN 1845534 Permit # 2024 2477659-LTPage 25 of 121

City of Aurora Building Division
Reviewed for Code Compliance
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Date: Oct 10, 2024
2021 INTERNATIONAL CODES & 2023 NEC



01 - LEVEL 01 - FINISH PLAN - IMAGING CT
1/4" = 1'-0"

FINISH PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
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FINISH PLAN LEGEND

ROOM FINISH TAG (REFERENCE I.101 SHEET)

ACT	CEILING FINISH
P	WALL FINISH
RB	WALL BASE FINISH
SV	FLOOR FINISH

* DENOTES MULTIPLE FINISHES. PLEASE REFER TO ENLARGED PLANS, DETAILS AND/OR ELEVATIONS FOR MORE INFORMATION.

- (1) KEYNOTE
- OUT OF SCOPE
- (P4) PAINT ACCENT
- (CPT) FINISH TAG
- WP1 SHEET/RAIL WALL PROTECTION RE: DETAILS ON SHEET I.101
- CG WALL PROTECTION CORNER GUARD RE: DETAILS ON SHEET I.101
- FLOORING TRANSITION
- REPAIR AND REPLACE DAMAGED TILES FROM FACILITY ATTIC STOCK

FINISH PATTERN LEGEND

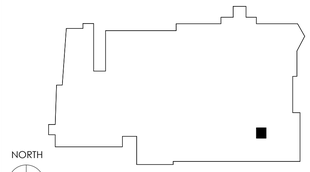
FLOOR FINISH

- SV1
- VCT1

FINISH PLAN KEYNOTES

(1) CONTRACTOR TO COORDINATE REINSTALLATION OF CORNER GUARD.

KEY PLAN



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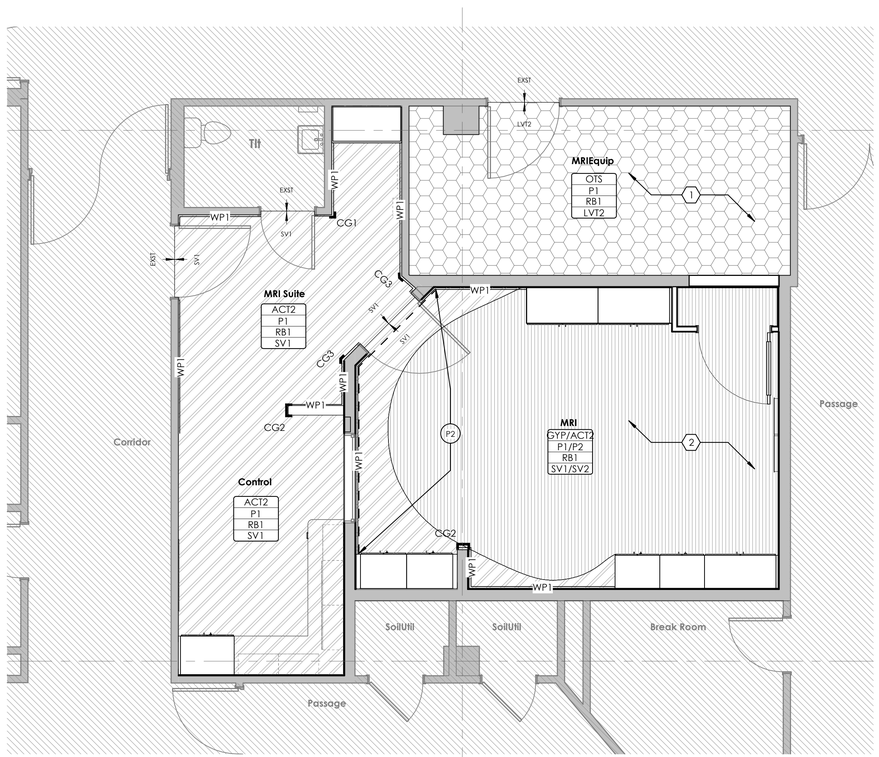
Sheet Title
FINISH PLAN

Sheet Number
I.201B

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City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: Kirk Nagle
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2021 INTERNATIONAL CODES & 2023 NEC



01 - LEVEL 01 - FINISH PLAN - MRI
1/4" = 1'-0"

FINISH PLAN GENERAL NOTES

1. **THESE DRAWINGS HAVE BEEN DEVELOPED FROM EXISTING DRAWINGS, WHICH MAY NOT REFLECT ACTUAL FIELD CONDITIONS. VERIFY THESE DRAWINGS WITH EXISTING FIELD CONDITIONSAND NOTIFY THE ARCHITECT IMMEDIATELY OF INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.**
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FINISH PLAN LEGEND

ROOM FINISH TAG (REFERENCE I.101 SHEET)

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SV	FLOOR FINISH

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- CG1 WALL PROTECTION CORNER GUARD RE: DETAILS ON SHEET I.101
- FLOORING TRANSITION

FINISH PATTERN LEGEND

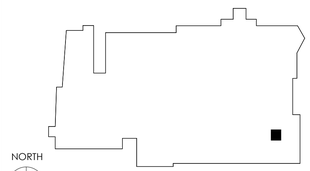
FLOOR FINISH

- SV1
- SV2
- LVT2

FINISH PLAN KEYNOTES

1. PAINT ENTIRE SPACE, ALL WALLS, TO STRUCTURE.
2. CONTRACTOR TO FOLLOW SG LINE FOR SV2 FLOORING. RE: VENDOR DRAWINGS.

KEY PLAN



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No.	Description	Date

STATE OF COLORADO
JOHN MENNOTTI
401729
LICENSED ARCHITECT
09/05/2023

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	JAV
Checked by	JMN

Sheet Title
FINISH PLAN

Sheet Number
I.201C

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MECHANICAL ABBREVIATIONS

AC	AIR CONDITIONING UNIT OR AIR COMPRESSOR
ACH	AIR CHANGES PER HOUR
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
AMP	AMPERE
AMS	AIR FLOW MEASURING STATION
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARCH	ARCHITECT/ARCHITECTURAL
AVG	AVERAGE
BAS	BUILDING AUTOMATION SYSTEM
BD	BALANCING DAMPER
BDD	BACK-DRAFT DAMPER
BI	BLACK IRON (KITCHEN GREASE DUCTWORK)
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTUH	BRITISH THERMAL UNIT PER HOUR
CC	COOLING COIL
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CO	CLEAN OUT OR CARBON MONOXIDE
CONT	CONTINUOUS, CONTINUATION
CU	CONDENSING/ER UNIT
CU FT	CUBIC FEET
CV	CONSTANT AIR VOLUME
CW	COLD WATER
DB	DRY BULB TEMPERATURE
DBA	DECIBEL LEVEL
DDC	DIRECT DIGITAL CONTROL
DE	DRYER EXHAUST
DEG.F	DEGREE FAHRENHEIGHT
DG	DOOR GRILLE
DIA	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DWG	DRAWING
DX	DIRECT EXPANSION
E	EXHAUST
(E)	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECM	ELECTRONICALLY COMMUTATED MOTOR
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EG	ETHYLENE GLYCOL SOLUTION (% BY VOLUME)
EL/ELEV	ELEVATION
ELEC	ELECTRIC/ELECTRICAL
ENT	ENTERING
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST	EXISTING
°F	DEGREE FAHRENHEIGHT
FA	FREE AREA
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET OR FLASH TANK
FV	FACE VELOCITY
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GD	GRAVITY DAMPER
GE	GENERAL EXHAUST
GEN	GENERAL
GER	GENERAL EXHAUST RISER
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HORIZ	HORIZONTAL
HP	HORSEPOWER OR HEAT PUMP
HR	HOUR
HTG	HEATING
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HZ	HERTZ

ID	INSIDE DIAMETER
IN OR "	INCH
IN W.C.	INCHES IN WATER COLUMN
IN W.G.	INCHES IN WATER GAUGE
KE	KITCHEN EXHAUST
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LL	LOW LIMIT OR LANDLORD
LRA	LOCKED ROTOR AMPERES
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MD	MOTORIZED DAMPER
MIN	MINIMUM OR MINUTE(S)
NC	NORMALLY CLOSE OR NOISE CRITERIA
NIC	NOT IN CONTACT
NK	NECK
NO	NORMALLY OPEN
NO OR #	NUMBER
NR	NOT REQUIRED
NTS	NOT TO SCALE
NV	NATURAL VENTILATION
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
P	PUMP
PBLG	PLUMBING
PC	PLUMBING CONTRACTOR
PG	PROPYLENE GLYCOL SOLUTION (% BY VOLUME)
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
R	RETURN
RA	RETURN AIR
REQ'D	REQUIRED
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RO	RELIEF OPENING
RPM	REVOLUTIONS PER MINUTE
S	SUPPLY
SA	SOUND ATTENUATOR
SF	SUPPLY FAN OR SQUARE FEET
SL	SENSIBLE LOAD
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SQ	SQUARE
SQ.FT.	SQUARE FEET
SS	STAINLESS STEEL
STD	STANDARD
STRUCT	STRUCTURE/STRUCTURAL
TD	TEMPERATURE DIFFERENCE OR TRANSFER DUCT
TE	TOILET EXHAUST
TEMP	TEMPERATURE
TO	TRANSFER OPENING
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UC	UNDER-CUT (DOOR)
UON	UNLESS OTHERWISE NOTED
V	VENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W	WATT
W/	WITH
WC	WATER COLUMN
WPD	WATER PRESSURE DROP
WMS	WIRE MESH SCREEN
WT	WEIGHT

GRAPHIC LINESTYLES

- THICK, DARK SOLID LINES INDICATE NEW OR RELOCATED ITEMS
- THIN, LIGHT SOLID LINES INDICATE EXISTING ITEMS TO REMAIN IN PLACE AND BE REUSED
- THICK, SHORT DASHED LINES INDICATE EXISTING ITEMS TO BE REMOVED
- THICK, SHORT DASHED LINES WITH DIAGONAL PATTERN INDICATE EXISTING ITEMS TO BE REMOVED

IDENTIFICATION SYMBOLS

- POINT OF NEW TO EXISTING CONNECTION
- POINT OF DISCONNECT FROM EXISTING TO DEMOLISHED ITEM
- X — KEYED NOTE TAG
- X / X — EQUIPMENT TAG / EQUIPMENT TAG NO.
- X / M-X — SECTION NUMBER / DRAWING ON WHICH SECTION IS SHOWN

AIR DEVICES DATA TAG

SENSOR SYMBOLS

- T — THERMOSTAT
- TC — COMBINATION; THERMOSTAT, HUMIDISTAT, CO2
- H — HUMIDISTAT
- CO — CARBON MONOXIDE DETECTOR
- CO2 — CARBON DIOXIDE DETECTOR
- SD — DUCT SMOKE DETECTOR

PIPING SYSTEMS

HWS	HEATING HOT WATER SUPPLY
HWR	HEATING HOT WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CTWS	COOLING TOWER WATER SUPPLY
CTWR	COOLING TOWER WATER RETURN
GWS	GEOTHERMAL WATER SUPPLY
GWR	GEOTHERMAL WATER RETURN
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE STEAM CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MPC	MEDIUM PRESSURE STEAM CONDENSATE
LPG	LOW PRESSURE NATURAL GAS
MPG	MEDIUM PRESSURE NATURAL GAS
CD	COOLING COIL CONDENSATE

DUCTWORK SYMBOLS

- SUPPLY AIR DUCT
- RETURN AIR DUCT
- EXHAUST AIR DUCT
- 24X12 — RECTANGULAR DUCT SIZE
- 24Ø — ROUND DUCT SIZE
- 24/12 — FLAT OVAL DUCT SIZE
- ELBOW TURNED DOWN
- ELBOW TURNED UP
- DUCT TRANSITION
- DUCT END CAP
- CEILING SUPPLY DIFFUSERS
- CEILING RETURN / EXHAUST DIFFUSER
- FLEXIBLE DUCT
- FD — FIRE DAMPER
- SD — SMOKE DAMPER
- FSD — COMBINATION FIRE/SMOKE DAMPER
- MD — MOTORIZED DAMPER
- MANUAL BALANCING DAMPER
- CLEAN OUT
- FLEXIBLE DUCT CONNECTION
- UC/DG — DG: DOOR GRILLE; UC: DOOR UNDERCUT

PIPING SYMBOLS

- ELBOW TURNED UP
- ELBOW TURNED DOWN
- TEE TURNED UP
- TEE TURNED DOWN
- DIRECTION OF FLOW ARROW
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER, FLAT ON BOTTOM
- ECCENTRIC REDUCER, FLAT ON TOP
- FLANGE
- FLEXIBLE CONNECTOR
- EXPANSION COMPENSATOR
- ANCHOR
- GUIDE
- CAPPED END
- CONTINUATION
- FM — FLOW METER (REFER TO SPECS)
- W — WATER METER
- SIGHT GLASS
- PIPE UNION
- T — STEAM TRAP (REFER TO SPECS)
- STRAINER
- STRAINER WITH BLOWDOWN
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- FLOW SWITCH
- DP — DIFFERENTIAL PRESSURE SWITCH
- INSTRUMENT WELL
- TEMPERATURE/PRESSURE PORT (PETE'S PLUG)
- PRESSURE GAUGE
- THERMOMETER
- VACUUM BREAKER
- PRESSURE RELIEF VALVE
- PIPE PITCH DIRECTION
- ISOLATION VALVE (REFER TO SPECS FOR TYPE)
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GLOBE VALVE
- TRIPLE DUTY VALVE
- BALANCING VALVE
- PRESSURE REDUCING VALVE
- DRAIN VALVE
- M — MOTORIZED, 2-WAY VALVE
- M — MOTORIZED, 3-WAY VALVE
- PNEUMATIC, 2-WAY VALVE
- S — SOLENOID, 2-WAY VALVE

MECHANICAL SHEET LIST

M000 - MECHANICAL SYMBOLS, ABBREVIATIONS & NOTES
M001 - MECHANICAL SCHEDULES AND DETAILS
M002 - MECHANICAL SCHEDULES AND DETAILS
M100 - MECHANICAL SPECIFICATIONS
M200 - MECHANICAL SPECIFICATIONS
M201A - ED CT DEMO AND FLOOR PLAN
M201B - IMAGING CT DEMO AND FLOOR PLAN
M201C - MRI DEMO AND FLOOR PLAN
M202 - ROOFTOP DEMO AND FLOOR PLAN

MECHANICAL CODE REFERENCE

CITY OF AURORA, CO LOCAL AMENDMENTS
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL PLUMBING CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2017 ASHRAE STANDARDS 170
2012 NFPA 99 STANDARDS
2018 FGI GUIDELINES FOR HOSPITALS

MECHANICAL SCOPE SUMMARY

ED CT SCOPE CONSISTS OF REPLACING SUPPLY AND RETURN DIFFUSERS AND ASSOCIATED DUCTWORK AS NEEDED IN CT SPACE.

IMAGING CT SCOPE CONSISTS OF DEMOLISHING OF EXISTING CT AND CONTROL ROOM HVAC SYSTEMS. (2) NEW VAVS TO BE INSTALLED WITH ASSOCIATED DUCTWORK AND DIFFUSERS.

MRI SCOPE CONSISTS OF DEMOLISHING AND REPLACING EXISTING DIFFUSERS AND ASSOCIATED DUCTWORK. NEW MRI ROOFTOP CHILLER TO BE INSTALLED NEXT TO EXISTING ON ROOF. NEW EXHAUST FAN TO BE INSTALLED ON ROOF. NEW HEAT EXCHANGER AND PUMP TO BE INSTALLED IN MRI EQUIPMENT ROOM

ALTERNATE #3: INSTALL OXYGEN MONITOR IN LOCATION SHOWN.

This work must also comply with **2021 IECC.**

Heating system shall be capable of maintaining 68 degrees F at 3'0" above the floor.
2021 IMC 309.1, IRC 303.10 and IBC 1203.1

Code violations that are found during inspections are required to be corrected. Permit issuance does not grant approval of a code violation.

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Y. Munoz*
Date: *Oct 11, 2024*
2021 INTERNATIONAL CODES & 2023 NEC

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No.	Description	Date

COLORADO LICENSED 53450 JACOB P THOMPSON PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St,
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	EV
Checked by	JH

Sheet Title
MECHANICAL SYMBOLS , ABBREV. & NOTES

Sheet Number
M000

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9/22/2023 8:48:01 PM

VARIABLE AIR VOLUME BOX WITH HOT WATER REHEAT SCHEDULE (VAV)

TAG	AREA SERVED	INLET	MAX COOLING CFM	OCCUPIED MIN CFM	UNOCCUPIED MIN CFM	HEATING CFM	HEATING COIL DATA								VOLT/PH	MANUFACTURER	MODEL	REMARKS
							MBH	ROWS	EAT DB °F	LAT DB °F	EWT °F	LWT °F	GPM	MAX PD (FT.)				
VAV-303	IMAGING CT 02	16	2700	520	520	1350	21.1	2	55	72.5	140	35	0.4	0.1	120V/1PH	JCI	TSS-WC	ALL
VAV-304A	CT SUITE CONTROL ROOM	10	950	320	320	475	13.1	2	55	85.9	140	77	0.4	0.3	120V/1PH	JCI	TSS-WC	ALL

REMARKS:

1. PROVIDE PRESSURE INDEPENDENT CONTROL.
2. PROVIDE DISCONECT SWITCH.
3. PROVIDE ACCESS DOOR ON BOTTOM OF UNIT AND AT HEATING COIL.
4. PROVIDE DUST TIGHT CONSTRUCTION.
5. TEMPERATURE CONTROL CONTRACTOR TO PROVIDE FACTORY MOUNTED CONTROLLER.
6. PROVIDE FIBER FREE LINER.
7. PROVIDE ADJUSTABLE THERMOSTAT.

ASHRAE 170 VENTILATION SCHEDULE

ROOM NAME	ASHRAE ROOM PURPOSE	FLOOR AREA SQ. FT.	CELING HEIGHT FT.	SPACE VOLUME CU FT	ASHRAE 170 CODE REQUIREMENTS							PROVIDED MINIMUM AIRFLOWS		
					TOTAL AIR ACH	REQUIRED TOTAL AIR CFM	OUTSIDE AIR ACH	REQUIRED OUTSIDE AIR CFM	EXHAUST AIR ACH	REQUIRED EXHAUST AIR CFM	PRESSURE RELATION	SUPPLY AIR CFM	OUTDOOR AIR CFM	EXHAUST AIR CFM
IMAGING CT 02	X-RAY DIAGNOSTIC AND TREATMENT	512	10	5120	6	512	2	171	NR	0	NR	2700	540	N/A
ED CT	X-RAY DIAGNOSTIC AND TREATMENT	398	10	3980	6	398	2	133	NR	0	NR	1700	340	N/A
MRI	X-RAY DIAGNOSTIC AND TREATMENT	380	10	3800	6	380	2	127	NR	0	NR	900	180	N/A

NOTES

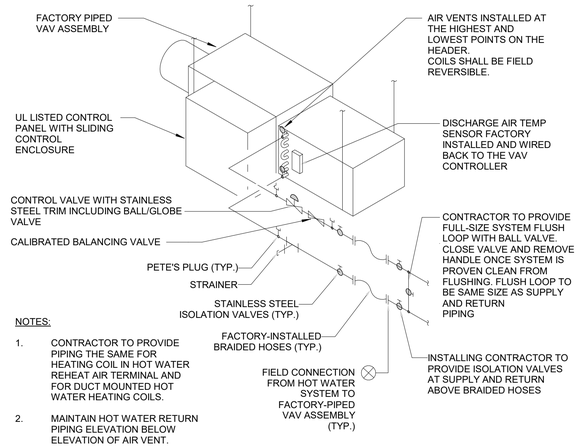
AHU UNDERSTOOD TO OPERATE AT 20% OA.

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

TAG	SERVICE	TYPE	FACE SIZE	INLET SIZE	INTEGRAL DAMPER	MATERIAL	MANUFACTURER	MODEL	REMARKS
A	SUPPLY	SQUARE PLAQUE DIFFUSER	24"x24"	SEE DRAWINGS	NO	STEEL/ALUMINUM	PRICE	SPD	ALL
B	RETURN/EXHAUST	45º LOUVERED GRILLE	24"x24"	SEE DRAWINGS	NO	STEEL/ALUMINUM	PRICE	600	ALL

REMARKS:

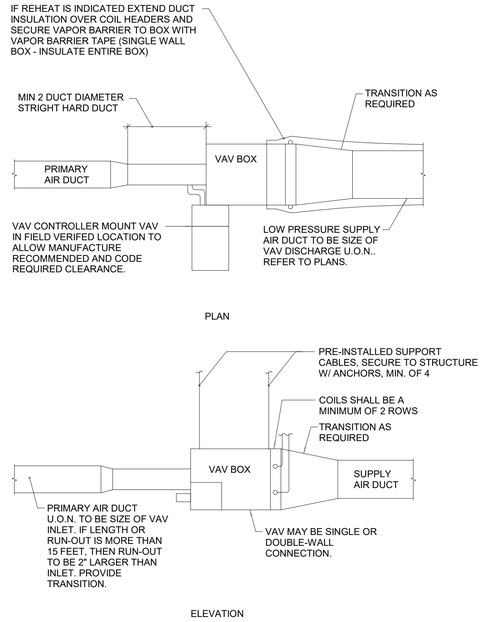
1. COORDINATE FINISH WITH ARCHITECT PRIOR TO INSTALL.
2. PROVIDE REMOTE OPERATED DAMPER FOR BALANCING WHERE INSTALLED IN ACCESSIBLE CEILINGS.
3. ONLY NONFERROUS MATERIALS IN THE MRI SCAN ROOM. GRDS OUTSIDE OF THE MRI SCAN ROOM TO BE STEEL.



NOTES:

1. CONTRACTOR TO PROVIDE PIPING THE SAME FOR HEATING COIL IN HOT WATER REHEAT AIR TERMINAL AND FOR DUCT MOUNTED HOT WATER HEATING COILS.
2. MAINTAIN HOT WATER RETURN PIPING ELEVATION BELOW ELEVATION OF AIR VENT.

1 PIPING AT TERMINAL REHEAT
NOT TO SCALE



2 VAV BOX INSTALLATION
NOT TO SCALE

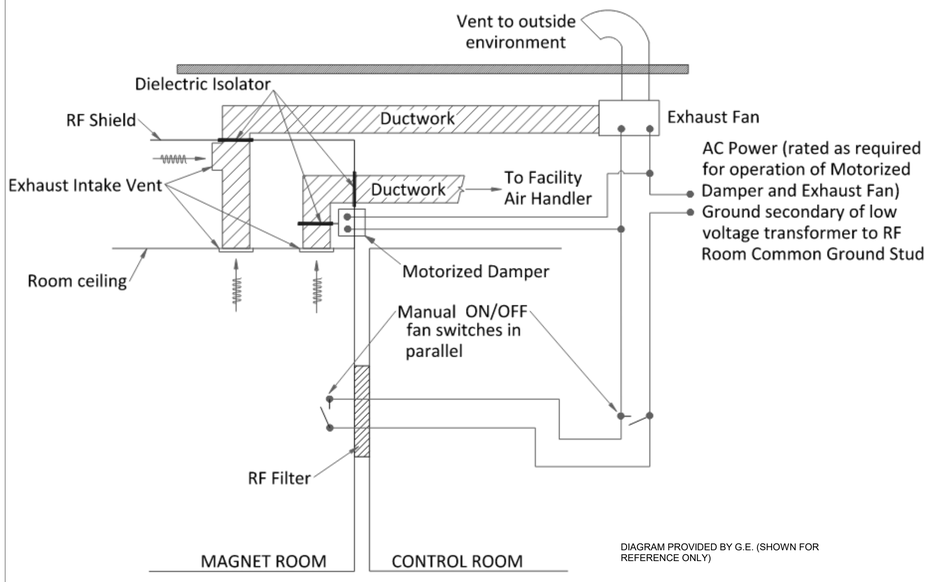
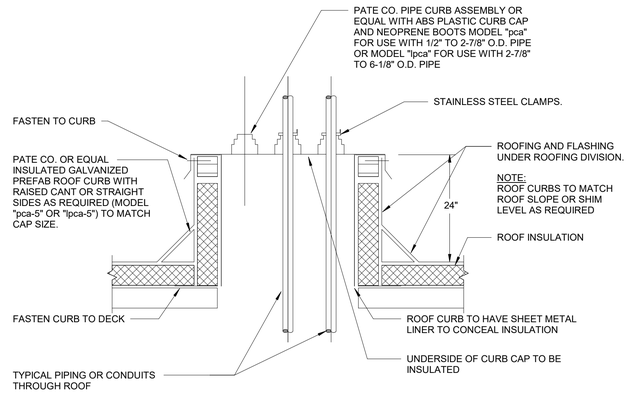
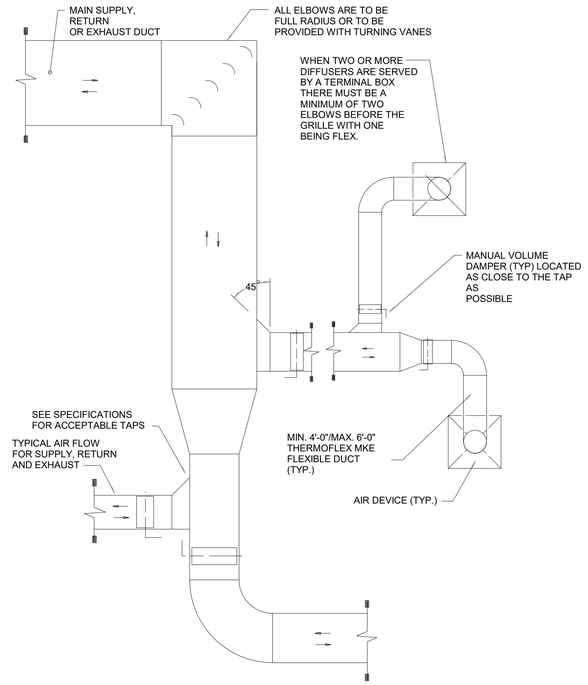


DIAGRAM PROVIDED BY G.E. (SHOWN FOR REFERENCE ONLY)

3 MAGNET ROOM EXHAUST FAN SCHEMATIC
NOT TO SCALE



4 TYPICAL ROOF PIPING PENETRATION
NOT TO SCALE



5 TYPICAL LOW PRESSURE DUCTWORK
NOT TO SCALE

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Y. Munoz*
Date: *Oct 11, 2024*
2021 INTERNATIONAL CODES & 2023 NEC

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No.	Description	Date

COLORADO LICENSED MICHAEL P THOMPSON 53150 PROFESSIONAL ENGINEER
2023.09.05

23-004 TMCA Imaging Replacements

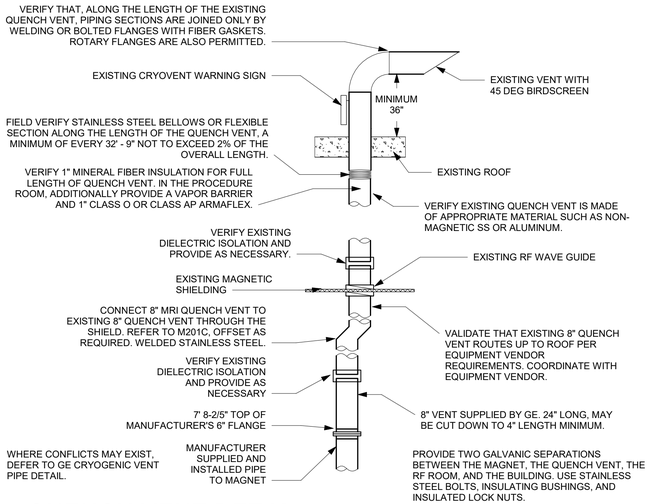
1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	EV
Checked by	JH

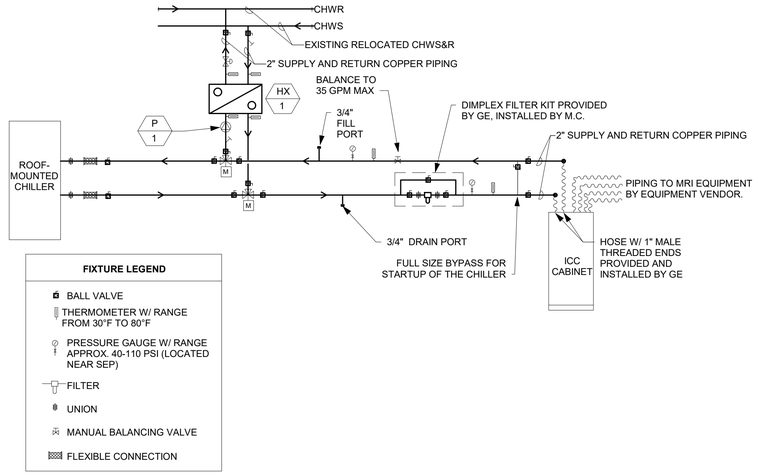
Sheet Title
MECHANICAL SCHEDULES AND DETAILS

Sheet Number
M001

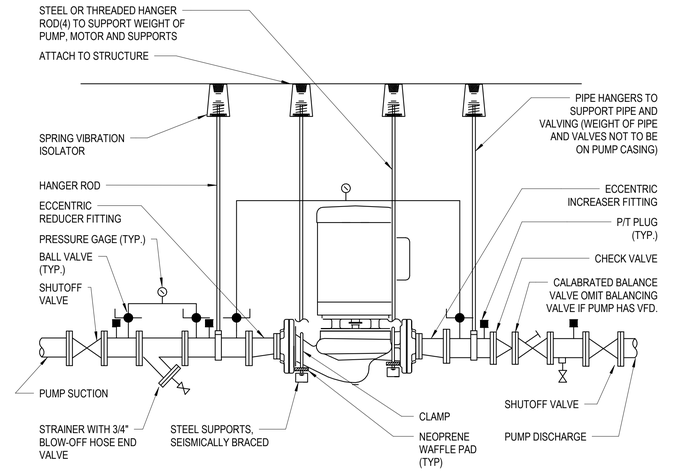
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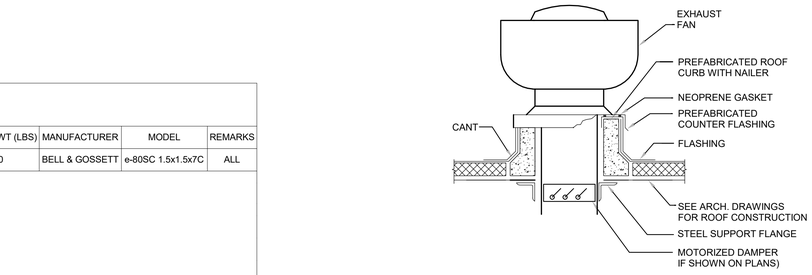
1 QUENCH VENT DETAIL
NOT TO SCALE



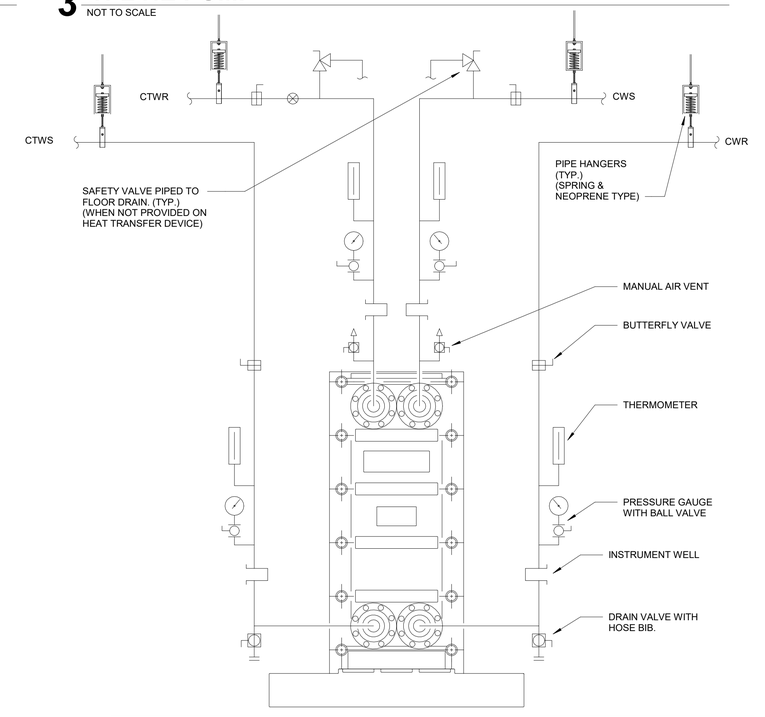
2 MRI COOLING DETAIL
NOT TO SCALE



3 IN-LINE PUMP
NOT TO SCALE



4 ROOF MOUNTED UPBLAST EXHAUST FAN
NOT TO SCALE



5 FLAT PLATE HEAT EXCHANGER PIPING
NOT TO SCALE

PUMP SCHEDULE

TAG	LOCATION	SERVICE	TYPE	GPM	HEAD (FT.)	RPM	HP	VOLTS/PH/HZ	APPROX. WT (LBS)	MANUFACTURER	MODEL	REMARKS
P-1	EQUIPMENT RM	HX-1	INLINE	35	130	3550	7.5	208/1/60	260	BELL & GOSSETT	e-80SC 1.5x1.5x7C	ALL

REMARKS:

1. PROVIDE PREMIUM EFFICIENCY MOTORS.
2. PROVIDE WITH INTEGRAL DISCONNECT.
3. FLUID IS 40% PROPYLENE GLYCOL.
4. PUMP SHALL OPERATE AT A CONSTANT SPEED. SPEED SET BY BALANCER AT STARTUP TO SCHEDULED VALUE.
5. PUMP SHALL BE ON EMERGENCY POWER.

FAN SCHEDULE

TAG	LOCATION	SERVICE	TYPE	CFM	ESP (IN. W.C.)	DRIVE	RPM	BHP	HP	VOLTS/PH/HZ	MANUFACTURER	MODEL	REMARKS
EF-1	ROOF	MRI	CENTRIFUGAL UPBLAST	1200	0.5	DIRECT	1329	0.18	1/4	115/1/60	GREENHECK	CUE-120-VG	ALL

REMARKS:

1. PROVIDE WITH EC MOTOR.
2. PROVIDE ROOF CURB.
3. FAN TO BE INTERLOCKED WITH PURGE SWITCH IN MRI CONTROL ROOM.
4. FAN TO BE INTERLOCKED WITH OXYGEN MONITOR.
5. CONNECT TO EMERGENCY POWER.
6. PROVIDE MOTORIZED ISOLATION DAMPER INTERLOCKED WITH FAN POWER CIRCUIT.
7. PROVIDE INSULATED HOUSING.
8. PROVIDE TO MEET UL 762.

PLATE AND FRAME HEAT EXCHANGER SCHEDULE (HX)

TAG	LOCATION	SERVICE	CAPACITY (MBH)	WORKING PRESSURE (PSI)	CONNECTION SIZE (INCHES)	HOT SIDE					COLD SIDE					OPERATING WEIGHT (LBS)	MANUFACTURER	MODEL	REMARKS
						FLOW RATE (GPM)	EWT (DEG F)	LWT (DEG F)	MAX. PRESS. DROP (FT)	FLUID	FLOW RATE (GPM)	EWT (DEG F)	LWT (DEG F)	MAX. PRESS. DROP (FT)	FLUID				
HX-1	EQUIPMENT RM	MRI	160	100	2	35.0	63	53	21	40% PG	21.3	45	60	5	WATER	207	BELL & GOSSETT	BP423-121	ALL

REMARKS:

1. PROVIDE REMOVABLE INSULATION PACKAGE.
2. PROVIDE STAINLESS STEEL DRIP TRAY.
3. ASME PRESSURE VESSEL ARI CERTIFIED.
4. MOUNT ON 4" HOUSEKEEPING PAD.
5. PROVIDE THREADED CONNECTIONS.

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No.	Description	Date



2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	EV
Checked by	JH

Sheet Title
MECHANICAL SCHEDULES AND DETAILS

Sheet Number
M002

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Y. Munoz*
Date: *Oct 11, 2024*
2021 INTERNATIONAL CODES & 2023 NEC

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MECHANICAL SPECIFICATIONS

GENERAL SPECIFICATIONS

1. HCA MAINTAINS PURCHASING AGREEMENTS FOR SELECT EQUIPMENT AND MATERIALS WHICH ARE OUTLINED IN THE HCA INNOVATION MEMORANDUMS. ALL MATERIALS AND EQUIPMENT PURCHASED UNDER THIS CONTRACT SHALL COMPLY WITH THE INNOVATION MEMORANDUMS. ALL PIPING RELATED ITEMS ARE TO BE PURCHASED THROUGH FERGUSON ENTERPRISE (ALTON LASSITER - 615-316-1848, ALTON.LASSITER@FERGUSON.COM).

2. WORK UNDER THIS SECTION IS SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, INCLUDING THE DRAWINGS, GENERAL AND SUPPLEMENTARY CONDITIONS OF THE ARCHITECTURAL SPECIFICATIONS.

3. THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER SYSTEMS OF HEATING, VENTILATION AND AIR CONDITIONING, INSULATION, BUILDING AUTOMATION SYSTEMS AND TEMPERATURE CONTROL, AND TESTING AND BALANCING. THE DRAWINGS AND SPECIFICATIONS ARE TO BE TAKEN TOGETHER. WORK SPECIFIED AND NOT SHOWN, OR WORK SHOWN AND NOT SPECIFIED, SHALL BE AS BINDING AS THOUGH REQUIRED BY BOTH THE DRAWINGS AND SPECIFICATIONS.

4. MINOR ITEMS AND ACCESSORIES OR DEVICES REASONABLY INFERABLE AS NECESSARY TO THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED FOR SUCH SYSTEMS, WHETHER OR NOT THEY ARE SPECIFICALLY CALLED FOR BY THE SPECIFICATIONS OR THE DRAWINGS.

5. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL NECESSARY PERMITS AND LICENSE FEES, MAKE ARRANGEMENTS FOR INSPECTIONS, PAY ALL FEES IN CONNECTION THEREWITH, EXCEPT BUILDING PERMIT, AND PAY ALL APPLICABLE FEDERAL, STATE AND LOCAL TAXES.

6. THE CONTRACTOR SHALL GUARANTEE ALL WORK TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR IN ACCORDANCE WITH THE GENERAL CONDITIONS, UNLESS A LONGER PERIOD IS STIPULATED UNDER SPECIFIED HEADINGS. HE SHALL REPAIR OR REPLACE, AT NO ADDITIONAL COST TO THE OWNER, ANY MATERIAL OR EQUIPMENT DEVELOPING DEFECTS. REPAIRS OR REPLACEMENTS SHALL BEAR AN ADDITIONAL TWELVE (12) MONTHS GUARANTEE FROM THE TIME THE REPAIR OR REPLACEMENT IS COMPLETE. THIS REQUIREMENT SHALL BE BINDING, EVEN THOUGH IT WILL EXCEED PRODUCT GUARANTEES NORMALLY FURNISHED BY SOME MANUFACTURERS.

7. THE CONTRACTOR SHALL SUBMIT HIS OWN AND EACH MANUFACTURERS' WRITTEN CERTIFICATES AND WARRANTIES WHICH INDICATE THAT EACH ITEM OF EQUIPMENT FURNISHED, COMPLIES WITH ALL REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. GUARANTEES AND WARRANTIES SHALL COMMENCE FROM THE DATE OF THE SIGNED ACCEPTANCE BY THE OWNER OF A PARTICULAR ITEM OF EQUIPMENT OR A PARTICULAR DEFINED PORTION OF THE WORK.

8. ALL WORK SHALL BE INSTALLED IN CONFORMITY WITH ALL GOVERNMENTAL JURISDICTIONAL AUTHORITIES REGULATIONS, LAWS, RULES, OR ORDINANCES IN EFFECT AND GOVERNING SAME; SUCH RULES AND REGULATIONS AND LOCAL ORDINANCES TO BE CONSIDERED PART OF SPECIFICATIONS. MECHANICAL CONTRACTOR SHALL BE HELD STRICTLY RESPONSIBLE FOR ANY VIOLATION AND SHALL CHANGE HIS WORK TO CONFORM WITHOUT ADDITIONAL COST TO OWNER.

9. ALL WORK SHALL ALSO CONFORM TO THE PUBLISHED STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AND ELECTRICAL WORK AND EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF THE CURRENT ISSUE OF THE NATIONAL ELECTRICAL CODE. ALL MATERIALS, IN GENERAL, SHALL BE UNDERWRITERS' LABORATORIES LISTED AND SHALL BEAR UL LABEL WHERE LABELING SERVICE IS AVAILABLE.

10. WHERE JURISDICTIONAL RULES REQUIRE ASSISTANCE OF MECHANICS OF TRADES OTHER THAN THOSE ORDINARILY EMPLOYED BY A PARTICULAR MECHANICAL CONTRACTOR IN THE HANDLING, STORAGE OR SETTING OF SPECIAL EQUIPMENT, THE MECHANICAL CONTRACTOR SHALL EMPLOY SUCH TRADESMEN SO AS TO BE IN CONFORMANCE WITH LOCAL JURISDICTIONAL AGREEMENTS.

11. ANY SHUTDOWNS OF HVAC SYSTEMS SHALL BE COORDINATED WITH THE OWNER AND ASSUMED TO TAKE PLACE OVER NIGHTS AND WEEKENDS. ANY WORK REQUIRING OVERTIME SHALL INCLUDE THE COST FOR SUCH OVERTIME WORK AS A PART OF THE BASE BID PROPOSAL.

12. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INTERFERENCE WITH OR DAMAGE TO ANY EXISTING UTILITIES AND SHALL REPAIR OR REPLACE ANY DAMAGED UTILITIES WITH THE LEAST POSSIBLE DELAY AND HOLD THE OWNER HARMLESS IN THE EVENT THAT THERE IS ANY DAMAGE.

13. CERTAIN ITEMS OF EQUIPMENT ARE SPECIFIED ON THE DRAWING EQUIPMENT SCHEDULES OR IN NOTES AS THE PRODUCT OF A SPECIFIC MANUFACTURER INCLUDING THE TRADE NAME, SIZE AND MODEL NUMBER. THIS IS TO ESTABLISH A STANDARD OF QUALITY AND TO MAKE PROVISIONS FOR POWER, SPACE ALLOWANCE, AND CONNECTIONS BY OTHER TRADES.

14. IF ALTERNATE MANUFACTURERS OTHER THAN THOSE NAMED IN THE DOCUMENTS ARE PROPOSED TO BE USED, THE BIDDER SHALL LIST SUCH OTHER ALTERNATE MANUFACTURERS ALONG WITH ANY COST ADDITIONS OR DEDUCTIONS FROM THE BASE BID PROPOSAL. IF THE OWNER ACCEPTS THE ALTERNATE MANUFACTURER, THE CONTRACT WILL SO STATE. IF THE CONTRACT DOES NOT CONTAIN THE NAMES OF ALTERNATE MANUFACTURERS, THE CONTRACTOR SHALL SUBMIT ONLY MANUFACTURERS NAMED IN THE DOCUMENTS.

15. IF THE MECHANICAL CONTRACTOR PROPOSES TO USE THE PRODUCT OF A MANUFACTURER OTHER THAN THE ONE NAMED IN THE DOCUMENTS, HE SHALL BE RESPONSIBLE FOR THAT ITEM OF EQUIPMENT FITTING IN PLACE WITH ADEQUATE CLEARANCES. FURTHER, IF DIFFERENT CONNECTIONS OR PROVISIONS ARE REQUIRED TO BE FURNISHED BY OTHER TRADES FROM THE PRODUCT NAMED IN THE DOCUMENTS, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OTHER TRADES OF ANY CHANGES, AND IF ADDITIONAL COSTS ARE REQUIRED BY THE OTHER TRADES, HE SHALL PAY SUCH COSTS.

16. THE ENGINEER HAS NO CONTRACTUAL RESPONSIBILITY IN CONNECTION WITH JOB SITE SAFETY MEASURES OR PRECAUTIONS AS RELATED TO MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES IN THAT REGARD. THE MECHANICAL CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE ARCHITECT/ENGINEER'S OBSERVATIONS OF THE MECHANICAL CONTRACTOR'S PERFORMANCE ARE NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE MECHANICAL CONTRACTOR'S SAFETY MEASURES IN, ON OR NEAR THE CONSTRUCTION SITE. IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH "SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION", VOLUME 36, NO.75, PART II OF THE FEDERAL REGISTER BY THE U.S. DEPARTMENT OF LABOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SUCH SAFETY MEASURES AND SHALL CONSULT WITH THE STATE OR FEDERAL SAFETY INSPECTOR FOR INTERPRETATION WHENEVER IN DOUBT AS TO WHETHER SAFE CONDITIONS DO OR DO NOT EXIST; OR WHETHER HE IS OR IS NOT IN COMPLIANCE WITH STATE OR FEDERAL REGULATIONS.

17. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHOW GENERAL ARRANGEMENT OF ALL EQUIPMENT, PIPING, DUCTWORK, SERVICES, ETC. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO SHOW ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. FURNISH ALL FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED TO MEET SUCH CONDITIONS AND TO FIT WORK OF OTHER TRADES.

18. FURNISH ONE DIGITAL AND THREE (3) HARD COPY SETS OF SHOP DRAWINGS, SHOWING ALL DETAILS OF CONSTRUCTION FOR THE FOLLOWING:
    A. DUCTWORK LAYOUTS
    B. VAV BOXES
    C. HYDRONIC PIPING ACCESSORIES
    D. HEAT EXCHANGER & PUMP
    E. FAN
    F. AIR TERMINALS
    G. CONTROLS
    H. PRELIMINARY TEST AND BALANCE REPORT
    I. FINAL TEST AND BALANCE REPORT

19. REVIEW OF THE SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY AND SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR OF BUILDING CONDITIONS; NOR SHALL IT BE CONSTRUED AS RELIEVING THE MECHANICAL CONTRACTORS OF BASIC RESPONSIBILITIES UNDER HIS CONTRACT.

20. ALL EQUIPMENT SUBMITTED AS SHOP DRAWINGS SHALL BE APPROVED BY THE GOVERNING JURISDICTIONAL AUTHORITIES PREVIOUS TO SUBMITTAL. SUBMISSION OF A SHOP DRAWING SHALL MEAN THAT APPROVAL HAS BEEN OBTAINED FOR INSTALLATION OF THE EQUIPMENT SUBMITTED FOR REVIEW.

21. AT COMPLETION OF THE PROJECT, ALL CHANGES AND DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE RECORDED BY THE MECHANICAL CONTRACTOR ON AS-BUILT DRAWINGS. SUPPLY TO THE ARCHITECT/ENGINEER DIGITAL COPIES AND FOUR PAPER BLUE LINE SETS.

22. THE OWNER, ARCHITECT, ENGINEER OR OTHERS WHO THEY MAY DESIGNATE SHALL BE PRIVILEGED TO ENTER AND OCCUPY THE BUILDING OR PORTIONS THEREOF, AT ANY TIME PRIOR TO COMPLETION OF THE MECHANICAL WORK WITHOUT PREJUDICE.

23. BEFORE MAKING ANY INSTALLATION, THE MECHANICAL CONTRACTOR SHALL CONFER WITH ALL OTHER CONTRACTORS WHOSE WORK MAY AFFECT THE WORK UNDER THEIR SECTIONS AND MAKE THE NECESSARY CHANGES TO AVOID INTERFERENCES OR IMPROPER EFFECT ON WORK TO BE PERFORMED BY ALL OTHER TRADES. IN THE EVENT THAT INTERFERENCES DEVELOP, THE ARCHITECT'S DECISION WILL BE FINAL AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR MOVING OF MISPLACED PIPING, DUCTS, CONDUIT AND/OR EQUIPMENT.

24. ALL MATERIALS AND/OR EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.

25. EACH MAJOR COMPONENT OF THE EQUIPMENT SHALL HAVE THE MANUFACTURER'S NAME, ADDRESS, MODEL NUMBER AND RATING ON A PLATE SECURELY AFFIXED IN A CONSPICUOUS PLACE. THE NAMEPLATE OF A DISTRIBUTING AGENT IS NOT ACCEPTABLE. ASME CODE RATINGS, OR OTHER DATA WHICH IS DIE-STAMPED INTO THE SURFACE OF THE EQUIPMENT SHALL BE IN A VISIBLE LOCATION.

26. USE ONLY NEW MATERIALS OF THE BEST QUALITY OF THEIR RESPECTIVE KINDS; LABOR SHALL BE DONE IN A THOROUGH WORKMANLIKE MANNER TO THE SATISFACTION OF THE ARCHITECT.

27. MATERIALS SHALL BE MANUFACTURED BY REPUTABLE MANUFACTURERS WHO HAVE BEEN PRODUCING THIS TYPE OF MATERIAL TO BE SOLD IN MAJOR CITIES IN THE UNITED STATES FOR A PERIOD OF AT LEAST FIVE (5) YEARS, UNLESS OTHERWISE NOTED HEREIN.

28. THE INSTALLATION OF ANY ACCESS PANEL IS STRICTLY LIMITED TO LOCATIONS AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR APPROVED BY ARCHITECT.

29. FIRE STOPPING SHALL BE REQUIRED AT ALL FLOOR AND FIRE RATED WALL/PARTITION PENETRATIONS. FIRE STOPPING SYSTEMS SHALL BE AS DETAILED ON ARCHITECTURAL DRAWINGS.

30. DUCTWORK BEHIND THE GRILLES, REGISTERS, DIFFUSERS, ETC. WHICH IS EXPOSED TO VIEW THROUGH THE UNITS, SHALL BE GIVEN ONE (1) COAT OF PRIMER AND A FINISH COAT OF FLAT BLACK PAINT.

31. ALL WORKMANSHIP SHALL BE FIRST CLASS IN EVERY RESPECT AND SHALL BE PERFORMED ONLY BY SKILLED MECHANICS, RECOGNIZED AS SUCH IN THEIR RESPECTIVE TRADES.

32. FURNISH NECESSARY SCAFFOLDING, STAGING OR CRIBBING REQUIRED FOR THE COMPLETION OF THE WORK. SUCH SCAFFOLDING, ETC., SHALL BE REMOVED FROM THE PREMISES WHEN ITS USE IS NO LONGER REQUIRED ON THE JOB.

33. SHOULD DAMAGE TO ANY MECHANICAL, ELECTRICAL OR ARCHITECTURAL PART OF THE BUILDING OCCUR, PAY ALL COSTS TO THE RESPECTIVE SUBCONTRACTORS AFFECTED ON THE JOB TO MAKE REPAIRS AND/OR TEMPORARY CONNECTIONS REQUIRED.

34. OPENINGS MADE IN A FIRE RATED WALL, CEILING OR FLOOR SHALL BE EFFECTIVELY CLOSED AND REPAIRED SO THE FIRE RATING IS NOT REDUCED BELOW ORIGINAL FIRE RATING REQUIREMENTS.

35. FURNISH 8 COMPLETE PORTFOLIOS TO THE OWNER'S REPRESENTATIVE, CONTAINING AS- BUILT SHOP DRAWINGS, TEST AND BALANCE REPORTS, OPERATING INSTRUCTIONS, WARRANTIES, PARTS LISTS, WIRING DIAGRAMS, ETC., ON ALL EQUIPMENT FURNISHED UNDER THIS CONTRACTOR.

36. THE CONTRACTOR SHALL FURNISH A COMPETENT INSTRUCTOR TO ADVISE THE OWNER'S OPERATING PERSONNEL AS TO THE PROPER OPERATION, SERVICING, ETC., OF ALL EQUIPMENT AND SYSTEMS INSTALLED.

37. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL CLEAN ALL OF HIS WORK, EQUIPMENT, ETC., FREE FROM DUST, ETC., AND LEAVE THE WORK IN GOOD HOUSEKEEPING FASHION IN A MANNER ACCEPTABLE TO THE OWNER'S REPRESENTATIVE. PROVIDE NECESSARY FITTINGS, LAMPS, VALVES, ETC., AND LEAVE THE WORK CLEAN AND IN PERFECT OPERATING CONDITION.

38. WHEN DIRECTED, DURING CONSTRUCTION PERIOD, OPERATE SYSTEM WITH ALL FILTERS IN PLACE AND ALL CAULKING COMPLETE. DO NOT OPERATE OR PERMIT SUPPLY SYSTEM TO BE OPERATED WITHOUT FILTERS.

39. UNDER NO CIRCUMSTANCES SHALL ANY ITEMS OF NEW AIR HANDLING EQUIPMENT BE OPERATED FOR TEMPORARY HEAT OR VENTILATION WITHOUT FILTERS IN PLACE. IF THE UNIT IS USED BEFORE CONSTRUCTION IS COMPLETED, THE FILTERS SHALL BE REPLACED, THE UNIT AND COILS SHALL BE CLEANED AND THIS SET OF FILTERS SHALL NOT BE CONSIDERED AS THE SPARE SET OF FILTERS.

40. THE CONTRACTORS SHALL PROVIDE TEMPORARY HEAT AS REQUIRED FOR CONSTRUCTION AND FREEZE PROTECTION.

41. ALL TENDERS SUBMITTED ON THESE DRAWINGS AND SPECIFICATIONS SHALL BE BASED ON NEW MATERIALS AND APPARATUS OF MAKE AND QUALITY AS SPECIFIED. IF THE CONTRACTOR DESIRES, HE MAY ALSO TENDER ON MATERIALS AND APPARATUS WHICH SHALL BE OF SAME QUALITY AND OF SIMILAR SPECIFICATIONS TO THOSE AS HEREIN SPECIFIED, IN WHICH CASE HE SHALL STATE IN HIS TENDER ALL ADDITIONS OR DEDUCTIONS INVOLVED IN THE ALTERNATE MATERIALS AND APPARATUS, AND SHALL SPECIFY THE NAME OR MAKE ON WHICH HIS ALTERNATE IS BASED. WHEN NO ALTERNATES ARE GIVEN OR ACCEPTED PRIOR TO CONTRACT AWARD, THE MAKE SPECIFIED SHALL BE INSTALLED.

HVAC SYSTEM

1. THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS ARE TO COVER THE FURNISHINGS OF ALL LABOR, MATERIALS, EQUIPMENT, APPARATUS, SERVICE PERMANENT AND TEMPORARY FACILITIES AS NECESSARY TO THE HEATING AND AIR CONDITIONING WORK INVOLVED IN THE FURNISHING, INSTALLING, TESTING, ADJUSTING, RETESTING, READJUSTMENT AS REQUIRED AND DIRECTED, AND PLACING INTO APPROVED SATISFACTORY OPERATION THE COMPLETE RESPECTIVE SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY THE JOB CONDITIONS.

2. BEFORE BEGINNING WORK, THE CONTRACTOR SHALL REVIEW THE MEDICAL EQUIPMENT VENDOR FINAL SHOP DRAWINGS FOR COORDINATION AND MEDICAL EQUIPMENT VENDOR EXPECTATIONS.

3. FURNISH AND INSTALL A COMPLETE AND OPERABLE SYSTEM FOR VENTILATING, HEATING AND AIR CONDITIONING CONSISTING OF, BUT NOT LIMITED TO:
    A. SUPPLY AND EXHAUST/RETURN DUCT SYSTEM
    B. GRILLES, DIFFUSERS, REGISTERS AND MANUAL VOLUME DAMPERS
    C. TESTING AND BALANCING

4. FURNISH ACCESS DOORS TO CEILING CONTRACTOR FOR ACCESS TO VALVES AND DAMPERS. ALL CONTROL DEVICES AND DAMPERS ABOVE INACCESSIBLE CEILINGS. LAY IN CEILINGS SHALL BE CONSIDERED ACCESSIBLE. PROVIDE 12"X12" (MIN.) ACCESS DOORS IN DUCTS FOR ACCESS TO FIRE DAMPERS, DUCT MOUNTED APPARATUSES, AND WHERE INDICATED FOR MAINTENANCE.

5. FURNISH AND INSTALL ALL INSULATION AS SPECIFIED.

6. FURNISH CUTTING AND CORING FOR INSTALLATION OF DUCTS AND EQUIPMENT. APPLICABLE STANDARDS AND CODES OF THE FOLLOWING:

    THE WORK UNDER THIS SECTION SHALL COMPLY WITH THE LATEST EDITION OF:
    A. IMC - INTERNATIONAL MECHANICAL CODE
    B. ASME - AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
    C. ASHRAE - AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING
    D. ARI - AIR CONDITIONING AND REFRIGERATION INSTITUTE
    E. ASTM - AMERICAN SOCIETY FOR TESTING MATERIALS
    F. AABC - ASSOCIATED AIR BALANCE COUNCIL NFPA -NATIONAL FIRE PROTECTION ASSOCIATION
    G. SMACNA - SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION

7. EXERCISE CARE IN TRANSPORTING AND HANDLING TO AVOID DAMAGE TO FIXTURES, EQUIPMENT AND MATERIALS.

8. STORE MATERIALS ON THE SITE SO AS TO PREVENT DAMAGE.

9. KEEP EQUIPMENT AND MATERIALS CLEAN, DRY AND FREE FROM DELETERIOUS CONDITIONS.

10. ALL DUCTWORK SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL OUTSIDE THE SHIELDING. THE DUCTS SHALL BE AIRTIGHT AND SHALL BE ANCHORED, BRACED AND REINFORCED TO PREVENT VIBRATION, LEAKAGE AND OIL CANNING. THE SPACING OF STIFFENERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA. ALL DUCTWORK WITHIN SHIELD SHALL BE CONSTRUCTED OF ALUMINUM WITH NON-FERROUS ACCESSORIES, FASTENERS, ETC.

11. THE DUCTWORK SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE WITH 1 INCH X 1/8 INCH SOLID GALVANIZED STRAP HANGERS (BOTH SIDES OF DUCT AT POINT OF SUPPORT) WITH GAGES AND SPACING AS SPECIFIED IN SMACNA. NON-FERROUS HANGERS WITH NON-FERROUS ACCESSORIES SHALL BE USED WITHIN THE MRI SHIELDING.

12. UNLESS OTHERWISE NOTED, ALL ROUND ELBOWS SHALL HAVE CENTER LINED RADIUS EQUAL TO 1-1/2 TIMES THE WIDTH OF THE DUCT. IF SPACE DOES NOT PERMIT, THEN PROVIDE 6" THROAT WITH SPLITTER VANES. SEE DUCT CONSTRUCTION DETAILS.

13. ALL DUCTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. DUCTWORK UPSTREAM OF VAV BOXES SHALL BE +4" PRESSURE CLASS. DUCTWORK DOWNSTREAM OF VAV BOXES SHALL BE +2" AND ALL EXHAUST/RETURN DUCTWORK SHALL BE -2" PRESSURE CLASS. ALL DUCTWORK SHALL BE SEAL CLASS A.

14. ALL DUCTWORK SHALL BE 22 GAUGE MINIMUM.

15. ROUND DUCTS AND FITTINGS SHALL BE FACTORY FABRICATED SPIRAL LOCK SEAM DUCT WITH MACHINE FORMED FITTINGS AS MANUFACTURED BY UNITED SHEET METAL. ALL FITTINGS SHALL BE SEALED WITH FIRE RETARDANT DUCT SEALER.

16. FLEXIBLE DUCTS SHALL BE FLEX MASTER OR APPROVED EQUAL. INSULATED FLEXIBLE DUCTS, SECURED WITH WORM DRIVE STAINLESS STEEL CLAMPS. DUCTS SHALL BE U.L. LISTED AND HAVE 2" W.G. GAUGE WORKING PRESSURE. 4'-0" MAXIMUM LENGTH.

17. FOR ALL OPERABLE DEVICES IN WALLS OR ABOVE INACCESSIBLE SUSPENDED CEILINGS, PROVIDE MILCOR ACCESS DOORS WITH SAME KEYED LOCKS AND CONCEALED HINGES. LAY IN CEILINGS ARE CONSIDERED ACCESSIBLE. SIZE AS REQUIRED FOR ACCESS.
    A. STYLE DW IN DRYWALL NO. 16 GA. FRAME NO. 14 GA. PANEL
    B. STYLE AP IN PLASTER NO. 16 GA. FRAME NO. 14 GA. PANEL
    C. STYLE M IN MASONRY NO. 16 GA. FRAME NO. 14 GA. PANEL

18. PROVIDE AN ADJUSTABLE BUTTERFLY OR OPPOSED MULTI BLADE VOLUME DAMPERS IN DUCTWORK ON EVERY BRANCH SERVING AIR TERMINAL DEVICES ON ALL SUPPLY, RETURN AND EXHAUST AIR DUCTWORK. DAMPERS SHALL BE 2 GAGES HEAVIER THAN DUCT IN WHICH THE DAMPER IS INSTALLED. CONSTRUCTION SHALL BE GALVANIZED SHEET METAL. EACH DAMPER SHALL BE PROVIDED WITH DAMPER ROD HELD IN PLACE WITH A CLAMPING DEVICE. VISIBLE END OF THE DAMPER RODS SHALL BE FILE MARKED WITH MARKS PARALLEL TO THE BLADES.

19. FIRE DAMPERS SHALL BE COMPLETE WITH WALL FRAME, SLEEVES, ANGLE IRON STOPS, LATCHES, SPRINGS AND FUSIBLE LINK, ETC., AND SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND ELSEWHERE AS REQUIRED IN ACCORDANCE WITH NATIONAL BUREAU OF FIRE UNDERWRITER REGULATION BULLETIN 90-A. AND THE CITY OF CHICAGO FIRE PREVENTION BUREAU. THE FIRE DAMPERS SHALL BEAR UL LABEL. FIRE DAMPER SHALL BE 98% FREE AREA, AND BE OF THE LOW RESISTANCE TYPE WITH 1-1/2 HOUR OR 3 HOUR FIRE RATING CORRESPONDING TO THE ASSOCIATED WALL/BARRIER RATING AS MANUFACTURED BY PHILLIPS-AIRE AMERICAN WARNING AND VENTILATING, INC., AIR BALANCE, INC., OR RUSKIN MANUFACTURING.

20. ALL SUPPLY, RETURN, AND EXHAUST AIR OUTLETS SHALL BE MOUNTED TIGHTLY WITH RUBBER GASKETS TO PREVENT AIR LEAKAGE.

21. OUTLETS SHALL BE SELECTED AND GUARANTEED BY THE MANUFACTURER TO HANDLE THE AIR QUANTITIES AS SHOWN ON THE DRAWINGS WITH MAXIMUM PRESSURE DROP THROUGH THE OUTLET NOT EXCEEDING 0.10 IN OF WATER.

22. UNLESS OTHERWISE NOTED, DIFFUSERS, REGISTERS OR GRILLES SHALL BE FABRICATED FROM ALUMINUM OR STEEL AND SHALL BE PROVIDED WITH A FINISH COAT OF WHITE BAKED ENAMEL PAINT, UNLESS NOTED OTHERWISE. DIFFUSERS, REGISTERS AND GRILLES SHALL BE AS MANUFACTURED BY TITUS, OR APPROVED EQUAL.

23. DRILLED-IN THREADED INSERTS: PHILLIPS "REDHEAD" DRILLED-IN THREADED INSERTS SHALL BE PROVIDED. INSTALL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

24. PROVIDE ANCHOR BOLTS, NUTS SLEEVES FOR ANCHORING FANS, MOTORS AND ANY OTHER POWER-OPERATED EQUIPMENT.

25. ALL CONDITIONED SUPPLY AIR DUCTS SHALL BE INSULATED WITH 1 1/2" THICK FIBERGLASS INSULATION.

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DUCTWORK:

1. ALL DUCTWORK WITHIN SHIELD SHALL BE CONSTRUCTED OF ALUMINUM WITH NON-FERROUS ACCESSORIES, FASTENERS, ETC; DUCTWORK OUTSIDE THE MRI SHIELDING SHALL BE GALVANIZED SHEET METAL CONSTRUCTED & INSTALLED IN ACCORDANCE WITH THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION HVAC DUCT CONSTRUCTION STANDARDS, EXCEPT AS FOLLOWS:

2. INTERNAL LINING OF DUCTWORK SHALL NOT BE PERMITTED.

3. DUCTWORK THICKNESS SHALL BE 22 GAUGE MINIMUM EXCEPT FOR THE FOLLOWING:
    A. WHERE ANY WELDING OTHER THAN LONGITUDINAL SEAM IS PERFORMED, THE THICKNESS SHALL BE 18 GAUGE MINIMUM.

4. ROUND:
    A. ROUND DUCTS MAY BE SPIRAL OR LONGITUDINAL SEAM. LONGITUDINAL SEAMS SHALL BE CONTINUOUSLY WELDED. SNAPLOCK SEAMS ARE NOT PERMITTED.
    B. CRIMP JOINTS ARE NOT PERMITTED.
    C. PLEATED ELBOWS ARE NOT PERMITTED.
    D. ADJUSTABLE ELBOWS ARE NOT PERMITTED.
    E. MITERED ELBOWS WITH TURNING VANES ARE NOT PERMITTED IN ROUND DUCTWORK. USE RADIUS ELBOWS WITH CENTERLINE RADIUS AT LEAST AS GREAT AS THE DUCT WIDTH.

5. RECTANGULAR:
    A. BUTTON PUNCH SNAPLOCK SEAMS ARE NOT PERMITTED.
    B. TRANSVERSE (GIRTH) JOINTS T-4, 9, 17, 18, 20, AND 23 ARE NOT PERMITTED.
    C. MITERED ELBOWS WITH TURNING VANES ARE PERMITTED ONLY WHERE RADIUS ELBOWS WITH CENTERLINE RADIUS AT LEAST AS GREAT AS THE DUCT WIDTH IS NOT POSSIBLE.

6. SIZES OF NEW DUCT SHOWN ON DRAWINGS ARE FREE AIRWAYS SIZES, NOT OUTSIDE DIMENSIONS.

7. TEES SHALL HAVE 45º BOOTS AND TAPS ARE TO BE CONICAL.

8. FOR FINAL CONNECTIONS TO DIFFUSERS AND MODULATING DAMPER BOXES, FLEXIBLE DUCTS MAY BE USED FOR A MAXIMUM OF 2'-0" FEET. FLEXIBLE DUCTS SHALL BE U.L. LISTED, WITH 1" THICK FIBERGLASS INSULATION W/ VAPOR BARRIER. INSTALL FULLY EXTENDED W/ A MAXIMUM OF ONE 90° CHANGE OF DIRECTION, IN LENGTHS NO GREATER THAN NECESSARY. USE GENEROUS RADIUS TURNS AND SUPPORT AS REQUIRED TO PREVENT EXCESSIVE SAGGING. FLEXIBLE ELBOWS AT THE DIFFUSER INLET IS NOT PERMITTED.

9. PROVIDE ADJUSTABLE OPPOSED BLADE OR BUTTERFLY DAMPERS FOR ALL NEW LOW PRESSURE SUPPLY & RETURN BRANCHES. EXTRACTORS AND SPLITTER DAMPERS ARE NOT PERMITTED.

10. SEAL ALL JOINTS OF NEW DUCTWORK. INSPECT EXISTING DUCTWORK FOR LEAKS & REPORT RESULTS BEFORE CONNECTING NEW DUCTWORK. ALL DUCTWORK WITHIN THE CONSTRUCTION LIMIT LINE IS SUBJECT TO LEAK TESTS AS REQUIRED AND WITNESSED BY THE OWNER. SEE LATEST BUILDING CONSTRUCTION STANDARDS FOR SPECIFIC TESTING REQUIREMENTS. ALL MEDIUM PRESSURE DUCTWORK UPSTREAM OF VAV AND FAN POWERED BOXES SHALL BE 3" W.G. PRESSURE CLASS, SEAL CLASS A. DUCT SEALANT SHALL BE WATER-BASED-UNITED McGILL OR APPROVED EQUAL. PRESSURE SENSITIVE TAPE IS UNACCEPTABLE. GASKETED FLANGES SHALL BE SEALED WITH A MASTIC.

11. PROTECT NEW & EXISTING DUCT OPENINGS FROM DUST & DIRT. CLEAN INSIDE & OUTSIDE OF NEW & EXISTING DUCTWORK IN AREA OF NEW WORK. REPLACE FILTERS AS REQUIRED DURING CONSTRUCTION PERIOD AND PROVIDE NEW SETS OF FILTERS AFTER COMPLETION OF WORK.

12. INSULATION
    A. INSULATION SHALL BE OWENS-CORNING, CERTAINTEED, ARMSTRONG, OR GUSTIN-BACON. NEW SUPPLY AIR DUCTWORK ABOVE CEILINGS AND EXHAUST DUCTWORK DOWNSTREAM OF THE MOTOR OPERATED DAMPER SHALL BE INSULATED WITH MIN. 1-1/2" THICK, 1# DENSITY FIBERGLASS WRAP WITH FIRE RETARDANT VAPOR-BARRIER COVERING TO PROVIDE A MAXIMUM INSTALLED CONDUCTANCE OF 0.16.
    B. OVERLAP ALL SEAMS AND JOINTS & SECURE WITH MANUFACTURER APPROVED ADHESIVE TO PROVIDE CONTINUITY OF VAPOR BARRIER.

PIPING:

1. HEATING WATER 2" OR SMALLER SHALL COPPER PIPE TYPE L WITH SOLDER JOINTS. CHILLED WATER PIPING 2" OR SMALLER SHALL BE COPPER PIPE TYPE L WITH SOLDER JOINTS.

2. DIELECTRIC FITTINGS SHALL BE USED BETWEEN STEEL AND COPPER PIPING.

3. VICTAULIC AND "PRESSFIT" SHALL NOT BE USED FOR ANY HVAC PIPING. PRESSURE AND GROOVED FITTINGS ARE NOT ALLOWED.

4. PIPING INSULATION
    A. HEATING WATER PIPING INSULATION TO BE MIN. 1-1/2" THICK FOR PIPING 1-1/4" AND SMALLER, AND MIN. 2" THICK FOR PIPING 1-1/2" AND LARGER.
    B. CHILLED WATER PIPING INSULATION TO BE MIN 1" THICK ELASTOMERIC CELLULAR FOAM. EXTERIOR CHILLED WATER PIPING TO BE 2" PREFORMED CELLULAR GLASS WITH FIELD APPLIED 0.024" THICK ALUMINUM JACKET. APPLY INSULATION AFTER HEAT TRACING.
    C. HEATING WATER PIPING SHALL BE INSULATED WITH MOLDED FIBERGLASS WITH ASJ FINISH.
    D. PROVIDE HIGH DENSITY INSULATION INSERTS FOR PIPING LARGER THAN 2" DIAMETER.

6. GENERAL INSULATION
    A. FITTINGS ON FIBERGLASS PIPE INSULATION SHALL BE MITERED INSULATION UP TO 2" DIAMETER AND MOLDED FITTINGS FOR 2-1/2" AND LARGER. ALL INDOOR FITTING INSULATION SHALL BE COVERED WITH A TIGHT FITTING PVC JACKET.
    B. PROV

MECHANICAL SPECIFICATIONS (CONT.)

7. VALVES (CONT.)
   - C. PROVIDE CLAMP LOCK HAND LEVER OPERATORS ON VALVES LESS THAN 8".
   - D. SHUTOFF VALVES FOR WATER PIPING 2" AND SMALLER SHALL BE BALL TYPE.
   - E. HYDRONIC VALVES
     - a. VALVES SHALL BE MANUFACTURED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND SHALL COMPLY WITH THE PERFORMANCE REQUIREMENTS OF ASTM F 2389 OR CSA B137.11. THE VALVES SHALL CONTAIN NO REWORK OR RECYCLED THERMOPLASTIC MATERIALS EXCEPT THAT GENERATED IN THE MANUFACTURER'S OWN PLANT FROM RESIN OF THE SAME SPECIFICATION FROM THE SAME RAW MATERIAL.
     - b. VALVES, OR ALTERNATES SPECIFICALLY DESIGNED FOR, SHALL BE NIRON AVAILABLE FROM NUPI AMERICAS AND PRODUCED USING MANUFACTURER AUTHORIZED MATERIALS.
   - F. BALL VALVES
     - a. APPLICATION: SHUTOFF 2" AND SMALLER
     - b. BODY: BRONZE WITH <15% ZINC
     - c. BALL AND TRIM: STAINLESS STEEL, VENTED BALL
     - d. CONNECTIONS: THREADED OR SOLDER ENDS
     - e. PRESSURE RATING: 125 PSI
     - f. ALLOWABLE SEAT/SEAL MATERIALS: PTFE, EPDM, NEOPRENE, BUNA-N
   - G. STRAINERS
     - a. APPLICATION: 2" AND SMALLER
     - b. BODY: BRONZE WITH <15% ZINC
     - c. PRESSURE RATING: 125 PSI
     - d. STRAINER SCREEN: STAINLESS STEEL WITH 3/64" MESH
     - e. CONNECTIONS: SCREWED ENDS
     - f. GENERALS: PROVIDE WITH THREADED NIPPLE AND SHUTOFF VALVE FOR BLOWDOWN
   - H. MANUAL BALANCING VALVES
     - a. BODY: BRONZE
     - b. CONSTRUCTION: VALVE SHALL HAVE ORIFICE OR VENTURI THAT IS FACTORY CALIBRATED TO CORRELATE PRESSURE DROP WITH FLOW RATE
     - c. PRESSURE GAUGE CONNECTIONS: PROVIDE INTEGRAL PORTS FOR DIFFERENTIAL PRESSURE MEASUREMENT
     - d. SIZING: SIZE FOR THE SCHEDULED FLOW RATE PER MANUFACTURER'S RECCOMENDATION
     - e. DESIGN PRESSURE DROP: 1' TO 2' AT FULL FLOW WITH VALVE OPEN
     - f. OPTIONS: PROVIDE REMOVABLE INSULATION COVERS
   - I. THERMOMETERS
     - a. TYPE: SOLAR DIGITAL
     - b. PROVIDE SEPARATE WELL
     - c. ADJUSTMENT: VARIABLE ANGLE
     - d. MANUFACTURER: WEISS INSTRUMENTS INC.
   - J. PRESSURE GAUGES:
     - a. TYPE: GLYCERINE FILLED
     - b. ACCURACY: 0.5%
   - K. 3-WAY CONTROL VALVES FOR CHILLED WATER:
     - a. BODY: BRONZE WITH <15% ZINC
     - b. BALL AND TRIM: CHARACTERIZED EQUAL PERCENTAGE BALL, STAINLESS STEEL
     - c. SIZING: SIZE FOR 4-5 PSI PRESSURE DROP AT FULL FLOW
     - d. CONNECTIONS: THREADED ENDS
     - e. CLOSE-OFF PRESSURE RATING: 125 PSI
     - f. ALLOWABLE SEAT/SEAL MATERIALS: PTFE
     - g. ACTUATOR: 24 V, MODULATING, FAIL CLOSED

HEAT EXCHANGERS:

1. ALLOWABLE MANUFACTURERS: ARMSTRONG, BELL & GOSSETT.
2. CONFIGURATION: FREESTANDING ASSEMBLY CONSISTING OF FRAME SUPPORT, TOP AND BOTTOM CARRYING AND GUIDE BARS, FIXED AND MOVABLE END PLATES, TIE RODS, INDIVIDUALLY REMOVABLE PLATES, AND ONE-PIECE GASKETS.
3. FRAME: CAPACITY TO ACCOMMODATE 20 PERCENT ADDITIONAL PLATES; PAINTED CARBON STEEL WITH PROVISIONS FOR ANCHORING TO SUPPORT.
4. TOP AND BOTTOM CARRYING AND GUIDE BARS: PAINTED CARBON STEEL, ALUMINUM, OR STAINLESS STEEL.
5. END-PLATE MATERIAL: PAINTED CARBON STEEL.
6. TIE RODS AND NUTS: STEEL OR STAINLESS STEEL.
7. PLATE MATERIAL: 0.024 INCH (0.6 MM) THICK BEFORE STAMPING; TYPE 304 STAINLESS STEEL.
8. GASKET MATERIAL: NITRILE RUBBER OR EPDM
9. PIPING CONNECTIONS: THREADED PORT FOR NPS 2 (DN 50) AND SMALLER. FOR LARGER SIZES, FURNISH END-PLATE PORT WITH THREADED STUDS SUITABLE FOR FLANGED CONNECTION.
10. ENCLOSE PLATES IN A SOLID ALUMINUM OR STAINLESS-STEEL REMOVABLE SHROUD.
11. INSTALLATION:
    - A. EXAMINE AREAS FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND FOR STRUCTURAL RIGIDITY, STRENGTH, ANCHORS, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF HEAT EXCHANGERS. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
    - B. INSTALL HEAT EXCHANGERS ON CONCRETE BASE.
    - C. CONCRETE BASES: ANCHOR HEAT EXCHANGER TO CONCRETE BASE.
      1. INSTALL DOWEL RODS TO CONNECT CONCRETE BASE TO CONCRETE FLOOR. UNLESS OTHERWISE INDICATED, INSTALL DOWEL RODS ON 18-INCH (450-MM) CENTERS AROUND FULL PERIMETER OF BASE.
      2. FOR SUPPORTED EQUIPMENT, INSTALL EPOXY-COATED ANCHOR BOLTS THAT EXTEND THROUGH CONCRETE BASE AND ANCHOR INTO STRUCTURAL CONCRETE FLOOR.
      3. PLACE AND SECURE ANCHORAGE DEVICES. USE SETTING DRAWINGS, TEMPLATES, DIAGRAMS, INSTRUCTIONS, AND DIRECTIONS FURNISHED WITH ITEMS TO BE EMBEDDED.
      4. INSTALL ANCHOR BOLTS TO ELEVATIONS REQUIRED FOR PROPER ATTACHMENT TO SUPPORTED EQUIPMENT.
    - D. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES FOR SERVICE AND MAINTENANCE. INSTALL PIPING CONNECTIONS TO ALLOW SERVICE AND MAINTENANCE OF HEAT EXCHANGERS.
    - E. INSTALL SHUTOFF VALVES AT HEAT-EXCHANGER INLET AND OUTLET CONNECTIONS.
    - F. INSTALL RELIEF VALVES ON HEAT-EXCHANGER HEATED-FLUID CONNECTION AND INSTALL PIPE RELIEF VALVES, FULL SIZE OF VALVE CONNECTION, TO FLOOR DRAIN.

PIPE HANGERS AND SUPPORTS:

1. INSTALL HANGERS, SUPPORTS, CLAMPS, AND ATTACHMENTS AS REQUIRED TO PROPERLY SUPPORT THE PIPING FROM THE BUILDING STRUCTURE TO WITHSTAND THE EFFECTS OF GRAVITY, FLUID FORCES, AND THERMAL EXPANSION
2. ALL HANGER RODS, HANGERS, AND SUPPORTS SHALL BE GALVANIZED
3. HANGERS IN CONTACT WITH COPPER SHALL BE COPPER PLATED.
4. AT A MINIMUM PROVIDE HANGERS AT EACH VALVE, STRAINER, AND CHANGE IN PIPING DIRECTION
5. COMPLY WITH MSS SP-58 FOR PIPE HANGERS
6. SPACING OF HANGERS SHALL NOT EXCEED THE FOLLOWING:

   A. STEEL PIPE:

a.	1 1/4" AND UNDER:	7'-0"
b.	1 1/2":	9'-0"
c.	2":	10'-0"
d.	2 1/2":	11'-0"
e.	3":	12'-0"
f.	4" AND LARGER:	12'-0"

   B. COPPER PIPE:

a.	3/4" AND SMALLER	5'-0"
b.	1":	6'-0"
c.	1 1/4":	7'-0"
d.	1 1/2":	8'-0"
e.	2":	8'-0"
f.	2 1/2":	9'-0"
g.	3":	10'-0"
h.	4" AND LARGER:	12'-0"

7. THE MINIMUM DIAMETER OF HANGER RODS SHALL BE AS FOLLOWS:

A.	3" PIPING AND SMALLER:	3/8"
B.	4" AND 5":	1/2"

8. THE FIRST 3 HANGERS DOWNSTREAM/UPSTREAM OF PUMPS SHALL BE:
   - A. DOUBLE DEFLECTION NEOPRENE HANGERS WITH A PROJECTED BUSHING
   - B. 0.15" STATIC DEFLECTION AT CALCULATED LOAD AND 0.35" AT MAXIMUM RATED LOAD
9. ALLOWABLE MANUFACTURERS INCLUDE: MASON "HD", KINETICS "RH", AEROFLEX "RHD", VIBRATION ELIMINATOR CO. "IC/3C/3CTD", VIBRIO ACOUSTICS "RH"

PIPE LABELING:

1. PROVIDE ADHESIVE BACKED PIPE MARKERS ON ALL PIPING IN THE PRIMARY AREA OF WORK.
2. LETTERING SHALL BE AT LEAST 1-1/2" HIGH.
3. PROVIDE FLOW DIRECTION ARROWS WRAPPING AROUND THE ENTIRE CIRCUMFERENCE OF THE PIPE ON BOTH THE UPSTREAM AND DOWNSTREAM ENDS OF THE PIPE LABEL.
4. HEATING WATER AND CHILLED WATER SHALL USE WHITE LETTERING ON GREEN BACKGROUND.
5. PROVIDE LABELS AT LEAST ONCE EVERY 20 FEET OR AT LEAST ONE IN EACH ROOM AT A MINIMUM.

EXHAUST FAN:

1. CONFORM TO AMCA STANDARD 211 AND 311. INSTALL PER MANUFACTURERS INSTRUCTIONS.
2. PROVIDE MINIMUM 2-YEAR MANUFACTURER WARRANTY ON FAN AND MOTOR.
3. HOUSING SHALL BE HEAVY GAUGE, LEAK-PROOF, ALUMINUM.
4. PROVIDE SPRING ISOLATED BASE RATED FOR OUTDOOR ENVIRONMENT. STRUCTUAL MEMBERS SHALL BE GALVANIZED. MINIMUM DEFLECTION OF SPRINGS SHALL BE 3/4".

MOTOR OPERATED DAMPER:

1. DAMPER TO BE AMCA-RATED, PARALLEL OR OPPOSED BLADE, MINIMUM 0.125" THICK EXTRUDED ALUMINUM FRAME. EDGE SEALS TO BE CLOSED-CELL NEOPRENE.
2. ACTUATOR: 24V, FAIL CLOSED.

VALVE TAGS:

1. PROVIDE BRASS TAGS HUNG FROM VALVES WITH MINIMUM 1" HIGH ENGRAVED LETTERING FOR ALL NEW VALVES.
2. PROVIDE VALVE DIRECTORY IN CLOSEOUT DOCUMENTS.

CEILING INDICATORS:

1. PROVIDE COLORED MARKERS ON THE CEILING GRID INDICATING VALVE AND VAV BOX LOCATION ABOVE THE CEILING.

AIR TERMINAL UNITS:

1. VARIABLE VOLUME AIR TERMINAL UNITS TO BE PRESSURE INDEPENDENT, SINGLE DUCT, DDC CONTROL TYPE WITH HOT WATER REHEAT COIL PRE-ASSEMBLED UNIT WITH FACTORY INSTALLED PIPING AND CONTROLS AND SHALL BE PRE-COMMISSIONED.
2. AIR TERMINAL UNIT AIRFLOW AND SOUND PERFORMANCE RATINGS TO BE CERTIFIED IN ACCORDANCE WITH AHRI STANDARD 880. SPECIFY UNTIS FOR MAXIMUM 26 NC LEVEL AT 3" S.P. PROVIDE CRITERIA FOR SOUND POWER LEVELS AND NC LEVELS TO ENSURE MANUFACTURERS' RATINGS ARE COMPARABLE.
3. A DISCHARGE AIR TEMPERATURE SENSOR SHALL BE PROVIDED ON EACH TERMINAL UNIT.
4. ACCEPTABLE MANUFACTURERS:
   - A. JCI VAV READY UNTIS (VRU) WHERE JCI ALREADY EXISTS OR IN NEW FACILITIES. REFER TO INNOVATION MEMORANDUM NO. 9.
5. AIR TERMINAL UNITS SHALL BE PRESSURE INDEPENDENT TYPE.
6. ON TERMINAL UNTIS WITH A 6" OR GREATER INLET, MULTI-POINT FLOW SENSING DEVICES, FLOW RINGS OR FLOW CROSSES, BY UNIT MANUFACTURER SHALL BE USED IN CONJUNCTION WITH DDC CONTROLLER.
7. PROVIDE TERMINAL UNITS WITH MINIMUM 22-GAUGE WELDED GALVANIZED STEEL HOUSING, SLIP AND DRIVE DUCT CONNECTION, 1/2 INCH THICK INTERNAL FIBER FREE CLOSED CELL INSULATION.
8. AN 8" DIAMETER OR 7 3/4" BY 7 3/4" GASKETED HINGED ACCESS DOOR SHALL BE PROVIDED ON THE TERMINAL UNIT. DOOR FRAME MAY BE BOLTED, SEALED, OR FLANGED TO THE CASING. THE DOOR SHALL BE DOUBLE WALL CONSTRUCTION, GASKETED, AND INSULATED. THE DOOR SHALL BE HELD IN PLACE WITH A CAM LOCK LATCH ALLOWING QUICK ACCESS WITHOUT THE USE OF TOOLS.

TEMPERATURE CONTROLS:

1. EXISTING TEMPERATURE CONTROLS SYSTEM BY JOHNSON CONTROLS INC TO REMAIN. NEW EQUIPMENT TO TIE INTO EXISTING BAS.
2. COORDINATE ALL CONTROL WIRING AND POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR. CONTROL CONTRACTOR SHALL TERMINATE ALL POWER AND CONTROL WIRING TO CONTROL DEVICES.

TESTING AND BALANCING OF AIR SYSTEMS:

1. TESTING AND BALANCING OF AIR SYSTEMS SHALL BE PERFORMED BY AN INDEPENDENT SUB-CONTRACTOR DIRECT TO THE GENERAL CONTRACTOR SPECIALIZING IN SUCH WORK AND IS A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL.
2. BALANCE AND TESTING SHALL NOT BEGIN UNTIL EACH SYSTEM HAS BEEN COMPLETED AND IS IN FULL WORKING ORDER. CONTRACTORS SHALL PUT ALL THEIR EQUIPMENT INTO FULL OPERATION AND SHALL CONTINUE THE OPERATION OF SAME DURING EACH WORKING DAY OF TESTING AND BALANCING.
3. TESTING AND BALANCING SHALL BE PERFORMED IN COMPLETE ACCORDANCE WITH THE SMACNA MANUAL OR THE AABC NATIONAL STANDARDS FOR FIELD MEASUREMENT AND INSTRUMENTATION AND THE LEGACY SPECIFICATIONS, SECTION.
4. UPON COMPLETION OF THE WORK, THE BALANCE CONTRACTOR SHALL COMPILE ALL TEST DATA AND SUBMIT 8 TYPEWRITTEN COPIES OF THE COMPLETE TEST DATA TO THE ARCHITECT FOR EVALUATION AND APPROVAL. ALL REPORTS SHALL BE MADE ON FORMS AS RECOMMENDED BY EITHER AGENCY.
5. PERFORM A PRE-BALANCE OF ALL AIR TERMINALS AND VAVS AS FOLLOWS:
   - A. AIR TERMINALS (GRILLES):
     - a. ROOM NAME & NUMBER
     - b. GRILLE # (EACH ROOM)
     - c. DESIGN CFM (FROM EXISTING DRAWINGS - AS INDICATED)
     - d. ACTUAL AIRFLOW (CFM)
   - B. VARIABLE AIR VOLUME UNITS (VAVS):
     - a. TAG
     - b. LOCATION
     - c. INLET SIZE
     - d. ACTUAL AIRFLOW (CFM)
6. THE BALANCE CONTRACTOR SHALL PERFORM THE FOLLOWING TESTS, AND BALANCE EACH SYSTEM IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
   - A. ADJUST ALL SUPPLY, RETURN AND EXHAUST AIR DUCTS TO PROPER DESIGN AIR FLOWS.
   - B. ADJUST AND RECORD ALL ZONES TO PROPER DESIGN AIR FLOWS, BY MEANS OF DUCT TRAVERSE METHOD.
   - C. TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO WITHIN PLUS OR MINUS 10% OF DESIGN REQUIREMENTS. EACH GRILLE, DIFFUSER AND REGISTER SHALL BE IDENTIFIED AS TO LOCATION, SIZE, TYPE, MANUFACTURER OF AND ALL TESTED EQUIPMENT SHALL BE IDENTIFIED AND LISTED. MANUFACTURER'S RATINGS ON ALL EQUIPMENT SHALL BE USED TO MAKE REQUIRED CALCULATIONS AND FINAL DATE BALANCED.
   - D. READINGS AND TEST OF DIFFUSERS, GRILLES AND REGISTERS SHALL INCLUDE REQUIRED FPM VELOCITY, TEST RESULTANT VELOCITY, REQUIRED CFM, TEST RESULTANT CFM AFTER ADJUSTMENTS AND FINAL DATE BALANCED.
   - E. IN COOPERATION WITH THE EQUIPMENT OR CONTROL MANUFACTURER'S REPRESENTATIVE, ADJUST AUTOMATICALLY OPERATED DAMPERS TO OPERATE AS SPECIFIED, INDICATED AND/OR NOTED.
   - F. ADJUST ALL DIFFUSERS, GRILLES AND REGISTERS TO PROVIDED PROPER AIR DISTRIBUTION AND TO MINIMIZE DRAFTS IN ALL AREAS.
   - G. ADJUSTMENT OF ALL DAMPERS, FANS OR BLOWER SPEED, BELT TENSION, ETC., SHALL BE BY THIS CONTRACTOR. PROVIDE NEW SHEAVES OR BELTS IF REQUIRED FOR BALANCING.
6. AFTER CONSTRUCTION, PERFORM A BALANCE OF ALL SYSTEMS INCLUDING THE FOLLOWING:
   - A. AIR TERMINALS (GRILLES):
     - a. ROOM NAME & NUMBER
     - b. GRILLE # (EACH ROOM)
     - c. DESIGN CFM
     - d. ACTUAL AIRFLOW (CFM)
   - B. EXHAUST FAN (EF-1):
     - a. TAG NAME
     - b. SERVICE
     - c. MANUFACTURER AND MODEL
     - d. EXHAUST AIRFLOW (CFM)
     - e. TOTAL STATIC PRESSURE (IN W.C.)
     - f. MOTOR HORSEPOWER (HP)
     - g. MOTOR AMPS
   - C. WATER TO WATER HEAT EXCHANGER (HX-1):
     - a. IDENTIFICATION (INCLUDE HOSPITAL PROVIDED TAG NUMBER)
     - b. MAKE AND MODEL
     - c. CHILLED WATER ENTERING AND LEAVING PRESSURES
     - d. CHILLED WATER PRESSURE DIFFERENTIAL
     - e. CHILLED WATER ENTERING ANG LEAVING TEMPERATURES
     - f. 40% GLYCOL WATER ENTERING AND LEAVING TEMPERATURES
     - g. 40% GLYCOL WATER FLOWRATE
     - h. 40% GLYCOL WATER ENTERING AND LEAVING PRESSURES
     - i. 40% GLYCOL WATER PRESSURE DIFFERENTIAL
   - D. PUMP (P-1):
     - a. IDENTIFICATION (INCLUDE HOSPITAL PROVIDED TAG NUMBER)
     - b. LOCATION AND SERVICE
     - c. MAKE AND SIZE
     - d. MODEL AND SERIAL NUMBER
     - e. WATER FLOWRATE
     - f. SUCTION AND DISCHARGE PRESSURES AT FINAL BALANCED CONDITIONS
     - g. PRESSURE DIFFERENTIAL AT FINAL BALANCED CONDITIONS
     - h. PUMP SPEED
     - i. MOTOR MAKE, FRAME SIZE, HORSEPOWER, AND RPM
     - j. VOLTAGE AT EACH CONNECTION
     - k. FULL LOAD AMPERAGE
     - l. FINAL VFD FREQUENCY
   - E. WATER COOLED CHILLER (CH-2):
     - a. IDENTIFICATION (INCLUDE HOSPITAL PROVIDED TAG NUMBER)
     - b. MANUFACTURER AND MODEL
     - c. REFRIGERANT TYPE
     - d. STARTER TYPE
     - e. SPECIFIED CAPACITY
     - f. ACTUAL CAPACITY
     - g. CHILLED WATER ENTERING AND LEAVING PRESSURES
     - h. CHILLED WATER PRESSURE DIFFERENTIAL
     - i. CHILLED WATER ENTERING AND LEAVING TEMPERATURES
     - j. CHILLED WATER FLOWRATE
     - k. CONDENSER WATER ENTERING AND LEAVING PRESSURES
     - l. CONDENSER WATER PRESSURE DIFFERENTIAL
     - m. CONDENSER WATER ENTERING AND LEAVING TEMPERATURES
     - n. CONDNESER WATER FLOWRATE
     - o. VOLTAGE AT EACH CONNECTION
     - p. COMPRESSOR HORSEPOWER
     - q. COMPRESSOR OPERATING AMPERAGE
7. AFTER THE AIR BALANCING WORK HAS BEEN COMPLETED, IT MAY BE NECESSARY TO PROVIDE COMFORT REBALANCE. THIS CONTRACTOR SHALL PROVIDE ALL BALANCE WORK FOR READJUSTMENTS.

This sheet of drawings has not been reviewed for code compliance.

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COLORADO LICENSED MICHAEL P THOMPSON 53150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

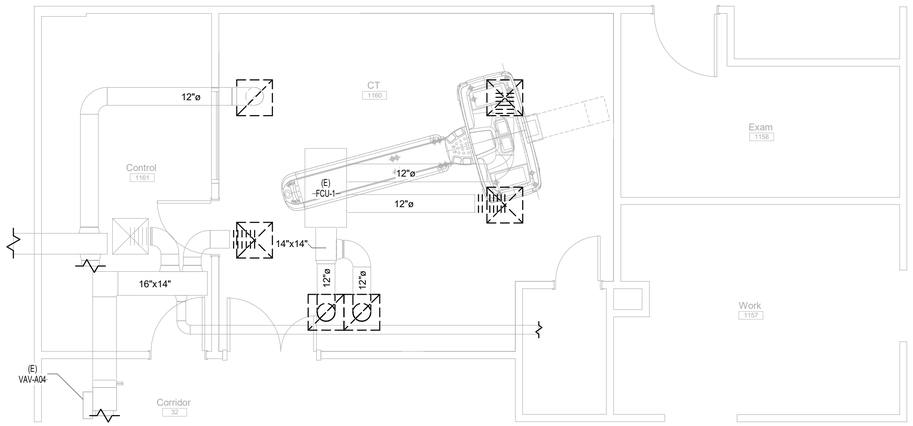
1501 S Potomac St.
Aurora, CO 80012

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Drawn by	EV
Checked by	DF

Sheet Title
MECHANICAL SPECIFICATIONS

Sheet Number
M101

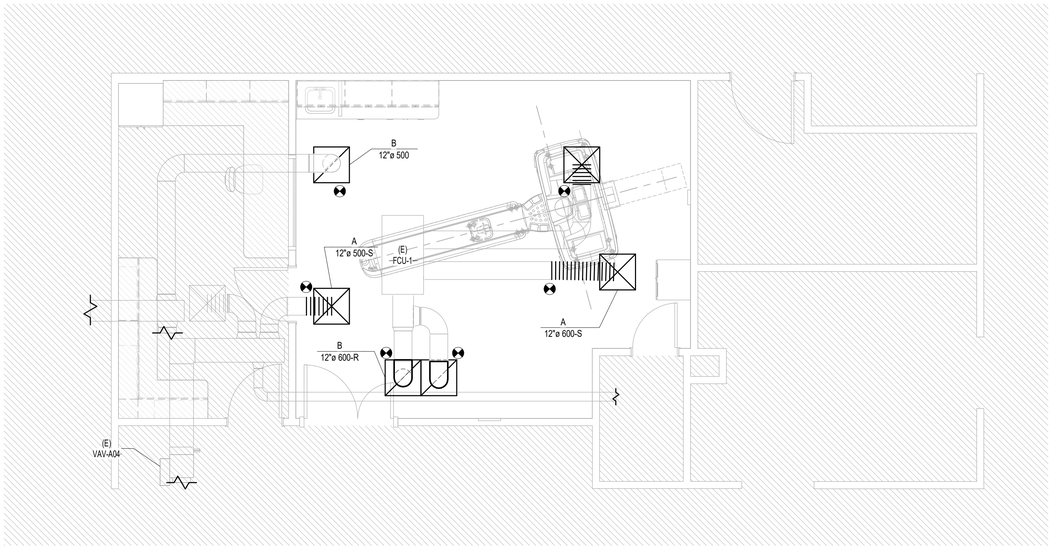
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1 LEVEL 1 - ED CT ENLARGED MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"

DEMOLITION PLAN NOT REVIEWED FOR CODE COMPLIANCE

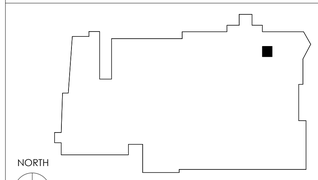


2 LEVEL 1 - ED CT ENLARGED MECHANICAL PLAN

1/4" = 1'-0"

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Y. Munoz*
Date: *Oct 11, 2024*
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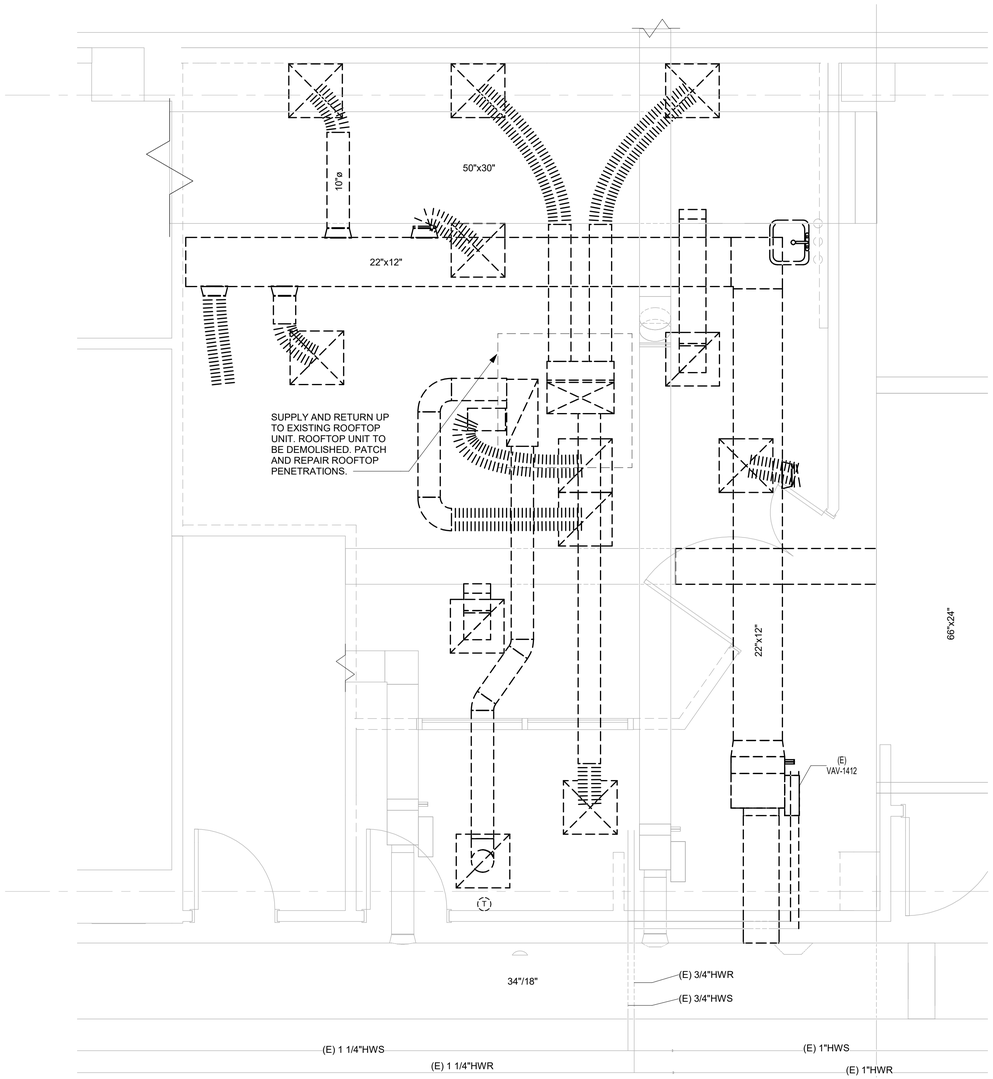
ED CT DEMO AND FLOOR PLAN

Sheet Number

M201A

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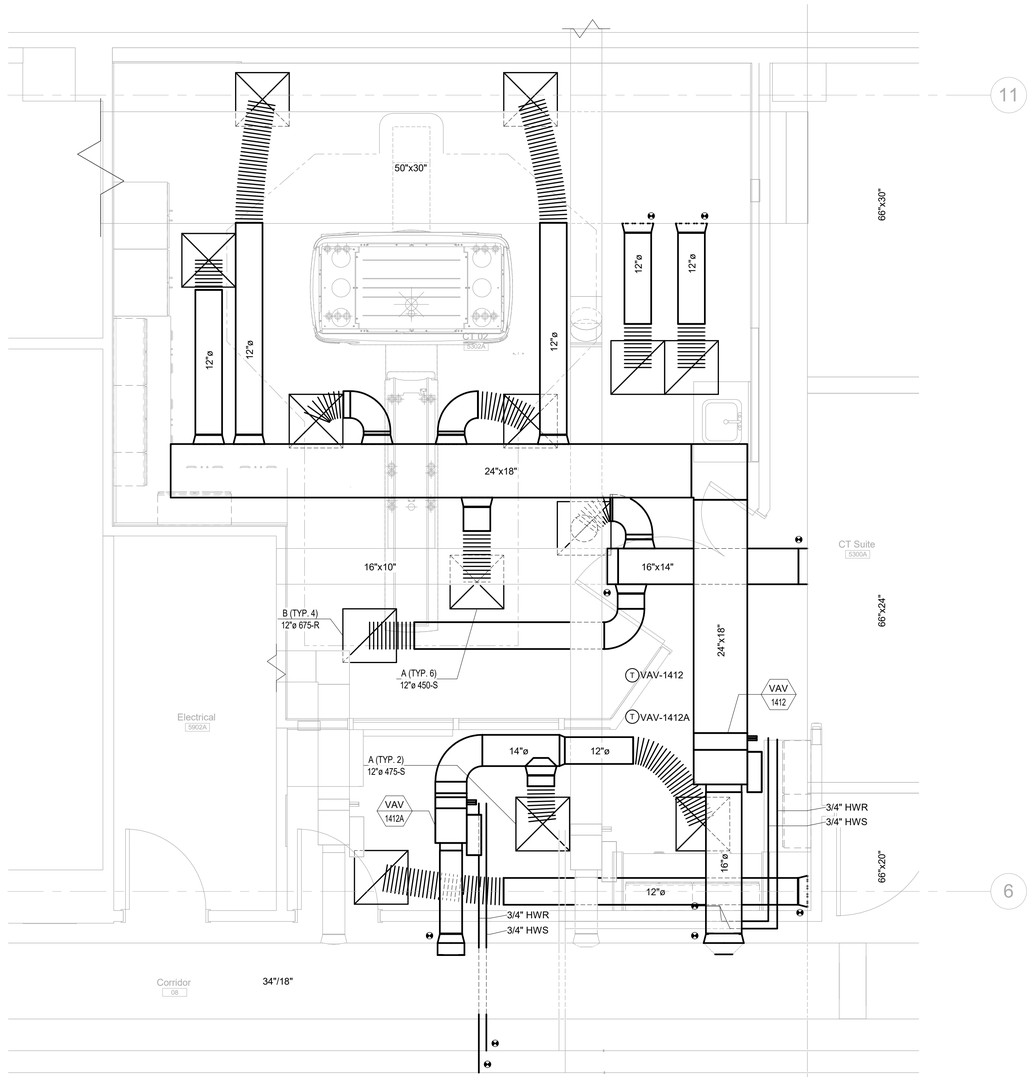
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1 LEVEL 1 - IMAGING CT ENLARGED MECHANICAL DEMOLITION PLAN

3/8" = 1'-0"

DEMOLITION PLAN NOT REVIEWED FOR CODE COMPLIANCE



2 LEVEL 1 - IMAGING CT ENLARGED MECHANICAL PLAN

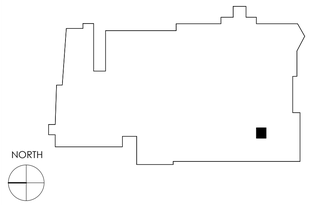
3/8" = 1'-0"

Plastic fire sprinkler piping exposed within a plenum shall be used only in wet pipe systems and shall have a peak optical density not greater than 0.50; average optical density not greater than 0.15; and a flame spread of not greater than 5 feet in accordance with UL 1887. Piping shall be listed and labeled.
2021 IMC 602.2.1.2

Provide proof of a flame spread index not more than 25 and a smoke-developed index not more than 50 for any material used in a plenum.
2021 IMC 602.2.1

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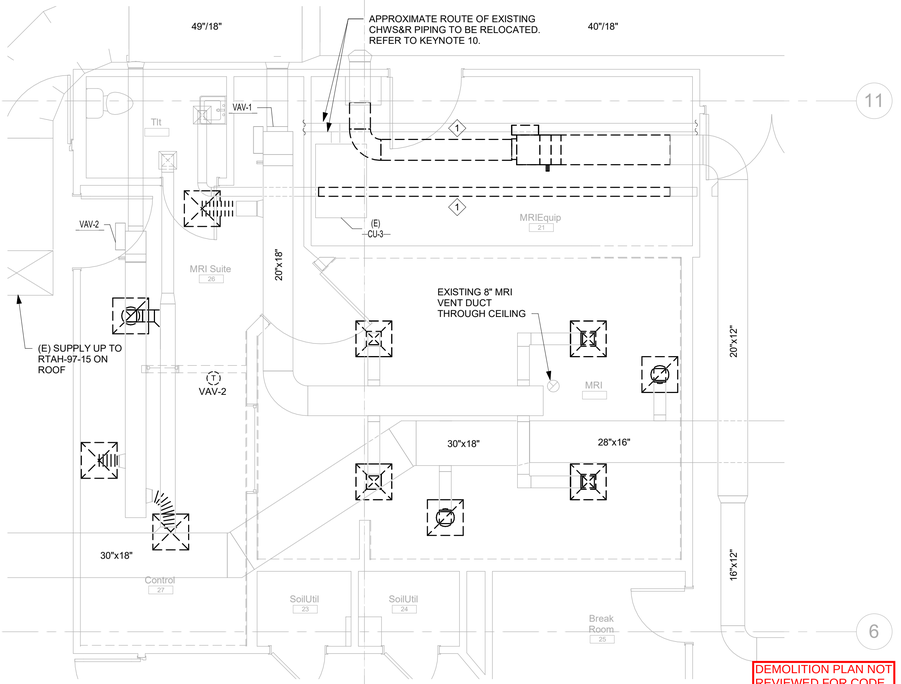
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IMAGING CT DEMO AND FLOOR PLAN

Sheet Number
M201B

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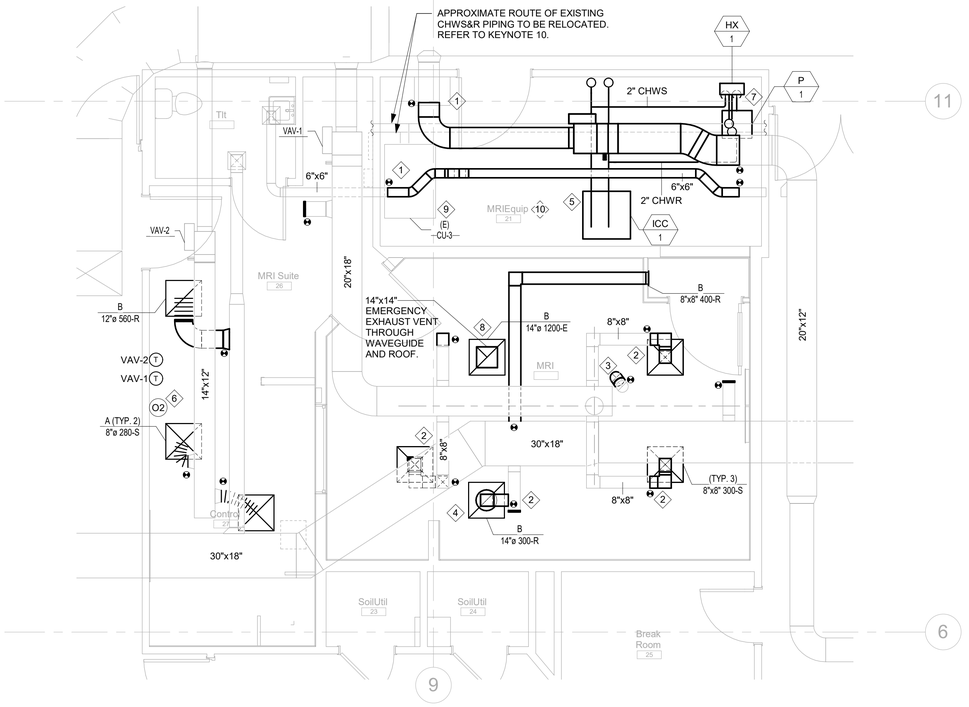
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DEMOLITION PLAN NOT REVIEWED FOR CODE COMPLIANCE

1 LEVEL 1 - MRI ENLARGED MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"



2 LEVEL 1 - MRI ENLARGED MECHANICAL PLAN

1/4" = 1'-0"

GENERAL NOTES:

MRI ROOM DUCT SIZES ARE APPROXIMATE. EXISTING DUCT SIZES TO BE CONFIRMED PRIOR TO INSTALL.

ALL MRI ROOM DUCTWORK AND DIFFUSERS TO BE ALUMINUM. ONLY NONFERROUS MATERIALS SHALL BE USED WITHIN THE MRI SHIELD.

CAP OPEN DUCT ENDS AS SHOWN.

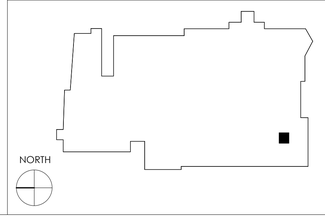
THERMOSTATS TO BE REPLACED AND INSTALLED AS SHOWN. LABEL NEW THERMOSTATS. THE THERMOSTAT FOR THE MRI SCAN ROOM SHALL BE ADJUSTMENT ONLY. PROVIDE NEW DUCT-MOUNTED RETURN DUCT SENSOR.

KEYED NOTES:

1. RE-ROUTE EXISTING DUCTWORK AROUND NEW MRI CABLE TRAY. M.C. TO DISCONNECT EXISTING PIPING VAV CONNECTIONS AND RECONNECT AS REQUIRED. MAINTAIN VAV ACCESS CLEARANCE.
2. EXISTING DUCTWORK IS ROUTED THROUGH SHIELDING AND DROPS DIRECTLY DOWN THROUGH THE SHIELD TO GRDS AS SHOWN. WHERE SHOWN AS DEMOLISHED, DUCTWORK TO BE DISCONNECTED AT WAVEGUIDE. PROVIDE DUCT DOWN TO NEW DIFFUSER. OFFSET AS REQUIRED.
3. CONNECT EXISTING 8" MRI QUENCH VENT TO EXISTING 8" QUENCH VENT THROUGH THE SHIELD. OFFSET AS REQUIRED. WELDED STAINLESS STEEL.
4. INSTALL MOTORIZED DAMPER IN 8" DUCTWORK BETWEEN EXHAUST GRILLE AND RF SHIELD.
5. 2" HYDRONIC PIPING DOWN FROM ROOF ABOVE. CONNECT TO NEW ICC PER GE SPECIFICATIONS. REFER TO M002/2 FOR DETAIL.
6. ALTERNATE NO. 3: INSTALL OXYGEN MONITOR IN LOCATION SHOWN.
7. HX-1 AND P-1 TO BE INSTALLED ON 4" HOUSEKEEPING PAD IN LOCATIONS SHOWN. REFER TO M002/2 FOR PIPING CONNECTION DETAIL. CONNECT TO RELOCATED CHWS AND CHWR PIPING.
8. PER GE PROVIDED DETAIL, INSTALL ADDITIONAL 12"X8" EXHAUST INTAKE VENT ON SIDE OF 14"X14" DUCT BETWEEN ROOM CEILING AND RF SHIELD. REFER TO DETAIL M001/3.
9. PER ARCHITECTURAL DRAWINGS, FLOOR WILL BE REMOVED AROUND THE EXISTING CRAC UNIT. CONTRACTOR TO PROVIDE NEW UNISTRUT SUPPORT TO MAINTAIN THE UNIT 12" OFF THE FLOOR. PROVIDE 1" MESH SCREEN AROUND THE BASE OF THE UNISTRUT.
10. REMOVE ALL EXISTING CHILLED WATER, DOMESTIC WATER, AND SANITARY PIPING UNDERFLOOR IN THE MRI EQUIPMENT ROOM. ALL EXISTING UNDERFLOOR PIPE RUNS TO EXISTING MRI EQUIPMENT TO BE DEMOLISHED. EXISTING LIEBERT UNIT PIPING TO BE RE-ROUTED IN EQUIPMENT ROOM BELOW CEILING. RELOCATED PIPING SHALL BE RECONNECTED TO CU-3 AND CONNECTED TO NEW CHWS AND CHWR PIPING PER KEYNOTE 7. NEW PIPING TO BE ROUTED TO NOT RUN ABOVE ELECTRICAL EQUIPMENT.

City of Aurora Building Division
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2023.09.05

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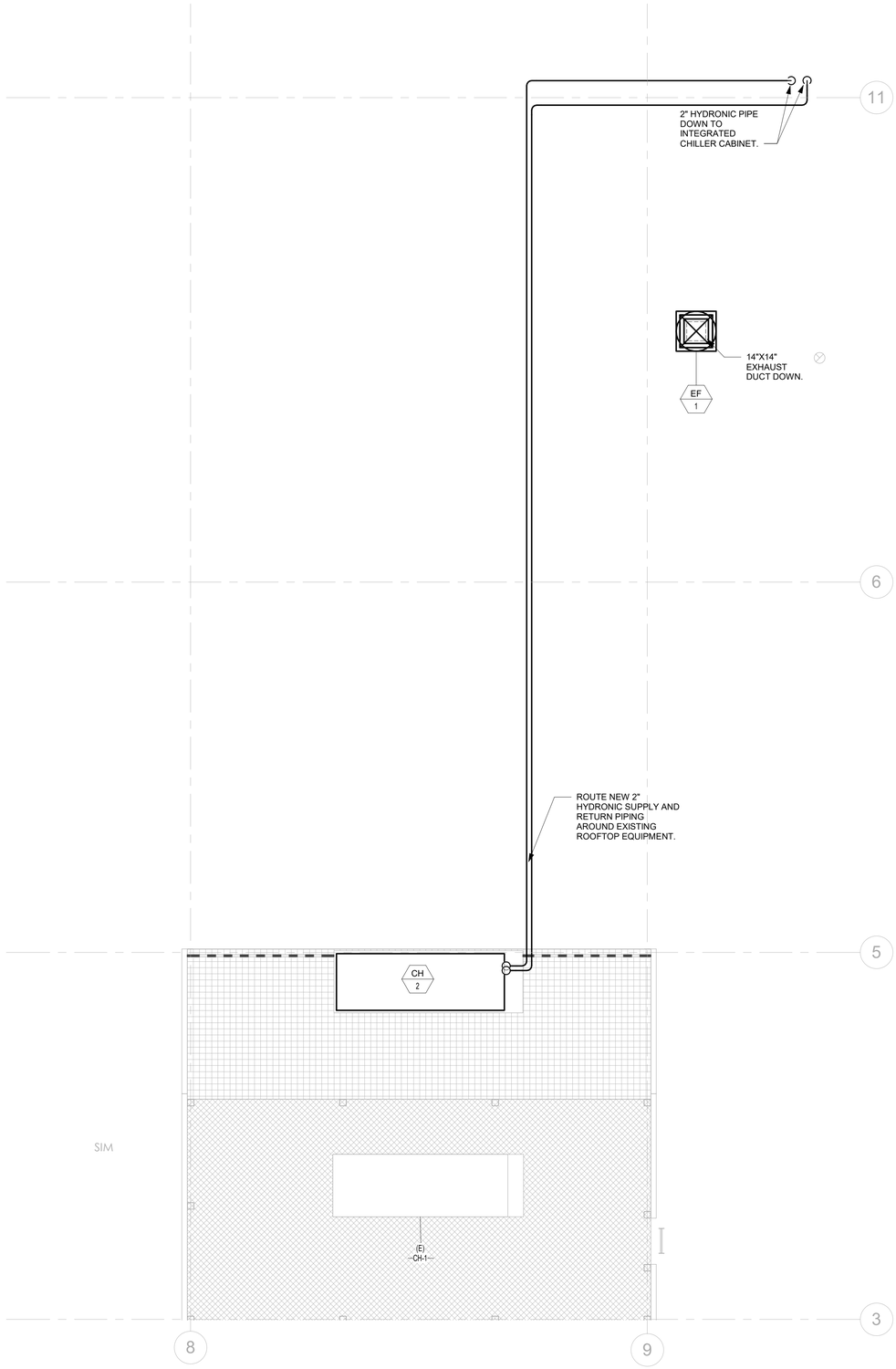
MRI DEMO AND FLOOR PLAN

Sheet Number

M201C

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1 ROOFTOP - NEW MECHANICAL PLAN

1/4" = 1'-0"

GENERAL NOTES:

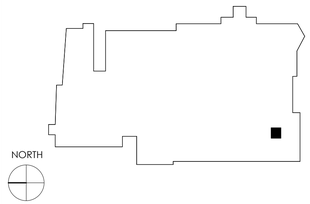
DEMOLISH EXISTING MRI CHILLER AND CURB. CURB TO BE RELOCATED. REFER TO ARCH.

NEW DIMPLEX CHILLER CH-2 PROVIDED BY OTHERS. RECIEVED, STORED, AND INSTALLED BY BIDDING CONTRACTOR.

NEW CHILLER LOOP SHALL BE CHARGED WITH 40% PROPYLENE GLYCOL MIXTURE. CONTRACTOR RESPONSIBLE FOR PROVIDING GLYCOL AND CHARGING NEW LOOP ACCORDINGLY.

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ROOFTOP DEMO AND FLOOR PLAN

Sheet Number
M202

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GENERAL CONTROLS NOTES:

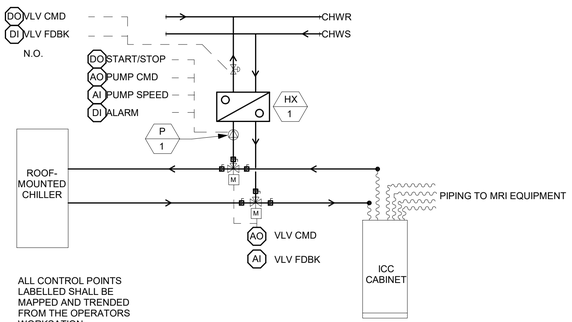
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE, OPERATIONAL CONTROLS SYSTEM TO MEET THE CONTROL INTENT DESCRIBED BELOW. NEW CONTROLS SHALL INTEGRATE INTO THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) BY JOHNSON CONTROLS INC.

MRI AND MRI CHILLER AND HTX/PUMP SEQUENCE OF OPERATIONS:

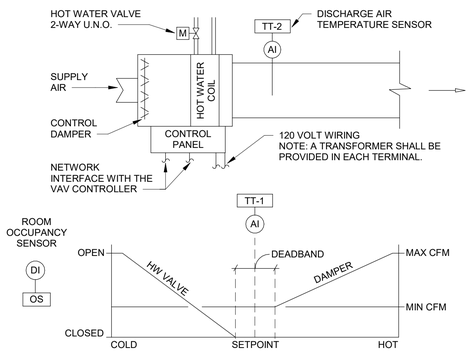
A. CHILLER
   1. CHILLER UNIT SHALL BE PROVIDED WITH PACKAGED CONTROLS.
   2. PROVIDE AND INSTALL A BACNET INTERFACE WITH EXISTING BUILDING AUTOMATION SYSTEM BY JCI.

B. MRI CHILLED WATER BYPASS SYSTEM
   1. UPON DETECTION FROM CHILLER ALARMS AND SHUTDOWN OF CHILLER THE FOLLOWING SHALL OCCUR:
      a. CHILLED WATER 2-WAY AUTO VALVE SHALL MODULATE OPEN AND MODULATE TO MAINTAIN A GLYCOL SUPPLY TEMPERATURE OF 53F (ADJ.).
      b. MRI CHILLED WATER 3-WAY BYPASS VALVES SHALL MODULATE OPEN TO BYPASS FLOW FROM OUTDOOR CHILLER TO HEAT EXCHANGER.
      c. PUMP P-1 SHALL OPERATE.
      d. THE SYSTEM SHALL REQUIRE A MANUAL RESET AT THE BAS TO RETURN TO GLYCOL CHILLER OPERATION.

C. EMERGENCY FAN EF-1
   1. EMERGENCY EXHAUST FAN SHALL BE ENERGIZED UPON MANUAL SWITCH, MRI SYSTEM ALARMS, OR OXYGEN MONITORING ALARM. MOTORIZED DAMPER SHALL CLOSE.



1 MRI COOLING CONTROL DIAGRAM
NOT TO SCALE



2 VAV CONTROLS
NOT TO SCALE

VARIABLE VOLUME BOX WITH HOT WATER REHEAT COIL

COOLING AND HEATING
UPON A RISE IN SPACE TEMPERATURE TRANSMITTERS (TT-1) SETPOINT, TT-1 SHALL, THROUGH THE DDC, SET A HIGHER CFM FOR THE MODULATING DAMPER TO MAINTAIN. ON A FALL IN SPACE TEMPERATURE TT-1 SHALL, THROUGH THE DDC, SET A LOWER CFM FOR THE MODULATING DAMPER TO MAINTAIN AND UNDER NO CIRCUMSTANCES (EXCEPT SMOKE CONTROL IF APPLICABLE) SHALL THE CFM SETTING BE BELOW THAT OF THE MINIMUM CFM AS INDICATED ON THE DRAWINGS. ON A FURTHER DECREASE OF SPACE TEMPERATURE THE HOT WATER VALVE WILL MODULATE OPEN.

ON FURTHER DECREASE OF SPACE TEMPERATURE THE REHEAT VALVE WILL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT. THE DISCHARGE AIR SETPOINT WILL BE RESET AS THE ZONE TEMPERATURE (TT-1) CHANGES. TEMPERATURE SETPOINT SHALL BE ADJUSTABLE THROUGH THE DDC CONTROL SYSTEM AND SHALL HAVE USER ADJUSTABLE OFFSETS. THE DEADBAND SHALL BE ADJUSTABLE THROUGH THE DDC CONTROL SYSTEM.

GAIN OF VAV DAMPER CONTROL SHALL NOT EXCEED 20%

THE DEADBAND SHALL NOT EXCEED +/-0.5 DEG. F.

THE FOLLOWING POINTS SHALL BE MAPPED AND TRENDED FROM THE OPERATORS WORKSTATION. A VAV BOX SUMMARY SHALL BE PROGRAMMED TO ALLOW THE OPERATOR TO VIEW THE FOLLOWING POINTS IN TABULAR FORM:
- SPACE TEMPERATURE SETPOINT
- CURRENT SPACE TEMPERATURE
- CFM SETTING
- CURRENT CFM
- DAMPER POSITION
- VALVE POSITION
- VAV DISCHARGE AIR TEMP
- ROOM OCCUPANCY STATE

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Sheet Title
MECHANICAL CONTROLS

Sheet Number
M300

PLUMBING NOTES

PART 1 - BASIC REQUIREMENT

1.01 RELATED REQUIREMENTS

A. THIS SPECIFICATION SHALL CONTROL ALL LABOR, SERVICES, MATERIALS AND EQUIPMENT AND PERFORMANCE OF ALL WORK REQUIRED FOR THE INSTALLATION OF ALL PLUMBING AND MEDICAL GAS WORK AS SPECIFIED IN THE FOLLOWING.

B. DEFINITIONS:

1. "PIPING" INCLUDES, IN ADDITION TO PIPE, ALL FITTINGS, VALVES, PIPE COVERING, HANGERS, AND OTHER SUPPORTS AND ACCESSORIES RELATED TO SUCH PIPING.
2. CONCEALED MEANS HIDDEN FROM SIGHT IN CHASES, FURRED SPACES, SHAFTS, HUNG CEILINGS, EMBEDDED IN CONSTRUCTION, IN CRAWL SPACES OR BURIED.
3. "EXPOSED" MEANS NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
4. "PROVIDE" MEANS TO FURNISH AND INSTALL COMPLETE.

1.02 GENERAL REQUIREMENTS

A. MEDICAL GAS WORK TO COMPLY WITH 2012 EDITION OF NFPA #99 STANDARDS.

B. CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO VERIFY SCOPE OF WORK.

C. PRODUCTS AND EXECUTION SHALL BE PROVIDED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM THROUGHOUT THE EXTENT OF THE PROJECT.

D. ALL PRODUCTS AND EQUIPMENT SHALL BE UL LISTED AND APPROVED BY THE FACILITY.

E. ALL NEW DEVICES AND TRIM SHALL COMPLY WITH RECOGNIZED NFPA STANDARDS.

F. EACH MAJOR COMPONENT OR PIECE OF EQUIPMENT TO HAVE THE MANUFACTURER'S NAME, ADDRESS, MODEL NUMBER AND RATING ON A PLATE SECURELY AFFIXED IN A CONSPICUOUS PLACE.

G. CODE RATINGS, LABELS OR OTHER DATA WHICH ARE DIE-STAMPED OR OTHERWISE AFFIXED TO THE SURFACE OF THE EQUIPMENT SHALL BE IN VISIBLE LOCATION.

H. CONTRACTOR SHALL COORDINATE PROPOSED WORK WITH EXISTING FIELD CONDITIONS INCLUDING ARCHITECTURAL BUILDING ELEMENTS, STRUCTURAL CONDITIONS, AND EXISTING MECHANICAL AND ELECTRICAL CONDITIONS.

I. CONTRACTOR SHALL ADHERE TO ALL BASE BUILDING AND CURRENT FACILITY STANDARDS AND REQUIREMENTS. SHUT-DOWN OF EXISTING BUILDING SYSTEMS FOR NEW PLUMBING CONNECTIONS SHALL BE AUTHORIZED, SCHEDULED AND PERFORMED IN ACCORDANCE TO BUILDING MANAGEMENT REQUIREMENTS. BUILDING SHALL BE NOTIFIED NO LESS THAN 72 HOURS PRIOR TO ANY SHUT-DOWNS. ACCESS TO AREAS OUTSIDE WORKS SPACES, SUCH AS ADJOINING SPACES AND SPACES IMMEDIATELY BELOW, SHALL BE PERFORMED IN ACCORDANCE TO BUILDING MANAGEMENT REQUIREMENTS.

1.03 WORK INCLUDED

A. INCLUDE ALL COSTS RELATED TO PROVIDE ALL PERMITS, LICENSES, INSPECTIONS, APPROVALS AND OTHER ARRANGEMENTS FOR WORK.

B. PROVIDE DEMOLITION OF EXISTING SYSTEMS INCLUDING REMOVAL OF ALL DEBRIS. COORDINATE WITH BUILDING MANAGEMENT EXISTING EQUIPMENT, FIXTURES OR DEVICES THAT SHALL BE RETAINED, CAREFULLY REMOVE AND TURN OVER TO OWNER. REMOVE ALL PIPING BACK TO ACTIVE SOURCE AND CAP LEAVING NO DEAD ENDS.

C. PRIOR TO DEMOLITION OF EQUIPMENT, FIXTURES OR TRIM, COORDINATE WITH OWNER ANY ITEMS TO BE RETAINED. CAREFULLY REMOVE SUCH ITEMS AND TURN OVER TO OWNER.

D. PROVIDE FIXTURES AS INDICATED ON PLUMBING AND ARCHITECTURAL DRAWINGS. FOR EXACT LOCATION OF FIXTURES, REFER TO ALL ARCHITECTURAL AND CONSULTANT PLANS AND ELEVATIONS.

E. MAKE NEW CONNECTIONS TO EXISTING BRANCH PIPING AS INDICATED ON PLANS AND RISER DIAGRAMS, AND AS NECESSARY TO COMPLETE THE WORK.

F. INSTALL PIPING WITH ADEQUATE PROVISIONS TO CONTROL EXPANSION AND CONTRACTION.

G. PROVIDE AND SET SLEEVES FOR ALL PIPING SYSTEMS PASSING THROUGH WALLS, FLOORS, PARTITIONS, ETC. SLEEVES SHALL BE SIZED AT LEAST TWO PIPE DIAMETERS LARGER THAN PIPING, OR OUTSIDE DIAMETER OF INSULATED PIPING.

H. ARRANGE FOR POWER TO SUPPORT ALL ELECTRICAL RELATED EQUIPMENT AND DEVICES.

I. PROVIDE ROUGH-IN AND FINAL CONNECTIONS TO ALL APPLIANCES AND EQUIPMENTS FURNISHED BY OTHERS, INCLUDING ALL REQUIRED DEVICES.

J. PROVIDE ALL CUTTING AND PATCHING OF BUILDING ELEMENTS AS REQUIRED FOR INSTALLATION OF WORK HERE IN SPECIFIED. ALL WORK SHALL BE COORDINATED AND APPROVED BY BUILDING AND ARCHITECTURAL FIELD REPRESENTATIVE PRIOR TO ANY WORK BEING PERFORMED.

K. PROVIDE FIRE-STOP AT ALL FLOOR AND WALL PENETRATIONS AS REQUIRED BY PROJECT PARAMETERS AND LOCAL CODE AUTHORITY.

L. PROVIDE ALL ACCESS PANELS. CONTRACTOR TO GIVE ALL LOCATIONS AND DIMENSIONS OF ALL REQUIRED ACCESS PANELS TO GENERAL CONTRACTOR. GENERAL CONTRACTOR WILL SUBMIT TO ARCHITECT FOR APPROVAL AND FINISH REQUIREMENTS PRIOR TO INSTALLATION.

M. COORDINATE PROPOSED WORK WITH ADDITIONAL TRADES AND OTHERS INVOLVED PRIOR TO ANY INSTALLATION WORK.

N. PROVIDE PIPING IDENTIFICATION MARKERS FOR ALL PIPING SYSTEMS WITH ANSI/ASME STANDARD COLORS AND LABELS. MARKERS SHALL BE INSTALLED 20 FEET ON CENTER MINIMUM AND MARKERS INSTALLED IN EACH ROOM.

O. PROVIDE VALVE TAGS OF BRASS OR STAINLESS STEEL HAVING A MINIMUM OF 1-1/2 INCH DIAMETER. PROVIDE COMPLETED VALVE CHART INDICATING VALVE SERVICE AND LOCATION.

P. PROVIDE AS-BUILT DRAWINGS IN AUTOCAD 2017 FORMAT AT COMPLETION OF PROJECT.

Q. PROVIDE TWO COPIES OF OWNER'S OPERATION AND MAINTENANCE MANUALS WITH ALL PLUMBING AND MEDICAL GAS EQUIPMENT, FIXTURES, TRIM AND DEVICES, MANUFACTURER'S MAINTENANCE INSTRUCTIONS AND MANUALS.

1.04 CLEANING

A. COORDINATE GENERAL CLEANUP WITH BUILDING MANAGEMENT.

B. CLEAN AND FLUSH ALL EXISTING DRAINAGE PIPING TO BE REUSED FOR CONNECTION WITH NEW PIPING.

1.05 FIELD TESTING

A. TESTING SHALL BE IN STRICT COMPLIANCE TO THE PLUMBING CODE.

B. NO WORK SHALL BE ENCLOSED, CONCEALED, COVERED UP OR USED UNTIL THE SYSTEMS HAVE BEEN INSPECTED AND APPROVED BY THE CODE OFFICIALS AND ARCHITECTURAL FIELD REPRESENTATIVE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALL NECESSARY ARRANGEMENTS FOR INSPECTIONS.

C. PROVIDE DISINFECTION OF ALL DOMESTIC WATER PIPING IN ACCORDANCE WITH CODE, HEALTH DEPARTMENT AND APPLICABLE STANDARDS.

PART 2 - BASIC MATERIALS

2.01 PIPES AND FITTINGS

A. ABOVE GROUND DRAINAGE AND VENT PIPING: SERVICE WEIGHT HUBLESS CAST IRON PIPE, THOROUGHLY COATED WITH COAL TAR INSIDE AND OUTSIDE, CONFORMING TO ASTM A74 AND CAST IRON SOIL INSTITUTE STANDARD 301. FITTINGS SHALL BE HUBLESS CAST IRON SOIL FITTINGS OF THE SAME GRADE AND COATED IN THE SAME MANNER. MAKE ALL JUNCTIONS WITH COMBINATION "Y" AND 1/8 BEND FITTINGS. JOINTS SHALL BE MADE WITH EXTRA HEAVY DUTY HUBLESS COUPLINGS HAVING A STAINLESS STEEL CLAMPS AND SHIELD WITH A MINIMUM OF 4 CLAMPS FOR 4 INCH AND SMALLER PIPING AND 6 CLAMPS FOR 5 INCH AND LARGER PIPING SIMILAR TO HUSKY SERIES 4000 OR SHALL BE MADE WITH MG COUPLING AS MANUFACTURED BY MG PIPING PRODUCTS CO. OR, WHICH IS A CAST IRON COUPLING CONSISTING OF TWO CAST IRON CLAMPS, A NEOPRENE GASKET AND STAINLESS STEEL BOLTS AND NUTS, CONFORMING TO ASTM C564.

B. BELOW GROUND DRAINAGE AND VENT PIPING: SCHEDULE 40 PVC PIPE AND FITTINGS IN ACCORDANCE TO ANSI/ASTM 2665 AND ASTM D1785. JOINTS SHALL BE PRIMED AND SOLVENT WELDED IN ACCORDANCE TO ANSI/ASTM D2564. ALL PIPE, FITTINGS AND JOINING MATERIAL SHALL BE PROVIDED FROM ONE MANUFACTURER. HANGERS SHALL BE NON-ABRASIVE AND SPACED IN ACCORDANCE TO THE MANUFACTURER'S INSTRUCTIONS.

C. COPPER WATER PIPE AND FITTINGS - 3 INCH AND SMALLER: PIPE SHALL BE HARD TEMPERED, SEAMLESS COPPER TUBING, TYPE "L" CONFORMING TO ASTM STANDARD B-88. FITTINGS IN COPPER TUBING 2-1/2 INCH AND SMALLER SHALL BE WROUGHT-SWEAT TYPE FITTINGS MANUFACTURED OF SEAMLESS TUBING FORGED BRONZE OR BRASS ROD TO MEET SAME STANDARD B16.22. ALL FITTINGS IN COPPER TUBING 3-INCH AND LARGER MAY BE CAST RED BRONZE SOLDER TYPE FITTINGS MEETING ASTM STANDARD B16.18. IN ALL CASES WHERE COPPER PIPE CONNECTIONS ARE MADE TO PIPING OR AN ITEM OF EQUIPMENT OF A DISSIMILAR METAL, PROVIDE SOLID BRASS THREADED TRANSITION PIECES IF CONNECTION WILL BE CONCEALED. IF NOT CONCEALED, USE DIELECTRIC UNIONS. ALL JOINTS SHALL BE SOLDERED IN ACCORDANCE WITH THE COPPER DEVELOPMENT ASSOCIATION COPPER TUBE HANDBOOK USING 'LEAD-FREE' SOLDER.

2.02 INSULATION

A. INSULATION SHALL COMPLY WITH APPLICABLE ENERGY CODE.

B. INSULATION FOR ALL SIZE PIPING: 1 INCH THICK TYPE I GRADE A GLASS FIBER PREFORMED PIPE INSULATION IN ACCORDANCE TO ASTM C 547 WITH FACTORY APPLIED VAPOR BARRIER ALUMINUM BACKING IN ACCORDANCE TO ASST. C 1136. FITTINGS SHALL BE FIELD INSULATED AND COVERED WITH PREFORMED PVC JACKETS. SEALANT AND ADHESIVES SHALL BE IN ACCORDANCE TO MANUFACTURER'S INSTRUCTIONS.

C. INSULATION SHALL RUN UNINTERRUPTED. PROVIDE OVERSIZED HANGERS AND INSULATION SADDLES FOR ALL INSULATED PIPING.

D. INSULATION TO COMPLY WITH ENERGY CODE INSULATION THICKNESS MINIMUMS.

2.03 VALVES

A. APPROVED VALVES SHALL BE AS MANUFACTURED BY APOLLO-CONBRACO.

B. ALL VALVES SHALL BE LEAD-FREE IN ACCORDANCE TO NSF STANDARD 372 AND NSF STANDARD 61.

C. BALL VALVES 2 INCH AND SMALLER: TWO-PIECE LEAD-FREE BRONZE BODY ASTM B 584, FULL PORT, 600 PSIG CWP, BLOW-OUT PROOF STEM, CHROME PLATED BALL, LEVER HANDLE AND THREADED CONNECTIONS.

2.04 SUPPORTS AND HANGERS

A. PROVIDE ALL NECESSARY HANGERS, SUPPORTS, BUILDING ATTACHMENTS, SUPPLEMENTAL STEEL, ANCHORS, INSERTS, ETC., AS REQUIRED TO INSTALL THE PIPING WORK. HANGERS AND SUPPORTS SHALL BE CAPABLE OF SUPPORTING PIPE LOADS AND FULL CONTENTS WITH ALL RELATED DEVICES, PUMPS, ETC.

B. HANGERS, SUPPORTS AND RELATED ITEMS SHALL HAVE FACTORY COATED FINISHES THAT WILL NOT PROMOTE GALVANIC OR CORROSION ACTION. RODS, NUTS AND MISCELLANEOUS FASTENERS SHALL BE GALVANIZED.

2.05 FIRE STOPPING

A. PROVIDE UL LISTED FIRE PENETRATION SYSTEMS AND ASSEMBLIES FOR ALL RATED FLOOR, WALL AND PARTITION PENETRATIONS.

B. COORDINATE ALL RATED ASSEMBLIES WITH CURRENT ARCHITECTURAL PLANS.

C. FIRE STOP SYSTEMS SHALL BE AS MANUFACTURED BY 3M, HILTI OR METACAULK.

PART 3 - BASIC EXECUTION

3.01 DOMESTIC WATER

A. PROVIDE NEW DOMESTIC WATER PIPING SYSTEMS COMPLETE TO SUPPORT PROPOSED WORK.

B. PROVIDE ALL VALVES IN THE DOMESTIC WATER SYSTEMS WHERE REQUIRED BY CODE AND AS INDICATED ON THE PLANS FOR PROPER CONTROL AND SERVICING OF THE PIPING SYSTEMS.

C. PROVIDE EACH ITEM OF EQUIPMENT, APPLIANCE AND FIXTURE WITH A SHUT-OFF VALVE. FIXTURES SHALL BE PROVIDED WITH FIXTURE STOPS OR INTEGRAL CHECK-STOPS.

D. PROVIDE MAKE UP WATER WITH CODE COMPLIANT BACKFLOW DEVICES FOR HVAC EQUIPMENT REQUIRING WATER CONNECTIONS.

E. PROVIDE DI-ELECTRIC UNIONS OR FITTINGS WHERE CONNECTIONS OCCUR BETWEEN DISSIMILAR MATERIALS.

F. INSULATE ALL DOMESTIC WATER SYSTEMS INCLUDING CONCEALED PIPING WITHIN WALLS AND CHASES. INSULATION SHALL REMAIN UNINTERRUPTED AT HANGERS AND SUPPORTS.

G. PROVIDE TEST AND CERTIFICATION OF ALL TESTABLE BACKFLOW DEVICES. POST TEST RESULTS AT EACH DEVICE.

H. PROVIDE PIPE IDENTIFICATION AND VALVE TAGS FOR ALL WATER PIPING SYSTEMS.

PART 4 - EQUIPMENT, FIXTURES AND DEVICES

4.01 GENERAL

A. INSTALL ALL ITEMS IN ACCORDANCE TO MANUFACTURER'S INSTRUCTIONS. PROVIDE ALL REQUIRED FACTORY AUTHORIZED START-UP SERVICES WHERE REQUIRED.

B. ITEMS SHALL BE SET, LEVELED, FASTENED AND CONNECTED COMPLETE WITH ALL REQUIRED TRIM, SUPPORTS, ETC. ALL FIXTURES SHALL BE PERFECT IN FINISH AND COLOR, SHALL BE SQUARE WITH RELATION TO FINISHED INTERIOR AND LOCATED AS INDICATED ON THE DRAWINGS.

C. ALL ITEMS SHALL BE PROVIDED WITH PROPER SUPPORT. PROVIDE AND ARRANGE FOR ALL NECESSARY WALL FRAMING AND BLOCKING.

D. AFTER WORK HAS BEEN COMPLETED, ALL ITEMS AND TRIM SHALL BE THOROUGHLY CLEANED.

D. ALL FIXTURES TO BE FERGUSON. NO ALTERNATES WILL BE PERMITTED.

CODE REFERENCES

CITY OF AURORA, CO LOCAL AMENDMENTS
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL PLUMBING CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2015 ASHRAE STANDARDS 170
2012 NFPA 99 STANDARDS
2018 FGI GUIDELINES FOR HOSPITALS

MATERIAL LIST

SERVICE DESCRIPTION	MATERIAL
DOMESTIC COLD, HOT AND RETURN HOT WATER (2-INCHES AND SMALLER) (ABOVE GROUND)	TYPE "L" HARD TEMPERED SEAMLESS COPPER TUBING CONFORMING TO ASTM B 88, WITH LEAD FREE SOLDERED JOINTS.
SANITARY, WASTE AND VENT (ALL SIZES) (ABOVE GROUND)	SERVICE WEIGHT NO-HUB CAST IRON PIPE CONFORMING TO ASTM A74 AND CISPI 301 WITH EXTRA HEAVY DUTY NO-HUB COUPLINGS.
SANITARY, WASTE AND VENT (ALL SIZES) (UNDERGROUND)	SCHEDULE 40 SOLID CORE POLYVINYL CHLORIDE (PVC) PLASTIC PIPE AND FITTINGS CONFORMING TO ASTM D 2665, WITH SOLVENT CEMENTED JOINTS.

SYMBOL LIST

SYMBOL	DESCRIPTION
	NEW PIPE
	EXISTING PIPE
	SHUT-OFF VALVE
	EXISTING FIXTURE/EQUIPMENT/PIPING TO BE REMOVED
	NEW CONNECTION

ABBREVIATION LIST

ABBREVIATION	DESCRIPTION
TYP.	TYPICAL
(N)	NEW PIPING
(E)	EXISTING PIPING

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	QUANTITY	LOCATION	FEATURES
SK-1	SINK (HCA-)	1	CT-02	ELKAY 'LUSTERTONE' MODEL NO. LRAD1919-55-3 SINGLE BOWL, ADA COMPLIANT, SELF-RIMMING COUNTERTOP SINK CONSTRUCTED OF 18 GAUGE TYPE 302 NICKEL BEARING STAINLESS STEEL WITH EXPOSED SURFACES HAVING A FINISH EQUAL TO LUSTROUS SATIN FINISH. SINK TO BE 19" X 19" OVERALL WITH A 16" X 13-1/2" X 6-1/2" DEEP COMPARTMENT AND 1-3/4" RADIUS COVED CORNERS. SINK TO HAVE BOTTOM PADS, 3-1/2" CENTER REAR DRAIN AND THREE FAUCET HOLES ON 4" CENTERS. ZURN MODEL NO. Z831B4-XL-FC ADA COMPLIANT WIDESPREAD GOOSENECK FAUCET WITH WRIST BLADE HANDLES, LAMINAR FLOW CONTROL IN BASE OF SPOUT, ADJUSTABLE CENTERS, 5-3/8" SWING SPOUT, CERAMIC DISK CARTRIDGES, 1.5 GPM FLOW CONTROL AND POLISHED CHROME FINISH. PROFLO MODEL NO. PFWTS 4-1/2" WIDE TOP GRID SINK STRAINER. PROFLO MODEL NO. PFTPB100 1-1/2" FLANKED TAILPIECE WITH 17 GAUGE BRASS CONSTRUCTION. FROFLO MODEL NO. PFPTB403 1-1/2" TUBULAR P-TRAP WITH INTEGRAL CLEAN OUT AND 17 GAUGE BRASS CONSTRUCTION. PROFLO MODEL NO. PFXQAC32C QUARTER TURN ANGLE VALVES WITH 5/8" X 3/8" COMPRESSION CONNECTIONS AND BRASS CONSTRUCTION. PROFLO MODEL NO. PFX146324 20" LONG BRAIDED STAINLESS STEEL FLEXIBLE RISERS WITH THERMOPLASTIC COATED CORE AND 3/8" COMPRESSION X 1/2" FIP CONNECTIONS. PROFLO MODEL NO. PFE7 1/2" CHROME PLATED ESCUTCHEONS.

This work must also comply with **2021 IECC.**

Code violations that are found during inspections are required to be corrected. Permit issuance does not grant approval of a code violation.

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Y. Munoz*
Date: *Oct 11, 2024*
2021 INTERNATIONAL CODES & 2023 NEC

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No.	Description	Date

COLORADO LICENSED DANIEL P THOMPSON 53150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

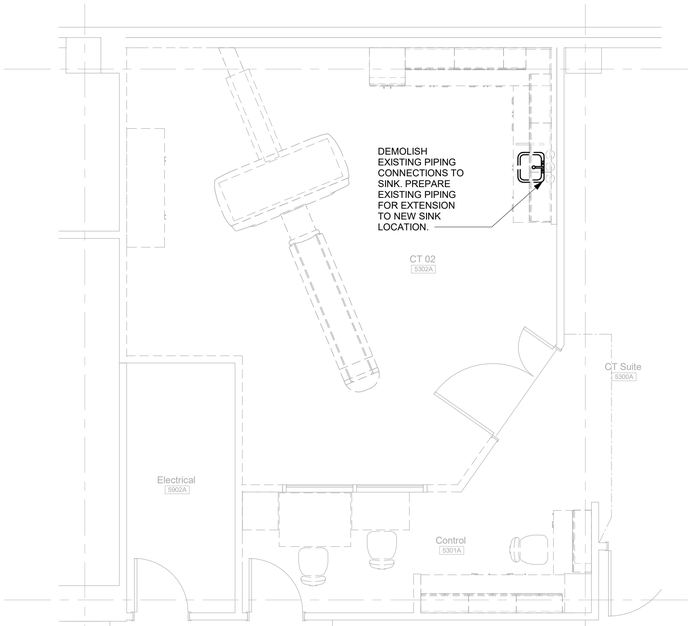
Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	EV
Checked by	BM

Sheet Title
PLUMBING SYMBOLS, ABBREVIATIONS, AND CODE INFORMATION

Sheet Number
P000

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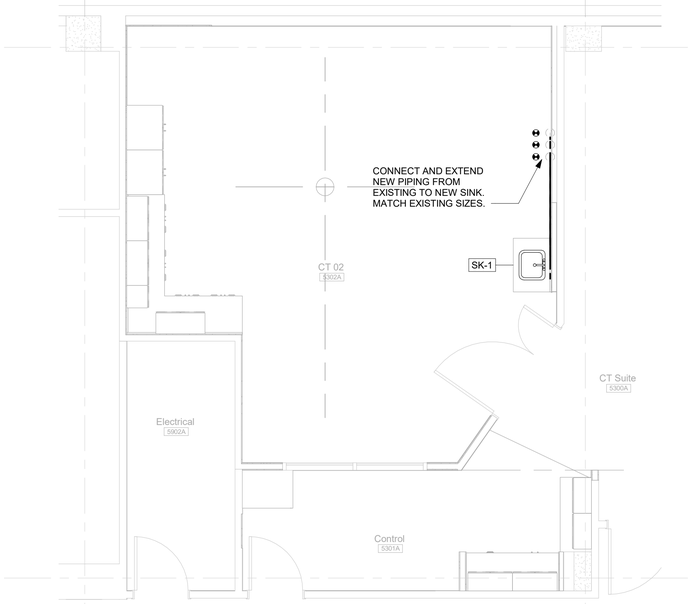
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DEMOLITION PLAN NOT REVIEWED FOR CODE COMPLIANCE

1 LEVEL 1 - IMAGING CT ENLARGED PLUMBING DEMOLITION PLAN

1/4" = 1'-0"

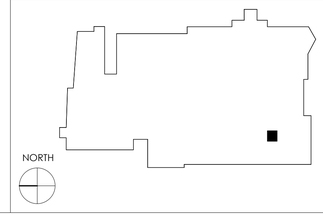


2 LEVEL 1 - IMAGING CT ENLARGED PLUMBING PLAN

1/4" = 1'-0"

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: *Y. Munoz*
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KEY PLAN



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No.	Description	Date

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RACHAEL P THOMPSON
53150
PROFESSIONAL ENGINEER

2023.09.05

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Aurora, CO 80012

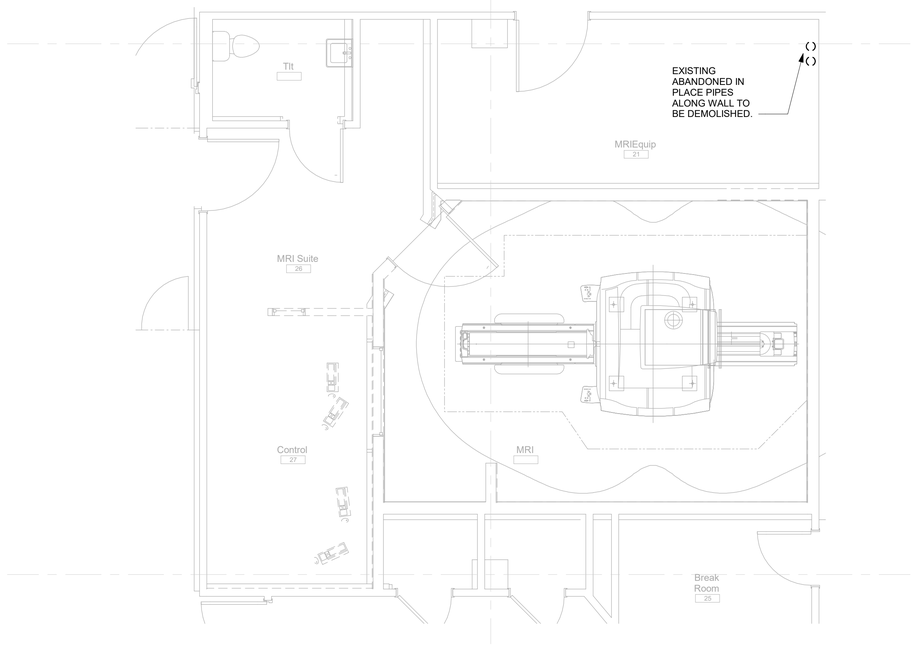
Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	EV
Checked by	BM

Sheet Title
LEVEL 01- IMAGING CT DEMO AND FLOOR PLAN

Sheet Number
P201B

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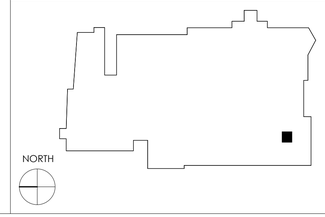


1 LEVEL 1 - MRI ENLARGED PLUMBING DEMOLITION PLAN

1/4" = 1'-0"

This sheet of drawings has not been reviewed for code compliance.

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2023.09.05

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Sheet Title

LEVEL 01- MRI DEMO PLAN

Sheet Number

P201C

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GENERAL ELECTRICAL SYMBOLS

	CONDUIT RUN CONCEALED IN CEILING OR WALL
	CONDUIT RUN CONCEALED IN OR BELOW FLOOR
	CONDUIT RUN EXPOSED ON CEILING OR WALL

ARROWHEAD DENOTES HOMERUN TO PANELBOARD. SLASH LINES INDICATE QUANTITY OF WIRE; NEUTRAL WIRE SHOWN AS A LONG LINE, PHASE WIRES AND SWITCH LEGS SHOWN AS SHORT LINES, AND GROUND WIRE SHOWN AS A LONG LINE WITH A DOT.

X	CONDUIT, WHERE "X" IS THE TYPE OR FUNCTION OF CONDUIT.

"C"	INDICATES CLOCK	"S"	INDICATES SOUND
"CO"	INDICATES CONDUIT ONLY	"T"	INDICATES TELEPHONE
"CTV"	INDICATES CCTV	"TVA"	INDICATES TELEVISION ANTENNA
"D"	INDICATES DATA	"TVC"	INDICATES CABLE TELEVISION
"FA"	INDICATES FIRE ALARM		
"I"	INDICATES INTERCOM		
"LV"	INDICATES LOW VOLTAGE		
"NC"	INDICATES NURSE CALL		

	CONDUIT STUBBED UP
	CONDUIT STUBBED DOWN
	FLEXIBLE CONDUIT
XX	CONDUIT TERMINATION:

"CS"	INDICATES CAP AND STAKE
"GB"	INDICATES GROUNDING BUSHING
"IB"	INDICATES INSULATING BUSHING
"TB"	INDICATES TERMINAL BUSHING

	CONDUIT SEAL
	MULTI-OUTLET ASSEMBLY
W W	WIREWAY
CT CT	CABLE TRAY
B B	BUSWAY (BUSDUCT)

UNDERFLOOR DUCT SYSTEM:

——	INDICATES POWER DUCT
– – –	INDICATES TELEPHONE DUCT
- - - -	INDICATES SYSTEM DUCT

	VARIOUS SYMBOLS IDENTIFY LOCATION OF DIFFERENT TYPES OF OUTLETS OR CONNECTIONS TO UNDERFLOOR DUCT SYSTEM.
PB	PULL BOX
	JUNCTION BOX- EXPOSED OR IN CEILING
	JUNCTION BOX - WALL MOUNTED
HD	JUNCTION BOX FOR HAND DRYER CONNECTION - WALL MOUNTED
	JUNCTION BOX WITH FLEXIBLE CONDUIT AND FINAL CONNECTION TO EQUIPMENT.
PDQ 13	EQUIPMENT IDENTIFICATION TAG

FIRE ALARM SYMBOLS

S	FIRE ALARM MANUAL PULL STATION
SD	SMOKE DETECTOR
D	HEAT DETECTOR
	VOICE SPEAKER
SV	VOICE SPEAKER WITH VISUAL ALARM
V	VISUAL STROBE
AV	AUDIBLE GENERAL ALARM WITH VISUAL STROBE
RA	REMOTE INDICATOR LIGHT FOR SMOKE DETECTOR
A	AUDIBLE GENERAL ALARM
DGP	FIRE ALARM TRANSPONDER PANEL
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE ALARM ANNUNCIATOR PANEL
MD	MAGNETIC DOOR HOLDER

POWER DEVICE SYMBOLS

WALL	FLOOR BOX	POKE-THROUGH	
			DUPLEX RECEPTACLE
			DOUBLE DUPLEX RECEPTACLE
			DUPLEX RECEPTACLE - SPLIT WIRED
			SINGLE RECEPTACLE
			COMBINATION DUPLEX RECEPTACLE TELEPHONE/ DATA SYSTEMS OUTLET
			COMBINATION DOUBLE DUPLEX RECEPTACLE TELEPHONE/ DATA SYSTEMS OUTLET
			SPECIAL RECEPTACLE - NEMA TYPE AS INDICATED
P	P	P	JUNCTION BOX WITH FLEXIBLE CONDUIT AND FINAL EQUIPMENT OR FURNITURE SYSTEM POWER CONNECTION

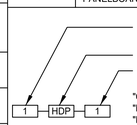
WP XX — ADJACENT LETTERS IN THE SYMBOLS ABOVE INDICATE THE FOLLOWING:

"CR"	INDICATES CHILD RESISTANT (SAFETY TYPE)
"E"	INDICATES RECEPTACLE FED BY EMERGENCY CIRCUIT
"EP"	INDICATES RECEPTACLE IS EXPLOSION PROOF
"GFI"	INDICATES RECEPTACLE HAS GROUND FAULT CIRCUIT INTERRUPTER
"IG"	INDICATES RECEPTACLE HAS ISOLATED GROUND
"TVS"	INDICATES RECEPTACLE HAS TRANSIENT VOLTAGE SURGE SUPPRESSION
"WP"	INDICATES RECEPTACLE HAS WATERPROOF COVER
"XX"	INDICATES RECEPTACLE CIRCUIT NUMBER

	DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP
	CLOCK OUTLET RECEPTACLE
	CLOCK OUTLET AND CLOCK FOR INTEGRATED CLOCK SYSTEM.
USB	DUPLEX RECEPTACLE WITH (2) USB PORTS
USB	OUTLET WITH (4) USB PORTS
TC	TIME CLOCK
PC	PHOTOCELL
OS XX	CEILING OR WALL MOUNTED OCCUPANCY SENSOR
DIM XX	WALL MOUNTED DIMMABLE SWITCH

POWER EQUIPMENT SYMBOLS

	SURFACE MOUNTED DISTRIBUTION PANELBOARD
	SURFACE MOUNTED BRANCH CIRCUIT PANELBOARD
	RECESSED MOUNTED BRANCH CIRCUIT PANELBOARD
1-HDP-1	SWITCHBOARDS, DISTRIBUTION PANELBOARDS, MOTOR CONTROL CENTERS, PANELBOARDS, CABINETS, AND RELATED EQUIPMENT



"C"	CRITICAL OR COMPUTER	"L"	208/120V, OR 208V
"D"	DISTRIBUTION	"MCC"	MOTOR CONTROL CENTER
"E"	EMERGENCY	"P"	POWER
"H"	480/277V, OR 480V	"Q"	EQUIPMENT
"ISP"	ISOLATION	"R"	RECEPTACLE
"K"	KITCHEN	"S"	STANDBY
"L"	LIGHTING	"SWBD"	SWITCHBOARD
		"XR"	X-RAY

AS	NON-FUSED DISCONNECT SWITCH, "AS" INDICATES AMPERE RATING OF SWITCH
AS/AF	FUSED DISCONNECT SWITCH, "AS" INDICATES AMPERE RATING OF SWITCH AND "AF" INDICATES AMPERE RATING OF FUSE
	MAGNETIC MOTOR STARTER - NEMA SIZE AS INDICATED
AS	COMBINATION MOTOR STARTER AND NON-FUSED DISCONNECT, "AS" INDICATES AMPERE RATING OF SWITCH
M	UTILITY METER
T	TRANSFORMER
BGB	BUILDING GROUND BOX
ST	SHUNT TRIP
SPD	SURGE PROTECTION DEVICE
CM	CUSTOMER METER
EPO	EMERGENCY POWER OFF MUSHROOM PUSHBUTTON CONTROL STATION

SECURITY SYMBOLS

	PUSH-BUTTON STATION "DB" DOORBELL "DR" DOOR RELEASE
	BUZZER
	BELL
CH	CHIME
T TH	LOW VOLTAGE TRANSFORMER WITHIN PLENUM BOX
CCTV	CLOSED CIRCUIT TELEVISION CAMERA
CR	CARD READER
ES	ELECTRIC STRIKE
DC	DOOR CONTACT
MS	MOTION SENSOR

COMMUNICATIONS SYMBOLS

TTC	TELEPHONE TERMINAL CABINET

WALL	FLOOR BOX	POKE-THROUGH	SUBSCRIPT INDICATES THE FOLLOWING FOR BELOW WALL MOUNTED OUTLETS, (U.N.O.):
			"H" HANDICAP MOUNTED AT 48" A.F.F. "P" PAY PHONE MOUNTED AT 54" A.F.F. "W" WALL MOUNTED AT 54" A.F.F.
			TELEPHONE OUTLET
			DUPLEX TELEPHONE OUTLET
			DATA SYSTEMS OUTLET
			DUPLEX DATA SYSTEMS OUTLET
			COMBINATION TELEPHONE/ DATA SYSTEMS OUTLET
T	T/D	D	JUNCTION BOX WITH FLEXIBLE CONDUIT AND FINAL EQUIPMENT OR FURNITURE SYSTEM CONNECTION. SUBSCRIPTS INDICATE THE FOLLOWING: "T" - TELEPHONE "D" - DATA SYSTEMS "T/D" - COMBINATION TELEPHONE/ DATA SYSTEMS

I I	INTERCOM, WALL OR CEILING MOUNTED
S S	SPEAKER, WALL OR CEILING MOUNTED

HEALTHCARE CALL SYMBOLS

1	SINGLE CALL STATION
3	TOILET BATH OR SHOWER CALL STATION
4	SINGLE CORRIDOR DOME ZONE LIGHT
7	MULTIPLE CORRIDOR DOME ZONE LIGHT
8	DUTY STATION
9	STAFF DUTY STATION
23	CODE BLUE STATION

ONE-LINE DIAGRAM SYMBOLS

	SWITCH
	FUSE
	CIRCUIT BREAKER
	PANELBOARD
	SWITCHBOARD OR MOTOR CONTROL CENTER AS INDICATED
	TRANSFORMER WITH FLEXIBLE CONDUIT AND PAD
SPD	SURGE PROTECTION DEVICE
M	UTILITY METER
GFR	GROUND FAULT RELAY

LIGHTING SYMBOLS

F1 1a	2' X 4' LIGHTING FIXTURE.
F1 1a	2' X 2' LIGHTING FIXTURE.
F1 1a	1' X 4' LIGHTING FIXTURE.
F1 1a	LINEAR LIGHTING FIXTURE- LENGTH AS INDICATED.
T F1 1a	WALL MOUNTED LINEAR LIGHTING FIXTURE- LENGTH AS INDICATED.
F1 1a F1 1a	INCANDESCENT, HID, OR LED LIGHTING FIXTURE.
F1 1a F1 1a	WALL MOUNTED INCANDESCENT, HID, OR LED LIGHTING FIXTURE
F1 E1	2' X 4' LIGHTING FIXTURE CONNECTED TO EMERGENCY CIRCUIT.
F1 E1	LINEAR LIGHTING FIXTURE CONNECTED TO EMERGENCY CIRCUIT.
F1 E1 F1 E1	INCANDESCENT, HID, OR LED LIGHTING FIXTURE CONNECTED TO EMERGENCY CIRCUIT.

LIGHTING FIXTURES:
"F1" INDICATES LIGHTING FIXTURE TYPE. REFER TO LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION AND MOUNTING.
"1" INDICATES CIRCUIT NUMBER
"a" INDICATES SWITCH CONTROL.
SHADING OF LIGHTING FIXTURE OR "E" INDICATES LIGHTING FIXTURE CONNECTED TO EMERGENCY CIRCUIT.

F1 E2	BATTERY PACK, EMERGENCY LIGHTING UNIT
	REMOTE HEAD CONNECTED TO BATTERY PACK.
	TRACK LIGHTING

NEW #3 E3 / #21 E5 — NEW #3N E3 / #21N E5 — EXISTING #3E E3 / #21E E5

"#X" INDICATES INSCRIPTION, ARROWS, AND SINGLE OR DOUBLE FACED, AS SHOWN BELOW. SHADED QUADRANTS INDICATES DIRECTION OF LIGHTED FACES.

"#1"	FIRE ESCAPE	"#14"	TRIANGLE
"#2A"	STAIRS	"#15"	ELEVATOR
"#3"	EXIT	"#16"	FIRE ESCAPE
"#4"	FIRE ESCAPE →	"#17A"	STAIRS
"#5A"	STAIRS →	"#18"	EXIT
"#6"	EXIT →	"#19"	FIRE ESCAPE ⇉
"#7"	FIRE ESCAPE ←	"#20A"	STAIRS ⇉
"#8A"	STAIRS ←	"#21"	EXIT ⇉
"#9"	EXIT ←	"#22"	FIRE ESCAPE ⇇⇉
"#10"	FIRE ESCAPE ←→	"#23A"	STAIRS ⇇⇉
"#11A"	STAIRS ←→	"#24"	EXIT ⇇⇉
"#12"	EXIT ←→		
"#13"	EXIT - RECESSED		

3W $ XXa

LIGHT SWITCH, SINGLE POLE UNLESS NOTED OTHERWISE:

"a"	INDICATES LIGHTS CONTROLLED
"D"	INDICATES DIMMER SWITCH
"K"	INDICATES KEY OPERATED
"LV"	INDICATES LOW VOLTAGE
"MC"	INDICATES MOMENTARY CONTACT
"P"	INDICATES PILOT LIGHT
"TH"	INDICATES THERMAL OVERLOAD PROTECTION
"XX"	INDICATES CIRCUIT NUMBER
"WP"	INDICATES WEATHERPROOF
"2P"	INDICATES 2 POLE
"3P"	INDICATES THREE POLE
"3W"	INDICATES THREE-WAY
"4W"	INDICATES FOUR-WAY

BRANCH CIRCUIT WIRING SCHEDULE - NOTE 8

OCPD AMPS	1P–2W+G,2P–2W+G	2P–3W+G & 3P–3W+G	3P–4W+G	COMMENTS
15	2#12, 1#12G, 3/4"C	3#12, 1#12G, 3/4"C	4#12, 1#12G, 3/4"C	
20	2#12, 1#12G, 3/4"C	3#12, 1#12G, 3/4"C	4#12, 1#12G, 3/4"C	
25	2#10, 1#10G, 3/4"C	3#10, 1#10G, 3/4"C	4#10, 1#10G, 3/4"C	
30	2#10, 1#10G, 3/4"C	3#10, 1#10G, 3/4"C	4#10, 1#10G, 3/4"C	
35	2#8, 1#10G, 3/4"C	3#8, 1#10G, 3/4"C	4#8, 1#10G, 3/4"C	
40	2#8, 1#10G, 3/4"C	3#8, 1#10G, 3/4"C	4#8, 1#10G, 3/4"C	
45	2#6, 1#10G, 3/4"C	3#6, 1#10G, 3/4"C	4#6, 1#10G, 1"C	
50	2#6, 1#10G, 3/4"C	3#6, 1#10G, 3/4"C	4#6, 1#10G, 1"C	
60	2#4, 1#10G, 3/4"C	3#4, 1#10G, 1"C	4#4, 1#10G, 1 1/4"C	
70	2#4, 1#8G, 3/4"C	3#4, 1#8G, 1"C	4#4, 1#8G, 1 1/4"C	
80	2#3, 1#8G, 1"C	3#3, 1#8G, 1"C	4#3, 1#8G, 1 1/4"C	
90	2#2, 1#8G, 1"C	3#2, 1#8G, 1 1/4"C	4#2, 1#8G, 1 1/4"C	
100	2#1, 1#8G, 1 1/4"C	3#1, 1#8G, 1 1/4"C	4#1, 1#8G, 1 1/2"C	

Code violations that are found during inspection are required to be corrected. Permit issuance does not grant approval of a code violation.

This sheet of drawings has not been reviewed for code compliance.

GENERAL NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF LIGHTING AND CONTROLS, RECEPTACLES, COMMUNICATIONS DEVICES, FIRE ALARM DEVICES, AND LIFE SAFETY DEVICES.

2. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF HVAC, PLUMBING, AND FIRE PROTECTION EQUIPMENT.

3. REFER TO PANEL DIVISION LINES FOR BRANCH CIRCUIT HOMERUN PANELBOARD DEMARCATION LINES, UNLESS NOTED OTHERWISE.

4. BRANCH CIRCUIT WIRING FOR 120 VOLT 20 AMP CIRCUITS WIRED TO 208Y/120V SYSTEMS SHALL BE AS FOLLOWS: A. GENERAL RECEPTACLES AND LIGHTING LOADS: UP TO 100 FEET IN LENGTH: 3#12, 1#12N, 1#12G -3/4"C. OVER 100 FEET IN LENGTH: 3#10, 1#10N, 1# 10G -3/4"C.

5. BRANCH CIRCUIT WIRING FOR 277 VOLT 20 AMP CIRCUITS WIRED TO 480Y/277V SYSTEMS SHALL BE AS FOLLOWS: A. LIGHTING LOADS: UP TO 150 FEET IN LENGTH: 3#12, 1#10N, 1# 12G -3/4"C. OVER 150 FEET IN LENGTH: 3#10, 1#8N, 1#10G -3/4"C.

6. DISTANCES FOR BRANCH CIRCUIT WIRING, AS INDICATED IN NOTES 4 & 5 ABOVE, SHALL BE MEASURED FROM THE FINAL OCPD TO THE CENTER OF THE BRANCH CIRCUIT LOAD. SIZES ARE A MINIMUM AND CONTRACTOR MAY BE REQUIRED TO UP-SIZE TO ACCOUNT FOR VOLTAGE DROP.

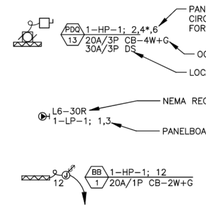
7. COMPUTER EQUIPMENT OUTLETS, OUTLETS WITHIN WORKSTATIONS, OFFICES, FURNITURE SYSTEMS, AND THE LIKE SHALL BE CONSIDERED NON-LINEAR LOADS.

8. BRANCH CIRCUIT CONDUCTORS SIZED AS INDICATED IN NOTES 4 & 5 ABOVE AND/OR ON PLAN SHALL BE ROUTED TO EACH ELECTRIC DEVICE CONNECTED TO THE INDICATED BRANCH CIRCUIT. PROVIDE WIRENUTS AND PIGTAILS SIZED TO MATCH THE CORRESPONDING OCPD LISTED IN THE BRANCH CIRCUIT WIRING SCHEDULE FOR ELECTRICAL DEVICE TERMINATIONS WHERE THE ELECTRICAL DEVICE LUGS CANNOT ACCOMMODATE THE INCREASED CONDUCTOR SIZE INDICATED ABOVE, U.N.O.

9. REFER TO THE BRANCH CIRCUIT WIRING SCHEDULE FOR MINIMUM INSTALLATION CRITERIA. BRANCH CIRCUIT WIRING SPECIFIED IN NOTES AND/OR ON PLAN OR OTHER SCHEDULES SHALL TAKE PRECEDENCE OVER THE INFORMATION PROVIDED IN THE SCHEDULE.

10. PROVIDE AN EQUIPMENT GROUNDING SCREW WITHIN THE RECEPTACLE OUTLET BOX FOR RECEPTACLES WITHOUT A SIDE-MOUNTED GROUNDING SCREW FOR TERMINATION OF THE BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.

11. ELECTRICAL DEVICE BRANCH CIRCUIT WIRING LEGEND:



12. MOUNTING HEIGHTS OF ELECTRICAL ITEMS SHALL BE AS LISTED BELOW ABOVE FINISHED FLOOR TO CENTERLINE, UNLESS NOTED OTHERWISE ON ARCHITECTURAL DRAWINGS OR AS REQUIRED BY CODE:

A.	GENERAL RECEPTACLES	18"
B.	PATIENT RECEPTACLES	18"
C.	GENERAL TELE AND DATA OUTLETS	18"
D.	PATIENT TELE AND DATA OUTLETS	18"
E.	GENERAL TOGGLE SWITCHES	48"
F.	FIRE ALARM PULL STATIONS	48"
G.	SECURITY CALL STATIONS	48"
H.	CLOCK AND PAGING SPEAKER OUTLETS	84"
I.	FIRE ALARM AUDIO VISUAL DEVICES	80"
J.	GENERAL WALL MOUNTED LIGHTS	90"
K.	CORRIDOR WALL SCONCES (>4" DEEP)	66"
L.	EXIT SIGNS	90"
M.	INDIVIDUAL DISCONNECTS AND STARTERS	60"
N.	GROUPED DISCONNECTS AND STARTERS	> 12" < 72"
O.	PANELBOARD OVERCURRENT DEVICES	> 12" < 72"

13. PROVIDE NEW FIRE ALARM DEVICES AS INDICATED IN THE DOCUMENTS OR AS OTHERWISE REQUIRED BY LOCAL CODES. NEW DEVICES SHALL BE PRODUCTS OF THE EXISTING FIRE ALARM MANUFACTURER, JCI.

14. PROVIDE MODIFICATIONS TO THE OVERHEAD AND INTERDEPARTMENTAL PAGING SYSTEM UTILIZING THE HOSPITAL PAGING SYSTEM MAINTENANCE CONTRACTOR, BEACON COMMUNICATIONS. CONTACT ANDREAS KACZANOWSKI - 303-750-6500.

15. PROVIDE NEW NURSE CALL DEVICES AS INDICATED IN THE DOCUMENTS. NEW DEVICES SHALL BE PRODUCTS OF THE EXISTING NURSE CALL SYSTEM MANUFACTURER, RAULAND RESPONDER IV. MODIFICATIONS TO THE NURSE CALL SYSTEM SHALL BE PERFORMED BY THE HOSPITAL PAGING SYSTEM MAINTENANCE CONTRACTOR, BEACON COMMUNICATIONS. CONTACT ANDREAS KACZANOWSKI - 303-750-6500.

16. PROVIDE EMPTY RACEWAY FOR COMMUNICATIONS SYSTEMS. COMMUNICATIONS CABLING AND OUTLETS SHALL BE FURNISHED AND INSTALLED BY THE OWNER'S COMMUNICATIONS CONTRACTOR UNDER SEPARATE CONTRACT. COORDINATE RACEWAY REQUIREMENTS WITH COMMUNICATIONS CONTRACTOR. PROVIDE EMPTY RACEWAY FOR PATIENT MONITORING SYSTEM.

17. PATIENT MONITORING CABLING AND OUTLETS SHALL BE FURNISHED AND INSTALLED BY THE OWNER'S PATIENT MONITORING VENDOR UNDER SEPARATE CONTRACT. COORDINATE RACEWAY REQUIREMENTS WITH PATIENT MONITORING VENDOR.

CODES AND STANDARDS

DESIGNED UNDER THE FOLLOWING CODES AND STANDARDS:
2023 NATIONAL ELECTRICAL CODE
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL ENERGY CONSERVATION CODE
2021 INTERNATIONAL FIRE CODE
2009 ANSI A117.1, ACCESSIBILITY REQUIREMENTS
ANSI/ASME A17.1, SAFETY CODE FOR ELEVATORS
NFPA 72 NATIONAL FIRE ALARM CODE

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Lakewood, CO 80215
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No.	Description	Date

COLORADO LICENSED MICHAEL P THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
ELECTRICAL SYMBOLS & GENERAL NOTES

Sheet Number
E000

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SPECIFICATIONS

DIVISION 16000 - ELECTRICAL

1. GENERAL

A. Requirements

1. Products and execution shall be provided for a complete and fully operational electrical system throughout the extent of the project, in conformance with applicable codes, laws, ordinances and agency standards of governing bodies having jurisdiction, and in strict accordance with the contract documents, and building standards.

2. Products, including equipment, devices, fixtures, and materials shall be new unless noted otherwise, UL listed, and bear appropriate label.

3. Execution, including preparation, installation, starting, and testing shall be performed by skilled trades personnel, in compliance with the associated manufacturers recommendations, and coordinated with the other construction trades.

B. Applicable Codes: See Sheet E000
1. Local Amendments

C. Applicable Laws and Agency Standards

1.	American National Standards Institute	ANSI
2.	American Society for Testing and Materials	ASTM
3.	Americans with Disabilities Act	ADA
4.	Association of Edison Illuminating Companies	AEIC
5.	Certified Ballast Manufacturers	CBM
6.	Electrical Testing Laboratories	ETL
7.	Electronic/Telecommunications Industries Association	EIA/TIA
8.	Energy Policy Act of 1992	EPACT
9.	Federal Aviation Administration	FAA
10.	Illuminating Engineering Society of North America	IESNA
11.	Institute of Electrical and Electronics Engineers	IEEE
12.	Insulated Cable Engineers Association	ICEA
13.	National Electrical Manufacturers Association	NEMA
14.	National Fire Protection Association	NFPA
15.	Underwriters' Laboratories	UL
16.	Facility Guidelines Institute	FGI
17.	HCA Installation Standards	HCA

D. Approvals

1. Fire Alarm and Life Safety Documents shall be prepared and submitted to the Local Fire Department for their approval of system expansion, layout, circuiting, equipment and device type. The base building fire alarm and life safety system manufacturer/installer shall be retained to produce or update the building fire alarm and life safety documents, and to make final connections and alterations to the existing system. Approved drawings shall be submitted for review prior to construction.

E. Submittals

1. Product Data shall be prepared and submitted for review prior to construction for the following products: cabinets, access panels, supports, wire, fuses, circuit breakers, receptacles, toggle switches, disconnect switches, motor starters, contactors, lighting fixtures, ballasts, lamps, controls, fire alarm devices and life safety devices.

2. Shop Drawings shall be prepared and submitted for review prior to construction for the following products: distribution panelboards, branch panelboards, transformers.

3. Manufacturers Instructions shall be prepared and submitted prior to construction including installation manuals with application conditions and limitations for electrical apparatus use, storage, handling, protection, examination, preparation, installation, and starting.

4. Project Record Documents shall be prepared using AutoCAD or equivalent CAD package. Project Record Documents shall be submitted on reproducible media prior to project completion for electrical systems. Record actual location of equipment, devices, fixtures, etc. Record actual routing of overhead feeders. Record actual routing of feeders below slab and branch circuits within or below slab.

5. Maintenance Data shall be prepared and submitted prior to project completion for electrical apparatus including operation manuals and maintenance manuals.

F. Coordination

1. Electrical Engineer: Notify the Engineer of any conflicting design information or any design intentions which are not readily interpreted from the contract documents prior to any product selection or execution of work. Notify the Engineer of any products which are damaged, unsuitable, incompatible, or non-compliant with any applicable codes or ordinances of any governing bodies having lawful jurisdiction.

2. Construction Trades: Coordinate work with other construction trades.

3. Building Management: Meet on site with the building engineer to become familiar with building standards. Normal building working hours shall be recognized. After-hours work or temporary services shall be with prior written approval from building management. Enclose construction area from other areas to prevent transmission of dust, dirt and noise into other existing tenant areas. Product and waste transfer shall be coordinated with building management for scheduling of the elevators, deliveries, and waste removal.

4. Existing Building Systems: Review building standards with the building engineer. Perform a site visit to verify the existing site conditions. Costs associated with unforseen conditions as result of not performing a site visit shall not be an entitlement for an increase to the contract. Construction shall be performed without interruption to the building power, communications, security, fire alarm and life safety systems, or interference to common areas, corridors, exits or existing tenants. Where any construction would interfere with the daily operations of the building or other tenants, after-hours work or temporary services shall be provided at no increase to the contract.

G. Warrantee and Guarantee

1. Provide warrantee and manufacturers certificate for each product, minimum of one year or longer as specified, from the date of occupancy. Repair and/or replace any equipment, devices, fixtures, materials, etc. with defect as required at no increase to the contract.

2. Provide guarantee of installation for a period of one year from the date of occupancy. Repair and/or reinstall any work with defect as required at no increase to the contract. Provide guarantee of rework for a period of one year from the completion of repair or reinstallation.

3. Damage caused to finishes, surfaces, ceiling tiles, equipment, etc. shall be repaired and/or replaced to match the pre-existing condition at no increase to the contract.

H. Pay fees and other charges incidental to the electrical work and obtain and pay for required liability and casualty insurance, permits, licenses, inspections, taxes, etc.

I. Construction shall be done during regular working hours and days, unless otherwise specified. Work required to be performed during overtime hours or days shall be as indicated.

J. Allow for 8 man-hours of training to the Owners staff for the operation of the electrical systems.

K. Substitutions are not acceptable.

2. PRODUCTS

A. Cabinets, enclosures and access panels shall be code gage steel with baked enamel finish and flangeless hinges and fasteners. Equipment bases shall be 3 inch high concrete, steel braced and reinforced with 1/4 inch chamfer, and shall extend a minimum of 2 inches around base of equipment. Vibration isolation shall be spring elements in suspended rods and isolation pads below equipment, electrical connections shall be flexible conduit.

B. Conduits shall be hot-dipped galvanized or electro-galvanized steel, minimum size shall be 3/4 inch, except power branch circuits may be 1/2 inch (unless noted otherwise) and flexible connections to recessed lighting fixtures which may be 3/8 inch. Flexible steel conduit shall be galvanized steel, with UL listed liquid tight jacket as required, for final connections to motors, recessed lighting fixtures, and life safety devices. Supports, including channels, angles, rods, and fasteners shall be hot-dipped galvanized steel. Manufacturer shall be Allied, LTV/Republic, Steeldust, or Wheatland.

C. Conduit fittings shall be steel, die cast fittings of pot metal are not acceptable. Electrical metallic tubing (EMT) fittings shall be compression type with insulated throats; set screw fittings are not acceptable. Intermediate metal conduit (IMC) and heavy wall conduit (HWG) fittings shall be of threaded joints; set screw and compression fittings are not acceptable. Manufacturer shall be Appleton, Crouse Hinds/Midwest, OZ/GGedney, Raco, Steel City, or T&B.

D. Outlet boxes for all toggle switches, receptacles, communications devices, fire alarm devices, and life safety devices shall include plaster rings, device plates, and cover plates where required. Provide boxes suitable for plenum, wet, or hazardous locations as required. Device cover plates shall be stainless steel painted to match finish. Multi-gang outlet boxes shall include suitable one-piece device cover plate. Outlets located on opposite sides of a partition shall be staggered by 12 inches, minimum. Manufacturer shall be Appleton, Raco, or Steel City.

E. Distribution panelboards shall be fully rated with copper phase, neutral, and ground bus, braced at 65,000 AIC for 480Y/277 Volt systems and 42,000 AIC for 208Y/120 Volt systems, or more to be greater than the available short circuit current. Isolated ground bus shall be as required. Overcurrent protection shall be fusible switches. Manufacturers shall be Eaton, ABB/GE, Siemens/ITE, or Square D.

F. Branch panelboards shall be fully rated with copper phase, neutral, and ground d at 14,000 AIC for 480Y/277 Volt systems and 10,000 AIC for 208Y/120 Volt systems, or more to be greater than the available short circuit current. Neutral bus shall be rated at 200 percent within panels serving non-linear loads. Isolated ground bus shall be as required. Overcurrent protection shall be Eaton, ABB/GE, Siemens/ITE, or Square D.

G. Individual motor starters shall include two sets of normally open contacts, one set of normally closed contacts, three overload relays, individually fused control transformer, hand-off-auto selector switch for automatic start, and pilot light(s) as required. Combination starter disconnects shall include fusible switches. Contactors shall be NEMA type, with replaceable coil and contact tips. Manufacturer shall be Eaton, ABB/GE, Siemens/ITE, or Square D.

H. Local disconnect switches for electrically operated equipment shall be heavy duty within enclosure suitable for the location. Fusible disconnect switches 800 Amps and larger shall be bolted pressure, load-break type. Fusible and non-fusible disconnect switches 600 Amps and smaller shall be quick-make, quick-break type. Manufacturer shall be Eaton, ABB/GE, Siemens/ITE, or Square D.

I. Overcurrent and short circuit protection within fusible switches shall be Class L current limiting time delay fuses for switches rated 800 Amps and larger, and Class RK-1 current limiting time delay fuses for switches rated 600 Amps and smaller. Manufacturer shall be Bussmann or Littelfuse.

J. Transformers shall be copper wound, dry type ventilated, 115°C rise with NEMA standard voltage taps and sound ratings. Transformers serving non-linear loads shall be K-13 rated or better for the order and magnitude of harmonic content. Transformers serving isolated ground distribution systems shall be shielded isolation type. Manufacturer shall Eaton, ABB/GE, Siemens/ITE, or Square D.

K. Grounding system, including service and equipment grounding and bonding, shall be in accordance with code and shall connect all electrically operated equipment. Provide a separate green ground wire for each branch circuit and feeder.

L. Receptacles shall be duplex NEMA 5-20R, back and side wired, hospital grade, unless noted otherwise. Special receptacle configurations, duplex isolated ground receptacles, and duplex ground fault interrupter receptacles shall be as required or as indicated on the contract documents. General receptacle color shall be white and IG receptacle color shall be orange unless specified otherwise, verify color with Architect. Manufacturer shall be Bryant, Hubbell, Leviton, or Pass & Seymour.

M. Toggle switches shall be single pole 20 Amp, 120-277 Volt, back and side wired, hospital grade, unless noted otherwise. Special switches, including 3-way, pilot light and momentary contact, shall be as required or as indicated on the contract documents. Color shall be white unless specified otherwise, verify color with Architect. Manufacturer shall be Bryant, Hubbell, Leviton, or Pass & Seymour.

N. Lighting contactors shall be enclosed and mechanically held, and shall include all required control modules, timeclocks, and remote photocells. Main contactors for panelboard feeders shall match the panel ratings. Multiple pole contactors for branch circuits shall be rated at 20 Amps, or more, as required for the specific load type. Manufacturer shall be N-Light Acuity, Lutron, Crestron, or approved equal.

O. Lighting fixtures shall be LED and shall include all appropriate accessories, mounting frame and trim for ceiling type. Lighting fixtures shall include coordinated air handling capability, plenum rating, damp label, wet label, MRI rated, and shall be explosion proof where required. Lighting fixtures recessed within grid type ceilings shall include securing clips as required by the local authority. Fixture manufacturer shall be as specified on the "LIGHTING FIXTURE SCHEDULE". Drivers shall have at minimum, a 3 year warrantee.

P. New fire alarm devices provided within existing systems shall match existing device manufacturer and type. Strobes shall meet ADA guidlines for the application and shall be rated 75cd, except in sleeping areas which shall be rated 110cd. Strobes rated 15/75cd with 75cd on axis are not acceptable except in small conference rooms. Existing fire alarm devices shall be extended as required. Existing fire alarm equipment shall be expanded as required with any additional components for proper operation of new devices on existing equipment.

3. EXECUTION

A. Penetrations and channels in floors and walls shall be via cutting and coring as required for the size of product, only in accordance with the Architect and Engineer recommendations, and as scheduled with the building management. Patch and fill sleeves, inserts, penetrations, and channels with appropriate code approved fire safing or filling to match or restore the original fire rating of the construction.

B. Install 3 inch concrete pad below floor mounted equipment including distribution panelboards, transformers, etc.

C. Make final connections to vibrating equipment, fixtures, and devices with flexible metal conduit or liquid tight flexible metal conduit as required. Extend ground wire through flexible connections.

D. Install conduit, fittings, supports, etc. in accordance with codes, standards, and manufacturers recommendations. The voltages identified in the following schedules are line-to-line or line-to-neutral. Interior concealed locations are those locations which are above ceilings, within walls, within floor slabs, and within dedicated electrical rooms. Conduit installation shall be as follows unless noted otherwise:

Voltage Location	0V thru 50V	Above 50V thru 250V	Above 250V thru 600V	Above 600V
Interior Concealed	EMT Concealed	EMT	< 2"EMT > 2 1/1"IMC	HWG
Interior Exposed	EMT	< 2"EMT > 2 1/2"IMC	IMC	HWG
Exterior and Hazardous Locations	IMC	IMC	HWG	HWG

E. Installations within air handling spaces, including plenum ceilings and built up air handling systems shall be approved for plenum installation and shall be in strict accordance with all applicable codes.

F. Installations within hazardous locations shall be listed for the Classification and Division of hazard. Install wiring and conduit complete with seals and explosion proof fittings in strict accordance with all applicable codes.

G. Communications raceway shall include square outlet box and single or double gang flush wall opening as required for each telephone/data device. Conduits shall include pull strings and wide radius bends. Conduit stubs shall include insulating bushings. Conduit from outlet box shall be 3/4 inch minimum.

H. Install pull boxes, junction boxes, and outlet boxes in accordance with codes, standards, and manufacturers recommendations. Boxes shall include accessible covers, shall be fabricated of heavy gage galvanized steel, and shall be sized in accordance with code to adequately facilitate pulling and connecting the quantity and size of wires, cables, and feeders contained. Conduit terminations shall be made with bushings and locknuts. Supports for conduits and boxes shall be suspended directly to the building structural components and in no case shall they be attached to suspended ceiling grid, ductwork, or piping components.

I. Install feeders and branch circuit wiring in accordance with codes, standards, and manufacturers recommendations. Install normal power, emergency power, fire alarm, and life safety systems within continuous metal raceways. Install concealed security and communications wiring within continuous metal raceways. Separate each system into independent raceways. Provide cable supports as required. Terminate cables per code and manufacturers recommendations. Provide (2) hole lugs for cables 250 kcmil and larger. Power wiring insulation shall be as follows unless noted otherwise:

Wire Location	300 kcmil and smaller	350 kcmil and larger	Environmental Conditions
Interior Locations	THHN/THWN	XHHW	dry
Exterior Locations	THHN/THWN THHN/THWN	XHHW XHHW-2	damp wet

J. All branch circuits serving patient care spaces shall be provided with an effective ground-fault current path by installation in a metal raceway system; or a cable having a metallic armor or sheath assembly. The metal raceway system, metallic cable armor, or sheath assembly shall itself qualify as an equipment grounding conductor in accordance with 250.118.

K. Install electrical distribution equipment and devices, including distribution panelboards, branch panelboards, motor starters, local disconnect switches, overcurrent protection, transformers, main contactors, receptacles, etc. in accordance with codes, standards, and manufacturers recommendations.

L. Install grounding systems in accordance with codes, standards, and manufacturers recommendations. Provide a #6 AWG bare copper conductor routed in 3/4" conduit to the building ground from a lug mounted on the communication equipment mounting board.

M. Install lighting and associated controls, including fixtures, ballasts, lamps, toggle switches, lighting contactors, etc in accordance with codes, standards, and manufacturers recommendations.

N. Install single and multiple device cover plates as required. Extend existing devices to finished surface as required.

O. Install fire alarm and other life safety systems in accordance with codes, standards, and manufacturers recommendations.

P. Install inscription plates and identification markings for products and wiring including the same inscriptions where indicated on the contract documents. Install plastic laminate nameplates on enclosures for each device within metering equipment, distribution panelboards, branch panelboards, motor starters, disconnect switches, transformers, and contactors. Nameplates shall be white with black core, 1-1/4 inches by 3 inches minimum, with 3/16 inch lettering, secured to equipment with two machine screws. Prepare and install type-written panel directory within each branch panel. Device plates shall be engraved for toggle switches and other devices whose function is not readily apparent. Markers shall be self-sticking for each wire and cable at terminations and at each accessible point in equipment and raceway.

Q. Clean electrical apparatus prior to completion of construction. Keep work areas clean at all times.

R. Alterations and Demolition of existing systems shall be as follows:
1. Provide all alterations and demolition of the existing electrical installation as required, including any incidental materials to execute all removal, rerouting, relocation, and any other modifications for proper accommodation of all new construction as indicated on the contract documents. All alterations and demolition shall be as indicated on the contract documents or as required, including any modifications not specifically identified on any contract documents but required to complete all new construction.

2. Provide all modifications to existing equipment as required or as indicated on the contract documents in strict accordance with the existing product manufacturers recommendations.

3. Existing raceway, wire and cable extending through the construction area but serving areas outside the contract shall be rerouted and reconnected as required. All modifications shall be without any interruption to the building power, communications, security, fire alarm and life safety systems, or interference to other areas or tenants. Where any modifications would interfere with the daily operations of the building or other tenants, after-hours work or temporary services shall be provided with prior written approval from the building.

4. Existing conduit, wire, cable, supports, hangers, and other electrical installation which is removed, shall be completely removed, back to the first device or that equipment which is unaffected by the modifications. Conduit which is buried in concrete or otherwise inaccessible may be abandoned and capped at each end. All wire and cable shall be removed from any abandoned conduit.

5. Existing electrical materials and equipment, including lighting fixtures, switches, receptacles, speakers, conduit, outlet boxes, fittings, wire, cable, and other equipment and devices which are removed shall remain the property of the Owner and shall be stored or discarded as directed.

6. Reuse existing electrical products as indicated on the contract documents only as is found practical. Examine the condition of all such products, determine suitability for re-use, and periodically notify the Architect/Engineer of findings for final acceptance of re-use. Wire and cable for new construction or extension of an existing installation shall be new, in no case shall existing wire and cable be reused.

S. Where equipment installation require collaboration with vendor drawings, refer most current vendor drawings for up to date rough-in information. Contractor shall field coordinate all conduit and cable tray routing with all other trades to avoid conflicts. Recommend having an on site meeting with vendor engineer for verification of all information prior to proceed with rough-in installations.

This sheet of drawings has not been reviewed for code compliance.

ABBREVIATIONS

NOTE: ABBREVIATIONS ARE ALPHABETICALLY LISTED BY DESCRIPTION.

ABBREV.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
ACL	ACROSS THE LINE
ALM	ALARM
AC	ALTERNATING CURRENT
A	AMPERE
AMP	AMPERE
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
ANN	ANNUNCIATOR
ATS	AUTOMATIC TRANSFER SWITCH
BAL	BALLAST
BR	BRANCH
BRKR	BREAKER
BGB	BUILDING GROUND BOX
CAB	CABINET
CATV	CABLE TELEVISION
C.B.	CIRCUIT BREAKER
CCT	CIRCUIT
CCTV	CLOSED CIRCUIT TELEVISION
CLO	CLOSET
COAX	COAXIAL
C.U.	COEFFICIENT OF UTILIZATION
COMED	COMMONWEALTH EDISON COMPANY
C	CONDUIT
CONN	CONNECTION
CONV	CONVENIENCE
CU	COPPER
CUH	CABINET UNIT HEATER
CT	CURRENT TRANSFORMER
HZ	HERTZ (CYCLES/SECOND)
DC	DIRECT CURRENT
DS	DISCONNECT SWITCH
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
DO	DRAWOUT
DT	DUSTTIGHT
ELEC	ELECTRIC
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING (THIN WALL CONDUIT)
EQ	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
EX	EXISTING
EP	EXPLOSION PROOF
FPB	FAN POWERED BOX
FA	FIRE ALARM
FDC	FIRE DEPARTMENT CONNECTION
FB	FLOORBOX
FLUOR	FLUORESCENT
F	FUSE
F.S.	FUSED SWITCH
GEN	GENERATOR
GRD	GROUND
GFI	GROUND FAULT INTERRUPTER
GHW	GALVANIZED HEAVYWALL STEEL CONDUIT
HV	HIGH VOLTAGE
HP	HORSE POWER
INC	INCANDESCENT
IC	INTERRUPTING CAPACITY
IMC	INTERMEDIATE GRADE CONDUIT
JB	JUNCTION BOX
KW	KILOWATT
KWH	KILOWATT-HOUR
KVA	KILOVOLT-AMPERE
KO	KNOCKOUT
LTG	LIGHTING
LS	LOUD SPEAKER
LV	LOW VOLTAGE
MH	MANHOLE
MFR	MANUFACTURER
MV	MULTI VAPOR
MERC.	MERCURY VAPOR
MTR	MOTOR
MCC	MOTOR CONTROL CENTER
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NEUT	NEUTRAL
NC	NORMALLY CLOSED
NO	NORMALLY OPENED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PNL	PANEL
PH	PHASE
PT	POTENTIAL TRANSFORMER
PWR	POWER
PRI	PRIMARY
PROT.	PROTECTION OR PROTECTIVE
PA	PUBLIC ADDRESS
PB	PULL BOX
RT	RAINTIGHT
RECP	RECEPTACLE
RC	REMOTE CONTROL
R	RESISTANCE
REL	RELOCATE
SEC	SECONDARY
SC	SHORT CIRCUIT
SP	SINGLE POLE
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
SPKR	SPEAKER
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STA	STATION
S	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
SYS	SYSTEM
TC	TERMINAL CABINET
TEL	TELEPHONE
TEL.CL.	TELEPHONE CLOSET
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TERM.	TERMINAL
TX	TRANSFORMER
T	TRIP
TL	TWIST LOCK
UL	UNDERWRITER'S LABORATORIES
UNG	UNGROUNDED
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VP	VAPORPROOF
VT	VAPORTIGHT
V	VOLT
VA	VOLT-AMPERE
WT	WATERTIGHT
W	WATT
WP	WEATHERPROOF
XR	EXISTING TO BE REMOVED
XRL	EXISTING TO BE RELOCATED
XRW	EXISTING TO BE REWIRED

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No.	Description	Date

COLORADO LICENSED MICHAEL P. THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

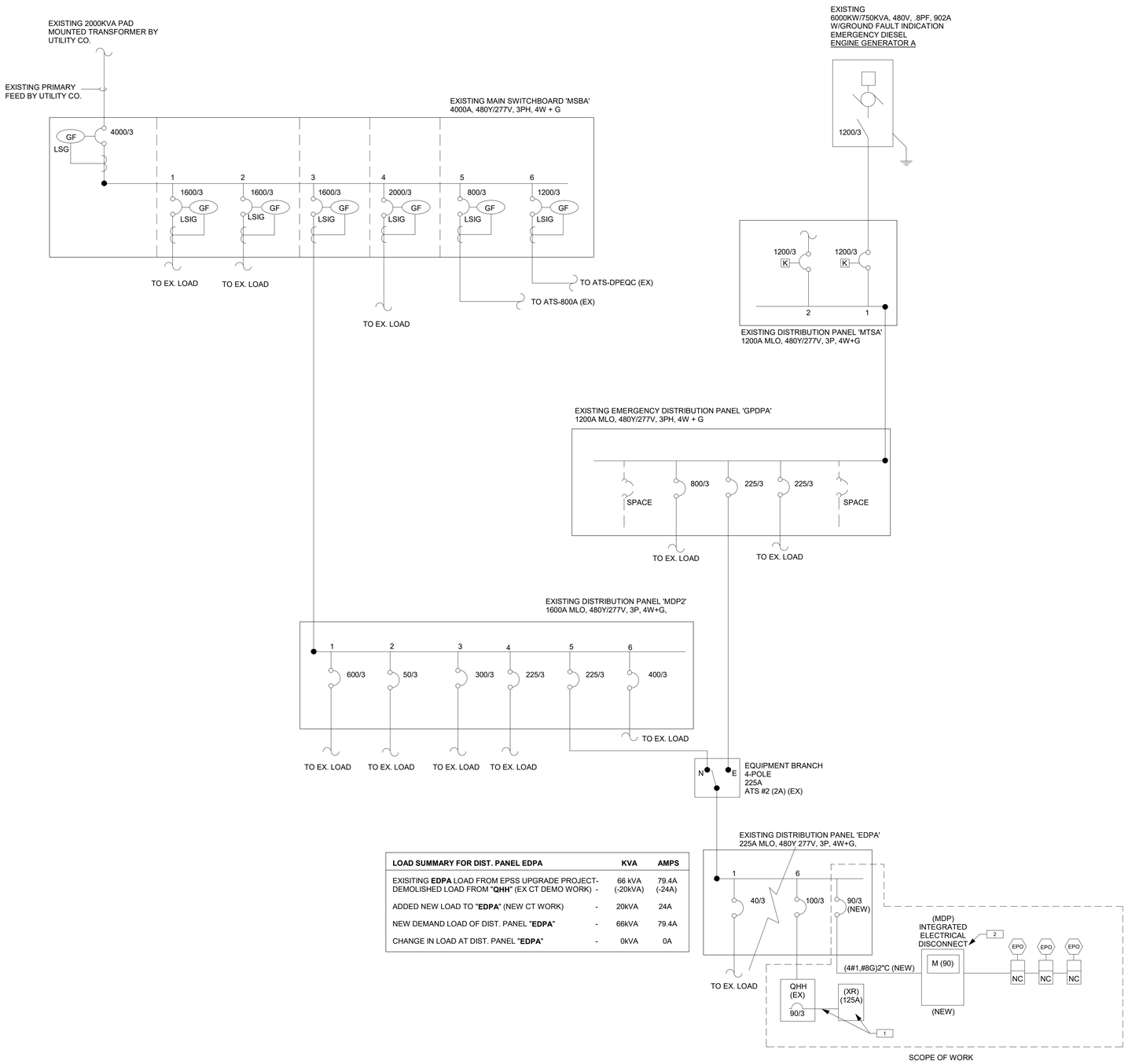
1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
ELECTRICAL SPECIFICATIONS & ABBREVIATIONS

Sheet Number
E001

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LOAD SUMMARY FOR DIST. PANEL EDPA		KVA	AMPS
EXISITING **EDPA** LOAD FROM EPSS UPGRADE PROJECT-DEMOLISHED LOAD FROM "**QHH**" (EX CT DEMO WORK)	-	66 kVA (-20kVA)	79.4A (-24A)
ADDED NEW LOAD TO "**EDPA**" (NEW CT WORK)	-	20kVA	24A
NEW DEMAND LOAD OF DIST. PANEL "**EDPA**"	-	66kVA	79.4A
CHANGE IN LOAD AT DIST. PANEL "**EDPA**"	-	0kVA	0A

1 EXISTING ED CT ONE-LINE DIAGRAM (SHOWN FOR REFERENCE ONLY)

NOT TO SCALE

GENERAL NOTES:

1. REFER TO SHEET E000 FOR ONE-LINE DIAGRAM SYMBOLS.
2. ALL EMERGENCY FEEDERS SHALL BE IN 2-HR RATED ASSEMBLIES AND SHALL BE INSTALLED PER NEC 700.10-A,B,C,D REQUIREMENTS.
3. ALL BREAKERS LARGER THAN 200AMPS SHALL BE PROVIDED WITH L,S,I ELECTRONIC TRIP SETTINGS. BREAKERS LARGER THAN 1000A SHALL BE PROVIDED WITH L,S,I,G ELECTRONIC TRIP SETTINGS.
4. REFER TO PANEL SCHEDULES FOR FULL PANEL REQUIREMENTS.

KEYNOTES: [#]

1. EXISTING FEEDER AND ASSOCIATED CT DISCONNECT TO BE DEMOLISHED BACK TO THE SOURCE. CONTRACTOR SHALL FIELD COORDINATE THE EQUIPMENT SHUTDOWNS WITH OWNER PRIOR TO PROCEED WITH DEMO WORK TO MINIMIZE THE FACILITY INTURRUPTIONS. UTILIZE AN "ICRA" CART FOR THIS WORK.
2. NEW INTERGRAL DISCONNECT SUPPLIED BY GE FOR NEW CT INSTALLTION. PANEL AND ALL ASSOCIATED WIRING SHALL BE INSTALLED BY E.C. THIS CONTRACTOR SHALL PROVIDE A NEW BREAKER IN EXISTING PANEL "EDPA" AND ROUTE THE NEW FEEDER FROM EDPA TO NEW DISCONNECT LOCATION. FIELD COORDINATE THE EXACT LOCATION AND REQUIREMENTS WITH GE PRIOR TO INSTALLATION.

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No.	Description	Date

COLORADO LICENSED
JOSEPH P. THOMPSON
55150
PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
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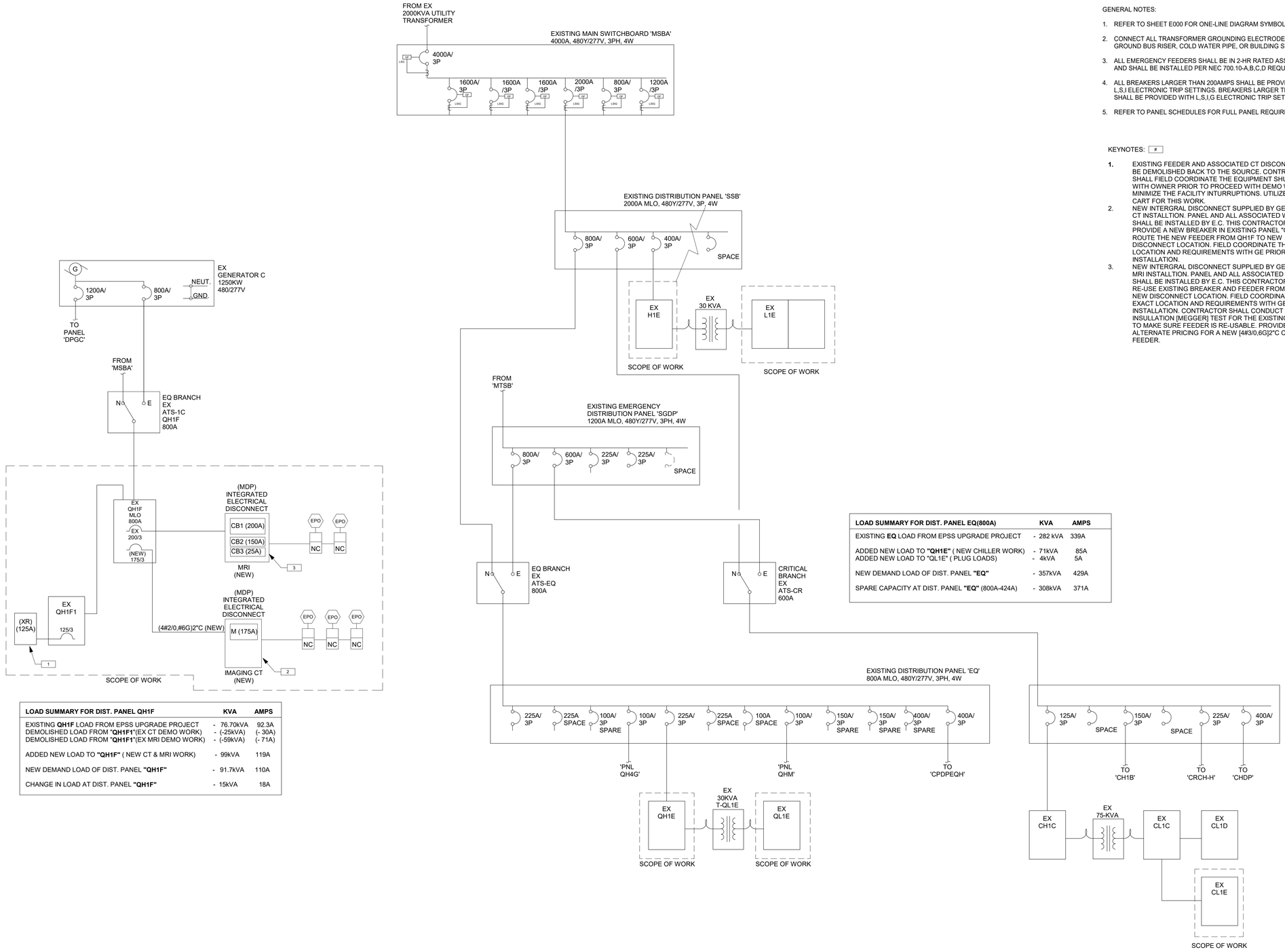
ELECTRICAL ONELINE DIAGRAMS

Sheet Number

E002

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: nmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

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LOAD SUMMARY FOR DIST. PANEL QH1F	KVA	AMPS
EXISTING **QH1F** LOAD FROM EPSS UPGRADE PROJECT	- 76.70kVA	92.3A
DEMOLISHED LOAD FROM **"QH1F1"**(EX CT DEMO WORK)	- (-25kVA)	(- 30A)
DEMOLISHED LOAD FROM **"QH1F1"**(EX MRI DEMO WORK)	- (-59kVA)	(- 71A)
ADDED NEW LOAD TO **"QH1F"** (NEW CT & MRI WORK)	- 99kVA	119A
NEW DEMAND LOAD OF DIST. PANEL **"QH1F"**	- 91.7kVA	110A
CHANGE IN LOAD AT DIST. PANEL **"QH1F"**	- 15kVA	18A

LOAD SUMMARY FOR DIST. PANEL EQ(800A)	KVA	AMPS
EXISTING **EQ** LOAD FROM EPSS UPGRADE PROJECT	- 282 kVA	339A
ADDED NEW LOAD TO **"QH1E"** (NEW CHILLER WORK)	- 71kVA	85A
ADDED NEW LOAD TO "QL1E" (PLUG LOADS)	- 4kVA	5A
NEW DEMAND LOAD OF DIST. PANEL **"EQ"**	- 357kVA	429A
SPARE CAPACITY AT DIST. PANEL **"EQ"** (800A-424A)	- 308kVA	371A

1 EXISTING MRI & IMAGING CT ONE-LINE DIAGRAM (SHOWN FOR REFERENCE ONLY)

NOT TO SCALE

GENERAL NOTES:

1. REFER TO SHEET E000 FOR ONE-LINE DIAGRAM SYMBOLS.
2. CONNECT ALL TRANSFORMER GROUNDING ELECTRODES TO GROUND BUS RISER, COLD WATER PIPE, OR BUILDING STEEL.
3. ALL EMERGENCY FEEDERS SHALL BE IN 2-HR RATED ASSEMBLIES AND SHALL BE INSTALLED PER NEC 700.10-A,B,C,D REQUIREMENTS.
4. ALL BREAKERS LARGER THAN 200AMPS SHALL BE PROVIDED WITH L,S,I ELECTRONIC TRIP SETTINGS. BREAKERS LARGER THAN 1000A SHALL BE PROVIDED WITH L,S,I,G ELECTRONIC TRIP SETTINGS.
5. REFER TO PANEL SCHEDULES FOR FULL PANEL REQUIREMENTS.

KEYNOTES: #

1. EXISTING FEEDER AND ASSOCIATED CT DISCONNECT TO BE DEMOLISHED BACK TO THE SOURCE. CONTRACTOR SHALL FIELD COORDINATE THE EQUIPMENT SHUTDOWNS WITH OWNER PRIOR TO PROCEED WITH DEMO WORK TO MINIMIZE THE FACILITY INTURRUPTIONS. UTILIZE AN "ICRA" CART FOR THIS WORK.
2. NEW INTERGRAL DISCONNECT SUPPLIED BY GE FOR NEW CT INSTALLTION. PANEL AND ALL ASSOCIATED WIRING SHALL BE INSTALLED BY E.C. THIS CONTRACTOR SHALL PROVIDE A NEW BREAKER IN EXISTING PANEL "QH1F" AND ROUTE THE NEW FEEDER FROM QH1F TO NEW DISCONNECT LOCATION. FIELD COORDINATE THE EXACT LOCATION AND REQUIREMENTS WITH GE PRIOR TO INSTALLATION.
3. NEW INTERGRAL DISCONNECT SUPPLIED BY GE FOR NEW MRI INSTALLTION. PANEL AND ALL ASSOCIATED WIRING SHALL BE INSTALLED BY E.C. THIS CONTRACTOR SHALL RE-USE EXISTING BREAKER AND FEEDER FROM QH1F TO NEW DISCONNECT LOCATION. FIELD COORDINATE THE EXACT LOCATION AND REQUIREMENTS WITH GE PRIOR TO INSTALLATION. CONTRACTOR SHALL CONDUCT A FEEDER INSULLATION (MEGGER) TEST FOR THE EXISTING FEEDER TO MAKE SURE FEEDER IS RE-USABLE. PROVIDE ALTERNATE PRICING FOR A NEW [4#3/0,6G]2"C COPPER FEEDER.

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No.	Description	Date

COLORADO LICENSED MICHAEL P. THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
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ELECTRICAL ONELINE DIAGRAMS

Sheet Number

E003

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Date: Oct 09, 2024
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PANEL DESIGNATION: QHH (EX) LOCATION: ELEC 1-1803 MOUNTING: **SURFACE** FAULT DUTY: 14,000
MLO: **X** MAIN: BUS: 225A VOLTS: **480/277** PHASE: **3** WIRE: 4

EQUIPMENT DESCRIPTION	DMD	WATTS A	WATTS B	WATTS C	BRKR SIZE			BRKR SIZE	WATTS A	WATTS B	WATTS C	DMD	EQUIPMENT DESCRIPTION
CT (XR)*	G				90/3	1	2	20/1				G	RADIOLOGY CNTL DESK (EX)
	G					3	4					G	NUC MED UPTAKE RM (EX)
	G					5	6	80/3				G	FEEDING UNDERGROUND (EX)
SPARE	G					7	8					G	RADIOLOGY CNTL DESK (EX)
	G				70/3	9	10	20/1				G	RADIOLOGY CNTL DESK (EX)
	G					11	12	20/1				G	RADIOLOGY CNTL DESK (EX)
FCU (EX)	G				20/1	13	14	20/1				G	FEEDING STERILE PROC. (EX)
SPARE	G				20/1	15	16						SPACE
SPARE	G				20/1	17	18						SPACE
SPARE	G				20/1	19	20					G	
SPARE	G				20/1	21	22	30/3				G	EXISITING LOAD
SPARE	G				20/1	23	24					G	
	G					25	26					G	
X-RAY (EX)	G				75/3	27	28	30/3				G	SPARE
	G					29	30					G	
SPACE						31	32					G	
SPACE						33	34	30/3				G	SPARE
SPACE						35	36					G	

TOTAL "A"	0		0	0			0.0 CONN.KVA
TOTAL "B"		0	0		0		0.0 CONN. AMPS
TOTAL "C"			0			0	0.0 DEMAND KVA
TOTAL "A,B,C "				0 CONN.			0.0 DEMAND AMPS
				0 DEMAND			0.0 DESIGN KVA
				0 DESIGN			0.0 DESIGN AMPS

NOTES:
1. ALL BOLD ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD ONLY.
*LOAD TO BE DEMOLISHED AND MARKED AS SPARE.

PANEL DESIGNATION: QH1F (EX) LOCATION:SEE PLAN MOUNTING: **FREE STANDING** FAULT DUTY: 42,000
MLO: **X** MAIN: BUS: 800A VOLTS: **480/277** PHASE: **3** WIRE: 4

EQUIPMENT DESCRIPTION	DMD	WATTS A	WATTS B	WATTS C	BRKR SIZE			BRKR SIZE	WATTS A	WATTS B	WATTS C	DMD	EQUIPMENT DESCRIPTION
PANEL QH1F1 (EX)	G				400/3	1	2					G	MAIN LUGS
	G					3	4					G	
	G					5	6					G	
XFMR QL1F (EX)	G				50/3	7	8	125/3				G	SPARE
	G					9	10					G	
	G					11	12					G	
AHU FOR X-RAY (EX)	G				25/3	13	14	20/3				G	RTU IR & COMPTR RM. (EX)
	G					15	16					G	
	G					17	18					G	
SPACE						19	20	20/1				G	PATIENT LTG RM 1-1510 (EX)
						21	22	20/1				G	SPECIAL PROC. RM#3 LTG (EX)
						23	24						SPACE
IMAGING CT-02*	G	3667			**175/3**	25	26	15/3				G	IR RM 1 & 2
	G		3667			27	28					G	
	G			3667		29	30					G	
IR-3 (EX)	G				175/3	31	32						
	G					33	34						
	G					35	36						
MRI-MDP	G	29333			200/3	37	38						
	G		29333			39	40						
	G			29333		41	42						
CT-01 DISC. (EX)	G				125/3	43	44						
	G					45	46						
	G					47	48						

TOTAL "A"	33000			33000	0		99.0 CONN.KVA
TOTAL "B"		33000		33000		0	119.1 CONN. AMPS
TOTAL "C"			33000	33000			99.0 DEMAND KVA
TOTAL "A,B,C "				99000 CONN.			119.1 DEMAND AMPS
				99000 DEMAND			99.0 DESIGN KVA
				99000 DESIGN			119.1 DESIGN AMPS

NOTES:
1. ALL BOLD ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD ONLY.
*PROVIDE NEW CIRCUIT BREAKER THAT MATCHES MANUFACTURER AND AIC RATING OF EXISTING BREAKERS IN PANEL.

PANEL DESIGNATION: L1E-S1 (EX) LOCATION: MOUNTING: **SURFACE** FAULT DUTY: 10,000
MLO: NO MAIN:150 BUS: VOLTS: **208/120** PHASE: **3** WIRE: 4

EQUIPMENT DESCRIPTION	DMD	WATTS A	WATTS B	WATTS C	BRKR SIZE			BRKR SIZE	WATTS A	WATTS B	WATTS C	DMD	EQUIPMENT DESCRIPTION
X-RAY OFFICE (EX)	G				20/1	1	2	20/1				G	CT 2 RCPT (EX)
X-RAY OFFICE (EX)	G				20/1	3	4	20/1				G	CT 1 RCPT (EX)
RCPT MRI CONTROL (EX)	G				20/1	5	6	20/1				G	HALLWAY RCPT (EX)
X-RAY OFFICE (EX)	G				20/1	7	8	20/1				G	X-RAY RCPT (EX)
FEEDS UNDERGROUND (EX)	G				20/1	9	10	20/1				G	MRI 2 CONTROL DESK (EX)
ROOM 4 X-RAY (EX)	G				20/1	11	12	20/1				G	IR3 VAV (EX)
MRI DESK RCPT (EX)	G				20/1	13	14	20/1				G	TECH WORK (EX)
RCPT MRI 2 (EX)	G				20/1	15	16	20/1				G	TECH WORK (EX)
TECH WORK RCPT (EX)	G				20/1	17	18	20/1				G	MRI RCPT (EX)
FEEDS UNDERGROUND (EX)	G				20/1	19	20	20/1				G	X-RAY RCPT (EX)
X-RAY RM 5 (EX)	G				20/1	21	22	20/1				G	FEEDS UNDERGROUND (EX)
X-RAY HALL (EX)	G				20/1	23	24	20/1				G	FEEDS UNDERGROUND (EX)
FEEDS UNDERGROUND (EX)	G				20/1	25	26	20/1				G	FEEDS UNDERGROUND (EX)
FEEDS UNDERGROUND (EX)	G				20/1	27	28	20/1				G	FEEDS UNDERGROUND (EX)
FEEDS UNDERGROUND (EX)	G				20/1	29	30	20/1				G	FEEDS UNDERGROUND (EX)

TOTAL "A"	0			0	0		0.0 CONN.KVA
TOTAL "B"		0		0		0	0.0 CONN. AMPS
TOTAL "C"			0	0			0.0 DEMAND KVA
TOTAL "A,B,C "				0 CONN.			0.0 DEMAND AMPS
				0 DEMAND			0.0 DESIGN KVA
				0 DESIGN			0.0 DESIGN AMPS

NOTES:
1.ALL BOLDED ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD.
*PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER'S MANUFACTURER AND AIC RATING.

P+A1:O59ANEL DESIGNATION: QL1E (EX) LOCATION:SEE PLAN MOUNTING: **SURFACE** FAULT DUTY: 10,000
MLO: NO MAIN:100A BUS: VOLTS: **208/120** PHASE: **3** WIRE: 4

EQUIPMENT DESCRIPTION	DMD	WATTS A	WATTS B	WATTS C	BRKR SIZE			BRKR SIZE	WATTS A	WATTS B	WATTS C	DMD	EQUIPMENT DESCRIPTION
CT 2 RCPT (EX)	G	180			20/1	1	2	20/1				G	RADIOLOGY CNTL DESK (EX)
CT 2 RCPT (EX)	G				20/1	3	4	20/1				G	NUC MED UPTAKE RM (EX)
RADIOLOGY STG RCPT (EX)	G				20/1	5	6	20/1				G	FEEDING UNDERGROUND (EX)
FEEDING UNDRGRND (EX)	G				20/1	7	8	20/1				G	RADIOLOGY CNTL DESK (EX)
FEEDING UNDRGRND (EX)	G				20/1	9	10	20/1				G	RADIOLOGY CNTL DESK (EX)
RADIOLOGY STG RCPT (EX)	G				20/1	11	12	20/1				G	RADIOLOGY CNTL DESK (EX)
CT OBSERV. RMS (EX)	G				20/1	13	14	20/1				G	FEEDING STERILE PROC. (EX)
VAV*	G		200		**20/1**	15	16	20/1				G	FEEDING STERILE PROC. (EX)
RADIOLOGY CNTRL DESK (EX)	G				20/1	17	18	20/1				G	FEEDING STERILE PROC. (EX)
FEEDING UNDRGRND (EX)	G				20/1	19	20	**20/1**	720			G	**CT 2 RCPT***
FEEDING UNDRGRND (EX)	G				20/1	21	22	20/1		900		G	**CT 2 RCPT**
FEEDING UNDRGRND (EX)	G				20/1	23	24	**20/1**			150	G	**MRI PATIENT MONITOR***
FEEDING UNDRGRND (EX)	G				20/1	25	26	20/1	540			G	**CT 2 CONTROL RM RCPT**
RADIOLOGY CNTRL DESK (EX)	G				20/1	27	28	**20/1**		796		G	**EF-1***
RADIOLOGY CNTRL DESK (EX)	G				20/2	29	30	20/2				G	EQUIP STG TWIST LOCK (EX)
	G					31	32					G	
CT 2 CONTROL RM RCPT	G		900		20/1	33	34	30/2				G	RADIOLOGY BACK OFFICE (EX)
CT OBSERV. RMS (EX)	G				20/1	35	36					G	
CT CAN LIGHTS (EX)	G				20/1	37	38	**20/2**	915				**P-1***
JBOX CT CEILING (EX)	G				20/1	39	40			915			
CT LTG	G			54	20/1	41	42						SPACE

TOTAL "A"	180			2355	2175		4.4 CONN.KVA
TOTAL "B"		1100		3711		2611	12.3 CONN. AMPS
TOTAL "C"			54	204		150	4.4 DEMAND KVA
TOTAL "A,B,C "				4440 CONN.			12.3 DEMAND AMPS
				4440 DEMAND			4.4 DESIGN KVA
				4440 DESIGN			12.3 DESIGN AMPS

NOTES:
1. ALL BOLD ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD ONLY.
*PROVIDE NEW CIRCUIT BREAKER THAT MATCHES MANUFACTURER AND AIC RATING OF EXISTING BREAKERS IN PANEL.

PANEL DESIGNATION: QH1F1 (EX) LOCATION: SEE PLAN MOUNTING: **SURFACE** FAULT DUTY: 18,000
MLO: **X** MAIN: BUS: 400A VOLTS: **480/277** PHASE: **3** WIRE: 4

EQUIPMENT DESCRIPTION	DMD	WATTS A	WATTS B	WATTS C	BRKR SIZE			BRKR SIZE	WATTS A	WATTS B	WATTS C	DMD	EQUIPMENT DESCRIPTION
SPARE	G				50/3	1	2	125/3				G	**CT-02 (XR)***
	G					3	4					G	
	G					5	6					G	
NUC MED (EX)	G				100/3	7	8	20/3				G	CT-1 RTU (EX)
	G					9	10					G	
	G					11	12					G	
NUC MED (EX)	G				30/3	13	14						SPACE
	G					15	16						SPACE
	G					17	18						SPACE
SPACE						19	20						SPACE
SPACE						21	22						SPACE
SPACE						23	24						SPACE
SPACE						25	26						SPACE
SPACE						27	28						SPACE
SPACE						29	30						SPACE

TOTAL "A"	0			0	0		0.0 CONN.KVA
TOTAL "B"		0		0		0	0.0 CONN. AMPS
TOTAL "C"			0	0			0.0 DEMAND KVA
TOTAL "A,B,C "				0 CONN.			0.0 DEMAND AMPS
				0 DEMAND			0.0 DESIGN KVA
				0 DESIGN			0.0 DESIGN AMPS

NOTES:
1. ALL BOLD ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD ONLY.
*LOAD TO BE DEMOLISHED AND MARKED AS SPARE.

PANEL DESIGNATION: L1E-S2 (EX) LOCATION: MOUNTING: **SURFACE** FAULT DUTY: 10,000
MLO: X MAIN: BUS:225A VOLTS: **208/120** PHASE: **3** WIRE: 4

EQUIPMENT DESCRIPTION	DMD	WATTS A	WATTS B	WATTS C	BRKR SIZE			BRKR SIZE	WATTS A	WATTS B	WATTS C	DMD	EQUIPMENT DESCRIPTION
CT RM (EX)	G				20/1	31	32	20/1				G	LTG (EX)
CT SCAN (EX)	G				20/1	33	34	20/1				G	CT RCPT (EX)
CT LTG	G			402	20/1	35	36	20/1				G	BREAK RM RCPT (EX)
MRI LIGHTING	G	589			20/1	37	38	20/1				G	CT RCPT (EX)
ULTRASOUND RM (EX)	G				20/1	39	40	20/1		300		G	**CT-02 CTRL MONITORS**
IR-3 RCPT BANK (EX)	G				20/1	41	42	20/1				G	ICE MACHINE (EX)
SPEC PRIC READ RM (EX)	G				20/1	43	44	20/1				G	READ RM (EX)
1508 GEX (EX)	G				20/1	45	46	20/1				G	COFFEE BREAK RM (EX)
SPEC PROC STG (EX)	G				20/1	47	48	20/1				G	MICROWAVE BREAK RM (EX)
NUC MED TREADMILL (EX)	G				20/2	49	50	20/1	300			G	**MRI PATIENT MONITORS**
	G					51	52	20/1				G	REF BREAK RM (EX)
TV BREAK RM (EX)	G				20/1	53	54	20/1				G	BREAKRM RCPT (EX)
MRI EF-1 (EX)	G				20/1	55	56	20/1				G	RCPT BREAKRM (EX)
MRI SCAN RM (EX)	G				20/1	57	58	20/1				G	MRI CONDENSORS (EX)
RADIOLOGY LTG (EX)	G				20/1	59	60	20/1				G	MRI CONDENSORS (EX)

TOTAL "A"	589			889	300		1.6 CONN.KVA
TOTAL "B"		0		300		300	4.4 CONN. AMPS
TOTAL "C"			402	402			1.6 DEMAND KVA
TOTAL "A,B,C "				1591 CONN.			4.4 DEMAND AMPS
				1591 DEMAND			1.6 DESIGN KVA
				1591 DESIGN			4.4 DESIGN AMPS

NOTES:
1.ALL BOLDED ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD.
*PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER'S MANUFACTURER AND AIC RATING.

Every circuit and circuit modification shall be provided with a legible and permanent description that complies with all of the following conditions as applicable (see 1-6). 2023 NEC 408.4

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: nmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

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No.	Description	Date

COLORADO LICENSED MICHAEL P. THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
ELECTRICAL SCHEDULES

Sheet Number
E004A

9/1/2023 10:48:51 PM

PANEL DESIGNATION: CL1E (EX)		LOCATION:			MOUNTING: **SURFACE**							FAULT DUTY: 10,000
MLO: X		MAIN:			BUS:100A	VOLTS: **208/120**		PHASE: **3**				WIRE: 4
EQUIPMENT		WATTS			BRKR			BRKR	WATTS			EQUIPMENT
DESCRIPTION	DMD	A	B	C	SIZE			SIZE	A	B	C	DMD	DESCRIPTION
X-RAY RM (EX)	G				20/1	1	2	20/1				G	FEED UNDERGROUND (EX)
MRI (EX)	G				20/1	3	4	20/1				G	SECRETARY OFFC. (EX)
MRI (EX)	G			180	20/1	5	6	20/1				G	FEEDS IN CT SUITE (EX)
ELEC RM RCPT (EX)	G				20/1	7	8	20/1				G	FEEDS IN CT SUITE (EX)
IDF UPS (EX)	G				30/2	9	10	20/1				G	FEEDS IN CT SUITE (EX)
	G					11	12	20/1				G	FEEDS IN CT SUITE (EX)
IT RCPTS (EX)	G				20/1	13	14	20/1				G	FEEDS IN CT SUITE (EX)
FEEDS INTO CT (EX)	G				20/1	15	16	20/1				G	IDF CLOSET LENEL (EX)
FEEDS INTO CT (EX)	G				20/1	17	18	20/1				G	IRI EQUIP RM (EX)
FEEDS INTO CT (EX)	G				20/1	19	20	20/1				G	CT SUITE (EX)
IR RM 2 (EX)	G				20/1	21	22	20/1				G	IR RM 2 (EX)
RADIOLOGY RCPT (EX)	G				20/1	23	24	20/1			140	G	**MRI LIGHTING***
RADIOLOGY RCPT (EX)	G				20/1	25	26	20/1				G	**SPARE**
RADIOLOGY RCPT (EX)	G				20/1	27	28	20/1		53		G	**MRI LIGHTING***
INTEVENTION RM (EX)	G				20/1	29	30	30/2				G	IR LASER (EX)
FEED IN IR (EX)	G				20/1	31	32					G	
MRI HOLDING RM (EX)	G				20/1	33	34	20/1				G	ULTRASOUND RM (EX)
IT RM DEDICATED RCPT (EX)	G				20/1	35	36	20/1				G	GEMST XFMR IR RM 1 (EX)
JCI CNTL RTU 14 (EX)	G				20/1	37	38	20/1				G	IR 1 CNTRL RM (EX)
JCI CNTL RTU 9 (EX)	G				20/1	39	40	20/1				G	IR 1 RECPT CORD (EX)
ULTRASOUND RM (EX)	G				20/1	41	42	20/1				G	IR CONTROL RM (EX)

TOTAL "A"		0			0	0			0.4 CONN.KVA
TOTAL "B"			0		53		53		1.0 CONN. AMPS
TOTAL "C"				180	320			140	0.4 DEMAND KVA
TOTAL "A,B,C "					373 CONN.				1.0 DEMAND AMPS
					373 DEMAND				0.4 DESIGN KVA
					373 DESIGN				1.0 DESIGN AMPS

NOTES:
1.ALL BOLDED ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD.
*PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER'S MANUFACTURER AND AIC RATING.

PANEL DESIGNATION: EDPA (EX)		LOCATION: SEE PLAN			MOUNTING: **SURFACE**							FAULT DUTY: 50,000
MLO: **X**		MAIN:			BUS: 225A	VOLTS: **480/277**		PHASE: **3**				WIRE: 4
EQUIPMENT		WATTS			BRKR			BRKR	WATTS			EQUIPMENT
DESCRIPTION	DMD	A	B	C	SIZE			SIZE	A	B	C	DMD	DESCRIPTION
AHU-A (EX)	G				30/3	1	2	100/3				G	SPARE
	G					3	4					G	
	G					5	6					G	
VP-1 (EX)	G				50/3	7	8	30/3				G	MAC-1 (EX)
	G					9	10					G	
	G					11	12					G	
QHH (EX)	G				100/3	13	14	100/3				G	SPARE (EX)
	G					15	16					G	
	G					17	18					G	
ED CT*	G	6667			**90/3**	19	20	60/3				G	T-EDHV (EX)
	G		6667			21	22					G	
	G			6667		23	24					G	
						25	26						
						27	28						
						29	30						
						31	32						
						33	34						
						35	36						
						37	38						
						39	40						
						41	42						

TOTAL "A"		6667			6667	0			20.0 CONN.KVA
TOTAL "B"			6667		6667		0		24.1 CONN. AMPS
TOTAL "C"				6667	6667			0	20.0 DEMAND KVA
TOTAL "A,B,C "					20001 CONN.				24.1 DEMAND AMPS
					20001 DEMAND				20.0 DESIGN KVA
					20001 DESIGN				24.1 DESIGN AMPS

NOTES:
1.ALL BOLDED ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD.
*PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER'S MANUFACTURER AND AIC RATING.

PANEL DESIGNATION: H1E (EX)		LOCATION: SEE PLAN			MOUNTING: **SURFACE**							FAULT DUTY: 14,000
MLO: **X**		MAIN:			BUS: 400A	VOLTS: **480/277**		PHASE: **3**				WIRE: 4
EQUIPMENT		WATTS			BRKR			BRKR	WATTS			EQUIPMENT
DESCRIPTION	DMD	A	B	C	SIZE			SIZE	A	B	C	DMD	DESCRIPTION
RADIOLOGY RM LTG (EX)	G				20/1	1	2	20/1				G	LTG ULTRASOUND (EX)
MRI EQUIP LTG	G		106		20/1	3	4	20/1				G	NORM. LTG (EX)
FEEDS UNDERGROUND (EX)	G				20/1	5	6					G	X-RAY DISC (EX)
MRI CHILLER ON ROOF (EX)	G				50/3	7	8	80/3				G	
	G					9	10					G	
	G					11	12	20/3				G	T-EDHV (EX)
MRI-2 CHILLER ON ROOF (EX)	G				100/3	13	14					G	
	G					15	16					G	
	G					17	18	20/2				G	SPARE
RF-3 (EX)	G				90/3	19	20					G	
	G					21	22	125/2				G	SPARE
	G					23	24					G	
AHU-7 (EX)	G				30/3	25	26	100/3				G	PET SCAN (EX)
	G					27	28					G	
	G					29	30					G	
PNL-L1E (EX)	G				80/3	31	32	60/3				G	AHU (EX)
	G					33	34					G	
	G					35	36					G	
AHUs (EX)	G				40/3	37	38	125/3				G	MRI (EX)
	G					39	40					G	
	G					41	42					G	

TOTAL "A"		0			0	0			0.1 CONN.KVA
TOTAL "B"			106		106		0		0.1 CONN. AMPS
TOTAL "C"				0	0			0	0.1 DEMAND KVA
TOTAL "A,B,C "					106 CONN.				0.1 DEMAND AMPS
					106 DEMAND				0.1 DESIGN KVA
					106 DESIGN				0.1 DESIGN AMPS

NOTES:
1.ALL BOLDED ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD.
*PROVIDE NEW CIRCUIT BREAKER MATCHING EXISTING BREAKER'S MANUFACTURER AND AIC RATING.

PANEL DESIGNATION: QH1E (EX)		LOCATION:SEE PLAN			MOUNTING: **SURFACE**							FAULT DUTY: 14,000
MLO: **X**		MAIN:			BUS: 225A	VOLTS: **480/277**		PHASE: **3**				WIRE: 4
EQUIPMENT		WATTS			BRKR			BRKR	WATTS			EQUIPMENT
DESCRIPTION	DMD	A	B	C	SIZE			SIZE	A	B	C	DMD	DESCRIPTION
SPARE	G				15/3	1	2	110/3				G	X-RAY (EX)
	G					3	4					G	
	G					5	6					G	
IR RM 1 PDB1 (EX)	G				150/3	7	8	50/3				G	PNL-QL1E (EX)
	G					9	10					G	
	G					11	12					G	
FCU-1 (EX)	G				20/3	13	14	20/3				G	HU-1 (EX)
	G					15	16					G	
	G					17	18					G	
CH-2*	G	23555			**100/3**	19	20						SPACE
	G		23555			21	22						SPACE
	G			23555		23	24						SPACE
SPACE						25	26						SPACE
SPACE						27	28						SPACE
SPACE						29	30						SPACE

TOTAL "A"		23555			23555	0			70.7 CONN.KVA
TOTAL "B"			23555		23555		0		85.0 CONN. AMPS
TOTAL "C"				23555	23555			0	70.7 DEMAND KVA
TOTAL "A,B,C "					70665 CONN.				85.0 DEMAND AMPS
					70665 DEMAND				70.7 DESIGN KVA
					70665 DESIGN				85.0 DESIGN AMPS

NOTES:
1. ALL BOLD ITEMS REPRESENT NEW SCOPE.
2. LOAD SHOWN REPRESENTS NEW LOAD ONLY.
*PROVIDE NEW CIRCUIT BREAKER THAT MATCHES MANUFACTURER AND AIC RATING OF EXISTING BREAKERS IN PANEL.

MOTOR/EQUIPMENT SCHEDULE - NOTES 1,2

TAG	DESCRIPTION	LOCATION	ELECTRICAL RATING					FEEDER/SOURCE - NOTE 1				DISCONNECT		NOTES
			KW	HP	VOLT	FLA	PH	PANEL	CCT	OCPD	FEEDER	INTEGRAL	BY EC	
CH-2	CHILLER	ROOF	N/A	TBD	480	85	3	QH1E	19/21/23	100A/3P DISC. W/ 100A FRS-R FUSE	[4#1,#6G]2"C	X	-	1,2
VAV-1412	VARIABLE AIR VOLUME	IMAGING ROOM	0.2	N/A	120	1.67	1	EX	EX	$T.O	[2#12,#12G]3/4"C	X	-	1,2
VAV-1412A	VARIABLE AIR VOLUME	IMAGING CTRL ROOM	0.2	N/A	120	1.67	1	QL1E	15	$T.O	[2#12,#12G]3/4"C	X	-	1,2
EF-1	EXHAUST FAN	ROOF	N/A	1/4	120	5.8	1	QL1E	28	$T.O	[2#12,#12G]3/4"C	-	X	1,2
P-1	PUMP	EQUIPMENT ROOM	N/A	1.0	208	8.8	1	QL1E	38/40	$T.O	[2#12,#12G]3/4"C	X	-	1,2
CU-3	EXISTING CRAC UNIT	EQUIPMENT ROOM	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	EX	1,2

NOTES:
1. REFER TO BRANCH CIRCUIT WIRING NOTES ON SHEET E000
2. COORDINATE EXACT EQUIPMENT REQUIREMENTS WITH OTHER TRADES PRIOR TO ROUGH-IN AND INSTALLATION

Every circuit and circuit modification shall be provided with a legible and permanent description that complies with all of the following conditions as applicable (see 1-6). 2023 NEC 408.4

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: mmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

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No.	Description	Date

COLORADO LICENSED MICHAEL P THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
ELECTRICAL SCHEDULES

Sheet Number
E004B

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LIGHTING FIXTURE SCHEDULE

TAG	DESCRIPTION	LAMP TYPE/CRI-CT	FIXTURE VOLT	FIXTURE WATTS	MANUFACTURER	ITEM NUMBER	REMARKS
F1	2x2 LED RECESSED - SURGICAL	LED-80-4000K	120/277	27.0	HEALTHCARE LIGHTING	HSTL-2X2-G-MVOLT-SYD-XX-3000LM-40K-80CRI	NOTES 1,2,3
F1E	2x2 LED RECESSED - SURGICAL W/ 90 MINUTE BATTERY BACKUP	LED-80-4000K	120/277	27.0	HEALTHCARE LIGHTING	HSTL-2X2-G-MVOLT-SYD-XX-3000LM-40K-80CRI-E10WLCP	NOTES 1,2,3
F2	4FT INDUSTRIAL LED STRIP LIGHT	LED-80-4000K	120/277	35.3	LITHONIA LIGHTING	CSS-L48-4000LM-MVOLT-40K-80CRI	NOTES 1,2,3
F3	RECESSED DOWNLIGHT	LED-80-4000K	120/277	13.0	LITHONIA LIGHTING	LBR6-AL02-40K-XX-XX-LSS-MWD-MVOLT-UGZ	NOTES 1,2,3
F3E	RECESSED DOWNLIGHT W/ BATTERY BACKUP	LED-80-4000K	120/277	13.0	LITHONIA LIGHTING	LBR6-AL02-40K-XX-XX-LSS-MWD-MVOLT-UGZ-E10WCP	NOTES 1,2,3
F4	2X2 IMAGE PANEL	LED-90-4100K	120/277	35.0	KIRLIN	MRV-22865-2500L-41K-XXX-D1	NOTES 1,2,3
F5	MRI 2X4 IMAGE PANEL W/ REMOTE MRI DRIVER MODULE (DVR-0700A)	LED	60VDC	20.0	KIRLIN	MRP-22290-2X4-AXX-94	NOTES 1,2,3,4
F6	MRI 6" DOWNLIGHT W/ REMOTE MRI DRIVER MODULE (DVR-1400A)	LED-80-4100K	60VDC	35.0	KIRLIN	MRR-06426-2500L-41K-94-99	NOTES 1,2,3,4
F6E	MRI 6" DOWNLIGHT W/ REMOTE MRI DRIVER MODULE (DVR-1400A) W/ REMOTE BATTERY PACK	LED-80-4100K	60VDC	35.0	KIRLIN	MRR-06426-2500L-41K-94-99	NOTES 1,2,3,4
	EDGE-LIT EXIT SIGN	LED	120/277	5.0	LITHONIA LIGHTING	#LRP-*-*-RW-*-120/277-*-*-*	NOTES 1,2,3

NOTES:
1. MANUFACTURERS' CATALOG NUMBERS ARE INTENTIONALLY INCOMPLETE; COORDINATE REQUIRED TRIM KITS, MOUNTING BRACKETS, LAMPS, FINISHES, ETC. WITH THE LIGHTING DESIGNER, CONTRACT DOCUMENTS, SPECIFICATIONS, AND OTHER TRADES.
2. VERIFY TYPE OF CEILING OR WALL FOR MOUNTING OF LIGHTING FIXTURES PRIOR TO ORDERING.
3. COORDINATE LAMP COLOR TEMPERATURES WITH ARCHITECT/LIGHTING DESIGNER.
4. ALL MRI WIRING SHALL BE ROUTED THROUGH "SMART LED RFI" FILTERS PER DETAIL "4" ON SHEET "E005".

1 LIGHTING FIXTURE SCHEDULE
NOT TO SCALE

LIGHTING CONTROL SCHEDULE - MRI

THE FOLLOWING CHART OUTLINES THE LIGHTING CONTROLS FOR TYPICAL AREAS

ZONE TAG	TYPICAL ZONE DESCRIPTION	OS/VS	DIM	LS	DL	TC	CIRCUIT	NOTES
a	CONTROL ROOM 2X2 LIGHTS AND DOWNLIGHT		X	X			L1E;37	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
a*	CONTROL ROOM 2X2 EM LIGHTS		X	X			CL1E;28	EMERGENCY. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
b	CONTROL ROOM DOWNLIGHTS		X	X			L1E;37	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
b*	CONTROL ROOM EM DOWNLIGHTS		X	X			CL1E;28	EMERGENCY. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
c	MRI DOWNLIGHTS		X	X			L1E;37	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
c*	MRI EM DOWNLIGHTS		X	X			CL1E;24	EMERGENCY. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
d	MRI DOWNLIGHTS AND 2X4 IMAGE LIGHTS		X	X			L1E;37	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.

GENERAL NOTES
1. LOW VOLTAGE OVERRIDE SWITCH SHALL BE PROVIDED FOR ALL AREAS PER 2021 IECC.
2. PROVIDE UL924 DEVICE FOR EACH CONTROL ZONE CONTAINING EMERGENCY FIXTURES. FIXTURE ZONES CALLED OUT WITH "*" REQUIRE UL924 DEVICE.
3. LIGHTING CONTROL SYSTEM SHALL BE INSTALLED AND COMMISSIONED PER 2021 IECC REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE ALL FINAL LIGHTING SCENE SETTING WITH ARCHITECT AND OWNER PRIOR TO PROJECT CLOSEOUT.

LEGEND
OS= OCCUPANCY SENSOR/VACANCY SENSOR
DIM= DIMMING
LS= LOCAL OVERRIDE SWITCH
DL= DAY LIGHT CONTROL
TC= AUTOMATIC TIME CLOCK CONTROL WITH LOCAL OVERRIDE SWITCH

2 MRI LIGHTING CONTROL SCHEDULE
NOT TO SCALE

LIGHTING CONTROL SCHEDULE - IMAGING CT

THE FOLLOWING CHART OUTLINES THE LIGHTING CONTROLS FOR TYPICAL AREAS

ZONE TAG	TYPICAL ZONE DESCRIPTION	OS/VS	DIM	LS	DL	TC	CIRCUIT	NOTES
a	CT ROOM DOWNLIGHTS & 2X2 LIGHTS		X	X			L1E;35	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
a*	CT ROOM 2X2 EM LIGHTS		X	X			QL1E;41	EMERGENCY. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
b	CT ROOM DOWNLIGHTS		X	X			L1E;35	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.
c	CONTROL ROOM		X	X			L1E;35	NORMAL. CONNECT TO EXISTING CIRCUIT. CONTRACTOR TO FIELD VERIFY.

GENERAL NOTES
1. LOW VOLTAGE OVERRIDE SWITCH SHALL BE PROVIDED FOR ALL AREAS PER 2021 IECC.
2. PROVIDE UL924 DEVICE FOR EACH CONTROL ZONE CONTAINING EMERGENCY FIXTURES. FIXTURE ZONES CALLED OUT WITH "*" REQUIRE UL924 DEVICE.
3. LIGHTING CONTROL SYSTEM SHALL BE INSTALLED AND COMMISSIONED PER 2021 IECC REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE ALL FINAL LIGHTING SCENE SETTING WITH ARCHITECT AND OWNER PRIOR TO PROJECT CLOSEOUT.

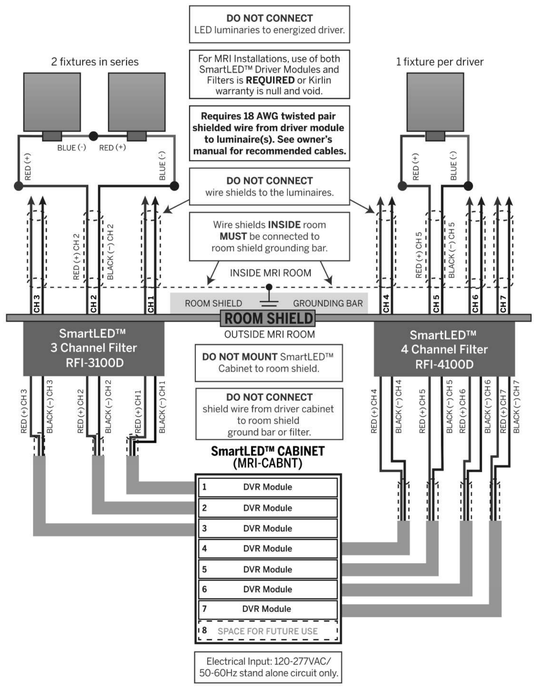
LEGEND
OS= OCCUPANCY SENSOR/VACANCY SENSOR
DIM= DIMMING
LS= LOCAL OVERRIDE SWITCH
DL= DAY LIGHT CONTROL
TC= AUTOMATIC TIME CLOCK CONTROL WITH LOCAL OVERRIDE SWITCH

3 IMAGING CT LIGHTING CONTROL SCHEDULE
NOT TO SCALE

SmartLED™ MRI LIGHTING SYSTEM

INSTALLATION GUIDE/OWNER'S MANUAL

SYSTEM WIRING/EXAMPLES



4 MRI - CABNT DRIVER CABINET WITH INTEGRAL DVR MODULES AND RFI FILTERS
NOT TO SCALE

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: nmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

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No.	Description	Date

COLORADO LICENSED 55150 MICHAEL P THOMPSON PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
LIGHTING SCHEDULES

Sheet Number
E005

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RSN 1845534 Permit # 2024 2477659-LTPage 47 of 121

COM*check* Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: TMCA IMAGING
Project Type: Alteration

Construction Site:
1501 S. POTOMAC ST.
AURORA, Colorado 80012

Owner/Agent:

Designer/Contractor:
SALAS O'BRIEN
9250 E COSTILLA AVE
GREENWOOD VILLAGE, Colorado
80112

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-IMAGING CT (Healthcare Facility:Imaging)	651	0.94	612
2-MRI (Healthcare Facility:Imaging)	683	0.94	642
3-MRI EQUIPMENT RM (Common Space Types:Electrical/Mechanical)	202	0.43	87
		Total Allowed Watts =	1341

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
IMAGING CT (Healthcare Facility: Imaging, 651 sq.ft.)				
LED: F3: LED 13W: Other:	1	22	13	286
LED: F1E: 27W: Other:	1	2	27	54
LED: F4: 35W: Other:	1	2	35	70
MRI (Healthcare Facility: Imaging, 683 sq.ft.)				
LED: F1& F1E: 27W: Other:	1	3	27	81
LED: F3 & F3E: 13w: Other:	1	7	13	91
LED: F6 &F6E: 35W: Other:	1	14	35	490
LED: F5: 20W: Other:	1	4	20	80
MRI EQUIPMENT RM (Common Space Types: Electrical/Mechanical, 202 sq.ft.)				
LED: F2: 35.3W: Other:	1	3	35	106
			Total Proposed Watts =	1258

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title | Signature | Date

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 0.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2, C405.2.2.1 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4.1, C405.2.4.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.5 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.8 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.9.1, C405.9.2 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.10 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.1.1 [EL30][2]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.11, C405.11.1 [EL31][2]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.5 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][3]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

City of Aurora Building Division
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No.	Description	Date

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MICHAEL P THOMPSON
50150
PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title

ELECTRICAL ENERGY COMPLIANCE

Sheet Number

E006

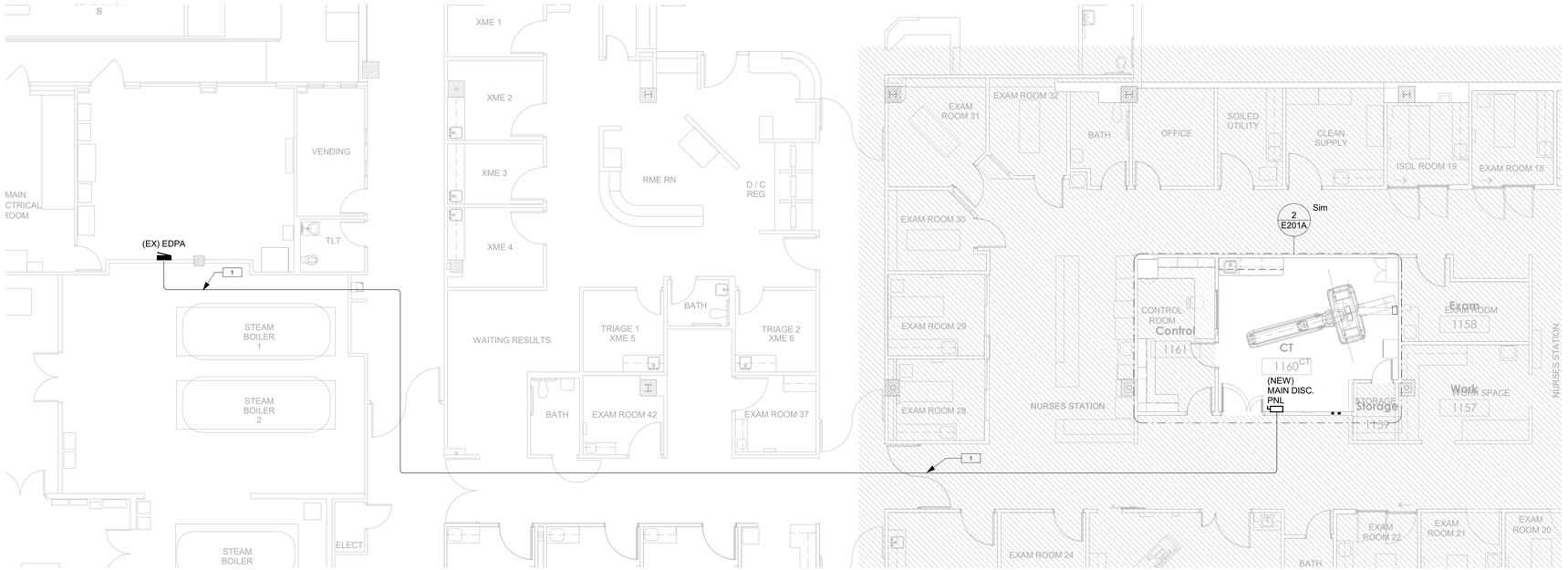
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GENERAL NOTES:

1. REFER TO ELECTRICAL SHEET E000 FOR ELECTRICAL SYMBOLS.
2. REFER TO ELECTRICAL SHEET E001 FOR ELECTRICAL SPECIFICATIONS.

KEYNOTES: #

1. PROPOSED NEW CONDUIT ROUTING FROM PANEL "EDPA" TO NEW ED CT INTERGRATED DISCONNECT. FIELD COORDINATE THE EXACT ROUTING WITH ALL TRADES. WORK TO BE DONE DURING OFF HOURS TO MINIMIZE HOSPITAL OPERATION INTERRUPTIONS. CONTRACTOR SHALL UTILIZE AN "ICRA" CART FOR THIS WORK.



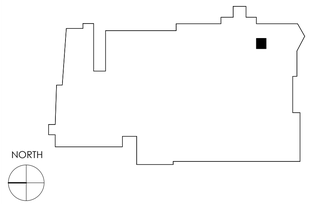
1 LEVEL 1 - ELECTRICAL OVERALL PLAN - ED CT

1/8" = 1'-0"

110.14. Identify disconnects per 2023 NEC 110.22 and provide working space and egress to and around electrical equipment per 2023 NEC 110.26

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: mmartine
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KEY PLAN



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Sheet Title
ELECTRICAL OVERALL PLAN - ED CT

Sheet Number
E200A

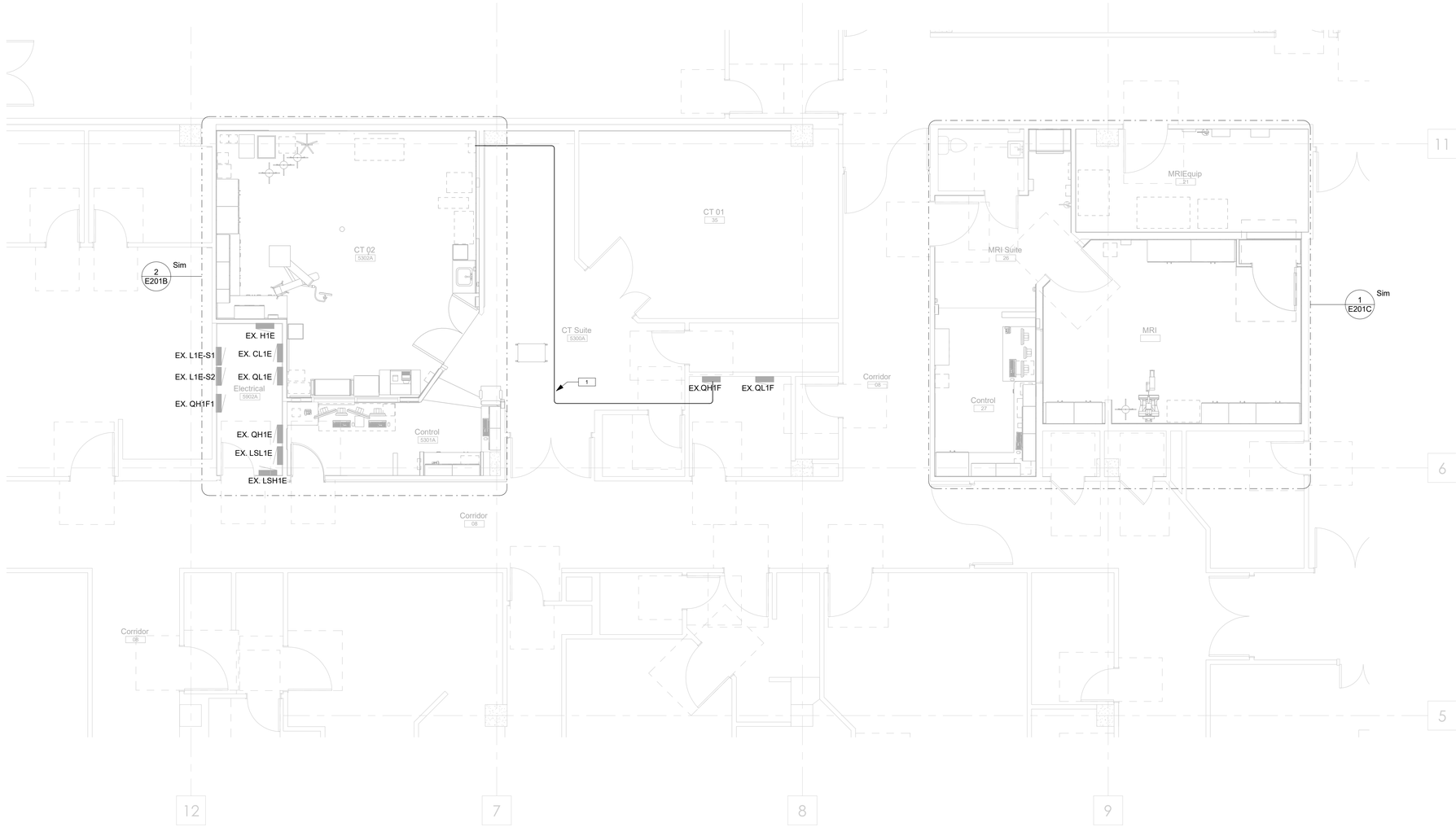
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GENERAL NOTES:

1. REFER TO ELECTRICAL SHEET E000 FOR ELECTRICAL SYMBOLS.
2. REFER TO ELECTRICAL SHEET E001 FOR ELECTRICAL SPECIFICATIONS.

KEYNOTES: #

1. PROPOSED NEW CONDUIT ROUTING FROM PANEL "QH1F" TO NEW IMAGING CT INTERGRATED DISCONNECT. FIELD COORDINATE THE EXACT ROUTING WITH ALL TRADES. WORK TO BE DONE DURING OFF HOURS TO MINIMIZE HOSPITAL OPERATION INTERRUPTIONS. CONTRACTOR SHALL UTILIZE AN "ICRA" CART FOR THIS WORK.

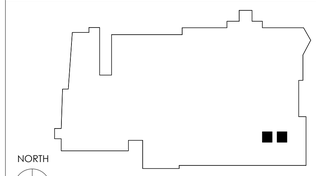


1 LEVEL 1 - ELECTRICAL OVERALL PLAN - IMAGING CT & MRI

3/16" = 1'-0"

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23-004 TMCA Imaging Replacements

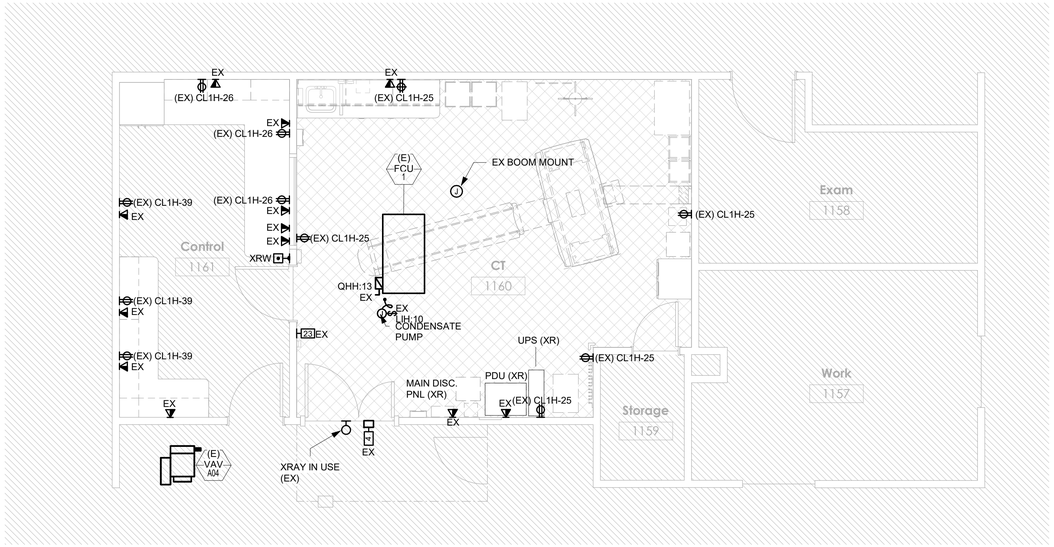
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ELECTRICAL OVERALL PLAN - IMAGING CT & MRI

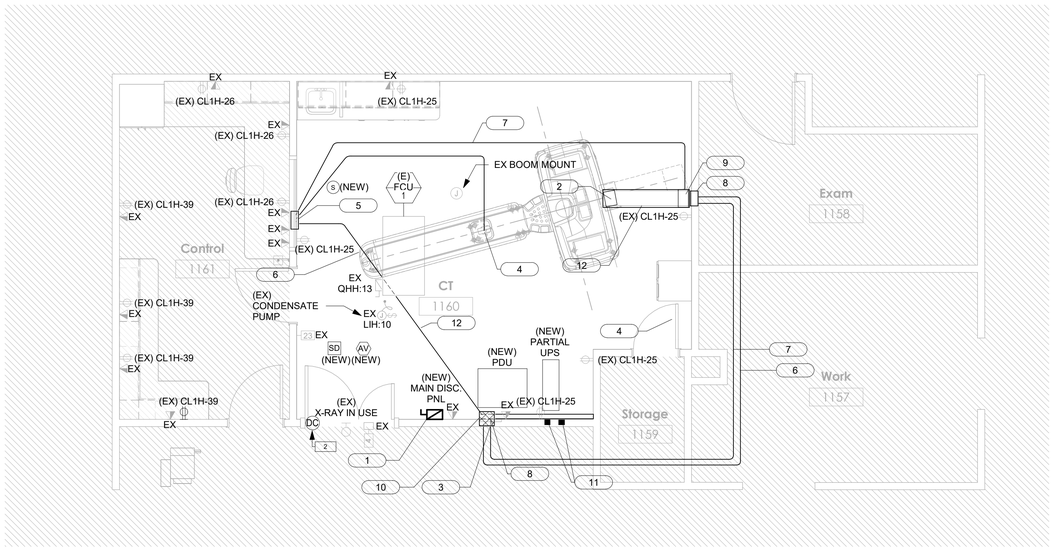
Sheet Number
E200B

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1 LEVEL 1 - ED CT ENLARGED ELECTRICAL POWER DEMOLITION PLAN

1/4" = 1'-0"



2 LEVEL 1 - ED CT ENLARGED ELECTRICAL POWER PLAN

1/4" = 1'-0"

KEYNOTES: [#]

1. MAIN DISCONNECT PANEL IS A ONE FOR ONE REPLACEMENT, REUSE EXISTING CIRCUIT BREAKER TO FEED NEW PANEL.
2. DOOR INTERLOCK SWITCH. COORDINATE WITH GE IF REQUIRED TO BE INSTALLED.

GENERAL NOTES:

1. REFER TO ELECTRICAL SHEET E000 FOR ELECTRICAL SYMBOLS.
2. REFER TO ELECTRICAL SHEET E001 FOR ELECTRICAL SPECIFICATIONS.
3. REFER TO MOTOR/EQUIPMENT SCHEDULE ON SHEET E004B
4. SCOPE INCLUDES AN EQUIPMENT REFRESH ONLY.
5. ALL RACEWAY SHOWN IS FOR REFERENCE ONLY. THIS CONTRACTOR SHALL FIELD COORDINATE EXACT LOCATIONS AND SIZE REQUIREMENTS WITH EQUIPMENT VENDOR PRIOR TO INSTALLATION.

EQUIPMENT INFORMATION PROVIDED BY GE(SHOWN FOR REFERENCE ONLY)

[#]

Item	Electrical Layout Item List
1	Main disconnect panel (MDP)
2	Suitable chase nipples, refer to Anchoring/Loading Distribution to the Floor detail on sheet S3 (Gantry)
3	Grommeted opening (Power Distribution Unit)
4	Cable inlet above ceiling (Express Camera)
5	EXISTING 12" x 12" x 6" [300 x 300 x 150] box (Console)
6	EXISTING 2 1/2" [64] conduit above ceiling
7	EXISTING 3 1/2" [89] conduit above ceiling
8	EXISTING 10" x 3 1/2" [250 x 100] flush wall duct with minimum 2 dividers
9	EXISTING Box above ceiling - size per local code
10	EXISTING Box above ceiling - size per local code
11	EXISTING 4" x 4" x 4" [100 x 100 x 100] box (Partial UPS)
12	EXISTING 12" x 3" [300 x 100] trench duct with minimum 2 dividers

Additional Conduit Runs (Contractor Supplied and Installed)					
From (Bubble # / Item)	To (Bubble # / Item)		Qty	Size In.	Size mm
3 Phase Power	1	Main Disconnect Panel	1	As req'd	As req'd
1 Main Disconnect Panel		Emergency Off	1	1/2	13
	10	Power Distribution Unit	1	As req'd	As req'd
10 Power Distribution Unit		Door Switch	1	1/2	13
			1	1/2	13
Warning Light		Warning Light Control	1	1/2	13
1 Phase Power			1	1/2	13
4 Express Camera	5	Operator's Console	1	1 1/2	38
1 Main Disconnect Panel	11	Partial UPS	1	1 1/4	30
3 Power Distribution Unit			1	2	50

POWER DISTRIBUTION

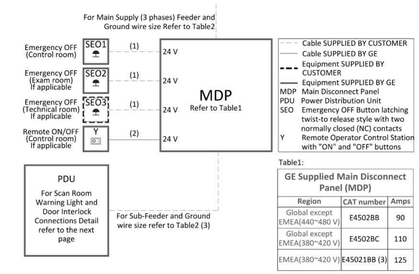


Table1:

GE Supplied Main Disconnect Panel (MDP)		
Region	CAT number	Amps
Global except EMEA(440~480 V)	E4502BB	90
Global except EMEA(380~420 V)	E4502BC	110
EMEA(380~420 V)	E45021BB (3)	125

Table2:

Feeder Table

The information below assumes the use of copper wire, rated 75 C and run in steel conduit. All ampacity is determined in accordance with the National Electrical Code (NFPA 70), Table 310-16 (2002). The ampacity of the circuit protection device listed above determines the minimum feeder size, except where total source regulation limits require a larger size. If the wire size does not match the above lists, please select the nearest wire size as per to local standards.

Feeder length from Power Substation to MDP - ft (m)	Minimum Wire Size, AWG or MCM (mm²)/VAC							
	200 VAC	220 VAC	240 VAC	380 VAC	400 VAC	420 VAC	440 VAC	460 VAC	480 VAC
50 (15)	1/0 (55)	1/0 (55)	1/0 (55)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
100 (30)	2/0 (70)	1/0 (55)	1/0 (55)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
150 (46)	4/0 (100)	3/0 (85)	3/0 (85)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
200 (61)	5/0 (125)	4/0 (100)	4/0 (100)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
250 (76)	6/0 (170)	5/0 (125)	5/0 (125)	1 (45)	1 (45)	2 (35)	2 (35)	2 (35)	3 (30)
300 (91)	7/0 (215)	6/0 (170)	5/0 (125)	1/0 (55)	1/0 (55)	1 (45)	1 (45)	2 (35)	2 (35)
350 (107)	8/0 (275)	7/0 (215)	6/0 (170)	2/0 (70)	1/0 (55)	1/0 (55)	1 (45)	1 (45)	1 (45)
400 (122)	8/0 (275)	7/0 (215)	7/0 (215)	2/0 (70)	2/0 (70)	1/0 (55)	1/0 (55)	1/0 (55)	1 (45)
Sub-Feeder length from MDP to PDU - ft (m)									
32 (9.7536)	1/0 (55)	1/0 (55)	1/0 (55)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
Grounding									
Run a dedicated 1/0 [55 mm²] or larger insulated copper ground wire from the power source to the MDP and from MDP to the PDU. Run the ground wire in the same raceway with the three-phase wires.									

Notes :
(1) Wire size: 4x2mm² [14AWG] and 1x2mm² [14AWG] GND
(2) Power cable: 3 Meter/10', multi-conductor, 24V DC
(3) GE supplied MDP option E45021BB includes a 10 meter long power cable (H07RN-F) with wire size 4x50mm² and a 50 meter long control cable with wire size 2x1.5mm²

POWER REQUIREMENTS

POWER SUPPLY	3 PHASES+G 200/220/240/380/400/420/440/460/480 V ± 10%
FREQUENCIES	50/60 Hz ± 3 Hz
MAXIMUM POWER DEMAND	100 kVA
AVERAGE (CONTINUOUS) POWER DEMAND	20 kVA
POWER FACTOR	0.85

- Power supply should come into a main disconnect panel (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.
- There must be discrimination between supply cable protective device at the beginning of the installation (main low-voltage transformer side) and the protective devices in the MDP.

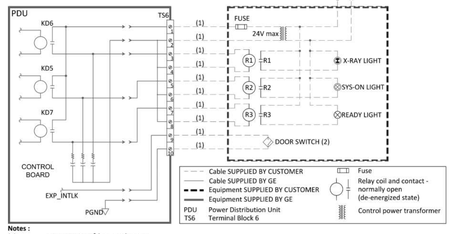
SUPPLY CHARACTERISTICS
- Power input must be separate from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with high speed film changers...).
- All equipment (lighting, power outlets, etc...) installed with GE system components must be powered separately.
- Phase imbalance 2% maximum.
- Transients must be less than 1500V peak. (on a 400V line)

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.

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

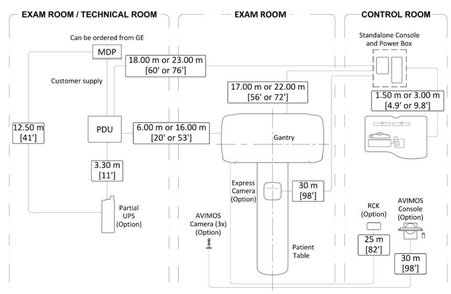
CABLEWAYS
The general rules for laying cableways should meet the conditions laid down in current standards and regulations, with regard to:
- Protecting cables against water (cableways should be waterproof).
- Protecting cables against abnormal temperatures (proximity to heating pipes or ducts).
- Protecting cables against temperature shocks.
- Replacing cables (cableways should be large enough for cables to be replaced).
- Metal cableways should be grounded.

SCAN ROOM WARNING LIGHT AND DOOR INTERLOCK



Notes :
(1) Wire size: 2mm² [14 AWG] at 24V
(2) Door Interlock circuit is jumpered out if a door switch is not provided.
(3) Grounding not shown on the detail, but must comply with local codes.

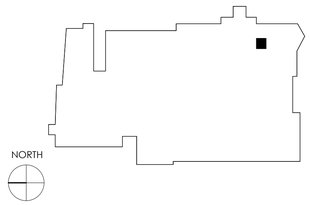
INTERCONNECTIONS



110.14. Identify disconnects per 2023 NEC 110.22 and provide working space and egress to and around electrical equipment per 2023 NEC 110.26

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: nmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

KEY PLAN



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No.	Description	Date

COLORADO LICENSED DANIEL P. THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

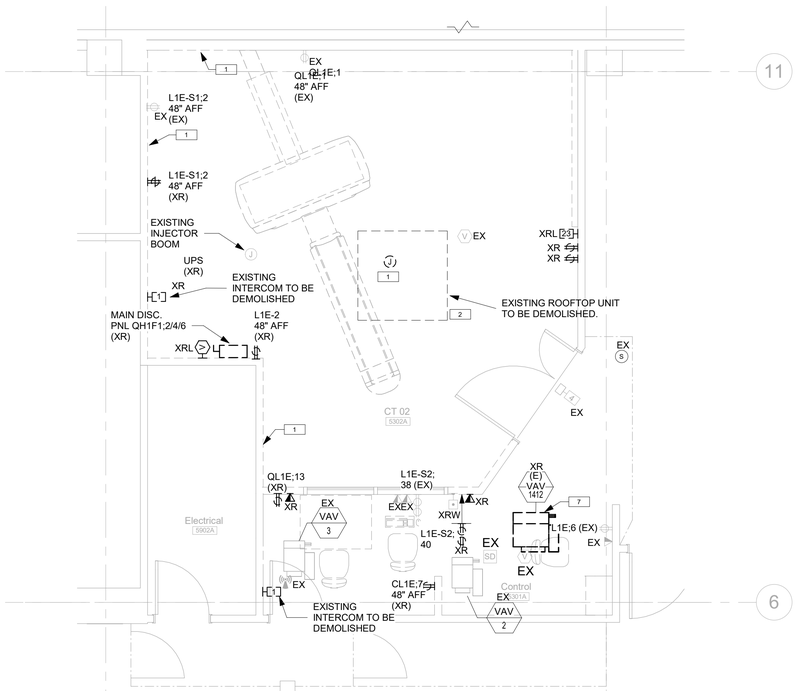
1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
LEVEL 01- ED CT DEMO AND FLOOR PLAN

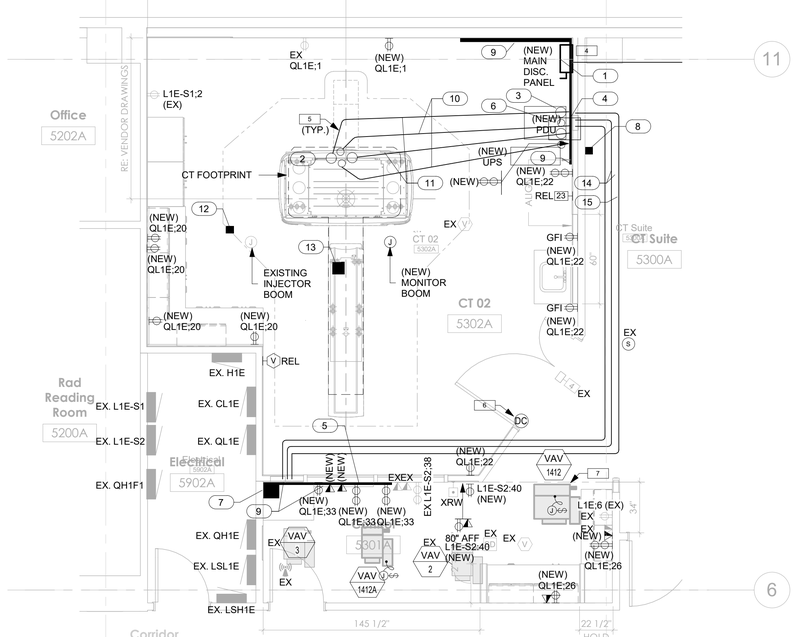
Sheet Number
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1 LEVEL 1 - IMAGING CT ENLARGED ELECTRICAL DEMOLITION PLAN

1/4" = 1'-0"



2 LEVEL 1 - IMAGING CT ENLARGED ELECTRICAL POWER PLAN

1/4" = 1'-0"

EQUIPMENT INFORMATION PROVIDED BY GE(SHOWN FOR REFERENCE ONLY)

Item	#	Electrical Layout Item List
1		Main disconnect panel (MDP)
2		Suitable bushings & lock nuts (Gantry)
3		Suitable bushings & lock nuts (Power Distribution Unit)
4		Grommeted opening (PDU)
5		Grommeted opening (Operator's Console)
6		Box above ceiling - size per local code (Exam Room)
7		Box above ceiling - size per local code (Control Room)
8		4" x 4" x 4" [100 x 100 x 100] box (Partial UPS)
9		10" x 3 1/2" [250 x 100] surface wall duct with minimum **3 Dividers**
10		2 1/2" [64] conduit below floor
11		3 1/2" [89] conduit below floor
12		Box above ceiling (SmartView monitor - GE Supplied)
13		Cable inlet above ceiling (Express Camera)
14		2 1/2" [64] conduit above ceiling
15		3 1/2" [89] conduit above ceiling

Additional Conduit Runs (Contractor Supplied and Installed)				
From (#ITEM)	To (#ITEM)	Qty	Size	
			In.	mm
3 Phase Power	Main Disconnect Panel	1	As req'd	As req'd
Main Disconnect Panel	Emergency Off	1	1/2	13
	Power Distribution Unit	1	As req'd	As req'd
Power Distribution Unit	Door Switch	1	1/2	13
	Warning Light Control	1	1/2	13
Warning Light		1	1/2	13
1 Phase Power		1	1/2	13
Main Disconnect Panel	Partial UPS	1	1 1/4	30
Power Distribution Unit		1	2	50
Express Camera	Operator's Console	1	1 1/2	38
SmartView Monitor	Operators Console	1	1	25
		1	2	50

POWER DISTRIBUTION

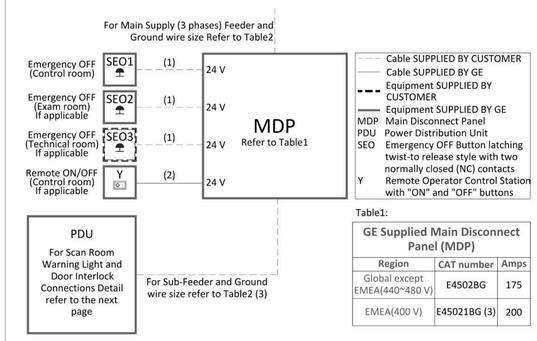


Table1:

GE Supplied Main Disconnect Panel (MDP)		
Region	CAT number	Amps
Global except EMEA(440~480 V)	E4502BG	175
EMEA(400 V)	E45021BG (3)	200

Table2:

Feeder Table						
The information below assumes the use of copper wire, rated 75 C and run in steel conduit. All ampacity is determined in accordance with the National Electrical Code (NFPA 70), Table 310-16 (2002). The ampacity of the circuit protection device listed above determines the minimum feeder size, except where total source regulation limits require a larger size. If the wire size does not match the above lists, please select the nearest wire size as per to local standards.						
Feeder length from Power Substation to MDP - ft (m)	Minimum Wire Size, AWG or MCM (mm²)/VAC					
	380 VAC	400 VAC	420 VAC	440 VAC	460 VAC	480 VAC
Sub-Feeder length from MDP to PDU - ft (m)						
50 (15)	3/0 (95)	3/0 (95)	3/0 (95)	2/0 (70)	2/0 (70)	2/0 (70)
Grounding						
Run a dedicated 1/0 [50 mm²] or larger insulated copper ground wire from the power source to the MDP and from MDP to the PDU. Run the ground wire in the same raceway with the three-phase wires.						

Notes :

(1) Wire size: 4x2mm² [14AWG] and 1x2mm² [14AWG] GND
(2) Power cable: 3 Meter/10', multi-conductor, 24V DC
(3) GE supplied MDP option E45021BG includes a 10 meter long power cable (H07RN-F) with wire size 4x50mm² and a 50 meter long control cable with wire size 2x1.5mm²

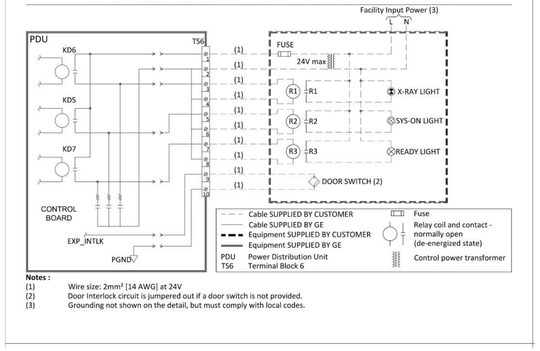
GENERAL NOTES:

1. REFER TO ELECTRICAL SHEET E000 FOR ELECTRICAL SYMBOLS.
2. REFER TO ELECTRICAL SHEET E001 FOR ELECTRICAL SPECIFICATIONS.
3. REFER TO MOTOR/EQUIPMENT SCHEDULE ON SHEET E004B

KEYED NOTES: #

1. DEMOLISH ELECTRICAL EQUIPMENT MOUNTED TO BOOM. BOOM MOUNTS ARE EXISTING TO REMAIN. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
2. EXISTING ROOFTOP UNIT TO BE DEMOLISHED. ELECTRICAL CONNECTIONS AND CONDUIT TO BE DISCONNECTED AND DEMOLISHED BACK TO SOURCE. COORDINATE WORK WITH MECHANICAL CONTRACTOR AND OWNER PRIOR TO DEMOLITION. UPDATE EXISTING PANEL SCHEDULES ACCORDINGLY.
3. DEMOLISH WALL MOUNTED RACEWAY. REFER TO ARCHITECTURAL DRAWINGS FOR MORE DETAIL.
4. NEW GE SUPPLIED MAIN DISCONNECT PANEL TO BE FED FROM PANEL QH1F; CKT 25/27/29 VIA (NEW) 175A CB.
5. PROVIDE A SAW CUT TO EXISTING FLOOR SLAB FOR NEW CONDUIT INSTALLATION. COORDINATE EXACT LOCATION AND ROUTE WITH GE AND ARCHITECT PRIOR TO INSTALLATION.
6. DOOR INTERLOCK SWITCH. COORDINATE WITH G.E. IF REQUIRED TO BE INSTALLED.
7. EXISTING VAV TO BE DEMOLISHED, CONTRACTOR SHALL PROTECT EXISTING CIRCUIT FOR RE-USE FOR NEW VAV-1412. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.

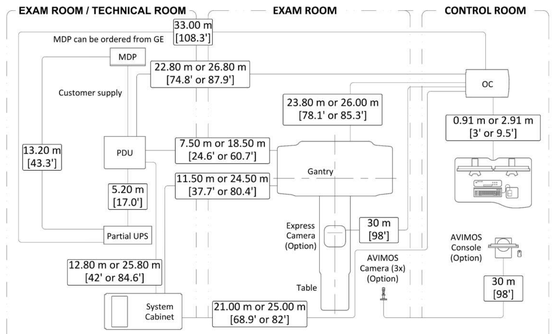
SCAN ROOM WARNING LIGHT AND DOOR INTERLOCK



Notes :

(1) Wire size: 2mm² [14 AWG] at 24V
(2) Door Interlock circuit is jumpered out if a door switch is not provided.
(3) Grounding not shown on the detail, but must comply with local codes.

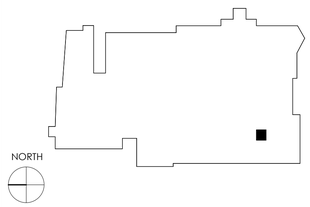
INTERCONNECTIONS



110.14. Identify disconnects per 2023 NEC 110.22 and provide working space and egress to and around electrical equipment per 2023 NEC 110.26

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: nmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

KEY PLAN



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No.	Description	Date

COLORADO LICENSED 56150 JAMES P. THOMPSON PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
LEVEL 01- IMAGING CT DEMO AND FLOOR PLAN

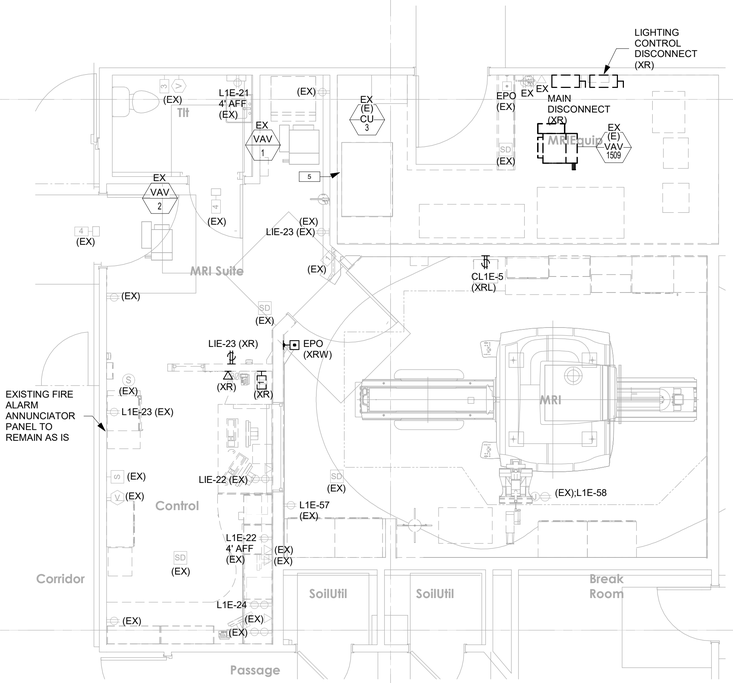
Sheet Number
E201B

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RSN 1845534 Permit # 2024 2477659-LTPage 52 of 121

EQUIPMENT INFORMATION PROVIDED BY GE(SHOWN FOR REFERENCE ONLY)



2 LEVEL 1 - MRI ENLARGED ELECTRICAL POWER DEMOLITION PLAN

1/4" = 1'-0"

Item	Electrical Layout Item List
1	Main disconnect panel (MDP)
2	RF Filters - grounded to RF shield at Common Ground Stud
3	Non-ferrous unistrut cable support 36" [915]
4	Non-ferrous cable ladder 18" x 6" [450 x 150]
5	Non-ferrous cable ladder for gradient cables 18" x 6" [450 x 150]
6	Cable tray for gradient cables 18" x 6" [450 x 150]
7	Cable ladder 18" x 6" [450 x 150]
8	Existing box in wall 4" x 4" x 2" [100 x 100 x 50] (MRU)
9	Box in wall 12" x 8" x 6" [300 x 200 x 150] (Operators console)
10	Conduit above RF screen 2" [50]
11	Conduit above RF screen 3" [75]

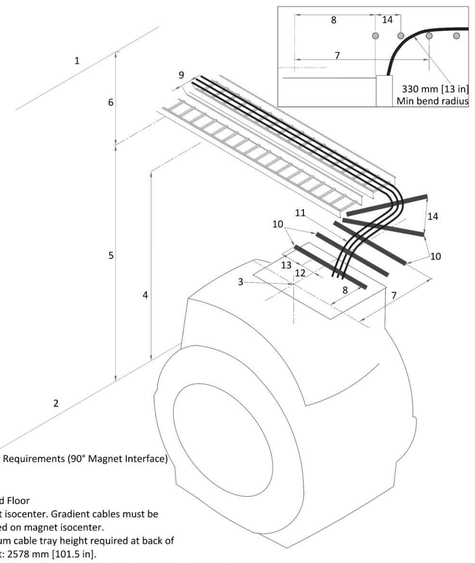
Additional Conduit Runs
(Contractor Supplied and Installed)

From (Bubble # / Item)	To (Bubble # / Item)	Qty	Size	
			In.	mm
Main Disconnect Panel	Power, Gradient, RF cabinet	1	As req'd	As req'd
	Integrated Cooling Cabinet	1	As req'd	As req'd
	System emergency off 2	1	1/2	16
System emergency off 2	Penetration Panel	1	1/2	16
Door switch	Power, Gradient, RF cabinet	1	3/4	20
System emergency off 1	Penetration Panel	1	3/4	20
Magnet Rundown Unit	Magnet	1	1	25
	RF filter #1	1	As req'd	As req'd
RF filter #1	120-V 1Ø Power	1	As req'd	As req'd
Room Light	RF filter #2	1	As req'd	As req'd
RF filter #2	Facility emergency power	1	As req'd	As req'd

Existing Electrical Note:
Use existing duct/conduits where possible. Additional duct/conduit runs may be necessary if existing system is inadequate in size and/or location for this installation. Verify existing size and location.

Existing Access Floor Note:
Access flooring in Equipment Room will either need to be removed or accessed and reinforced to support the weight of heavier cabinets. Access flooring in Magnet Room must be removed.

CABLE TRAYS REQUIREMENTS IN MAGNET ROOM



Cable Tray Requirements (90° Magnet Interface)

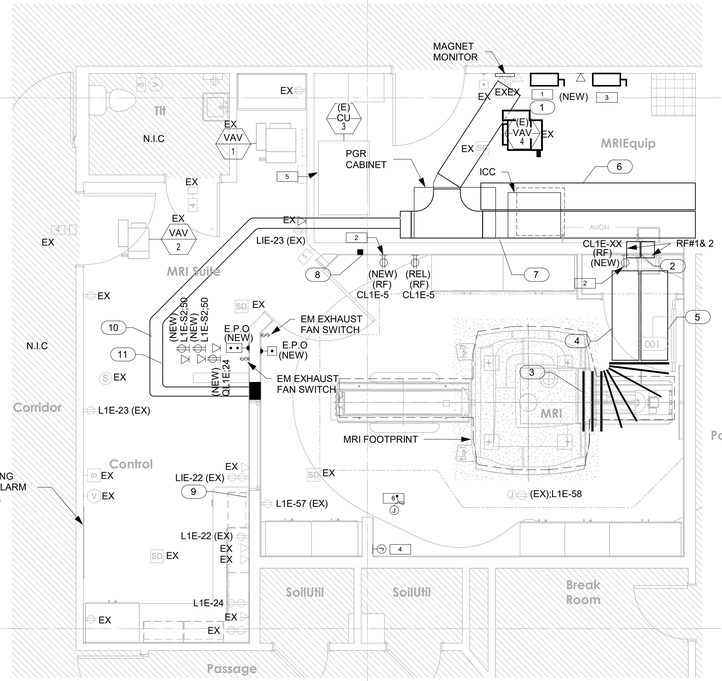
1 - Ceiling
2 - Finished Floor
3 - Magnet isocenter. Gradient cables must be centered on magnet isocenter.
4 - Minimum cable tray height required at back of Magnet: 2578 mm [101.5 in].
Tray height may be lower at other points to avoid obstructions.
5 - Maximum height from floor to top of tray (anywhere in Magnet room): 3251 mm [128 in].
6 - Minimum distance from top of cable tray to ceiling or other obstruction: 254 mm [10 in].
7 - Tray end to isocenter: 1336 ±12 mm [52.60 ±0.5 in].
8 - Other cable termination to isocenter: 955 ±12 mm [37.60 ±0.5 in].
9 - Minimum distance between trays: 12 mm [0.5 in].
10 - Non-ferrous cable support.
11 - Minimum gradient cable bend radius 330 mm [13 in].
12 - The center of the gradient cable group is 89 mm [3.5 in] from magnet center.
13 - Outer gradient cable is 450 mm [18 in] from edge of non-ferrous cable support.
14 - Distance between non-ferrous cable support: at least 305 mm [12 in].

GENERAL NOTES:

1. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL MECHANICAL UNITS WITH MECHANICAL CONTRACTOR.
2. ALL EXPOSED CONDUIT SHALL BE ROUTED PERPENDICULAR, PARALLEL, AND TIGHT TO COLUMNS AND BEAMS. ALL EXPOSED CONDUIT ROUTING SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO INSTALLATION AND INSTALLED IN A NEAT AND CONSISTENT MANNER. NO ADDITIONAL COST TO THE OWNER WILL BE ALLOWED FOR RELOCATING CONDUIT DUE TO THE LACK OF COORDINATION WITH ARCHITECT. ALL SURFACE MOUNTED CONDUIT WHERE EXPOSED TO CONDUIT WHERE EXPOSED TO PUBLIC AREAS SHALL BE PAINTED. PAINT COLOR TO BE DETERMINED BY THE ARCHITECT.
3. ALL BACK BOXES SHALL BE FLUSH MOUNTED UNLESS NOTED OTHERWISE. ALL VERTICAL SECTIONS OF CONDUIT SHALL BE CONCEALED. CONTRACTOR SHALL COORDINATE INSTALLATION OF CONDUIT AND BACK BOXES IN CONCRETE, MASONRY AND GYP. WALLS.
4. THIS CONTRACTOR SHALL REFER TO "MEP" SERIES DRAWINGS FOR ALL MECHANICAL EQUIPMENT ELECTRICAL CONNECTIONS.
5. CIRCUITS TO ALL MECHANICAL EQUIPMENT SHALL BE DEDICATED UNLESS NOTED OTHERWISE.
6. PROVIDE (1) DEDICATED NEUTRAL FOR EACH HOT AND (1) COMMON GROUND FOR EACH HOME RUN.
7. ALL WIRING J-BOXES SHALL BE TAGGED WITH PROPER CIRCUITRY LABELS.
8. FEEDER CONDUCTORS SHALL BE SIZED FOR MAXIMUM VOLTAGE DROP OF 2% AT DESIGN LOAD. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED FOR MAXIMUM VOLTAGE DROP OF 3% AT DESIGN LOAD.
9. ALL BRANCH CIRCUITS OVER 75FT SHALL BE #10 WIRE.
10. COORDINATE AND ADJUST ALL WORK BETWEEN TRADES AND EXISTING CONDITIONS IN ORDER TO ACCOMPLISH A NEAT, INTEGRATED AND EFFICIENT INSTALLATION WHICH INCLUDES BUT NOT LIMITED TO:
    A. EXAMINE THE CONTRACT DOCUMENTS, SHOP DRAWINGS OF ALL TRADES
    B. COORDINATE NECESSARY EQUIPMENT, FIXTURES, ETC. SO THAT THE FINAL INSTALLATION IS COMPATIBLE WITH THE MATERIALS AND EQUIPMENT OF THE OTHER TRADES.

KEYED NOTES: [#]

1. NEW MAIN DISCONNECT PANEL, SUPPLIED BY GE AND INSTALLED BY E.C., TO BE FED FROM PANEL QH1F; CKT 37/39/41 VIA EXISTING 200A CB.
2. DUPLEX HOSPITAL GRADE RECEPTACLE. CIRCUIT/WIRING TO BE ROUTED THROUGH RF FILTER.
3. MRI LIGHTING CONTROL PANEL, KIRLIN "SmartLED MRI Cabinet" OR APPROVED EQUAL WITH INTEGRAL DRIVER MODULES, SMART LED FILTERS. FIELD COORDINATE EXACT LOCATION WITH OTHER ASSOCIATED TRADES. ALL LIGHTING WIRING TO BE ROUTED THROUGH THE SMART LED RF FILTER LOCATED IN THE EQUIPMENT ROOM.
4. PROVIDE BACKBOX AND 3/4" STUB UP ABOVE FALSE CEILING FOR HARD WIRE PATIENT MONITOR ROUTE.
5. EXISTING CRAC UNIT TO REMAIN. CONTRACTOR SHALL PROTECT ALL EXISTING WIRING DURING DEMOLITION AND MAKE SAFE FOR OTHER CONSTRUCTION WITHIN THE ROOM. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR MORE INFORMATION.
6. PROVIDE 120V POWER TO LOW VOLTAGE TRANSFORMER FOR MOTORIZED DAMPER LOCATED IN 8" DUCTING VIA PANEL QL1E; CCT 28. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.



1 LEVEL 1 - MRI ENLARGED ELECTRICAL POWER PLAN

1/4" = 1'-0"

POWER REQUIREMENTS

SPECIFICATIONS OF MAIN POWER INPUT

POWER SUPPLY	380/400/415/480V ±10%, 3 PHASE + GND
FREQUENCIES	380/400/415V at 50Hz ± 3Hz, 480V at 60Hz ± 3Hz
TOTAL SYSTEM 50ms PEAK POWER	129 kVA
TOTAL SYSTEM CONTINUOUS POWER	88 kVA
STAND-BY POWER	< 17 kVA

- Governing electrical codes may require a neutral wire. If present, neutral must be terminated in MDP.
- Power input must be separated from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with [illegible]eed film changers...).
- [illegible]oltage harmonic distortion less than 2.5%. Phase imbalance must not exceed 2%.
- Lock-out/Tag-out: The Main Disconnect Panel (MDP) shall provide an external single point lock-out/tag-out feature for the entire system and a means to externally lock-out/tag-out each output breaker independently. Each lock-out/tag-out feature shall accommodate a standard sized lock hasp.

SPECIFICATIONS OF OPTIONAL BACK-UP POWER SUPPLY

MAGNET MONITOR REQUIRES A 100-240 VAC, 50/60 HZ, 3.0 A FACILITY SUPPLIED OUTLET. POWER AT THE OUTLET MUST BE CONTINUOUSLY AVAILABLE.

FOR CRYOCOOLER COMPRESSOR	
POWER INPUT	380/400/415/480V, THREE-PHASE + G
POWER REQUIREMENT	MIN 9kVA
POWER CONSUMPTION	MAX 7.2kW / STEADY STATE 6.5kW at 50Hz MAX 8.3kW / STEADY STATE 7.5kW at 60Hz
FREQUENCY	380/400/415V at 50Hz ± 3Hz, 480V at 60Hz ± 3Hz
Power to Cryocooler Compressor must be removed when emergency off circuit is actuated.	

CABLES

- Power and cable installation must comply with the distribution diagram.
- Size of the Main power input cable is determined by the customer, taking its length and admissible voltage drops into consideration.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signaling and remote control (Y,Emergency Off Buttons,...) will go to Main Panel with a pigtail length of 1.5m [60in], and will be connected during installation.
- Each conductor will be identified and isolated (screw connector).

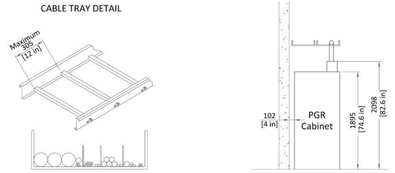
GROUND SYSTEM

- The equipotential link will be by means of an equipotential bar.
- The grounding point of MDP is directly connected to the building's ground by an isolated copper cable.
- The impedance of the earth bar should be less than or equal to 2 ohms.

GUIDANCE ON SLECTION OF FEEDER AND TRANSFORMER FOR MR SYSTEM			
	Direct feed from facility to MR system	MR system fed by dedicated facility distribution transformer	
Prerequisite Conditions			
MR System Incoming Voltage	480V 3-phase		
Minimum Source short-circuit kVA	7,900 kVA (at source of feeder to MDP)	8,325 kVA (at input to distribution transformer)	
Minimum No-Load Voltage	460V	475V (transformer secondary tapped accordingly)	
Feeder and Transformer Recommendations			
Dedicated Distribution Transformer Recommendations	N/A	Size: 225 kVA Impedance (Z): ≤5% K-Factor: ≥ K=20 200A overcurrent protection on secondary*	Size: 225 kVA Impedance (Z): ≤4% K-Factor: ≥ K=20 200A overcurrent protection on secondary*
Maximum Feeder Length*	280 ft	150 ft	240 ft
Feeder Size - 3-phase power conductors*	3/0 AWG Cu	3/0 AWG Cu	
Feeder Size - Ground (USA)*	6 AWG Cu (equipment grounding conductor)	4 AWG Cu (supply side bonding jumper) 6 AWG Cu (equipment grounding conductor)	
Feeder Size - Ground (Canada)*	6 AWG Cu (bonding conductor)	6 AWG Cu (bonding conductor)	
* NOTE: Recommendations shown apply only to cases defined exactly as shown in this table and when not in conflict with local electrical codes . For all other cases, refer to the local codes and the System Voltage Regulation Calculator located on the GE Healthcare Site Planning Website			

CABLE TRAYS IN EQUIPMENT ROOM

CABLE TRAY DETAIL



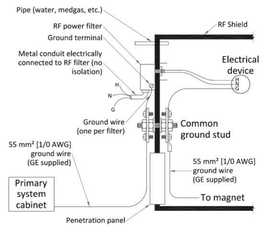
Minimum Cable Tray Width					
	PGR		ICC		OW
	Electrical	Air/Water	Electrical	Air/Water	Electrical
Pen Panel	300 [12 in]	N/A	N/A	450 [18 in]	76 [3 in]
PGR	N/A	N/A	76 [3 in]	150 [6 in]	76 [3 in]
ICC	76 [3 in]	150 [6 in]	N/A	N/A	N/A
OW	76 [3 in]	N/A	N/A	N/A	N/A

NOT TO SCALE

TYPICAL MAGNET ROOM GROUNDING

GROUNDING REQUIREMENTS

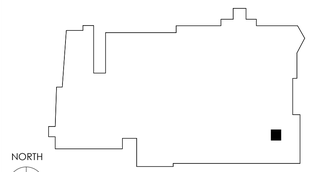
- All power lines into the RF shielded room require an RF filter.
- All electrical devices (for example, outlets, light fixtures, and so on) must have a ground wire from device power source and be grounded to the RF Shield at the RF Common Ground Stud.
- Resistance between any two grounded devices must not exceed 0.1 ohm to ensure equal potential ground system within the Magnet Room.
- Do not ground non-MR equipment to the MR ground system.
- The common ground stud must be installed near the penetration point(s) of the GE equipment, into the RF shield between the Equipment Room and Magnet Room.
- For additional information refer to RF Shielded Room manual 5850260-1EN



110.14. Identify disconnects per 2023 NEC 110.22 and provide working space and egress to and around electrical equipment per 2023 NEC 110.26

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KEY PLAN



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ph: 303.431.6100

No.	Description	Date

COLORADO LICENSED MICHAEL P THOMPSON 55150 PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St,
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

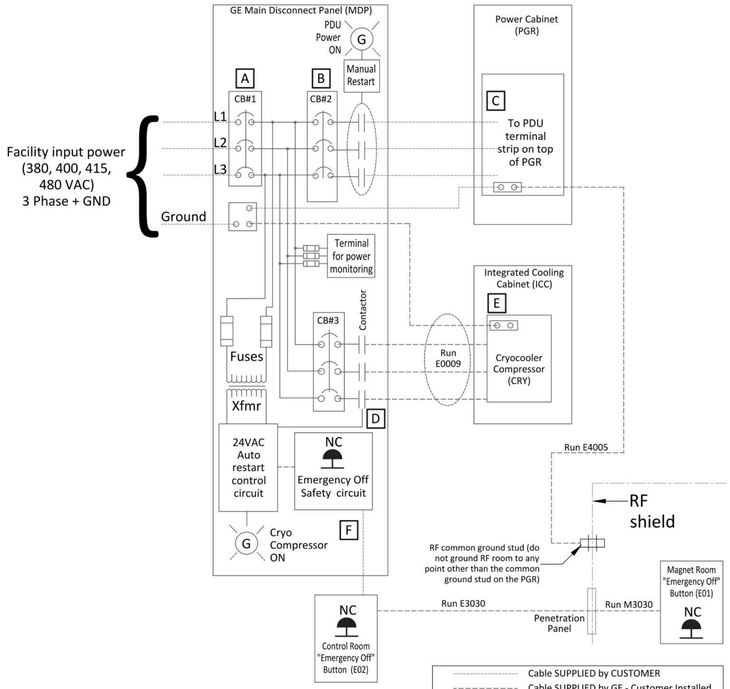
Sheet Title
LEVEL 01- MRI DEMO AND FLOOR PLAN

Sheet Number
E201C

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POWER DISTRIBUTION



NOTES:
1) Cryocooler Compressor (CRY) must operate 24 hours per day, 7 days per week.
2) Runs E0009, E3030 and M3030 are GE supplied cables. All other wiring is customer supplied and installed.
3) Two remote Emergency Off Maintained Buttons are supplied with the MDP. Emergency Off removes power from all outputs when activated.
4) All MDP output circuits drop out on loss of power. the Cryocooler (CRY) circuit will automatically restart upon restoration of power.
5) MDP Short circuit current rating is 25,000 amperes at 480 VAC.
6) MDP is NRTL labeled.
7) All feeder circuits require dedicated ground wires.

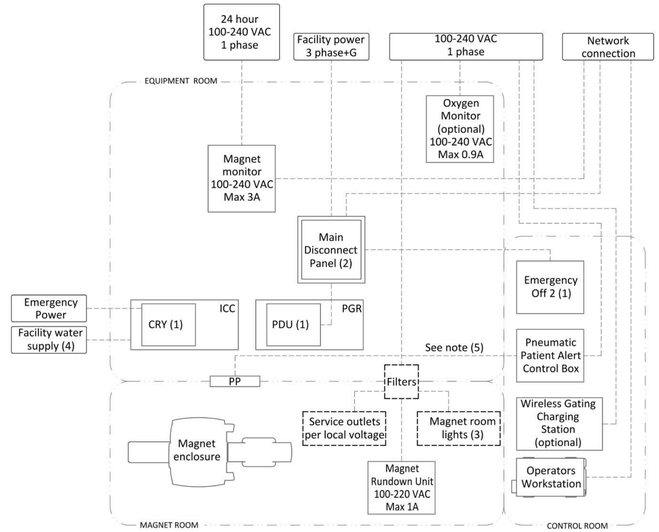
CB	MDP
1	200 A
2	150 A
3	25 A

Accepts following range of standard stranded conductors. All wire types, color and sizing to be selected in accordance with governing electrical code(s).

GE MDP M7100ZA 380V-480V

Item	Phase		Ground	
	sq mm	AWG/kcmil	sq mm	AWG/kcmil
A	6-120	10-250	16-120	6-250
B	10-120	8-250	35-120	2-250
C	2.5-70	14-2/0	2.5-70	14-2/0
D	2.5-4	14-10	2.5-16	14-10
E	2.5-6	14-10	2.5-6	14-10
F	0.5-10	22-10	-	-

FACILITY SUPPLIED WIRING



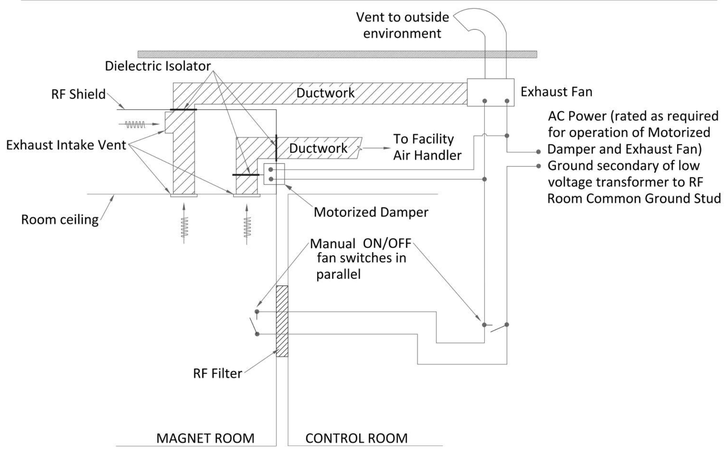
This diagram displays minimum power requirements for GE equipment and should be used as a guide to determine appropriate wire sizes per local regulatory requirements.

CRY	Cryocooler Compressor (Inside ICC)
ICC	Integrated Cooling Cabinet
PDU	Power Distribution Unit (inside PGR)
PGR	Power, Gradient, RF Cabinet
PP	Penetration Panel

Notes :
(1) Refer to Power Distribution detail for more information
(2) Size incoming wires from GE equipment according to conductor sizes listed on Power Distribution detail.
A network connection must be provided near the MDP to support power quality monitoring.
(3) Refer to Lighting Requirements detail
(4) This group contains water lines which shall be routed separate from electrical lines (I.E. power and signal)
(5) A cable is supplied by GE but may be extended if needed.

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

MAGNET ROOM EXHAUST FAN SCHEMATIC



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No.	Description	Date

COLORADO LICENSED 55150 MICHAEL P THOMPSON PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

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Checked by	Checker

Sheet Title
MRI WIRING DIAGRAMS

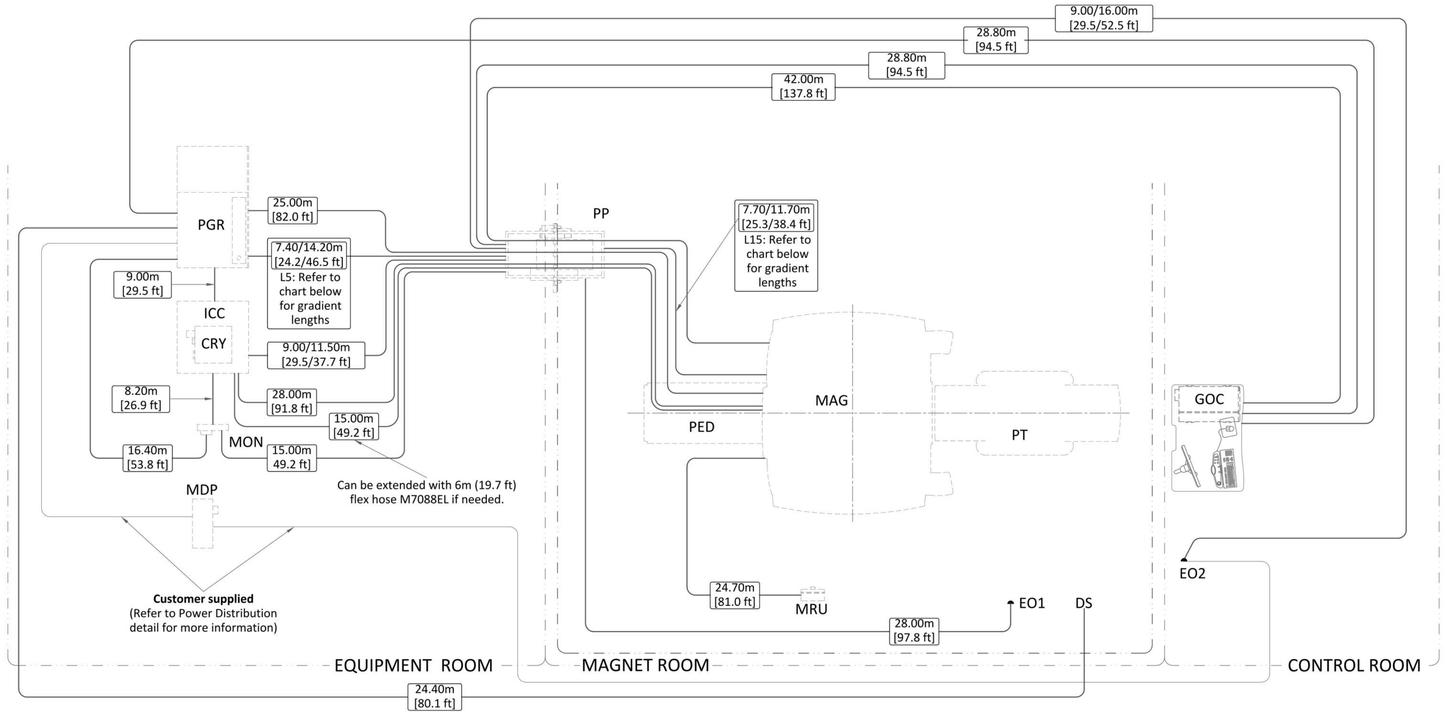
Sheet Number
E201D

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Reviewed for Code Compliance
Approved as Noted: smartine
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INTERCONNECTIONS



GRADIENT CABLE LENGTH OPTIONS

Length Identifier	Available lengths m (ft)	Proposed
L5	3.7 (12.9)	-
	5.7 (18.7)	-
	7.7 (25.3)	-
	9.7 (31.8)	-
	11.7 (38.4)	-
	13.7 (45.0)	-
	15.7 (51.5)	-
L15	4.6 (15.1)	-
	6.6 (21.6)	-
	8.6 (28.2)	-
	10.6 (34.7)	-
	12.6 (41.3)	-

CABLE ROUTING FOR ACCESSORIES

OPTION	FROM	TO	CABLE LENGTH m (ft)
Magnetic Resonance Elastography (MRE)	MRE	Magnet (Isocenter)	Nominal: 7.31 (24) Maximum: 10.06 (33)
	MRE	PP	15.24 (50)
	MRE	Ethernet Hub in PGR	15.24 (50)
	MRE	Customer Supplied Outlet	60Hz: 6.10 (20) 50Hz: 7.62 (25)
Multi-Nuclear Spectroscopy (MNS)	MNS	PGR	9.85 (32.3)
	MNS	PGR	7.85 (25.7)/14 (45.9)
	PP	PGR	8.2 (26.9)/14.35 (47)
Brainwave (BW)	BW	PP	18.3 (60)

GENERAL NOTE: PMI must validate proposed selectables and send confirmation to OTR. Refer to MyProjects if Proposed field is blank.
GOLDSEAL/SILVER PREFERRED NOTE: Cable lengths listed may differ from what is shipped with the system. Contact the Goldseal group for actual lengths to be delivered.
ROOM MOVE NOTE: Cable lengths listed may differ from what is included with reinstalled system. Contact the local field engineer for actual lengths to be delivered.

Order Configuration Options

Configuration	Equipment Room - site option	Magnet Room - site option	Proposed
A	Short	Short	-
B	Long	Short	-
C	Short	Long	-

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2023.09.05

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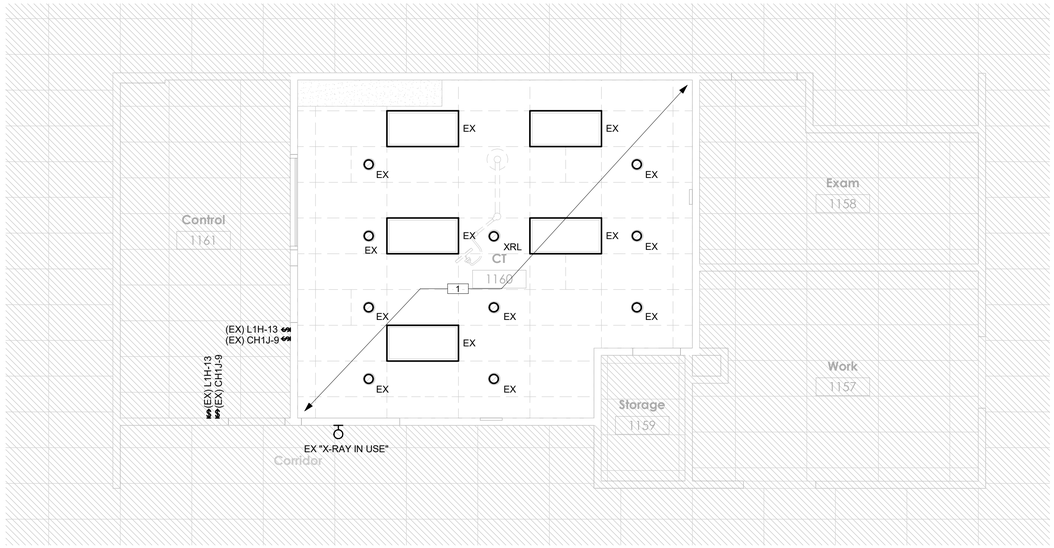
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Drawn by	Author
Checked by	Checker

Sheet Title
MRI WIRING DIAGRAMS

Sheet Number
E201E

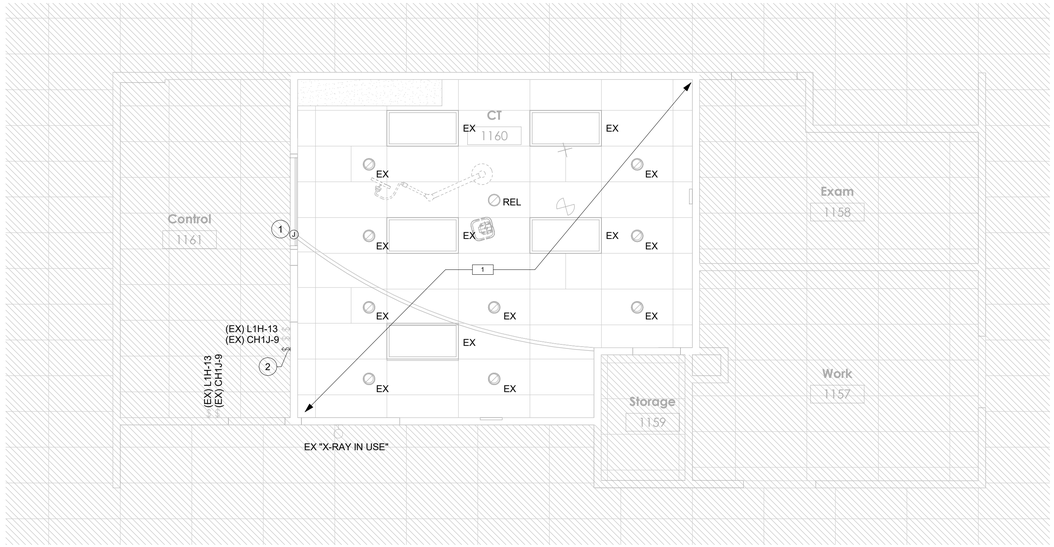
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1 LEVEL 1 - ED CT ENLARGED ELECTRICAL LIGHTING DEMOLITION RCP

1/4" = 1'-0"



2 LEVEL 1 - ED CT ENLARGED ELECTRICAL LIGHTING RCP

1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET **E005** FOR LIGHT FIXTURE SCHEDULE.
2. REFER TO SHEET **E005** FOR LIGHTING CONTROL SCHEDULE.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ALL FIXTURE LOCATIONS WITHIN A CEILING OR CEILING GRID.

KEYED NOTES: #

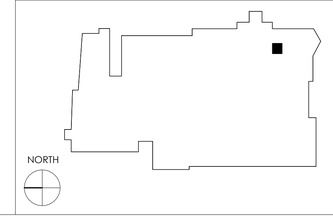
1. REMOVE EXISTING LIGHTS AND STORE AT A SAFE LOCATION FOR RE-INSTALLTION WITH THE NEW CEILING PER ARCHITECTURAL RCP PLANS. CONTRACTOR SHALL PROTECT ALL ASSOCIATED EXISTING WIRING FOR FIXTURE RE-INSTALLTION. REFER TO ARCHITECTURAL RCPS FOR ADDITIONAL INFORMATION.

ALTERNATE SCOPE: #

1. CONTRACTOR TO INSTALL "BL fiberOPTIC Starfield KIT" WITH "BL fiberSOURCE Aries" FIBER SOURCE MODULE AND "**BL controls NERO touch screen + App**" WALL CONTROLLER. CONNECT TO EXISTING CIRCUIT SERVING THE SPACE.
2. "BL controls NERO touch screen + App" WALL CONTROLLER FOR FIBER OPTIC TWINKLE LIGHT.

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KEY PLAN



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No.	Description	Date

COLORADO LICENSED
MICHAEL P THOMPSON
55150
PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

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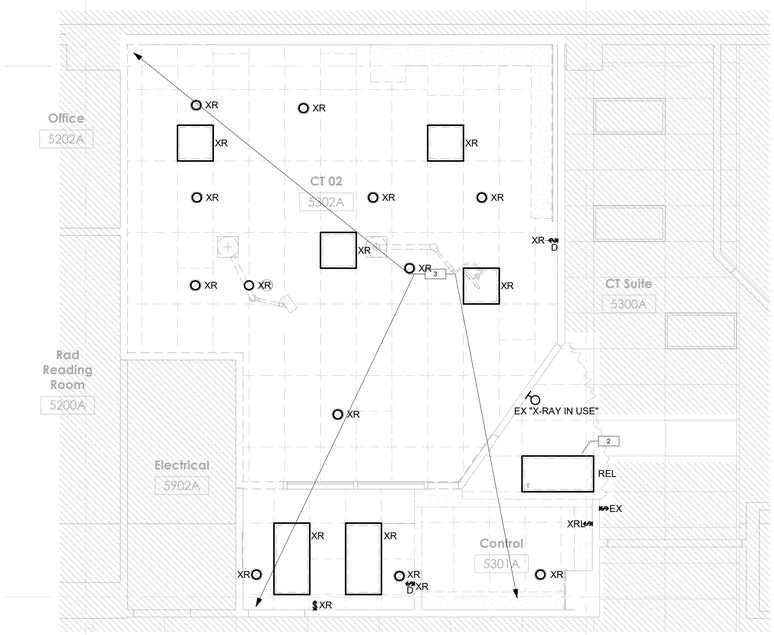
Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title
LEVEL 01- ED CT DEMO AND REFLECTED CEILING PLAN

Sheet Number
E202A

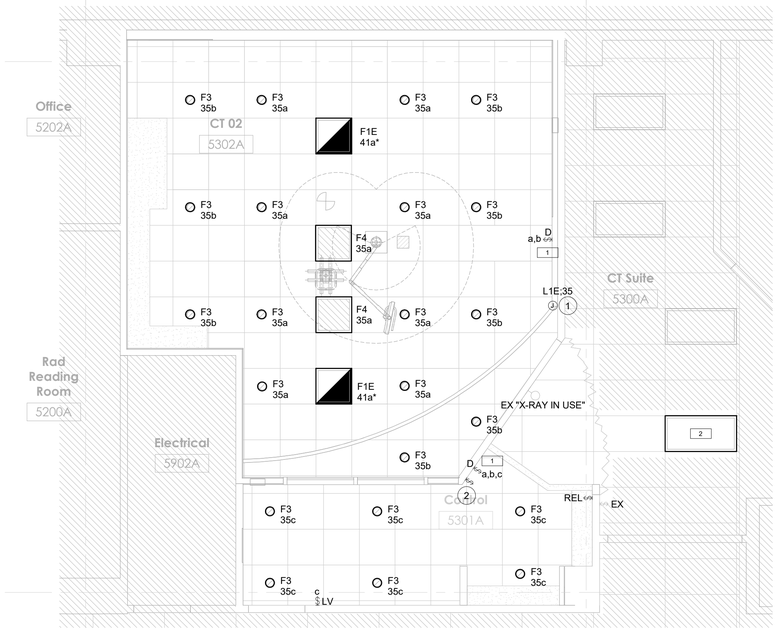
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1 LEVEL 1 - IMAGING CT ENLARGED ELECTRICAL LIGHTING DEMOLITION RCP

1/4" = 1'-0"



2 LEVEL 1 - IMAGING CT ENLARGED ELECTRICAL LIGHTING RCP

1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET **E005** FOR LIGHT FIXTURE SCHEDULE.
2. REFER TO SHEET **E005** FOR LIGHTING CONTROL SCHEDULE.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ALL FIXTURE LOCATIONS WITHIN A CEILING OR CEILING GRID.
4. ALL NORMAL POWER LIGHTING DEVICES AND FIXTURES ARE TO BE FED FROM PANEL L1E.
5. ALL EMERGENCY POWER LIGHTING DEVICES AND FIXTURES ARE TO BE FED FROM PANEL QL1E.

KEYED NOTES: #

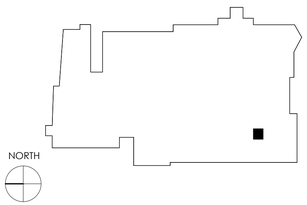
1. PROVIDE MULTIBUTTON KEYPAD WITH RAISE / LOWER DIMMING FUNCTIONALITY.
2. RELOCATE EXISTING 2X4 FIXTURE TO NEW LOCATION. EXTEND WIRING AS NECESSARY. RE: ARCH. RCP.
3. EXISTING LIGHT FIXTURES IN THIS AREA TO BE DEMOLISHED. THIS CONTRACTOR SHALL DEMO ALL FIXTURES AND MAKE SAFE FOR ALL OTHER ASSOCIATED DEMOLITION WORK. PROTECT THE EXISTING LIGHTING CIRCUITS SERVING THIS AREA FOR RE-USE.

ALTERNATE SCOPE: (#)

1. CONTRACTOR TO INSTALL "BL fiberOPTIC Starfield KIT" WITH "BL fiberSOURCE Aries" FIBER SOURCE MODULE AND **"BL controls NERO touch screen + App"** WALL CONTROLLER. CONNECT TO EXISTING CIRCUIT SERVING THE SPACE.
2. "BL controls NERO touch screen + App" WALL CONTROLLER FOR FIBER OPTIC TWINKLE LIGHT.

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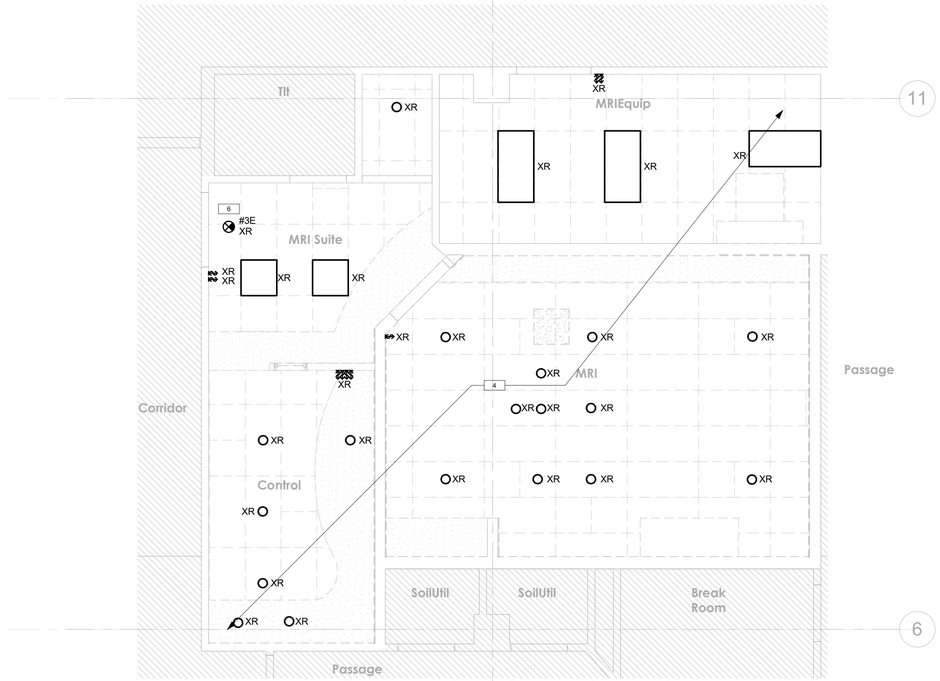
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Sheet Title
LEVEL 01- IMAGING CT DEMO AND REFLECTED CEILING PLAN

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E202B

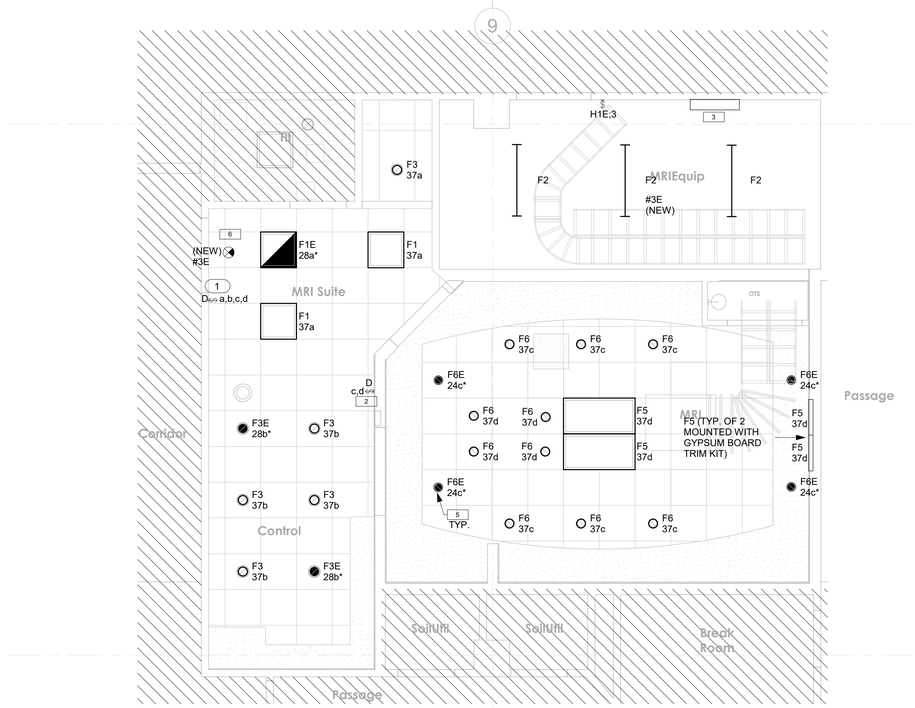
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RSN 1845534 Permit # 2024 2477659-LTPage 57 of 121



1 LEVEL 1 - MRI ENLARGED ELECTRICAL LIGHTING DEMOLITION RCP

1/4" = 1'-0"



2 LEVEL 1 - MRI ENLARGED ELECTRICAL LIGHTING RCP

1/4" = 1'-0"

GENERAL NOTES:

1. REFER TO SHEET **E005** FOR LIGHT FIXTURE SCHEDULE.
2. REFER TO SHEET **E005** FOR LIGHTING CONTROL SCHEDULE.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ALL FIXTURE LOCATIONS WITHIN A CEILING OR CEILING GRID.
4. ALL LIGHTING FIXTURES AND ASSOCIATED COMPONENTS MUST MEET ALL RF SHIELDED ROOM AND RF GROUNDING REQUIREMENTS (RE: GE DRAWINGS.).
5. ALL REMOVABLE LIGHTING FIXTURES AND ASSOCIATED COMPONENTS MUST BE NON-MAGNETIC.
6. DC LED LIGHTING MAY BE USED IF THE DC POWER CONVERTER AND RF SOURCES ARE ALL LOCATED OUTSIDE THE MAGNET.
7. BATTERY CHARGERS (E.G., USED FOR EMERGENCY LIGHTING) MUST BE LOCATED OUTSIDE THE MAGNET ROOM.
8. ALL NORMAL POWER LIGHTING DEVICES AND FIXTURES ARE TO BE FED FROM PANEL L1E, UNO.
9. ALL EMERGENCY POWER LIGHTING DEVICES AND FIXTURES ARE TO BE FED FROM PANEL CL1E, UNO.

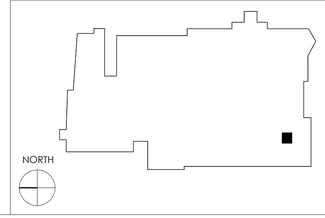
KEYED NOTES: #

1. PROVIDE MULTIBUTTON KEYPAD WITH RAISE AND LOWER DIMMING FUNCTIONALITY.
2. PROVIDE MRI-SAFE MULTIBUTTON KEYPAD WITH RAISE AND LOWER DIMMING FUNCTIONALITY.
3. MRI LIGHTING CONTROL PANEL, KIRLIN "SmartLED MRI Cabinet" OR APPROVED EQUAL WITH INTEGRAL DRIVER MODULES, SMART LED FILTERS. FIELD COORDINATE EXACT LOCATION WITH OTHER ASSOCIATED TRADES. ALL LIGHTING WIRING TO BE ROUTED THROUGH THE SMART LED RF FILTER LOCATED IN THE EQUIPMENT ROOM.
4. EXISTING LIGHT FIXTURES IN THIS AREA TO BE DEMOLISHED. THIS CONTRACTOR DEMO ALL FIXTURES AND MAKE SAFE FOR ALL OTHER ASSOCIATED DEMOLITION WORK. PROTECT THE EXISTING LIGHTING CIRCUITS SERVING THIS AREA FOR RE-USE.
5. PROVIDE A REMOTE EM BATTERY PACK IN THE EQUIPMENT ROOM FOR SHOWN EM LIGHTING.
6. EXISTING EXIT SIGN TO BE DEMOLISHED. PROJECT EXISTING CIRCUIT DUURING DEMOLITION AND RE-USE FOR NEW EXIT SIGN.

Provide Emergency Illumination that complies with 2023 NEC 700.16

City of Aurora Building Division
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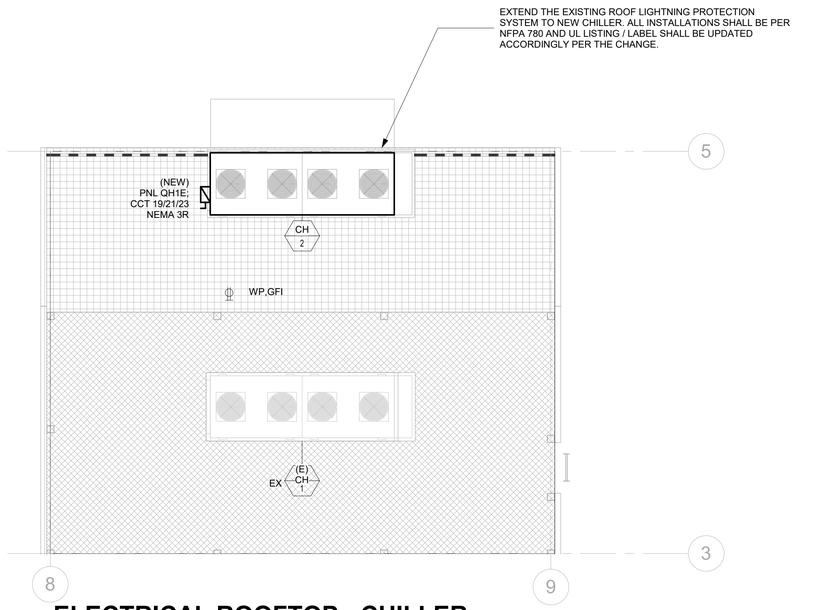
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GENERAL NOTES:

1. REFER TO ELECTRICAL SHEET E000 FOR ELECTRICAL SYMBOLS.
2. REFER TO ELECTRICAL SHEET E001 FOR ELECTRICAL SPECIFICATIONS.
3. REFER TO MOTOR/EQUIPMENT SCHEDULE ON SHEET E004B



6



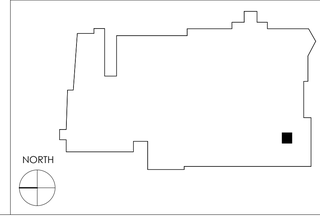
1 ELECTRICAL ROOFTOP - CHILLER

1/4" = 1'-0"

110.14. Identify disconnects per 2023 NEC 110.22 and provide working space and egress to and around electrical equipment per 2023 NEC 110.26

City of Aurora Building Division
Reviewed for Code Compliance
Approved as Noted: nmartine
Date: Oct 09, 2024
2021 INTERNATIONAL CODES & 2023 NEC

KEY PLAN



PATH architecture + planning 21

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Lakewood, CO 80215
ph: 303.431.6100

No.	Description	Date

COLORADO LICENSED
MICHAEL P THOMPSON
55150
PROFESSIONAL ENGINEER

2023.09.05

23-004 TMCA Imaging Replacements

1501 S Potomac St.
Aurora, CO 80012

Issue	ISSUE FOR CONSTRUCTION
Date	05 SEPTEMBER 2023
Project Number	23-004
Drawn by	Author
Checked by	Checker

Sheet Title

ROOFTOP DEMO AND FLOOR PLAN

Sheet Number

E203

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9/1/2023 10:47:05 PM



REV	DATE	MODIFICATIONS
D	08/AUG/2023	Revision (DC-397455); layout change
C	26/JUL/2023	Revision (DC-395963); layout change
B	08/JUN/2023	Revision (DC-390603)
A	17/MAY/2023	Final (DC-386152)

01 - C1 - Cover Sheet
02 - C2 - Disclaimer - Site Readiness Checklist
03 - A1 - General Notes
04 - A2 - Equipment Layout
05 - A3 - Radiation Protection
06 - A4 - Equipment Dimensions (1)
07 - A5 - Equipment Dimensions (2)
08 - A6 - Delivery
09 - S1 - Structural Notes
10 - S2 - Structural Layout
11 - S3 - Structural Details (1)
12 - S4 - Structural Details (2)
13 - S6 - Structural Details (4)
14 - M1 - HVAC
15 - E1 - Electrical Notes
16 - E2 - Electrical Layout
17 - E3 - Electrical Elevations
18 - E4 - Power Requirements
19 - E5 - Electrical Details - Interconnect

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.

Medical Center of Aurora
Aurora, CO
USA

GE Healthcare

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REVOLUTION APEX PLUS POWER PRO
FINAL STUDY

Drawn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
JMS	CRM	-	2009808531.6	5418654-1EN	20

Format	Scale	File Name	Date	Sheet
A3	1/4"=1'-0"	CT-M352276-FIN-00-D.DWG	08/AUG/2023	01/19

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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**

CUSTOMER SITE READINESS REQUIREMENTS

REQUIRED MANUALS FOR SYSTEM PRE-INSTALLATION	
Description	**Document Number***
Product specific Pre-installation Manual	Refer to cover page
*documents can be accessed in multiple languages at *https://customer-doc.cloud.gehealthcare.com/#/cdp/dashboard*	

- 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.
- The items on the GE Healthcare Site Readiness Checklist **DOC1809666** are REQUIRED to facilitate equipment delivery to the site. Equipment will not be delivered if these requirements are not satisfied.
  - 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. Restrooms.
  - Provide for refuse removal and disposal (e.g. crates, cartons, packing)
  - For CT systems it is required to minimize vibrations within the scan room. 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 Pre-installation manual for vibration specifications.

ENVIRONMENT

ALTITUDE

- The system shall meet all functional and performance specifications when placed in a room that is at an elevation of -150 m to 2,400 m [-492 ft to 7,875 ft] above sea level. For different altitudes refer to the PIM.

MAGNETIC FIELD SPECIFICATIONS

- Limit the magnetic interference to guarantee specified imaging performance.

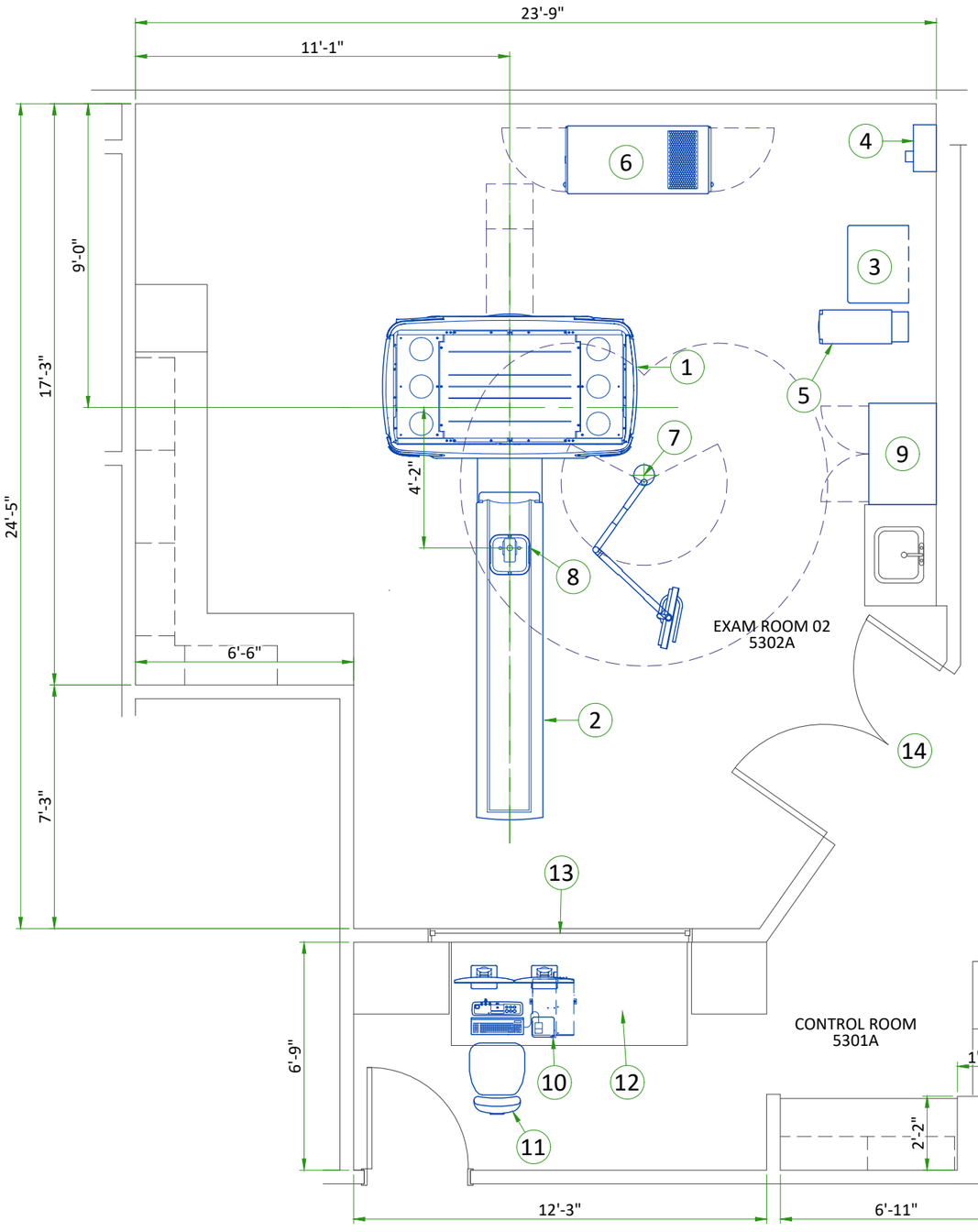
GANTRY:
- Ambient static magnetic fields less than 1 Gauss.
- Ambient AC magnetic fields less than 0.01 Gauss.

OPERATOR CONSOLE:
- Ambient static magnetic fields less than 10 Gauss.

SYSTEM CABINET:
- Ambient static magnetic fields less than 10 Gauss.

SYSTEM NOISE LEVEL

- The maximum noise level produced by the system in the scan room is less than 70 dBA at one meter [3.3 ft] from any surface of the system.



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/h)	WEIGHT (lbs)	MAX HEAT OUTPUT (W)	WEIGHT (kg)
A	1	GANTRY	27110	5901	7950	2676.2
A	2	NG-2000V TABLE	-	1477	-	670
A	3	POWER DISTRIBUTION UNIT (NGPDU-61)	1200	797	352	361.4
B	4	MAIN DISCONNECT PANEL (MDP)	-	90	-	41
A	5	PARTIAL UPS 14.4 KVA	3001	775	880	351.5
A	6	SYSTEM CABINET V	10571	573	3100	260
A	7	LCD MONITOR ON CEILING	-	66	-	29.9
A	8	AUTO PATIENT POSITIONING DEPTH CAMERA	-	7	-	3.2
A	9	STORAGE CABINET	-	90	-	41
A	10	OPEN CONSOLE	5115	106	1500	48.1
A	11	OPERATOR'S CHAIR	-	-	-	-
C	12	COUNTERTOP FOR EQUIPMENT				
C	13	LEAD GLASS VIEWING WINDOW				
C	14	MINIMUM OPENING FOR EQUIPMENT DELIVERY IS 1168 mm x 1980 mm [46 in x 78 in], CONTINGENT ON A 2438 mm [96 in] CORRIDOR WIDTH				

EXAM ROOM HEIGHT

FINISHED FLOOR TO SLAB HEIGHT	TBD
FALSE CEILING HEIGHT	8'-4"

For Accessory Sales: (866) 281-7545 Options 1, 2, 1, 2 or mail to: gehcaccessorysales@ge.com

RADIATION PROTECTION TABLES

A cylindrical PMMA phantom with a diameter of 32 cm [12.60 in] and a length of 20 cm [7.87 in] (for the 40 mm [1.57 in] collimation measurements) is centered in the scan plane and scanned. Scatter radiation measurements are made for both the vertical and the horizontal planes which include the axis of rotation. The horizontal plane is 1.03 m [3.38 ft] above the floor.
Tables below show scatter radiation for 40 mm [1.57 in] collimation. The air kerma per 100 mAs (µGy / 100 mAs) is provided at 0.5 m [1.6 ft] intervals within each plane. The CT scan technique that results in the maximum scatter radiation per unit mAs is used for all measurements as follows:

- Detector Coverage = 40 mm [1.57 in]
- Tube voltage = 140 kV
- SFOV = Medium Body

Typical Scatter Radiation in µGy/100 mAs - Horizontal Plane 40 mm [1.57 in] Collimation

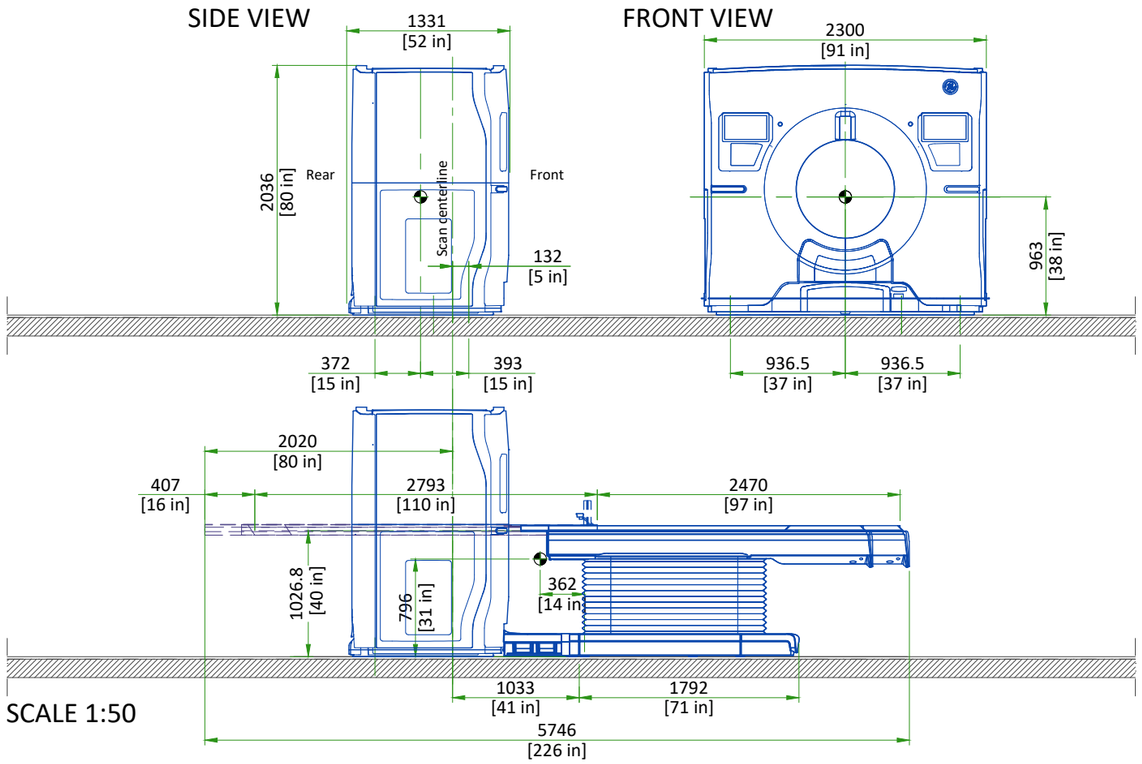
X-axis (m [ft])	Z-axis (m [ft])										
	3.5 [11.4]	3 [9.8]	2.5 [8.2]	2 [6.6]	1.5 [4.9]	1 [3.3]	0.5 [1.6]	0 [0]	-0.5 [-1.6]	-1 [-3.3]	-1.5[-4.9]
-1.5 [-4.9]	0.98	1.30	1.69	2.27	2.77	2.00	0.95	0.22	0.04	0.10	0.46
-1 [-3.3]	1.01	1.38	1.88	2.84	4.17	6.37	4.23	ISO		0.59	3.03
-0.5 [-1.6]	0.86	1.24	1.89	3.24	4.95	11.11	23.37			15.13	6.82
0 [0]	0.63	0.91	1.34	2.17	4.74	11.84	50.28			18.14	7.44
0.5 [1.6]	0.81	1.12	1.63	2.58	4.99	10.29	28.86			15.74	7.00
1 [3.3]	0.85	1.18	1.70	2.59	4.52	7.27	3.15			2.43	4.86
1.5 [4.9]	0.90	1.21	1.65	2.53	3.25	2.50	0.90	0.20	0.04	0.10	0.56

Typical Scatter Radiation in µGy/100 mAs - Vertical Plane 40 mm [1.57 in] Collimation

Y-axis (m [ft])	Z-axis (m [ft])										
	3.5 [11.4]	3 [9.8]	2.5 [8.2]	2 [6.6]	1.5 [4.9]	1 [3.3]	0.5 [1.6]	0 [0]	-0.5 [-1.6]	-1 [-3.3]	-1.5[-4.9]
1.5 [4.9]	1.13	1.41	1.92	2.64	3.36	2.47	0.84	0.28	0.02	0.10	0.40
1 [3.3]	1.13	1.52	2.15	3.29	5.09	7.91	3.69			0.46	2.98
0.5 [1.6]	1.06	1.46	2.16	3.46	5.93	12.26	24.87	ISO		14.02	6.97
0 [0]	0.63	0.91	1.34	2.17	4.74	11.84	50.28			18.14	7.44
-0.5 [-1.6]		Table								9.84	4.51

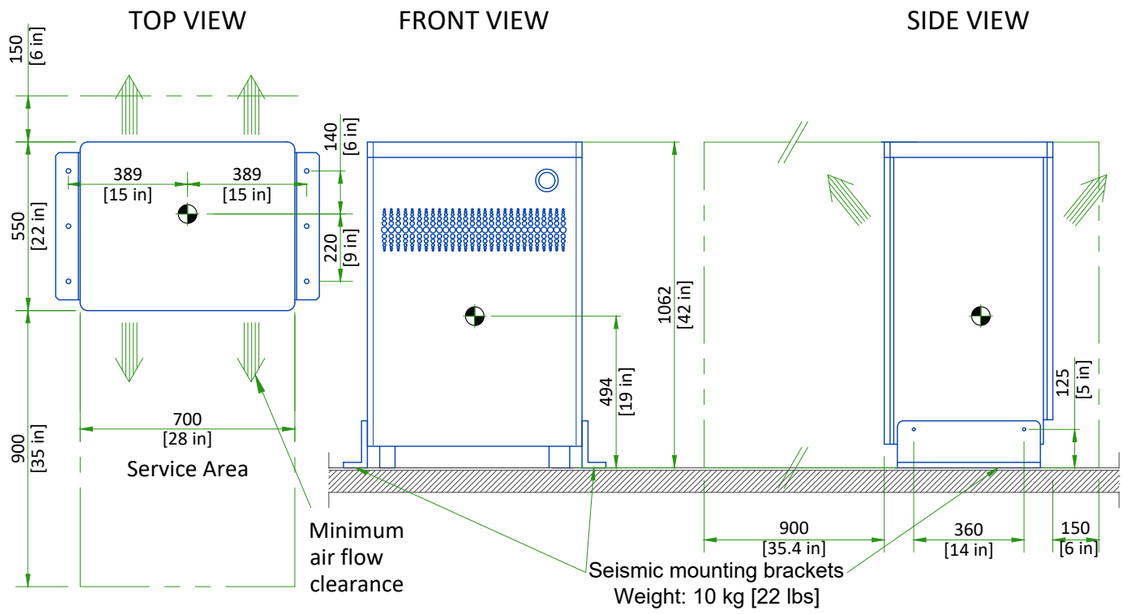
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GANTRY WITH TABLE



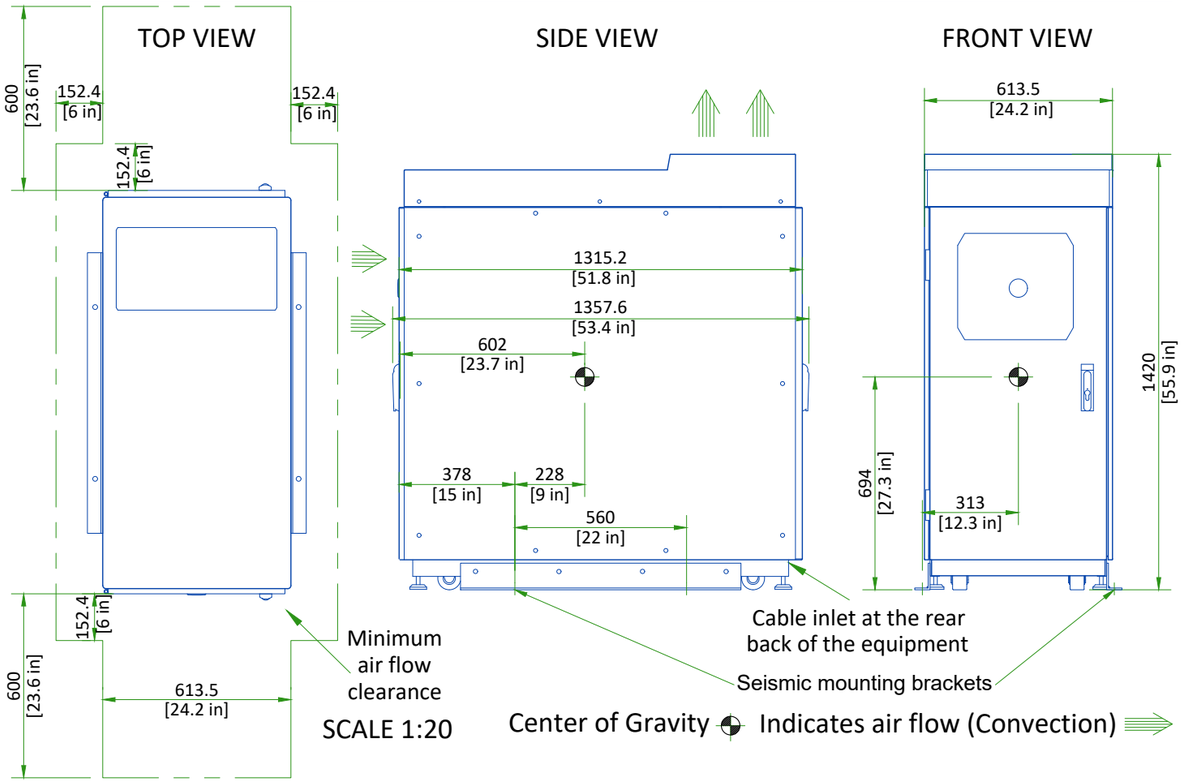
SCALE 1:50

POWER DISTRIBUTION UNIT (PDU)



SCALE 1:20

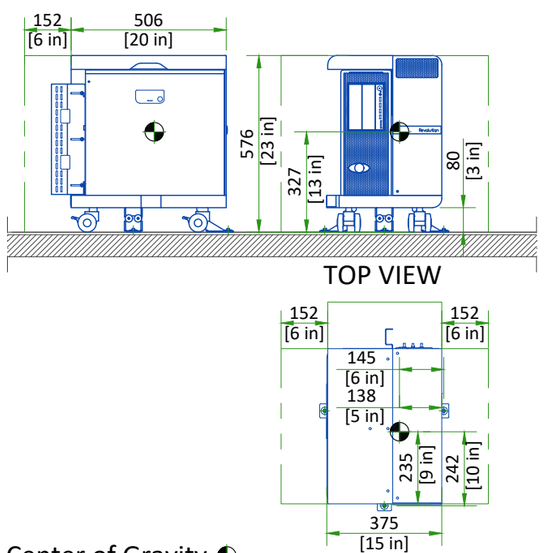
SYSTEM CABINET



SCALE 1:20

CUSTOMER SUPPLIED TABLE AND OPEN CONSOLE

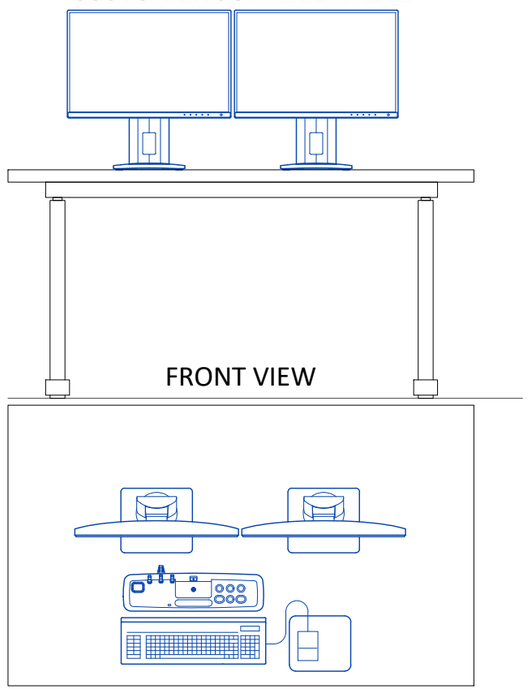
OPERATOR CONSOLE



Center of Gravity

SCALE 1:20

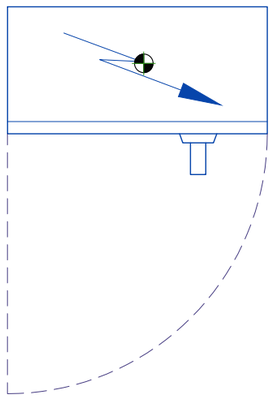
CUSTOMER SUPPLIED TABLE



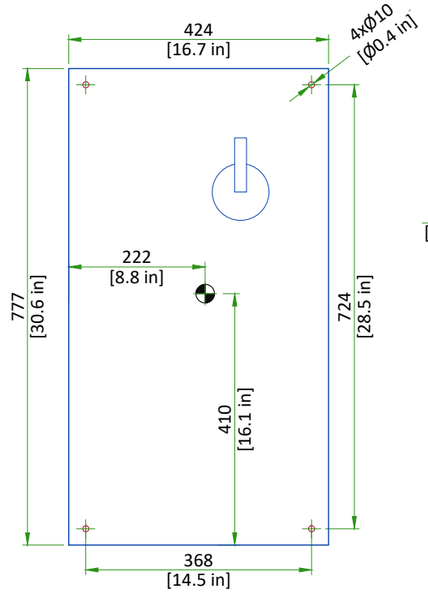
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MAIN DISCONNECT PANEL

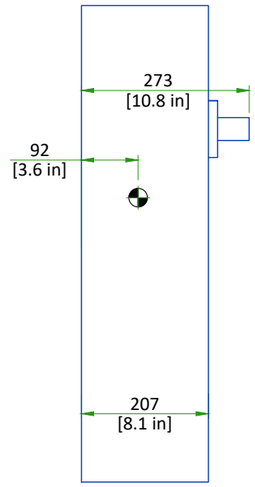
TOP VIEW



FRONT VIEW



SIDE VIEW



Center of gravity

SCALE 1:10

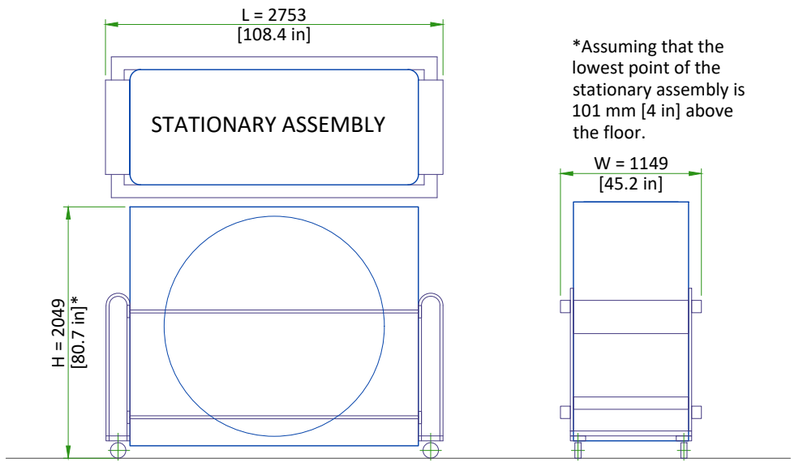
DELIVERY

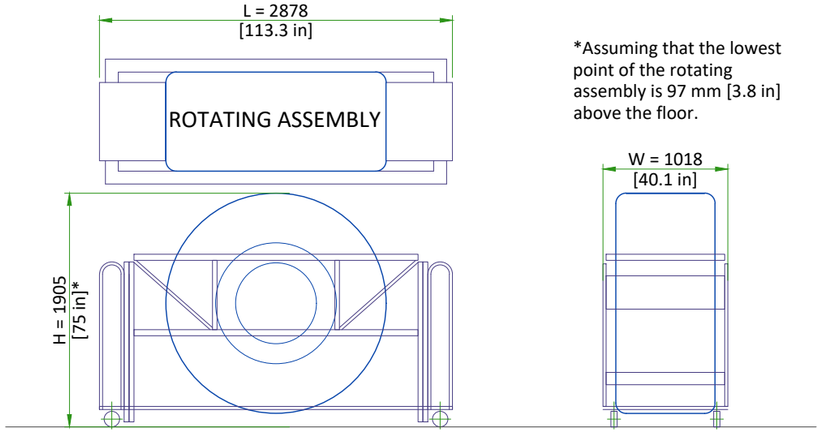
THE CUSTOMER/CONTRACTOR SHOULD:

- 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

EQUIPMENT		DIMENSIONS		WEIGHT	
GANTRY	STATIONARY ASSEMBLY	LENGTH	2753 mm [108.4 in]	1738.8 kg	3830 lbs
		WIDTH	1149 mm [45.2 in]		
		HEIGHT	2049 mm [80.7 in]		
	ROTATING ASSEMBLY	LENGTH	2878 mm [113.3 in]	1681.6 kg	3704 lbs
		WIDTH	1018 mm [40.1 in]		
		HEIGHT	1905 mm [75 in]		
NG-2000V PATIENT TABLE		LENGTH	2972 mm [117 in]	737.2 kg	1622 lbs
		WIDTH	1120 mm [44.1 in]		
		HEIGHT	1230 mm [48.4 in]		



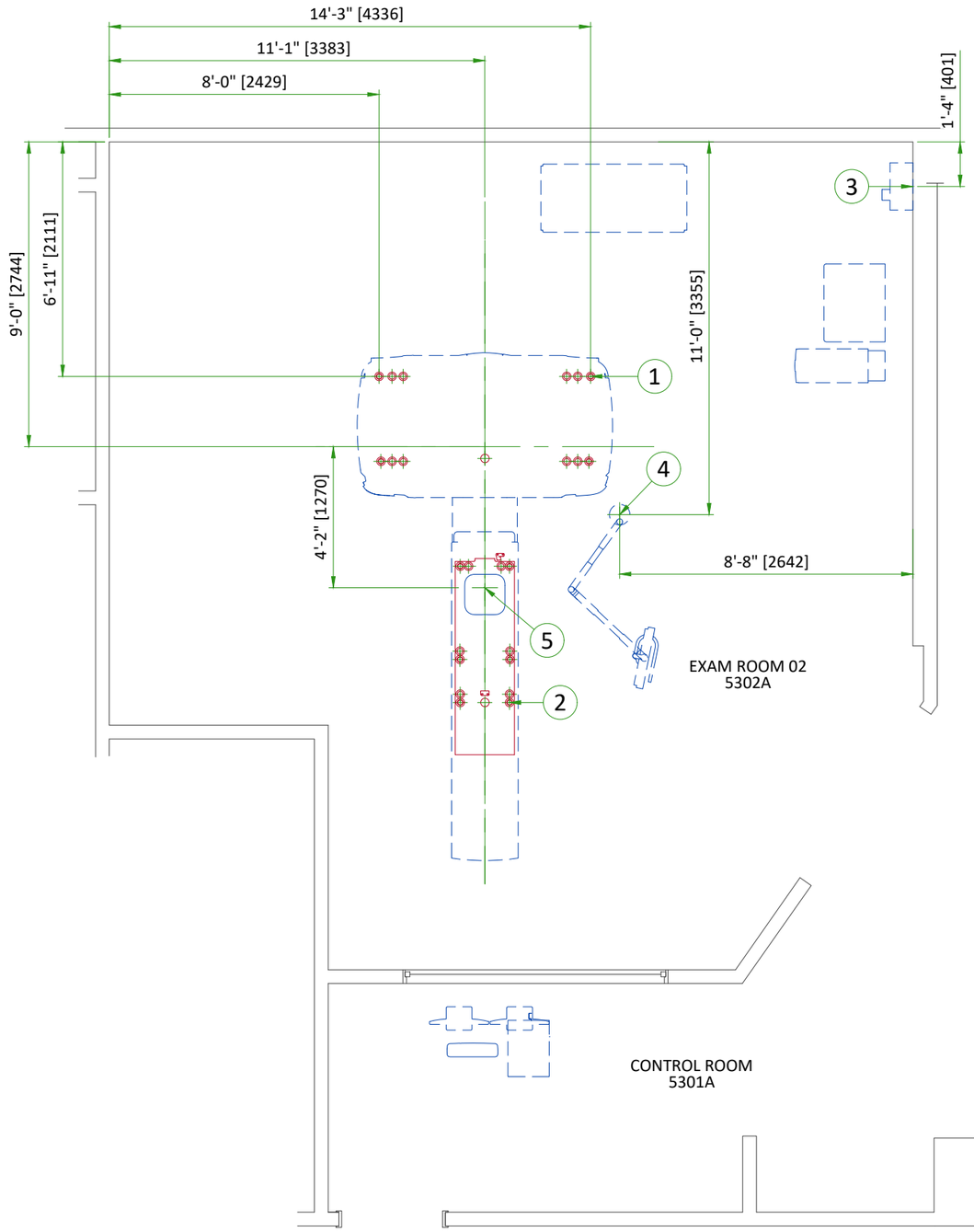


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STRUCTURAL NOTES

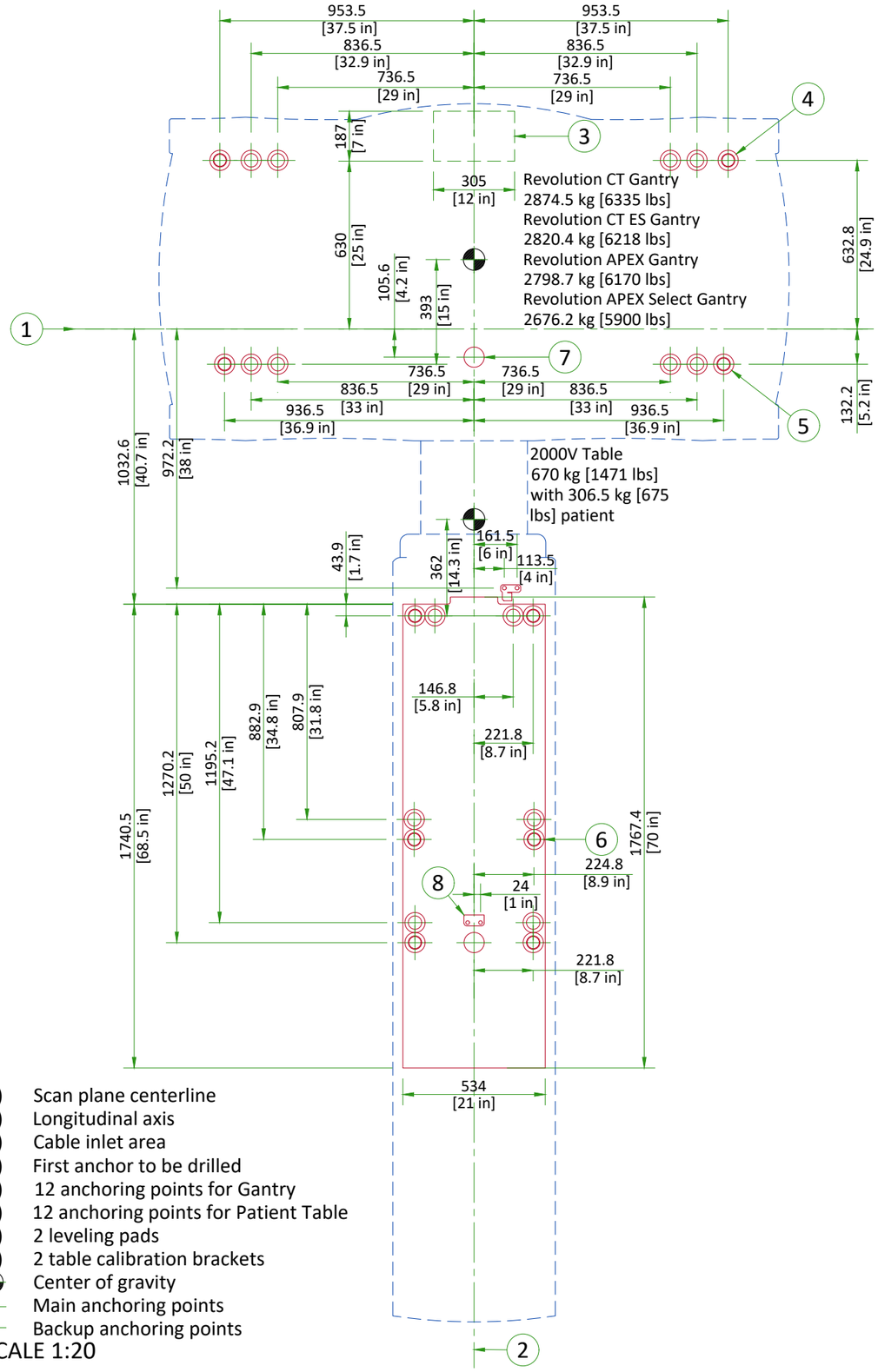
- all steel work and parts necessary to support ceiling mounted equipment is to be supplied by the customer or his contractors.
- methods of support for the steelwork that will permit attachment to structural steel or through bolts in concrete construction should be favored. Do not use concrete or masonry 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 1/4" below the finished ceiling.
- floor slabs on which equipment is to be installed must be level to 1/4" in 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	Gantry anchor "A". Refer to Anchoring/loading Distribution To The Floor detail on sheet S3.
2	Table leveling pads. Refer to Anchoring/loading Distribution To The Floor detail on sheet S3.
3	Support Backing, locate as shown
	Ceiling
4	The pedestal-ceiling mount requires a flush ceiling mounting plate that is structurally supported to handle the weight of the load.
5	Unistrut or equivalent for mounting patient positioning camera mounting plate on ceiling. Support designed and supplied by customer. Supports to be at least 2' [610mm] in length and located per dimensions on Positioning Camera Mounting Plate structural detail.

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ANCHORING/LOADING DISTRIBUTION TO THE FLOOR

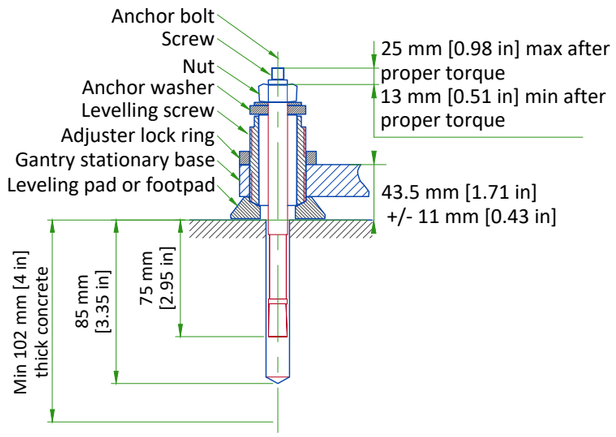


(1) Scan plane centerline
(2) Longitudinal axis
(3) Cable inlet area
(4) First anchor to be drilled
(5) 12 anchoring points for Gantry
(6) 12 anchoring points for Patient Table
(7) 2 leveling pads
(8) 2 table calibration brackets
Center of gravity
Main anchoring points
Backup anchoring points

SCALE 1:20

FLOOR SPECIFICATIONS

GE SUPPLIED GANTRY ANCHORS



FINISHED FLOOR REQUIREMENTS

- Installation requires a finished 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 levelness tolerance of the floor surface that the gantry and table will rest on is 6 mm [0.25 in] over a 3000 mm [9.8 ft] distance.
- Shims should not be used to compensate for a floor that does not meet this requirement.
- If the concrete floor has a floor covering installed over it (such as floor tile), the foot pad load bearing areas under the gantry and the patient table shall be cut into the flooring to ensure the table and gantry rest on a solid surface. (Openings cut during installation.)
- These floor penetrations can be sealed if required. These requirements apply to all installation types.

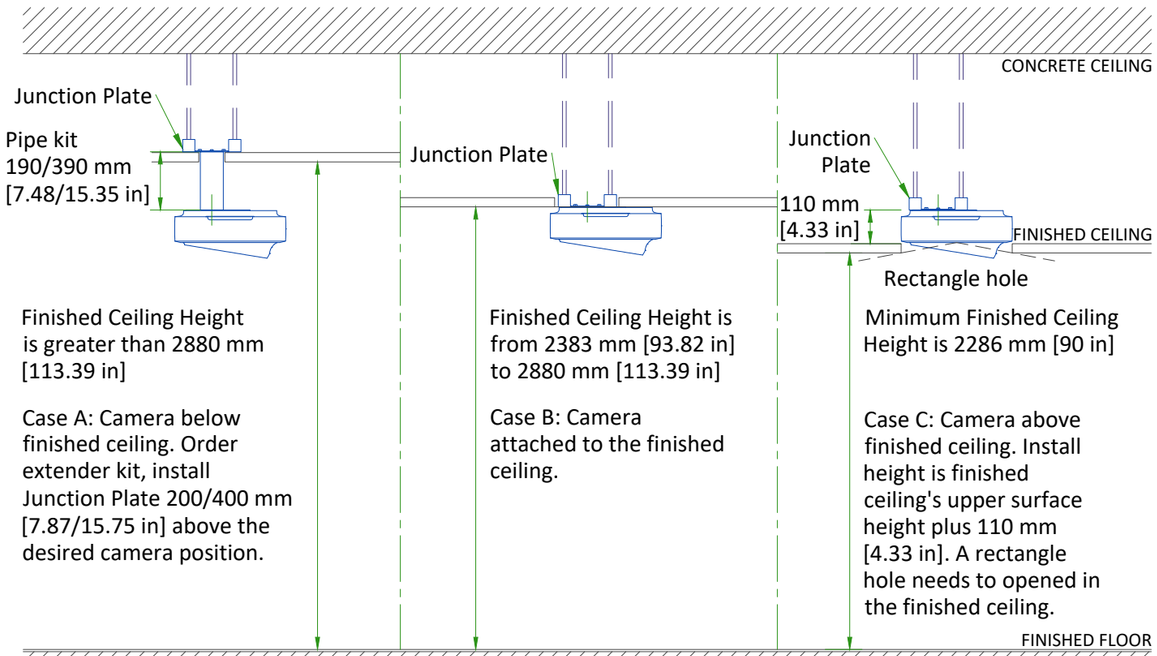
Notes:

- Anchors must be embed at least 127 mm [5.0 in] from any existing old cut off anchor, concrete edge, metal conduit or duct edge embedded in the concrete, concrete joint or crack.
- Anchors, nuts and drill bits required for seismic installations are not provided by GE. The type and length of the anchors, nuts, and drill bit must be defined in the alternative seismic anchoring plan and purchased separately by the customer.

NOT TO SCALE

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POSITIONING CAMERA INSTALLATION POSITION



Finished Ceiling Height is greater than 2880 mm [113.39 in]

Case A: Camera below finished ceiling. Order extender kit, install Junction Plate 200/400 mm [7.87/15.75 in] above the desired camera position.

Finished Ceiling Height is from 2383 mm [93.82 in] to 2880 mm [113.39 in]

Case B: Camera attached to the finished ceiling.

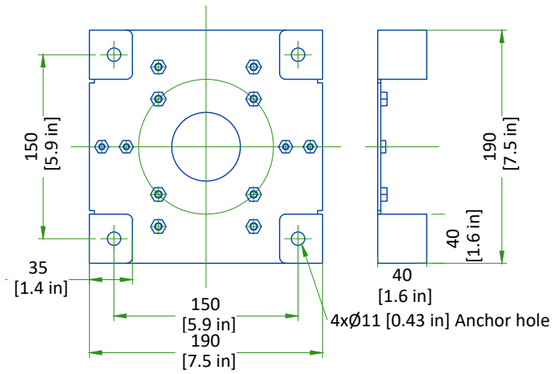
Minimum Finished Ceiling Height is 2286 mm [90 in]

Case C: Camera above finished ceiling. Install height is finished ceiling's upper surface height plus 110 mm [4.33 in]. A rectangle hole needs to opened in the finished ceiling.

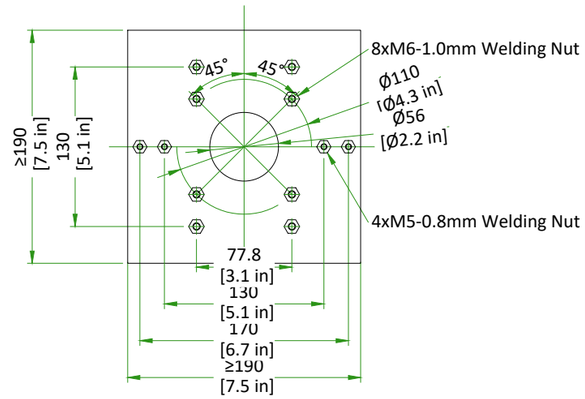
NOT TO SCALE

POSITIONING CAMERA MOUNTING PLATE

JUNCTION PLATE SUPPLIED BY GE



JUNCTION PLATE SUPPLIED BY CUSTOMER



GE will provide a Junction Plate, shipped with the system. If the Junction Plate supplied by GE can not meet the requests of the customer or the building structure, the customer's architect can design and install the Junction Plate (refer to the right side of the detail) with sufficient strength to hold the camera assembly.

Material: Steel material with a min. tensile strength of 375 MPa
Plate thickness: 2.5 mm [0.10 in]

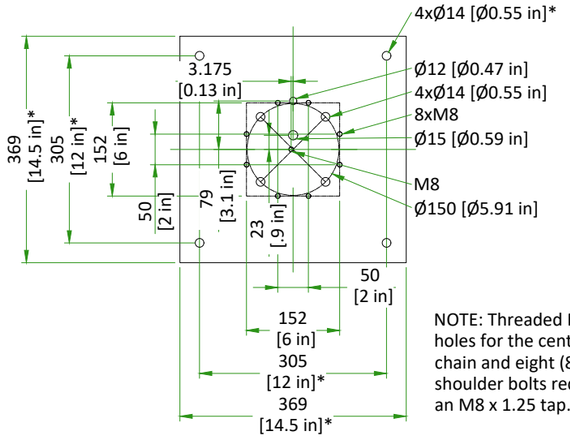
Welding Nut: Meet GB-T 13681-1992 requirement or equivalent		
	M5-0.8 mm	M6-1.0 mm
Thickness (mm [in])	3.7-4 [0.15-0.16]	4.7-5 [0.19-0.20]
Pledge load (N)	11000	15500

NOTE: The system manufacturer will NOT inspect and test that the fixing methods between the Junction Plate and the building structure meet the loading capacity specified (recommend a 6x safety factor), which is the customer's responsibility. The weight of the camera assembly is approximately 3.2 kg [7.05 lbs], suggest the safety load on the Junction Plate is no less than 20 kg [44.09 lbs]. If the Anchor Bolt is not applicable for site requirement, the customer's architect can consider other methods (such as welding...) to fix the Junction Plate. Presetting for site preparation of the Camera installation, customer had better install the Junction Plate in advance before the system installation.

NOT TO SCALE

LCD MONITOR MOUNTING PLATES

CUSTOMER SUPPLIED BOOM PEDESTAL MOUNTING PLATE

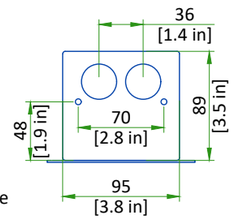


NOTE: Threaded M8 holes for the center chain and eight (8) shoulder bolts require an M8 x 1.25 tap.

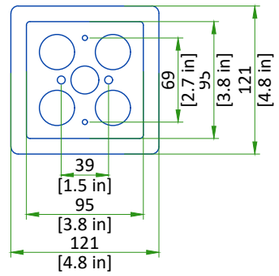
GE SUPPLIED JUNCTION BOX MOUNTING PLATE

The customer must mount the electrical junction box (included in the kit) flush to the ceiling, since a finished cover plate, also included in the kit, mounts directly to the junction box. The electrical junction box is an industry standard, large capacity type (deep), dimensions of which are shown below:

SIDE VIEW



TOP VIEW



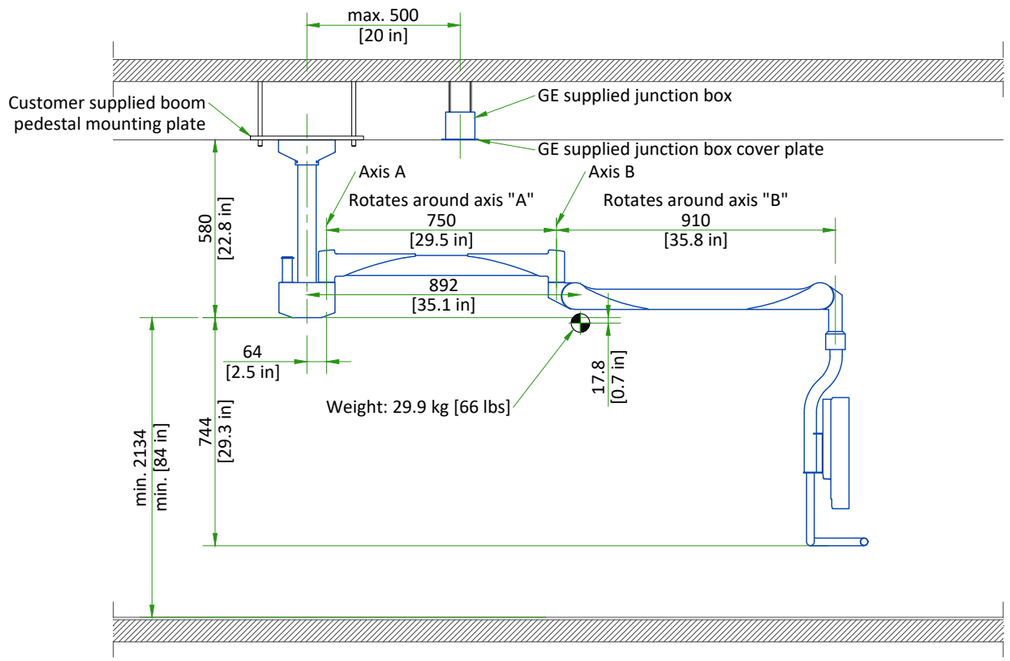
Material for the boom pedestal mounting plate shall be:

- Structural steel between 10-15 mm [0.4-0.6 in] thickness
- Tensile stress shall be 400 MPa or greater
- Yield stress shall be 235 MPa or greater

NOTE: Safety factor on the junction box mounting plate and the boom mounting plate shall be no less than 4 times load. Dimensions marked with an asterisk (*) in the illustration above (and the available engineering drawing provided by the PMI) are for customer reference only. Since the customer supplies this plate, dimensions marked with (*) are minimum size recommendations and may vary, depending on customer ceiling layout. The ceiling mounting plate must be designed by a structural engineer and installed by a qualified contractor prior to the system installation.

NOT TO SCALE

LCD MONITOR SUSPENSION



NOT TO SCALE

Center of Gravity

TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS

	EXAM ROOM			CONTROL ROOM		
Temperature (From -150 m [-492 ft] to 1600 m [5249 ft])	Min	Recommended	Max	Min	Recommended	Max
	18°C	22°C	26°C	18°C	22°C	26°C
	64°F	72°F	79°F	64°F	72°F	79°F
Temperature (From 1600 m [5249 ft] to 3000 m [9843 ft])	Min	Recommended	Max	Min	Recommended	Max
	18°C	22°C	25°C	18°C	22°C	25°C
	64°F	72°F	77°F	64°F	72°F	77°F
Relative humidity (1)	30% to 70%			30% to 70%		

STORAGE CONDITIONS

Temperature	+4°C to +27°C
	40°F to +80°F
Temperature gradient	**≤ 3°C/h**
	≤ 5.4°F/h
Relative humidity (1)	20% to 60%
Humidity gradient	**≤ 5%/h**

Storage longer than 6 months is not recommended.
(1) Non-condensing

AIR RENEWAL

According to local standards.
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 DETAILS

ROOM	DESCRIPTION	Max (btu)	Max (kW)
Exam Room	Gantry and Patient Table	27150	7.95
	TOTAL	**27150**	**8.0**
Exam Room or Technical Room*	Power Distribution Unit	1200	0.352
	System Cabinet IV	10578	3.1
	Partial UPS - Powerware 9355-15-14GE	3000	0.88
	TOTAL	**14778**	**4.3**
Control Room	Operator console (including 2 monitors)	5100	1.5
	AW Workstation	3412	1.0
	AW Server	1911	0.6
	Smart Subscription Server ML350G10	6134	1.8
	TOTAL	**16557**	**4.9**

*Technical Room is not mandatory, the placements of these elements are recommended in the Exam Room.

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 distritbution 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 pigtails 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

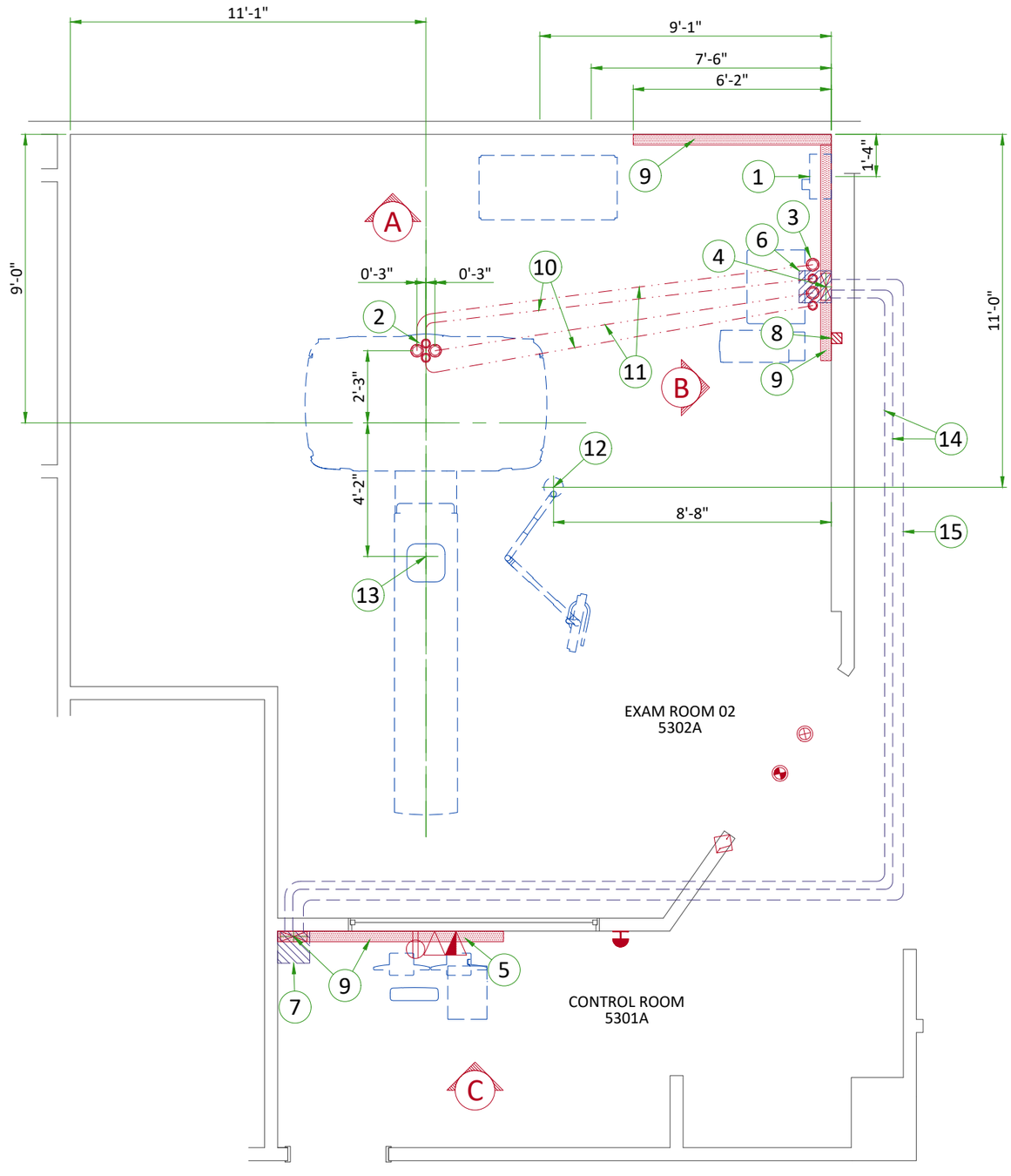
Your new GE Healthcare imaging modality will require local and remote connectivity to enable our full range of digital support:

- Local connectivity - This allows your system to connect to local devices such as PACS and modality worklist. We will require network information to configure the system(s), and a live ethernet port(s) prior to the delivery of the system(s).
- Remote connectivity - Your GE Healthcare service warranty includes InSite™ (applicable to InSite capable products), a powerful broadband-based service which enables digital tools that can help guard your hospital against equipment downtime and revenue loss by quickly connecting you to a GE Healthcare expert.

Depending on product family and software version, imaging systems can be connected in one of the following methods:

1. TLS over TCP Port 443 (Preferred method for new products) via:
    a. DNS resolution
    b. Customer-provided Proxy or
    c. GE Proxy (Available in some regions)
2. Site-to-Site IPsec VPN tunnel

Please provide the GE project manager with the contact information for the resource that can provide information required to set up these connections. GEHC will send out communication to these contacts, which will include the project's Connectivity requirements, and a Connectivity form. This form will need to be completed and returned to GEHC prior to delivery of the system to ensure the system is tested and connectivity is enabled prior to the completion of the installation.

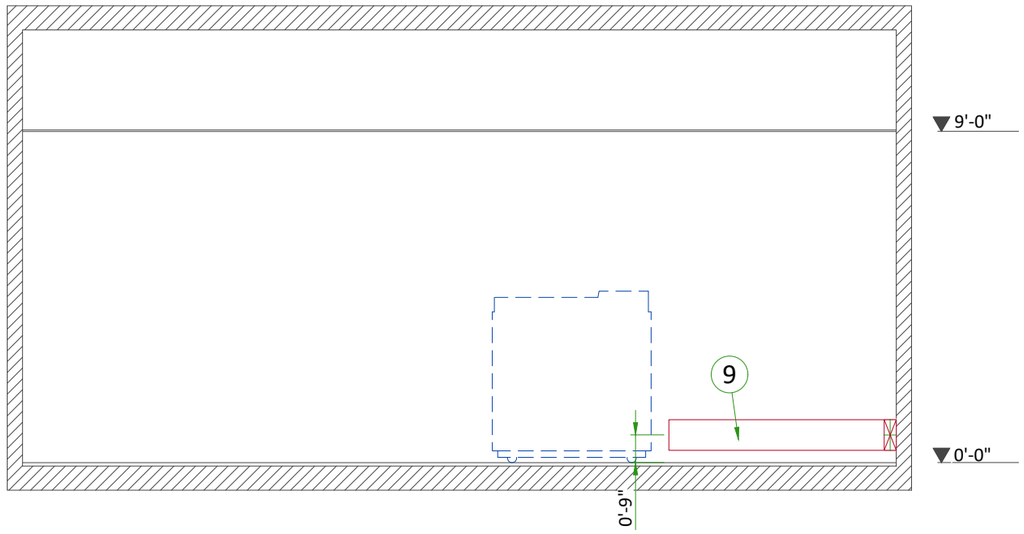


Item	Electrical Layout Item List
1	Main disconnect panel (MDP)
2	Suitable bushings & lock nuts (Gantry)
3	Suitable bushings & lock nuts (Power Distribution Unit)
4	Grommeted opening (PDU)
5	Grommeted opening (Operator's Console)
6	Box above ceiling - size per local code (Exam Room)
7	Box above ceiling - size per local code (Control Room)
8	4" x 4" x 4" [100 x 100 x 100] box (Partial UPS)
9	10" x 3 1/2" [250 x 100] surface wall duct with minimum 2 dividers
10	2 1/2" [64] conduit below floor
11	3 1/2" [89] conduit below floor
12	Box above ceiling (SmartView monitor - GE Supplied)
13	Cable inlet above ceiling (Express Camera)
14	2 1/2" [64] conduit above ceiling
15	3 1/2" [89] conduit above ceiling

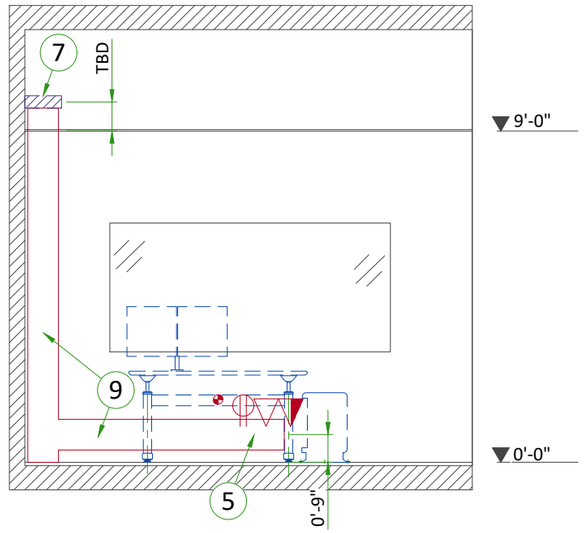
ITEM	QTY	Electrical Outlet Legend Customer/contractor supplied and installed items unless otherwise specified. Height above floor determined by local codes unless otherwise specified.
△		Dedicated telephone line(s)
◢		Network outlet
⏂		System emergency off (SEO), (recommended height 1.2m [48"] above 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)

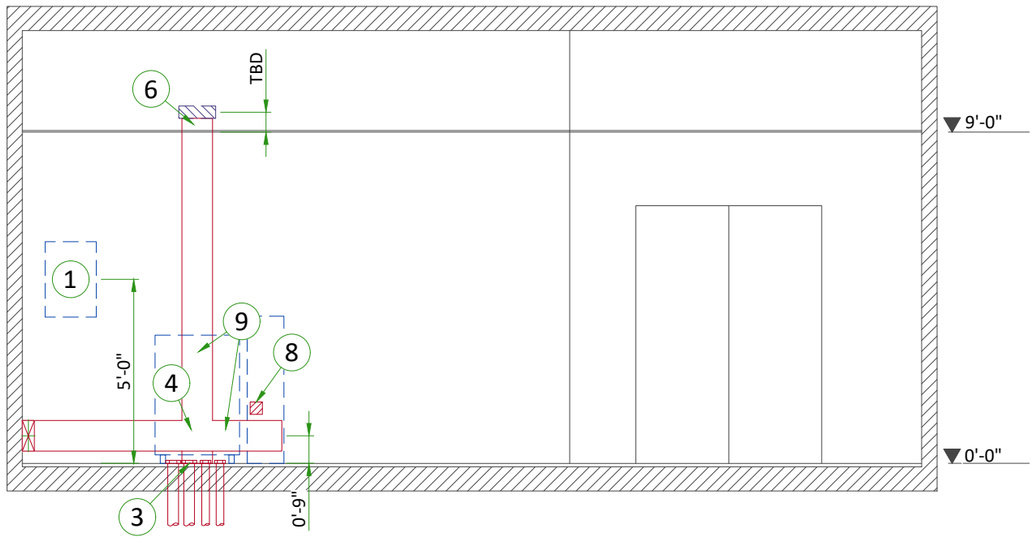
From (Bubble # / Item)		To (Bubble # / Item)		Qty	Size	
					In.	mm
	3 Phase Power	1	Main Disconnect Panel	1	As req'd	As req'd
1	Main Disconnect Panel		Emergency Off	1	1/2	13
		6	Power Distribution Unit	1	As req'd	As req'd
6	Power Distribution Unit		Door Switch	1	1/2	13
			Warning Light Control	1	1/2	13
	Warning Light			1	1/2	13
	1 Phase Power			1	1/2	13
1	Main Disconnect Panel	8	Partial UPS	1	1 1/4	30
13	Express Camera	7	Operator's Console	1	1 1/2	38
12	SmartView Monitor	7	Operators Console	1	1	25
				1	2	50



A



C



B

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POWER REQUIREMENTS

POWER SUPPLY	**3 PHASES+G (4-Wire system, neutral not used) 380/400/420/440/460/480 V ± 10%**
FREQUENCIES	**50/60 Hz ± 3Hz**
MAXIMUM POWER DEMAND	**200 kVA**
AVERAGE (CONTINUOUS) POWER DEMAND	**11 kVA**
POWER FACTOR	**0.85**

- Power supply should come into a main disconnect panel (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.
- There must be discrimination between supply cable protective device at the beginning of the installation (main low-voltage transformer side) and the protective devices in the MDP.

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.
- Transients must be less than 1500V peak. (on a 400V line)
- Maximum source regulation allowable is 6%. The combination of daily voltage variation (no load) and source regulation under full load shall not exceed + 10/-13% of nominal.

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.

CABLES

- Power and cable installation must comply with the distribution diagram.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signaling and remote control (Y, SEO, L...) will go to MDP 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.

POWER DISTRIBUTION

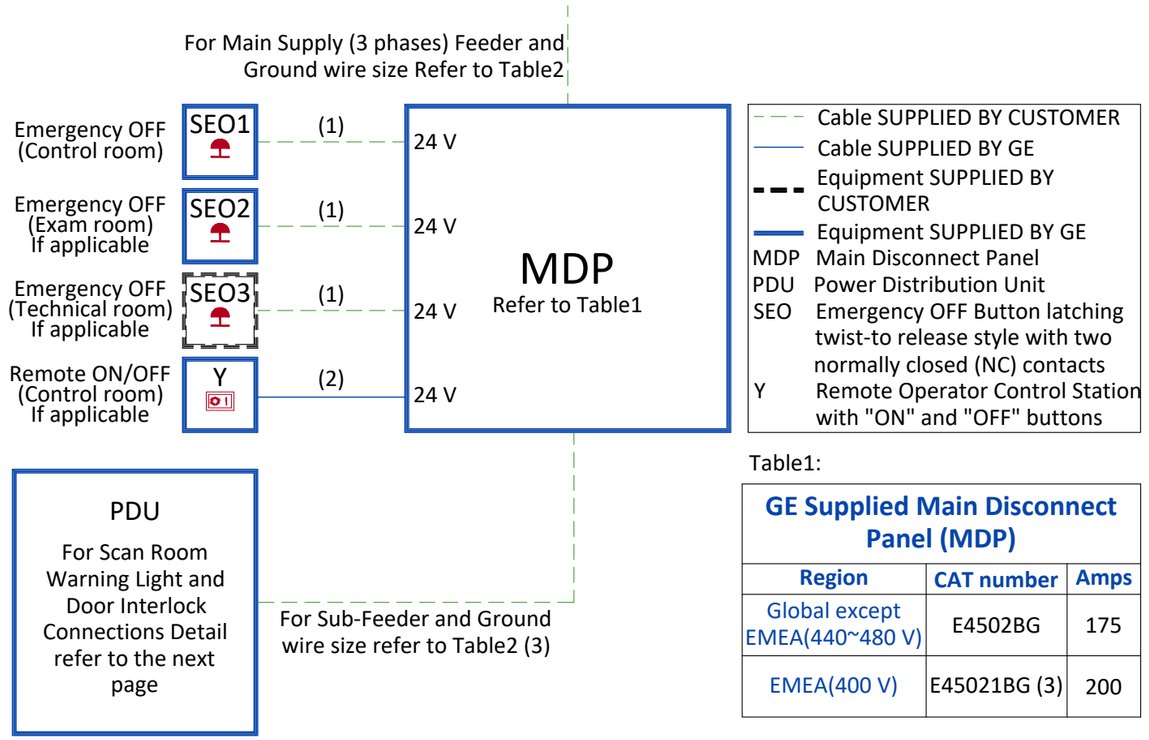


Table1:

GE Supplied Main Disconnect Panel (MDP)		
Region	**CAT number**	**Amps**
Global except EMEA(440~480 V)	E4502BG	175
EMEA(400 V)	E45021BG (3)	200

Table2:

Feeder Table						
The information below assumes the use of copper wire, rated 75 C and run in steel conduit. All ampacity is determined in accordance with the National Electrical Code (NFPA 70), Table 310-16 (2002). The ampacity of the circuit protection device listed above determines the minimum feeder size, except where total source regulation limits require a larger size. If the wire size does not match the above lists, please select the nearest wire size as per to local standards.						
Feeder length from Power Substation to MDP - ft (m)	**Minimum Wire Size, AWG or MCM (mm²)/VAC**					
	380 VAC	400 VAC	420 VAC	440 VAC	460 VAC	480 VAC
Sub-Feeder length from MDP to PDU - ft (m)						
50 (15)	3/0 (95)	3/0 (95)	3/0 (95)	2/0 (70)	2/0 (70)	2/0 (70)
Grounding						
Run a dedicated 1/0 [50 mm²] or larger insulated copper ground wire from the power source to the MDP and from MDP to the PDU. Run the ground wire in the same raceway with the three-phase wires.						

Notes :

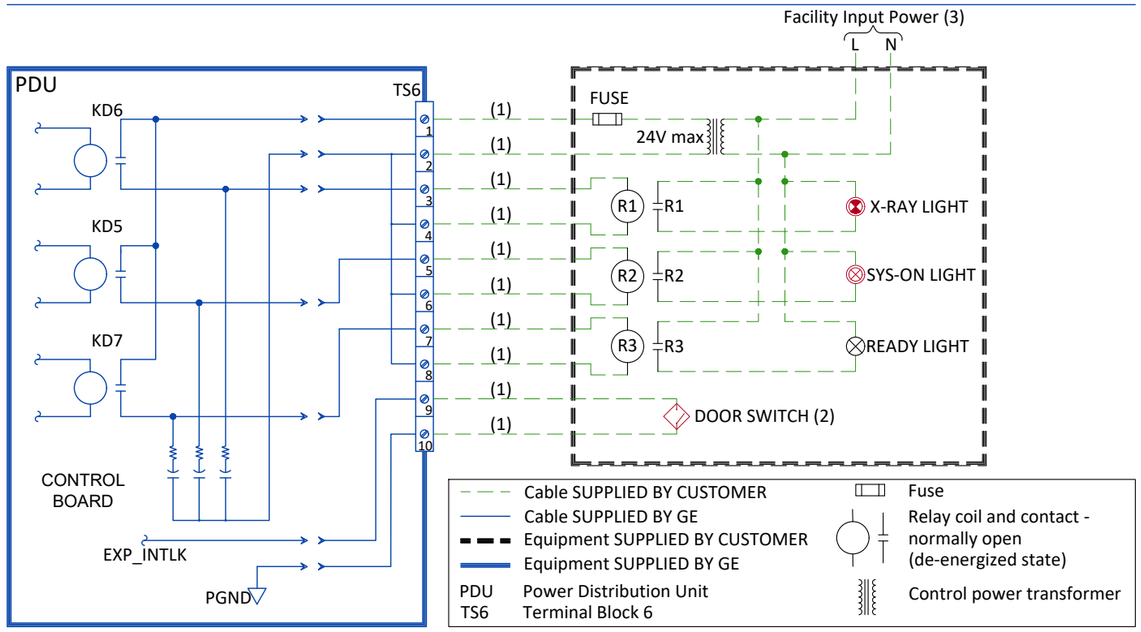
(1) Wire size: 4x2mm² [14AWG] and 1x2mm² [14AWG] GND

(2) Power cable: 3 Meter/10', multi-conductor, 24V DC

(3) GE supplied MDP option E45021BG includes a 10 meter long power cable (H07RN-F) with wire size 4x50mm² and a 50 meter long control cable with wire size 2x1.5mm²

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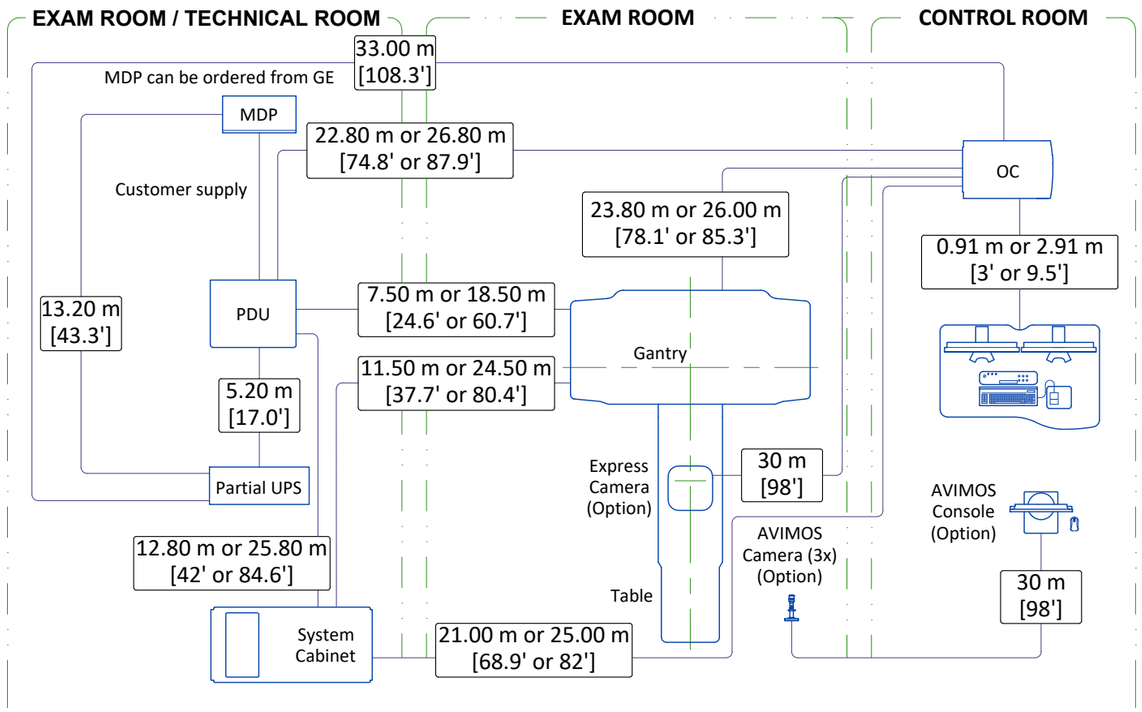
SCAN ROOM WARNING LIGHT AND DOOR INTERLOCK



Notes :

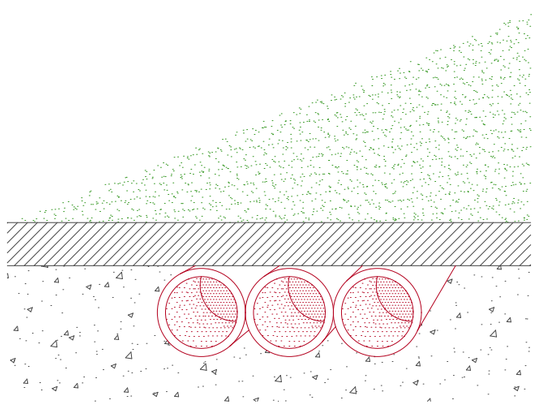
(1) Wire size: 2mm² [14 AWG] at 24V
(2) Door Interlock circuit is jumpered out if a door switch is not provided.
(3) Grounding not shown on the detail, but must comply with local codes.

INTERCONNECTIONS

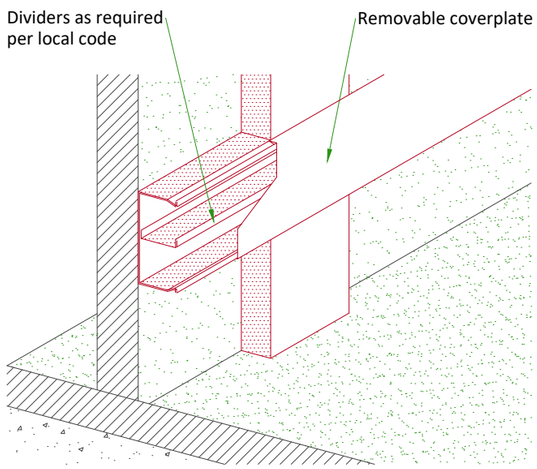


TYPICAL CABLE MANAGEMENT

CONDUIT IN THE FLOOR



WALL DUCT



NOT TO SCALE



REV	DATE	MODIFICATIONS
A	25/Aug/2023	Final DC-399611

01 - C1 - Cover Sheet
02 - C2 - Disclaimer - Site Readiness Checklist
03 - A1 - General Notes
04 - A2 - Equipment Layout
05 - A3 - Radiation Protection
06 - A4 - Radiation Protection Details
07 - A5 - Equipment Dimensions (1)
08 - A6 - Equipment Dimensions (2)
09 - A7 - Delivery
10 - S1 - Structural Notes
11 - S2 - Structural Layout
12 - S3 - Structural Details (1)
13 - S4 - Structural Details (2)
14 - M1 - HVAC
15 - E1 - Electrical Notes
16 - E2 - Electrical Layout
17 - E3 - Electrical Elevations
18 - E4 - Power Requirements
19 - E5 - Electrical Details - Interconnect

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.

Medical Center of Aurora
Aurora, CO
USA

GE Healthcare

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REVOLUTION ASCEND
FINAL STUDY

Drawn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
CRM	CRM	-	5315409	5987663-1EN	3

Format	Scale	File Name	Date	Sheet
A3	1/4"=1'-0"	CT-M366299-FIN-00-A.DWG	25/Aug/2023	01/19

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**

CUSTOMER SITE READINESS REQUIREMENTS

REQUIRED MANUALS FOR SYSTEM PRE-INSTALLATION	
Description	**Document Number***
Product specific Pre-installation Manual	Refer to cover page
*documents can be accessed in multiple languages at *https://customer-doc.cloud.gehealthcare.com/#/cdp/dashboard*	

- 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.
- The items on the GE Healthcare Site Readiness Checklist **DOC1809666** are REQUIRED to facilitate equipment delivery to the site. Equipment will not be delivered if these requirements are not satisfied.
  - 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. Restrooms.
  - Provide for refuse removal and disposal (e.g. crates, cartons, packing)
  - For CT systems it is required to minimize vibrations within the scan room. 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 Pre-installation manual for vibration specifications.

ENVIRONMENT

ALTITUDE

- The system shall meet all functional and performance specifications when placed in a room that is at an elevation of -150 m to 4000 m [-492 ft to 13,124 ft] above sea level.

MAGNETIC FIELD SPECIFICATIONS

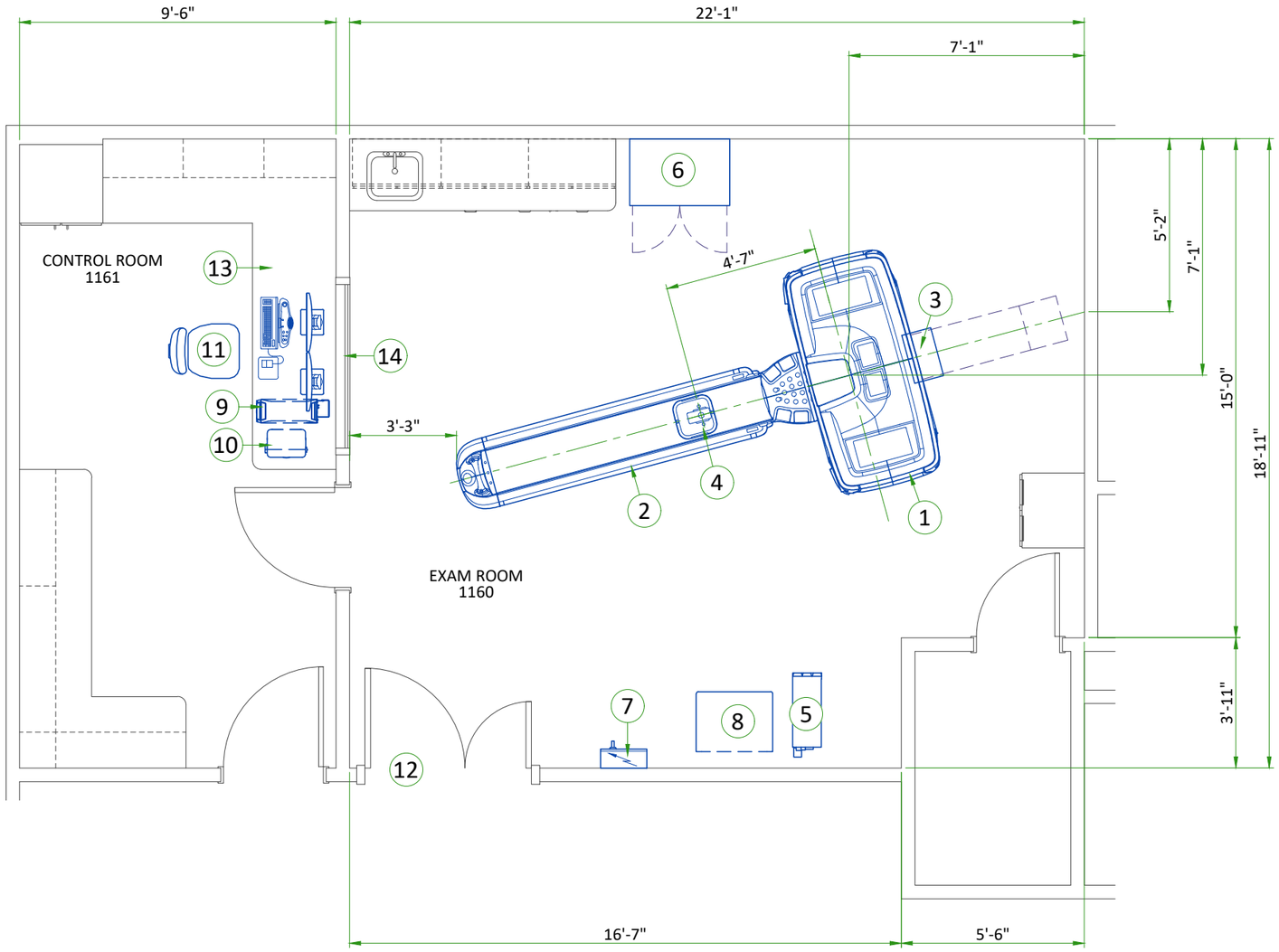
- Limit the magnetic interference to guarantee specified imaging performance.

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

OPERATOR CONSOLE:
- Ambient static magnetic fields less than 10 Gauss.

SYSTEM COMPONENT NOISE LEVEL

- **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 1 m [3.3 ft] from the nearest gantry surface, in any direction.
- **Maximum Console Audible Noise Level:** The maximum ambient noise levels is less than 54 dBA when measured at a distance of 1 m [3.3 ft] from the nearest console surface, in any direction.

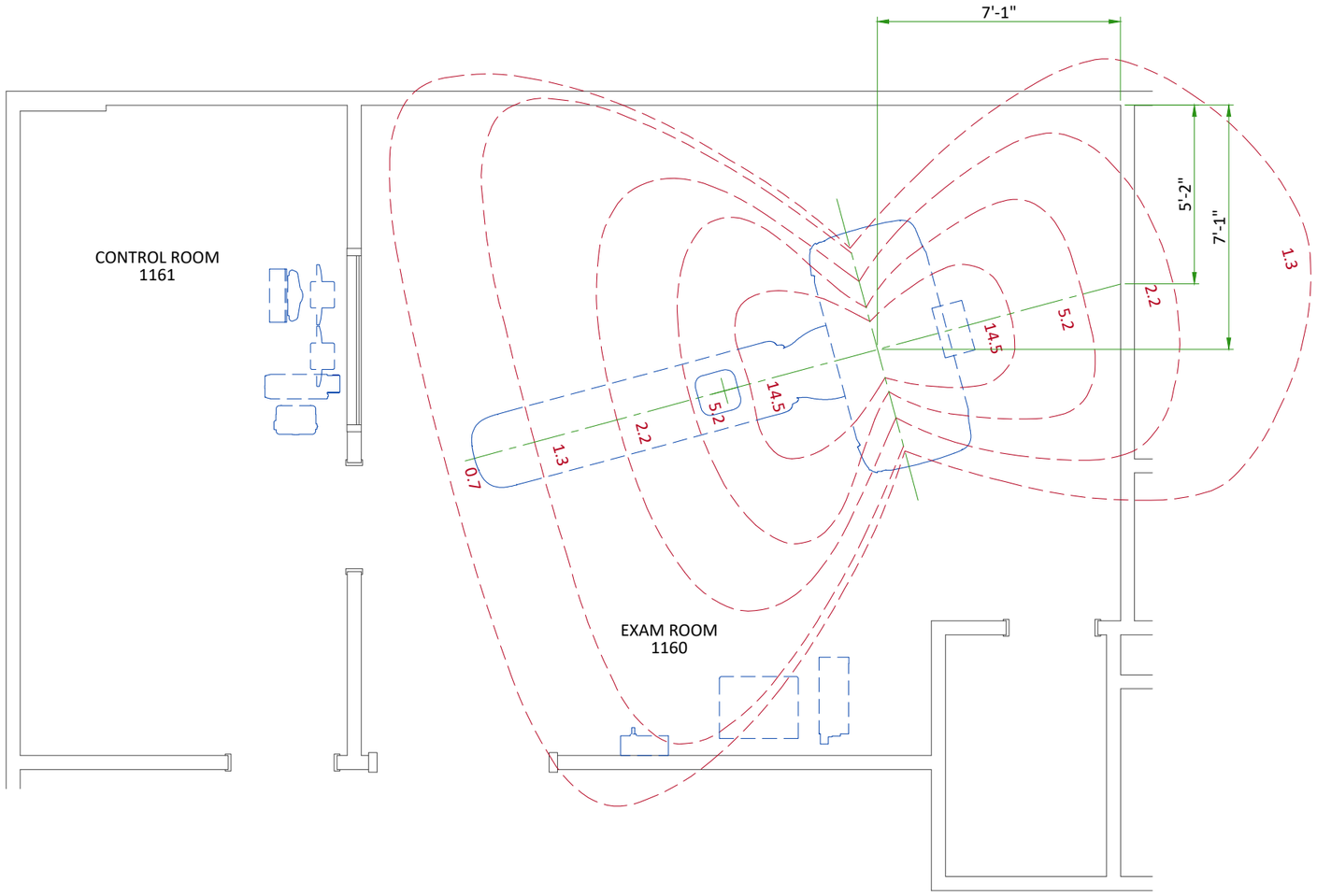


LEGEND			
A	GE SUPPLIED	D	AVAILABLE FROM GE
B	GE SUPPLIED/CONTRACTOR INSTALLED	E	EQUIPMENT EXISTING IN ROOM
C	CUSTOMER/CONTRACTOR SUPPLIED AND INSTALLED	*	ITEM TO BE REINSTALLED FROM ANOTHER SITE

BY	ITEM	DESCRIPTION	MAX HEAT OUTPUT (BTU/h)	WEIGHT (lbs)	MAX HEAT OUTPUT (W)	WEIGHT (kg)
A	1	GANTRY	18687	3980	5480	1805
A	2	VT2000 TABLE	1023	1114	300	505
A	3	REAR CABLE COVER	-	-	-	-
A	4	AUTO PATIENT POSITIONING DEPTH CAMERA	-	7	-	3.2
A	5	PARTIAL UPS	2830	265	830	120
A	6	GE STORAGE CABINET	-	150	-	68
B	7	MAIN DISCONNECT PANEL (MDP)	-	46	-	21
A	8	POWER DISTRIBUTION UNIT (PDU)	3410	816	1000	370
A	9	STANDALONE CONSOLE	3205	57	940	26
A	10	POWER BOX	-	22	-	10
A	11	OPERATOR'S CHAIR	-	-	-	-
C	12	MINIMUM OPENING FOR EQUIPMENT DELIVERY IS 1067 mm x 2083 mm [42 in x 82 in], CONTINGENT ON A 2438 mm [96 in] CORRIDOR WIDTH				
C	13	COUNTER TOP FOR EQUIPMENT- PROVIDE GROMMETED OPENINGS AS REQUIRED TO ROUTE CABLES				
C	14	LEAD GLASS WINDOW				

EXAM ROOM HEIGHT	
FINISHED FLOOR TO SLAB HEIGHT	TBD
FALSE CEILING HEIGHT	9'-0"

For Accessory Sales: (866) 281-7545 Options 1, 2, 1, 2 or mail to: gehcaccessorysales@ge.com



RADIATION PROTECTION LAYOUT

SHIELDING REQUIREMENTS SCALING	
CHANGED PARAMETER (mAs)	MULTIPLICATION FACTOR (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:

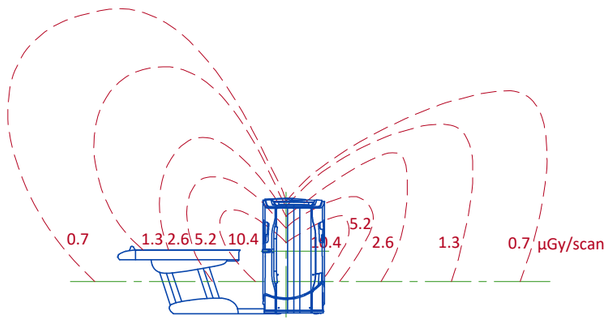
- Scatter radiation levels within the scanning room
- Equipment placement
- Weekly projected work-loads (number of patients/day technique (kvp*ma))
- Materials used for construction of walls, floors, ceiling, doors, and windows
- Access to surrounding scan room areas
- Equipment in surrounding scan room areas (e.g., film developer, film storage)
- Room size and equipment placement within the room relative to room size

The illustration on this page depicts measurable radiation levels within the scanning room while scanning a 32 cm CTDI phantom (body) with the technique shown:
- 140 kV
- 100 mA
- 1 sec
- 40 mm

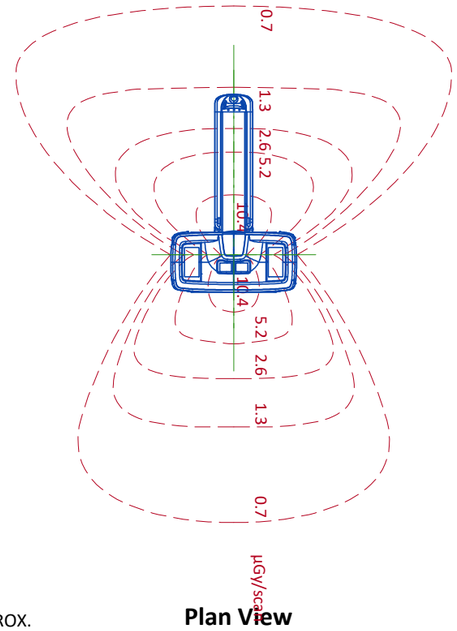
NOTE: Actual measurements can vary. Expected deviation equals ±15%, except for the 5 mA and 1 mm techniques, where variation may be greater (up to a factor of 2), due to the inherent deviation in small values. The maximum deviation anticipated for tube output equals ±40%.

RADIATION SCATTER - HEAD PHANTOM

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



Elevation

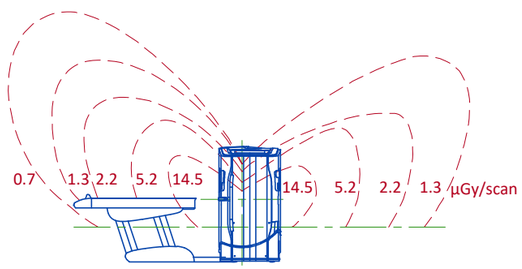


Plan View

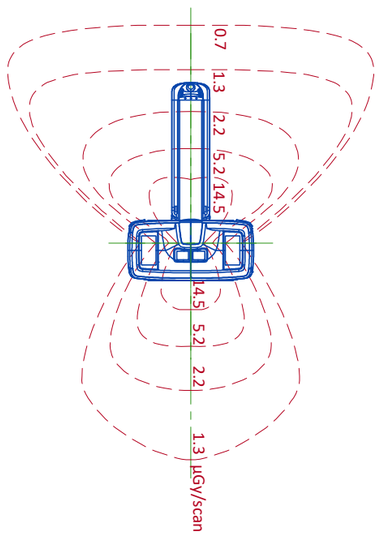
APPROX.
0" 50"
0.5 1.0m

RADIATION SCATTER - BODY PHANTOM

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



Elevation

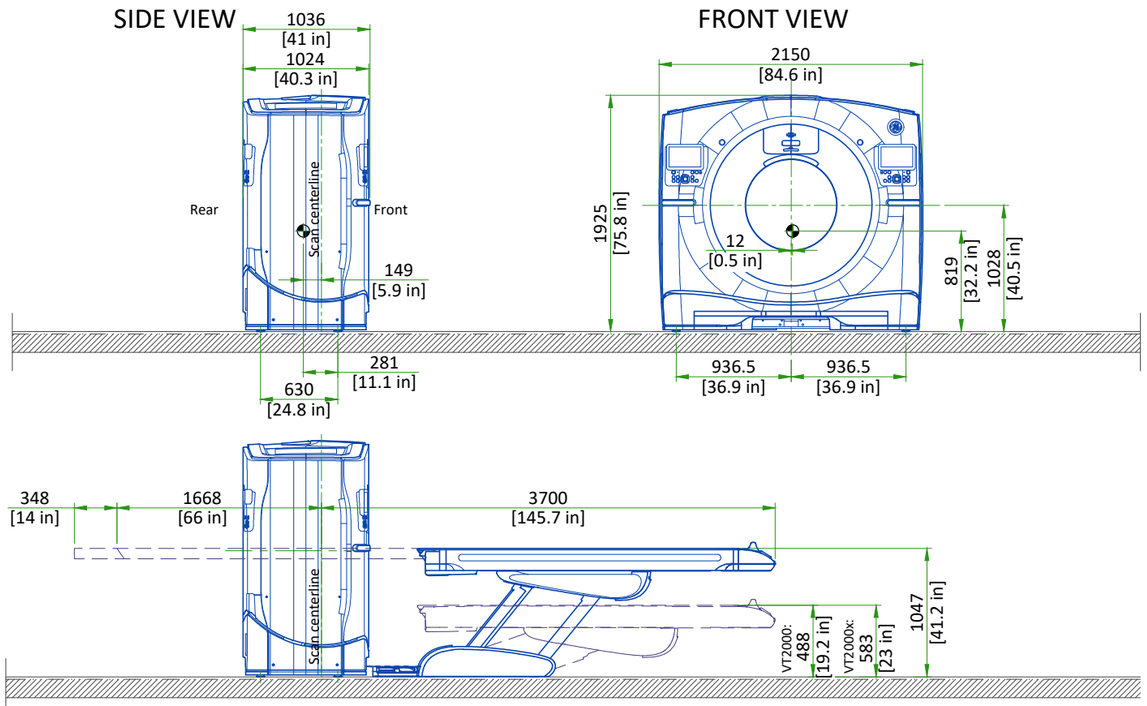


Plan View

APPROX.
0" 50"
0.5 1.0m

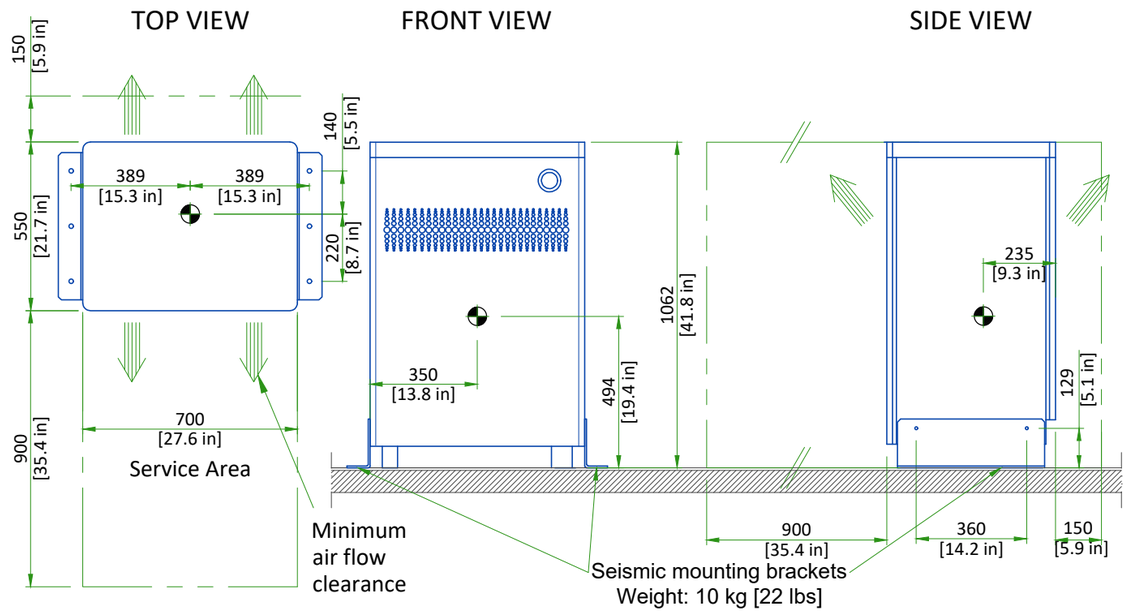
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GANTRY WITH VT2000/VT2000X TABLE



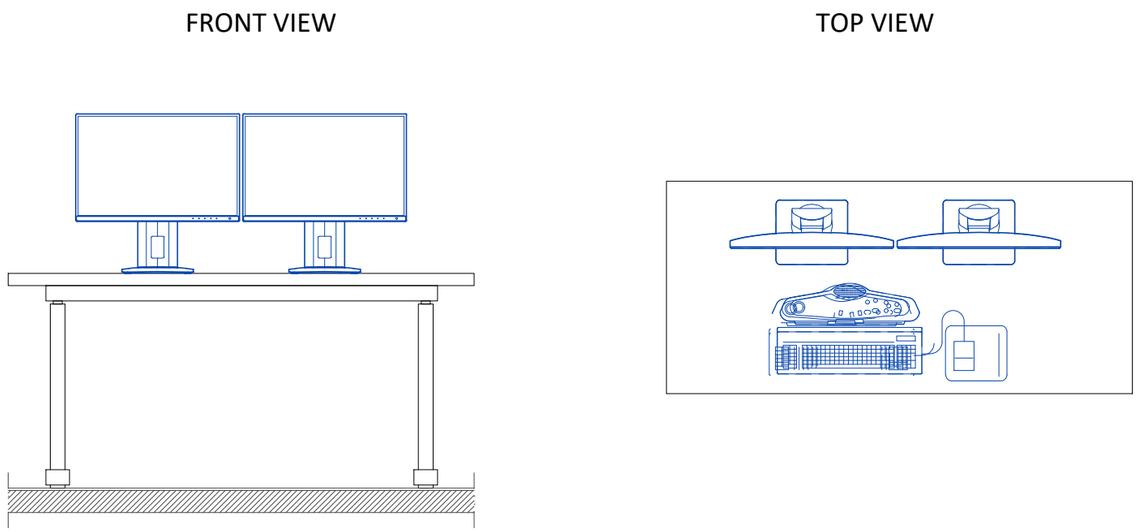
SCALE 1:50

POWER DISTRIBUTION UNIT (PDU)



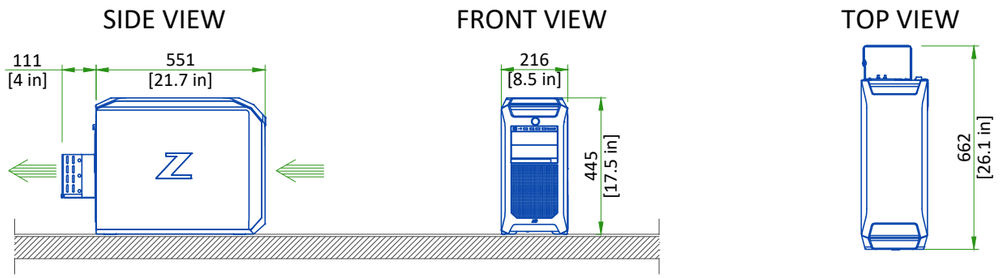
SCALE 1:20

CUSTOMER SUPPLIED TABLE

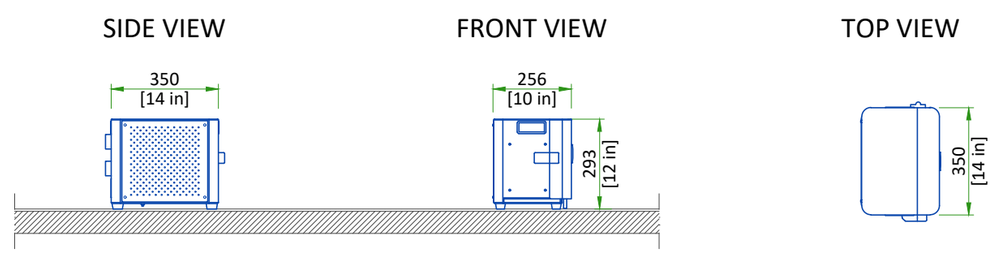


STANDALONE Z8G4 CONSOLE WITH POWER BOX

STANDALONE Z8G4 CONSOLE



POWER BOX

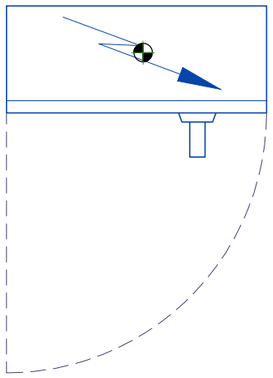


SCALE 1:20

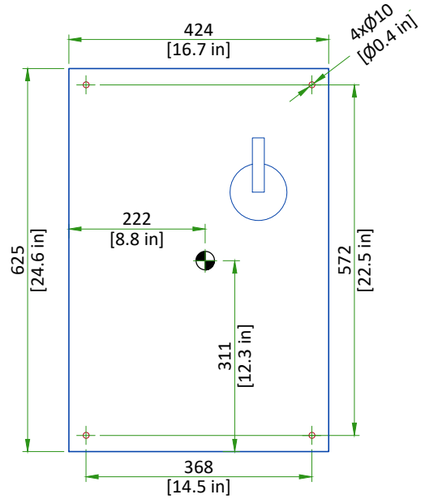
Indicates air flow (Convection)

MAIN DISCONNECT PANEL

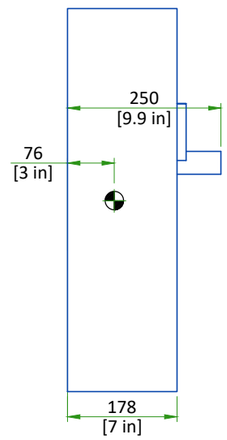
TOP VIEW



FRONT VIEW



SIDE VIEW



Center of gravity

SCALE 1:10

DELIVERY

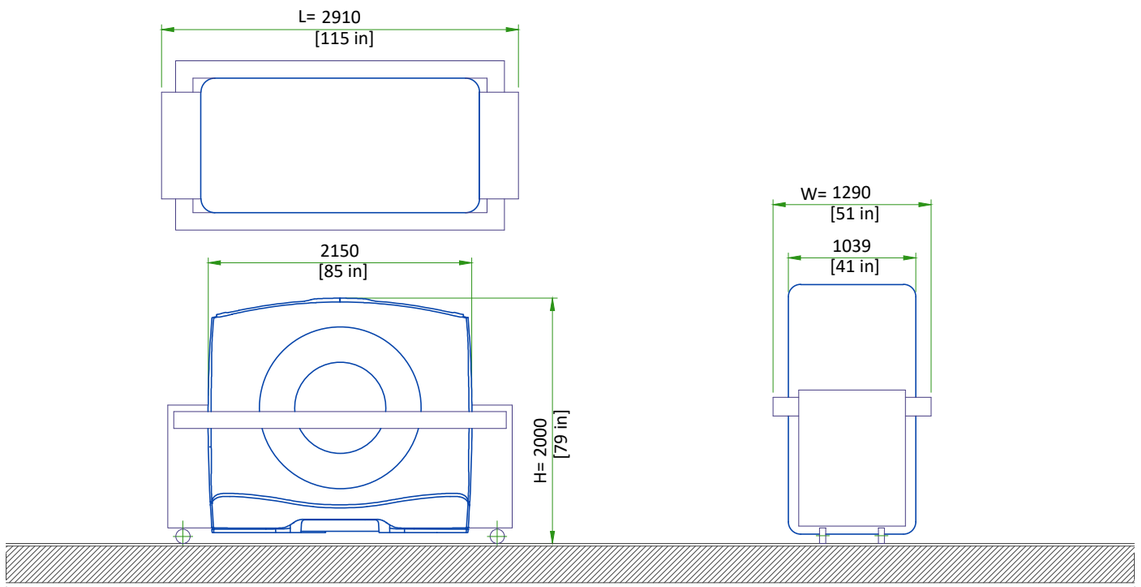
THE CUSTOMER/CONTRACTOR SHOULD:

- 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

EQUIPMENT	DIMENSIONS			WEIGHT	
GANTRY	LENGTH	2910 mm	115 in	2035 kg	4486 lbs
	WIDTH	1290 mm	51 in		
	HEIGHT	2000 mm	79 in		
VT2000/VT2000X TABLE	LENGTH	2997 mm	118 in	632 kg	1390 lbs
	WIDTH	762 mm	30 in		
	HEIGHT	1143 mm	45 in		

GANTRY DELIVERY

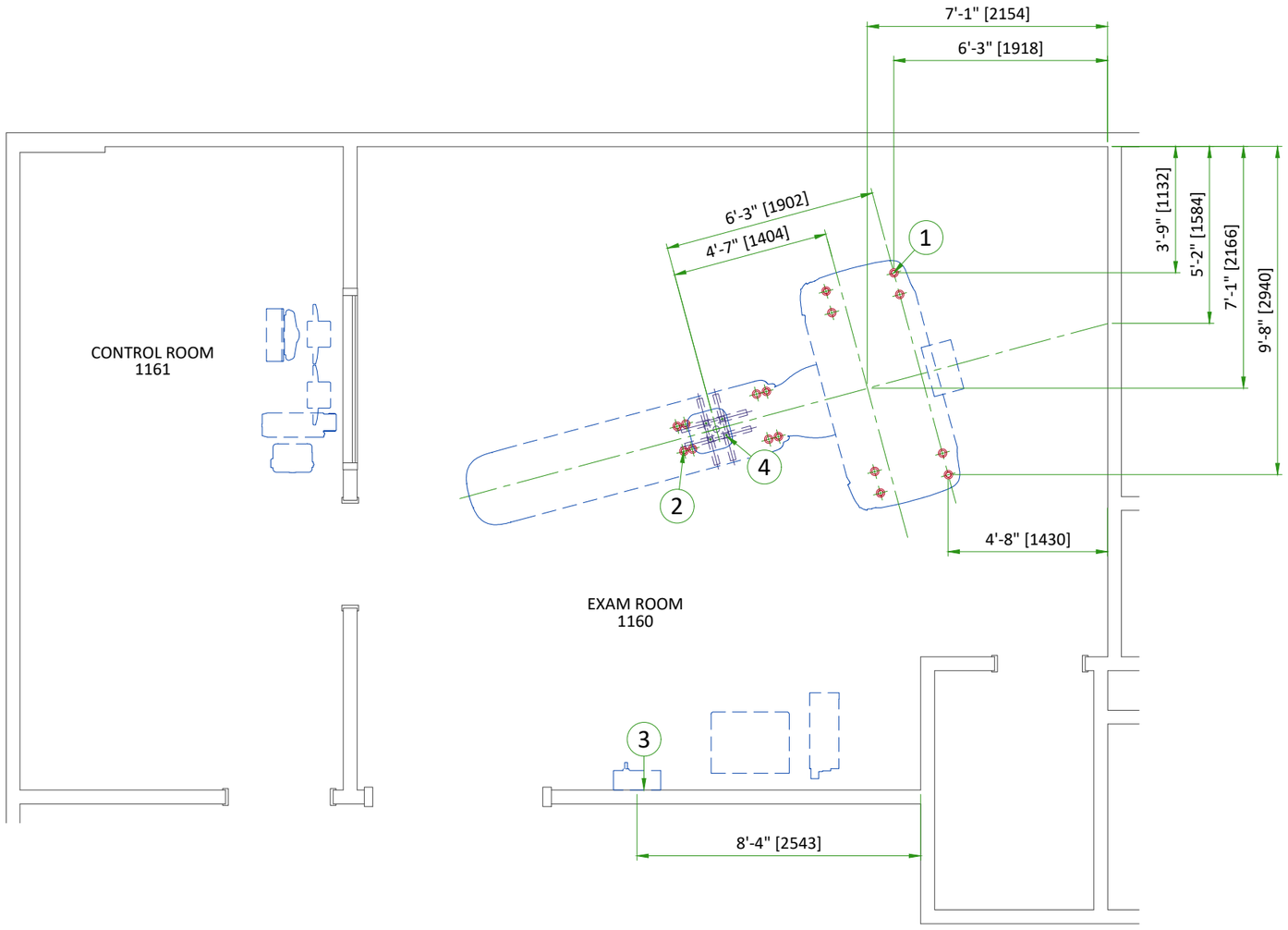


- The gantry is shipped on a dolly equipped with elevating casters (normal shipping configuration).

NOT TO SCALE

STRUCTURAL NOTES

- all steel work and parts necessary to support ceiling mounted equipment is to be supplied by the customer or his contractors.
- 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 1/4" below the finished ceiling.
- floor slabs on which equipment is to be installed must be level to 1/4" in 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"



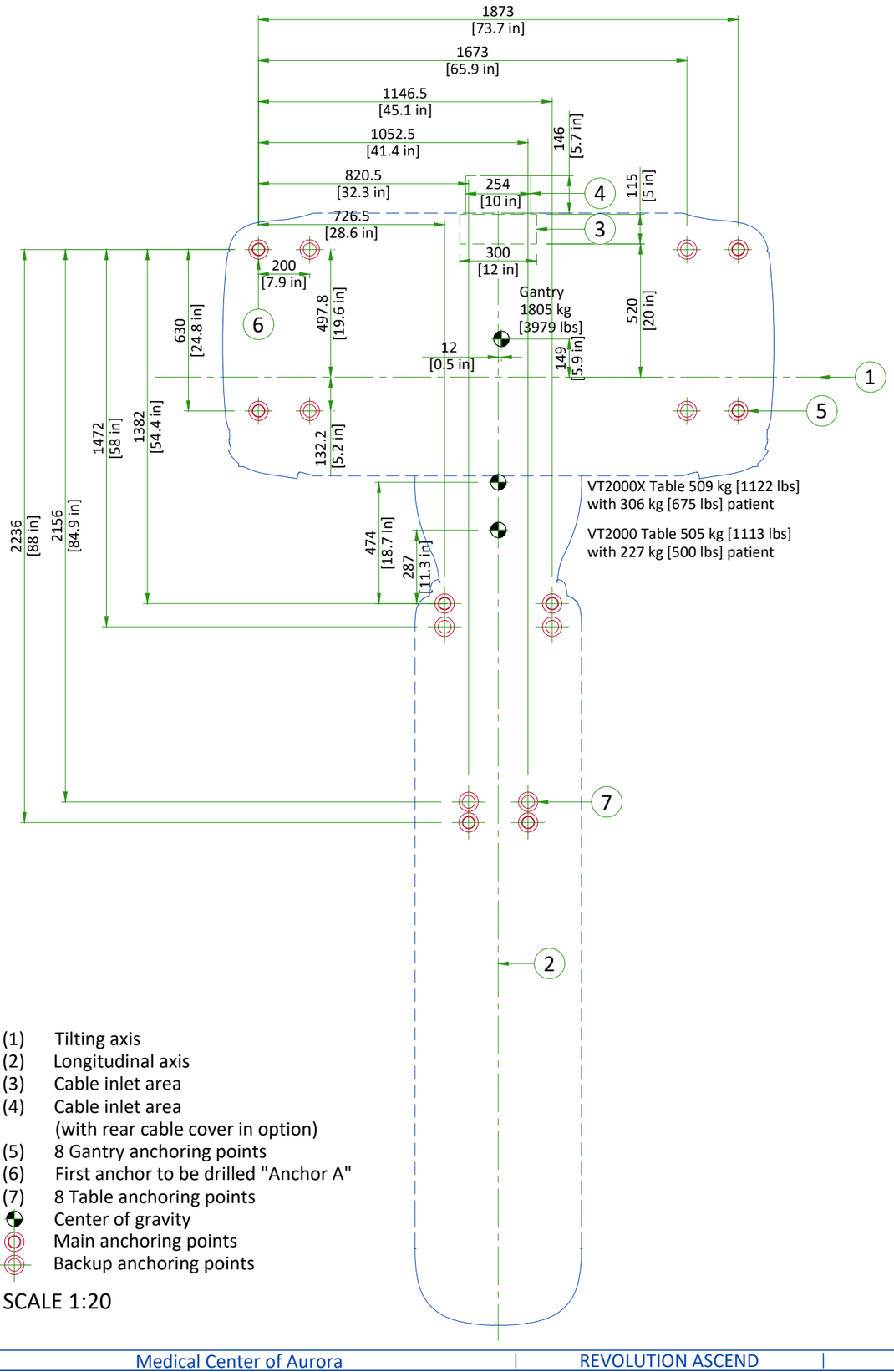
ITEM	DESCRIPTION
	(CONTRACTOR SUPPLIED & INSTALLED)
1	Gantry anchor "A." Refer to Anchoring/loading Distribution To The Floor detail on sheet S3.
2	Table leveling pads. Refer to Anchoring/loading Distribution To The Floor detail on sheet S3.
3	Support Backing, locate as shown
4	Unistrut or equivalent for mounting patient positioning camera mounting plate on ceiling. Support designed and supplied by customer. Supports to be at least 2' [610mm] in length and located per dimensions on Positioning Camera Mounting Plate structural detail.

Dimension Precision Note:
Metric dimensions should be referenced when positioning the CT gantry alignment tool.

Camera Position Note:
Position of camera(s) must be calculated and verified by GEHC PMI or Field Engineer for final location accuracy.

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ANCHORING/LOADING DISTRIBUTION TO THE FLOOR

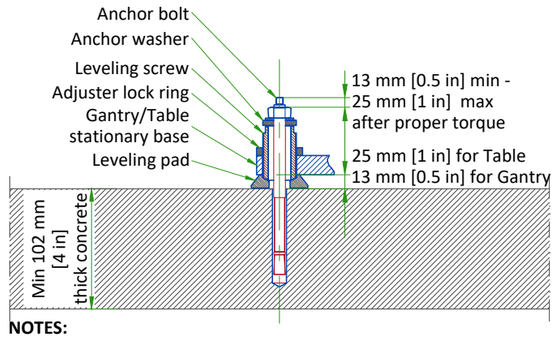


(1) Tilting axis
(2) Longitudinal axis
(3) Cable inlet area
(4) Cable inlet area
(with rear cable cover in option)
(5) 8 Gantry anchoring points
(6) First anchor to be drilled "Anchor A"
(7) 8 Table anchoring points
Center of gravity
Main anchoring points
Backup anchoring points

SCALE 1:20

FLOOR REQUIREMENTS

GE SUPPLIED TABLE/GANTRY ANCHORS



NOTES:

- The distance from central line of anchor to the edge of concrete basement of Gantry/Table should not be less than 160 mm [6.3 in].
- Torque anchor to 54 Nm (40 ft-lb)

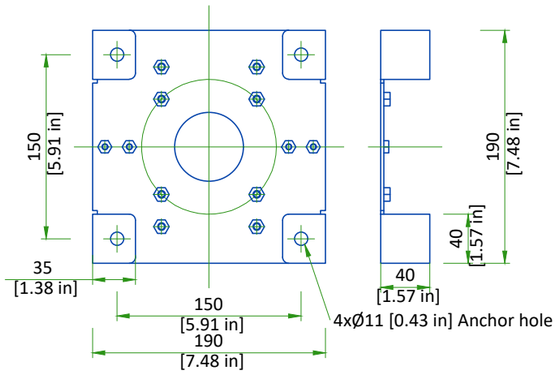
FINISHED FLOOR REQUIREMENTS

- 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 levelness tolerance of the floor surface that the gantry and table will rest on is 6 mm [1/4 in] over a 3048 mm [10 ft] distance.
- Shims should not be used to compensate for a floor that does not meet this requirement.
- Eight or more floor covering openings that are 102 mm [4 in] in diameter are made to ensure the table and gantry rest on a solid surface. These floor penetrations can be sealed if required.
- These requirements apply to all installation types.

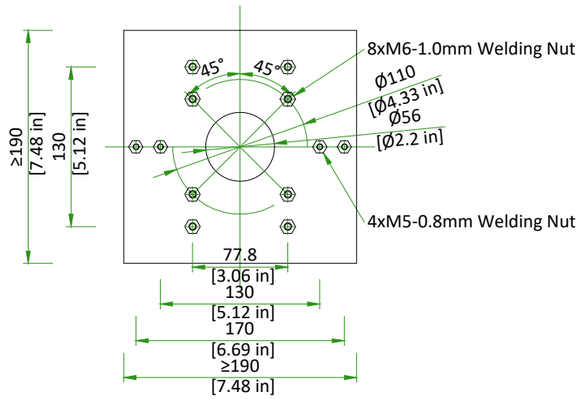
NOT TO SCALE

POSITIONING CAMERA MOUNTING PLATE

JUNCTION PLATE SUPPLIED BY GE



JUNCTION PLATE SUPPLIED BY CUSTOMER



GE will provide a Junction Plate, shipped with the system. If the Junction Plate supplied by GE can not meet the requests of the customer or the building structure, the customer's architect can design and install the Junction Plate (refer to the right side of the detail) with sufficient strength to hold the camera assembly.

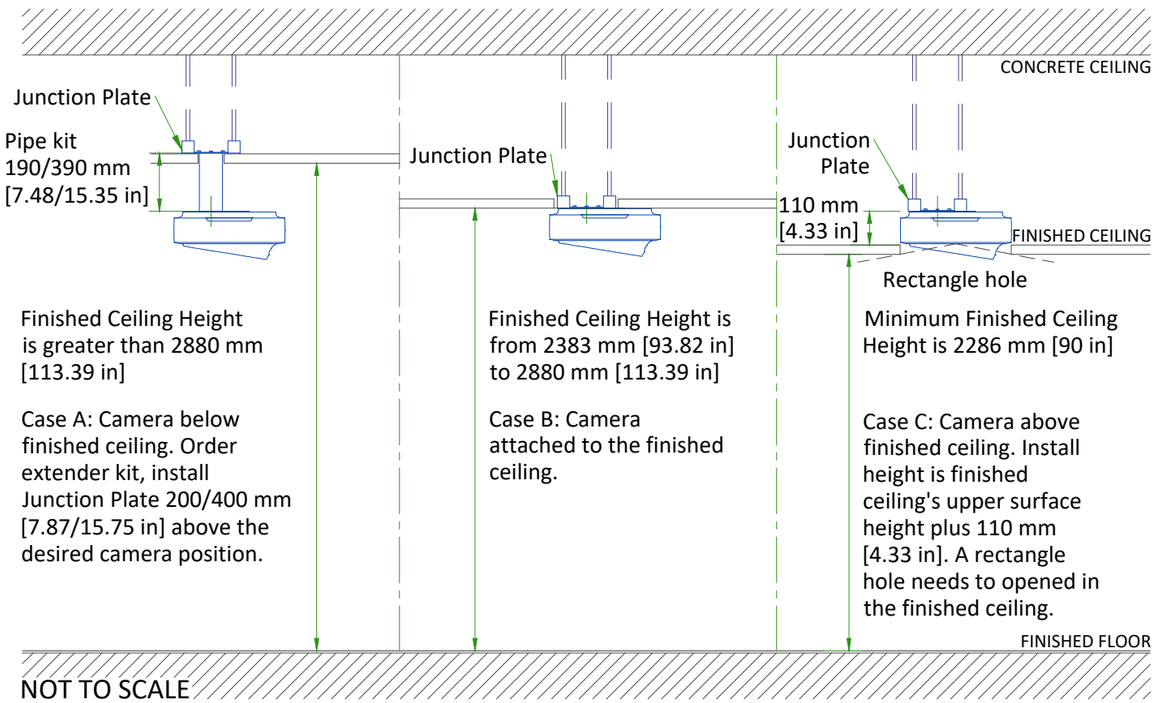
Material: Steel material with a min. tensile strength of 375 MPa
Plate thickness: 2.5 mm [0.10 in]

Welding Nut: Meet GB-T 13681-1992 requirement or equivalent		
	M5-0.8 mm	M6-1.0 mm
Thickness (mm [in])	3.7-4 [0.15-0.16]	4.7-5 [0.19-0.20]
Pledge load (N)	11000	15500

NOTE: The system manufacturer will NOT inspect and test that the fixing methods between the Junction Plate and the building structure meet the loading capacity specified (recommend a 6x safety factor), which is the customer's responsibility. The weight of the camera assembly is approximately 3.2 kg [7.05 lbs], suggest the safety load on the Junction Plate is no less than 20 kg [44.09 lbs]. If the Anchor Bolt is not applicable for site requirement, the customer's architect can consider other methods (such as welding...) to fix the Junction Plate. Presetting for site preparation of the Camera installation, customer had better install the Junction Plate in advance before the system installation.

NOT TO SCALE

POSITIONING CAMERA INSTALLATION POSITION



Finished Ceiling Height is greater than 2880 mm [113.39 in]

Case A: Camera below finished ceiling. Order extender kit, install Junction Plate 200/400 mm [7.87/15.75 in] above the desired camera position.

Finished Ceiling Height is from 2383 mm [93.82 in] to 2880 mm [113.39 in]

Case B: Camera attached to the finished ceiling.

Minimum Finished Ceiling Height is 2286 mm [90 in]

Case C: Camera above finished ceiling. Install height is finished ceiling's upper surface height plus 110 mm [4.33 in]. A rectangle hole needs to opened in the finished ceiling.

NOT TO SCALE

TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS

	EXAM ROOM			CONTROL ROOM		
Temperature (up to 2400 m [7875 ft])	Min	Recommended	Max	Min	Recommended	Max
	18°C	22°C	26°C	18°C	22°C	26°C
	64°F	72°F	79°F	64°F	72°F	79°F
Temperature (up to 3000 m [9843 ft])	18°C	22°C	25°C	18°C	22°C	25°C
	64°F	72°F	77°F	64°F	72°F	77°F
Temperature (up to 4000 m [13124 ft])	18°C	22°C	23°C	18°C	22°C	23°C
	64°F	72°F	73.4°F	64°F	72°F	73.4°F
Relative humidity (1)	30% to 60%			30% to 60%		

STORAGE CONDITIONS

Temperature	0°C to +30°C
	32°F to +86°F
Temperature gradient	**≤ 3°C/h**
	≤ 5.4°F/h
Relative humidity (1)	20% to 60%
Humidity gradient	**≤ 5%/h**

Storage longer than 6 months is not recommended.
(1) Non-condensing

AIR RENEWAL

According to local standards.

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 DETAILS

ROOM	DESCRIPTION	Max (kW)	Max (BTU)
Exam Room	Gantry	5.48	18700
	Patient Table (Without patient)	0.30	1030
	TOTAL	**6**	**19730**
Exam Room or Technical Room*	Power Distribution Unit	1.00	3400
	Partial UPS - Liebert GXT4	0.83	2828
	TOTAL	**2**	**6228**
Control Room	Standalone Console	0.84	2860
	LCD Monitor (Total amount of 2 monitors)	0.10	340
	TOTAL	**1**	**3200**
*Technical Room is not mandatory, the placements of these elements are recommended in the Exam Room.			

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 distritbution 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 pigtails 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

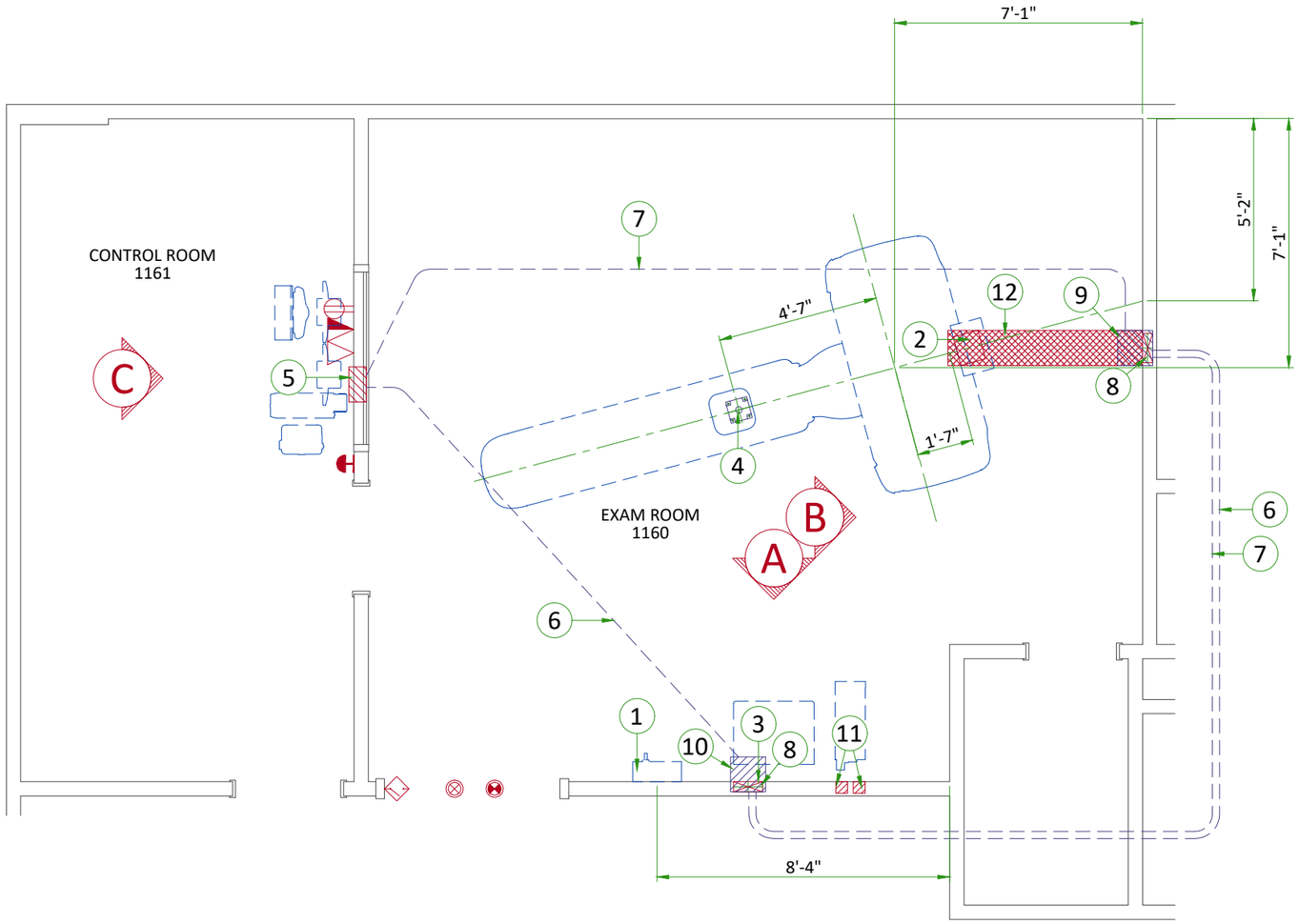
Your new GE Healthcare imaging modality will require local and remote connectivity to enable our full range of digital support:

- Local connectivity - This allows your system to connect to local devices such as PACS and modality worklist. We will require network information to configure the system(s), and a live ethernet port(s) prior to the delivery of the system(s).
- Remote connectivity - Your GE Healthcare service warranty includes InSite™ (applicable to InSite capable products), a powerful broadband-based service which enables digital tools that can help guard your hospital against equipment downtime and revenue loss by quickly connecting you to a GE Healthcare expert.

Depending on product family and software version, imaging systems can be connected in one of the following methods:

1. TLS over TCP Port 443 (Preferred method for new products) via:
   a. DNS resolution
   b. Customer-provided Proxy or
   c. GE Proxy (Available in some regions)
2. Site-to-Site IPsec VPN tunnel

Please provide the GE project manager with the contact information for the resource that can provide information required to set up these connections. GEHC will send out communication to these contacts, which will include the project's Connectivity requirements, and a Connectivity form. This form will need to be completed and returned to GEHC prior to delivery of the system to ensure the system is tested and connectivity is enabled prior to the completion of the installation.



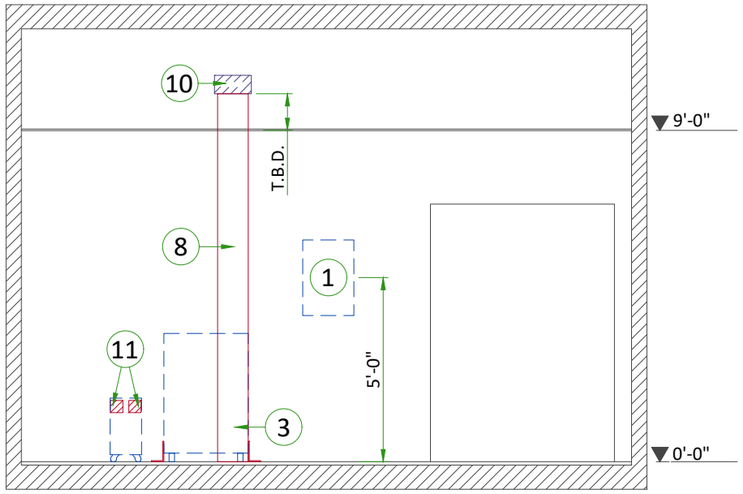
Item	Electrical Layout Item List
1	Main disconnect panel (MDP)
2	Suitable chase nipples, refer to Anchoring/Loading Distribution to the Floor detail on sheet S3 (Gantry)
3	Grommeted opening (Power Distribution Unit)
4	Cable inlet above ceiling (Express Camera)
5	EXISTING 12" x 12" x 6" [300 x 300 x 150] box (Console)
6	EXISTING 2 1/2" [64] conduit above ceiling
7	EXISTING 3 1/2" [89] conduit above ceiling
8	EXISTING 10" x 3 1/2" [250 x 100] flush wall duct with minimum 2 dividers
9	EXISTING Box above ceiling - size per local code
10	EXISTING Box above ceiling - size per local code
11	EXISTING 4" x 4" x 4" [100 x 100 x 100] box (Partial UPS)
12	EXISTING 12" x 3" [300 x 100] trench duct with minimum 2 dividers

ITEM	QTY	Electrical Outlet Legend Customer/contractor supplied and installed items unless otherwise specified. Height above floor determined by local codes unless otherwise specified.
△		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 Light
◇		Door interlock switch (needed only if required by state/local codes)

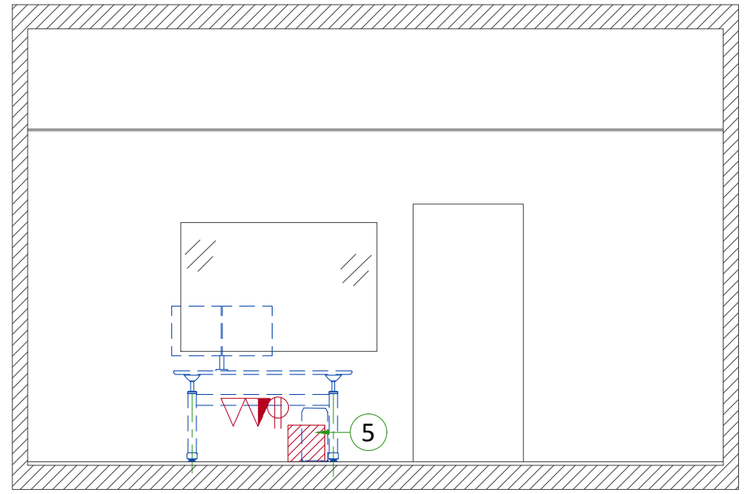
Existing Electrical Note:
Use existing duct/conduits where possible. Additional duct/conduit runs may be necessary if existing system is inadequate in size and/or location for this installation. Verify existing size and location.

Additional Conduit Runs
(Contractor Supplied and Installed)

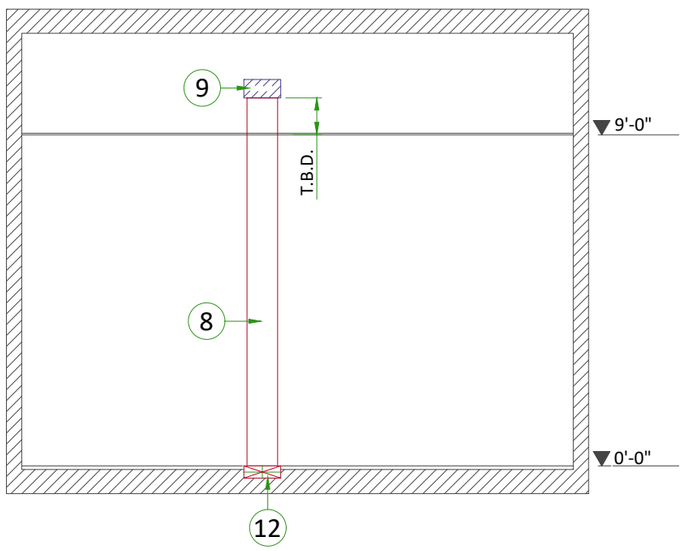
From (Bubble # / Item)		To (Bubble # / Item)		Qty	Size	
					In.	mm
	3 Phase Power	1	Main Disconnect Panel	1	As req'd	As req'd
1	Main Disconnect Panel		Emergency Off	1	1/2	13
		10	Power Distribution Unit	1	As req'd	As req'd
10	Power Distribution Unit		Door Switch	1	1/2	13
			Warning Light Control	1	1/2	13
	Warning Light			1	1/2	13
	1 Phase Power			1	1/2	13
4	Express Camera	5	Operator's Console	1	1 1/2	38
1	Main Disconnect Panel	11	Partial UPS	1	1 1/4	30
3	Power Distribution Unit			1	2	50



A



C



B

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POWER REQUIREMENTS

POWER SUPPLY	**3 PHASES+G 200/220/240/380/400/420/440/460/480 V ± 10%**
FREQUENCIES	**50/60 Hz ± 3 Hz**
MAXIMUM POWER DEMAND	**100 kVA**
AVERAGE (CONTINUOUS) POWER DEMAND	**20 kVA**
POWER FACTOR	**0.85**

- Power supply should come into a main disconnect panel (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.
- There must be discrimination between supply cable protective device at the beginning of the installation (main low-voltage transformer side) and the protective devices in the MDP.

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.
- Transients must be less than 1500V peak. (on a 400V line)

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.

CABLES

- Power and cable installation must comply with the distribution diagram.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signaling and remote control (Y, SEO, L...) will go to MDP 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.

POWER DISTRIBUTION

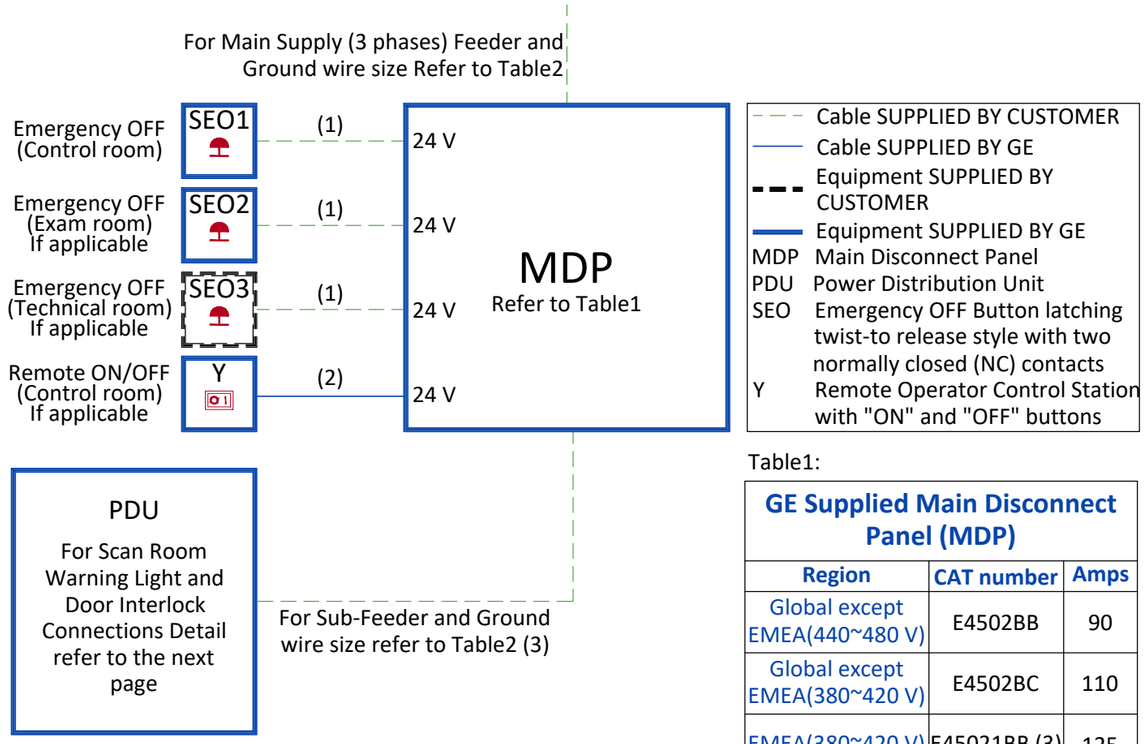


Table1:

GE Supplied Main Disconnect Panel (MDP)		
Region	**CAT number**	**Amps**
Global except EMEA(440~480 V)	E4502BB	90
Global except EMEA(380~420 V)	E4502BC	110
EMEA(380~420 V)	E45021BB (3)	125

Table2:

Feeder Table									
The information below assumes the use of copper wire, rated 75 C and run in steel conduit. All ampacity is determined in accordance with the National Electrical Code (NFPA 70), Table 310-16 (2002). The ampacity of the circuit protection device listed above determines the minimum feeder size, except where total source regulation limits require a larger size. If the wire size does not match the above lists, please select the nearest wire size as per to local standards.									
Feeder length from Power Substation to MDP - ft (m)	**Minimum Wire Size, AWG or MCM (mm²)/VAC**								
	200 VAC	220 VAC	240 VAC	380 VAC	400 VAC	420 VAC	440 VAC	460 VAC	480 VAC
50 (15)	1/0 (55)	1/0 (55)	1/0 (55)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
100 (30)	2/0 (70)	1/0 (55)	1/0 (55)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
150 (46)	4/0 (100)	3/0 (85)	3/0 (85)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
200 (61)	5/0 (125)	4/0 (100)	4/0 (100)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
250 (76)	6/0 (170)	5/0 (125)	5/0 (125)	1 (45)	1 (45)	2 (35)	2 (35)	2 (35)	3 (30)
300 (91)	7/0 (215)	6/0 (170)	5/0 (125)	1/0 (55)	1/0 (55)	1 (45)	1 (45)	2 (35)	2 (35)
350 (107)	8/0 (275)	7/0 (215)	6/0 (170)	2/0 (70)	1/0 (55)	1/0 (55)	1 (45)	1 (45)	1 (45)
400 (122)	8/0 (275)	7/0 (215)	7/0 (215)	2/0 (70)	2/0 (70)	1/0 (55)	1/0 (55)	1/0 (55)	1 (45)
Sub-Feeder length from MDP to PDU - ft (m)									
32 (9.7536)	1/0 (55)	1/0 (55)	1/0 (55)	2 (35)	2 (35)	3 (30)	3 (30)	3 (30)	3 (30)
Grounding									
Run a dedicated 1/0 [55 mm²] or larger insulated copper ground wire from the power source to the MDP and from MDP to the PDU. Run the ground wire in the same raceway with the three-phase wires.									

Notes :

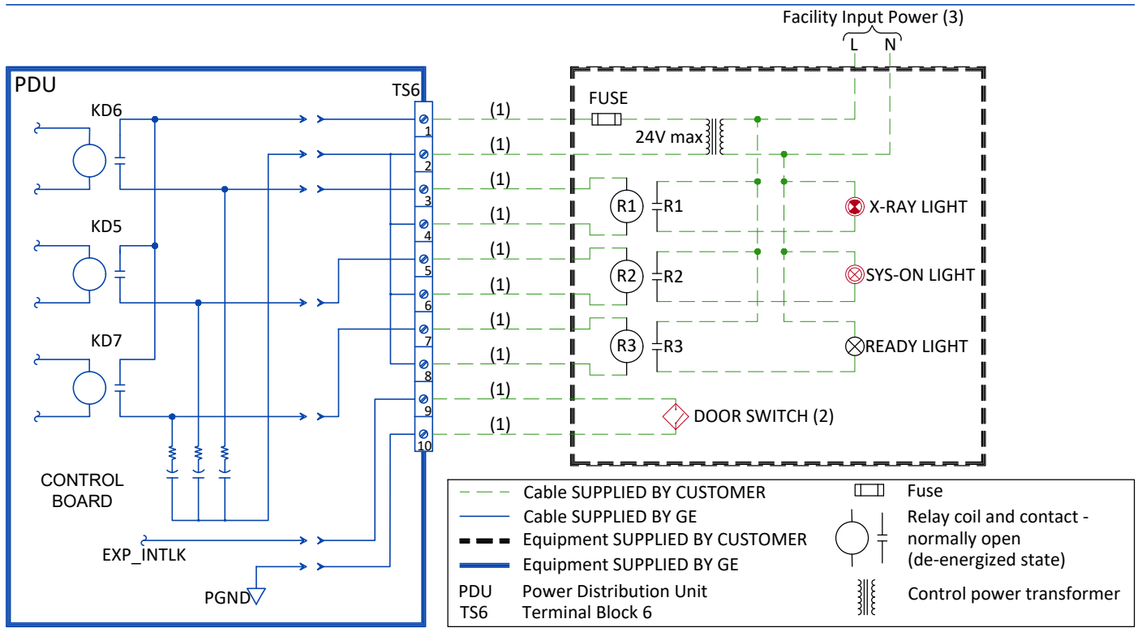
(1) Wire size: 4x2mm² [14AWG] and 1x2mm² [14AWG] GND

(2) Power cable: 3 Meter/10', multi-conductor, 24V DC

(3) GE supplied MDP option E45021BB includes a 10 meter long power cable (H07RN-F) with wire size 4x50mm² and a 50 meter long control cable with wire size 2x1.5mm²

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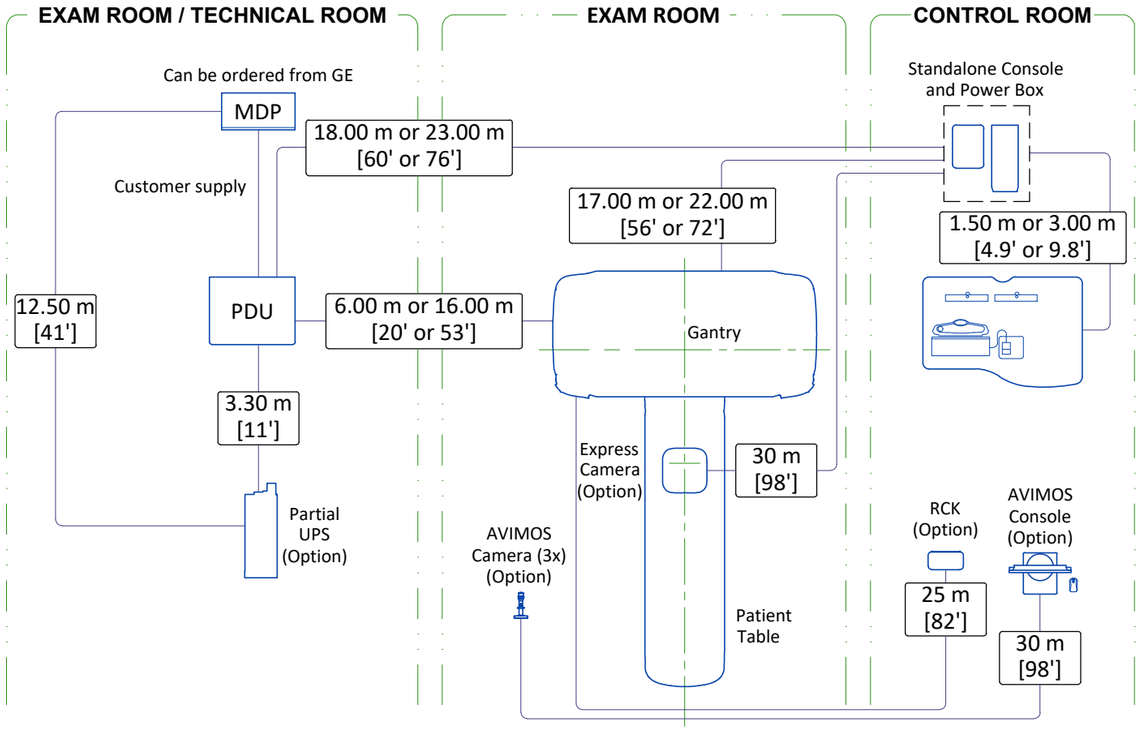
SCAN ROOM WARNING LIGHT AND DOOR INTERLOCK



Notes :

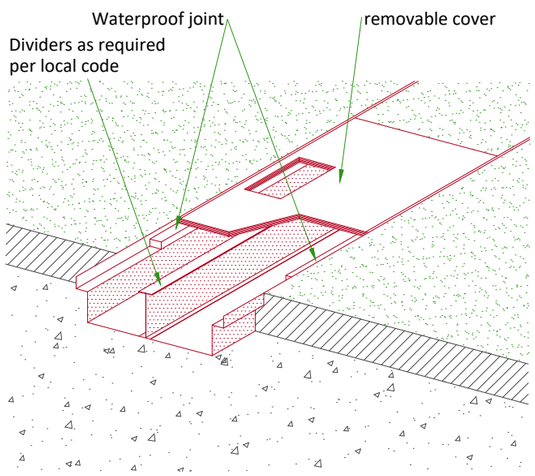
(1) Wire size: 2mm² [14 AWG] at 24V
(2) Door Interlock circuit is jumpered out if a door switch is not provided.
(3) Grounding not shown on the detail, but must comply with local codes.

INTERCONNECTIONS

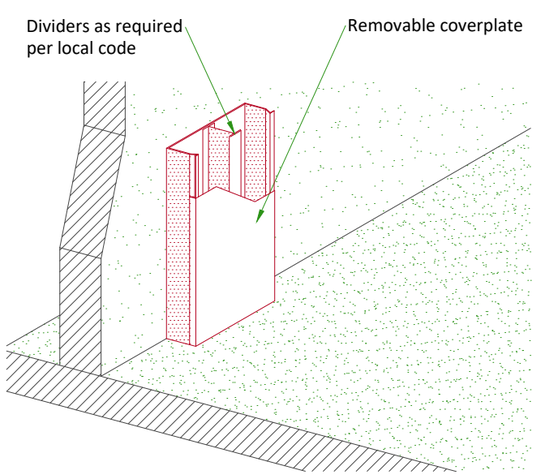


TYPICAL CABLE MANAGEMENT

FLUSH FLOOR DUCT



VERTICAL DUCT ON WALL



NOT TO SCALE



ALL INFORMATION IN THIS DRAWING SET IS PRELIMINARY, SUBJECT TO CHANGE!

REV	DATE	MODIFICATIONS
C	04/Aug/2023	Revision - DC-396613; Architecture Updated & UPS Removed
B	25/Jul/2023	Revision - DC-395379; Magnet Isocenter Updated
A	14/Jun/2023	Final (DC-390640)

01 - C1 - Cover Sheet
02 - C2 - Disclaimer - Site Readiness
03 - A1 - General Notes
04 - A2 - Equipment Layout
05 - A3 - Section Views
06 - A4 - Acoustic - Proximity Limits
07 - A5 - RF shielding
08 - A6 - Equipment Details (1)
09 - A7 - Equipment Details (2)
10 - A8 - Delivery
11 - S1 - Structural Notes
12 - S2 - Structural Layout
13 - S3 - Structural Details
14 - M1 - Mechanical Layout
15 - M2 - HVAC-Venting
16 - M3 - Chilled Water
17 - M4 - Cryogenics (1)
18 - M5 - Cryogenics (2)
19 - E1 - Electrical Notes
20 - E2 - Electrical Layout
21 - E3 - Electrical Elevations
22 - E4 - Electrical Details
23 - E5 - Power Requirements - Power Distribution
24 - E6 - Facility Supplied Wiring
25 - E7 - Interconnections

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.

Medical Center of Aurora
Aurora, CO
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SIGNA ARTIST EVO UPGRADE
FINAL STUDY

Drawn by	Verified by	Concession	S.O. (GON)	PIM Manual	Rev
TNC	TNC	232196996	5315411	5884915-8EN	2

Format	Scale	File Name	Date	Sheet
A3	1/4"=1'-0"	MRI-M360412-FIN-00-C.DWG	04/Aug/2023	01/25

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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.

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

CUSTOMER SITE READINESS REQUIREMENTS

REQUIRED MANUALS FOR SYSTEM PRE-INSTALLATION	
Description	**Document Number***
Product specific Pre-installation Manual	Refer to cover page
Magnet Room Venting	5850263
RF Shielded Room Pre-installtion Requirements for MR systems	5850260
IEC Electromagnetic Compatibility	5850261
Acoustic Room Details	5850262
Magnet Venting Conformance Assessment Form	2705036
*documents can be accessed in multiple languages at *https://customer-doc.cloud.gehealthcare.com/#/cdp/dashboard*	

- 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.
- The items on the GE Healthcare Site Readiness Checklist **DOC1809666** are REQUIRED to facilitate equipment delivery to the site. Equipment will not be delivered if these requirements are not satisfied.
  - 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. Restrooms.
  - Provide for refuse removal and disposal (e.g. crates, cartons, packing)
  - It is required to minimize vibrations within the scan room. 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 Pre-installation manual for vibration specifications.

MRI SITE PLANNING REMINDERS

Please refer to pre-installation checklist in pre-installation manual listed on the cover sheet for items critical to image quality.

1. The layout should be arranged so that the 5g line is contained to the magnet room. If not possible, a barrier is recommended to prevent entry to the 5g field area.
2. The spaces around, above, and below the magnet must be reviewed for effects of the 5g, 3g, 1g, and .5g fields. Refer to the proximity limit chart in the MR pre-installation manual referenced on the cover sheet.
3. For moving metal, the restriction lines typically extend outside of the MR space. Please confirm there are no moving metal concerns within these areas.
4. For vibration, analysis to be completed as required per pre-installation manual.
5. For EMI, review the site for the location of the main electrical feeders, AC devices, or distribution systems. An EMI study is recommended if large AC systems are nearby.
6. Details of the floor below the magnet must be reviewed. The structural engineer must verify that the quantity of steel in the volume 10ft [3.1m] x 10ft [3.1m] x 13in [.3m] deep (below the magnet) does not exceed the allowable steel content as given in the MR pre-installation manual referenced on the cover sheet.
7. Remove, cover, or fill-in abandoned ducts or troughs from the Equipment and Magnet rooms. Access/computer room flooring in the Equipment room can either be removed or assessed and reinforced to support heavier cabinets.

Responsibility for the coordination, design, engineering, and site preparation resides with the customer and their project architects and contractors. GE does not, by providing reviews and furnishing comments and assistance, accept any responsibility beyond its obligations as defined in the MR system, sale/purchase agreement.

IMAGE QUALITY CONSIDERATIONS

Broadband RF noise is a single transient or continuous series of transient disturbances caused by an electrical discharge. Low humidity environmental conditions will have higher probability of electrical discharge. The electrical discharge can occur due to electrical arcing (micro arcing) or merely static discharge. Some potential sources capable of producing electrical discharge include:

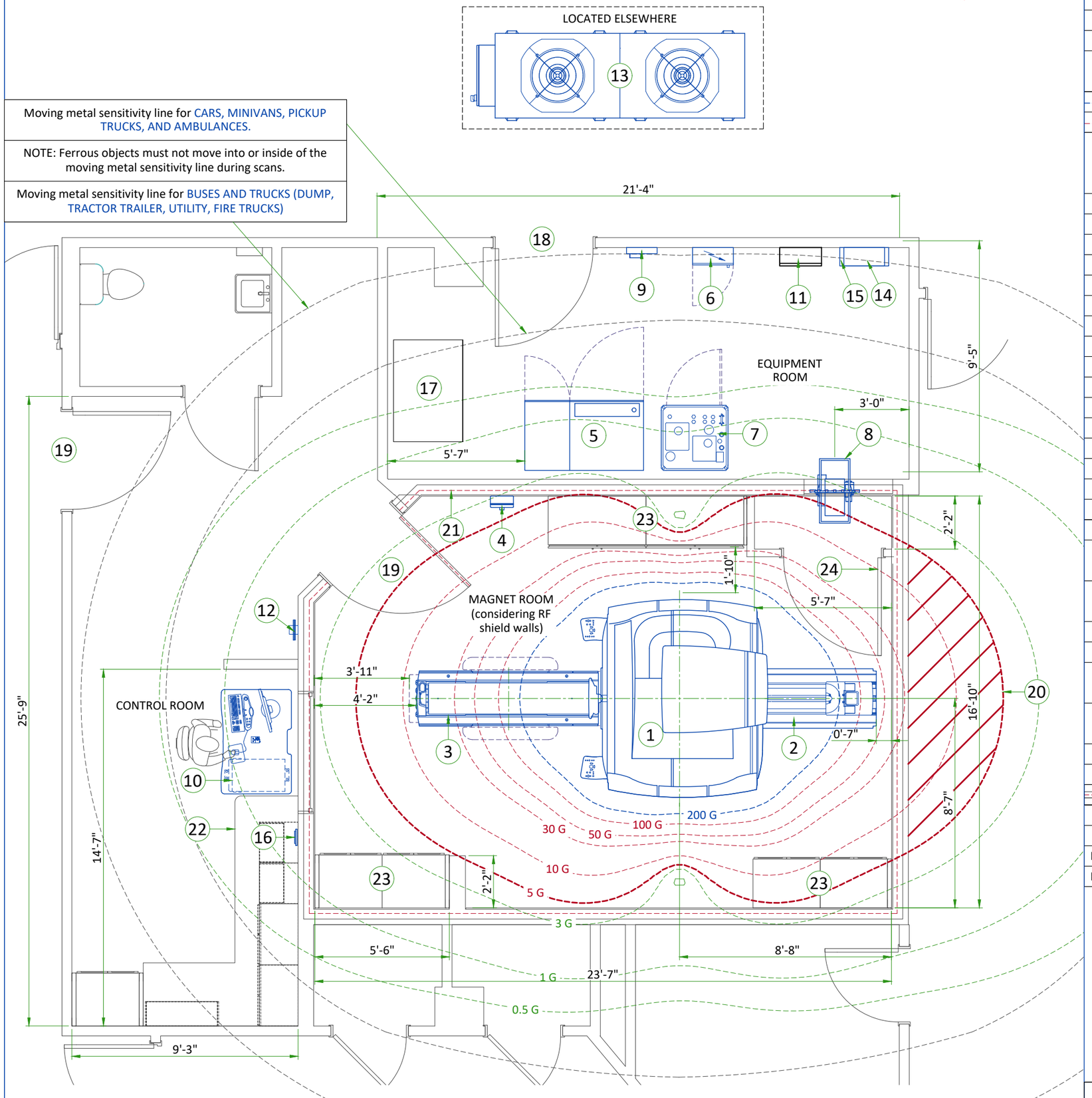
- Loose hardware/fasteners vibration or movement (electrical contunuity must always be maintained)
- Flooring material including raised access flooring (panels & support hardware) and carpeting
- Electrical fixtures (i.e. Lighting fixtures, track lighting, emergency lighting, battery chargers, outlets)
- Ducting for HVAC and cable routing
- RF shield seals (walls, doors, windows etc.)

For additional information regarding image quality, refer to the pre-installation manual listed on the cover sheet.

MAGNETIC INTERFERENCE SPECIFICATIONS

- The customer must establish protocols to prevent persons with cardiac pacemakers, neurostimulators, and biostimulation devices from entering magnetic fields of greater than 5 gauss (exclusion zone).
- Main power transformers must remain outside the 3 gauss field. EMI < 40mG RMS AC at the magnet location. EMI 4.43mGp-p DC, refer to Preinstallation Manual for additional information.
- Potential exists under fault conditions that the 5 gauss line may expand radially to 19.68 ft. [6.0 m] and axially to 24.61 ft. [7.5 m] for 2 seconds or less. It should be noted that normal rampdowns or magnet rundown unit initiated quenches will not cause the magnetic field to expand.
- It is recommended every site consider the event of a quench and plan accordingly (such as placing 5 gauss warning signs at expanded locations).
- The ferrous metal objects listed below must not move into or inside of the moving metal sensitivity line during scans.

TYPCIAL MOVING MAGNETIC MASS	DISTANCE RADIALLY		DISTANCE AXIALLY	
Carts, Gurneys 100-400 lbs [45-182 kg]	3 Gauss line		3 Gauss line	
Forklifts, small elevator, cars, minivans vans, pickup trucks, ambulances (objects greater than 400 lbs [182 kg])	15.5 FT	4.72 M	21.0 FT	6.4 M
Buses and trucks (dump, tractor trailer, utility, fire trucks)	18.1 FT	5.52 M	24.5 FT	7.47 M



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
	200 GAUSS		5 GAUSS
	100, 50, 30, 10 GAUSS		3, 1, 0.5 GAUSS

BY	ITEM	DESCRIPTION	MAX HEAT OUTPUT (BTU/h)	WEIGHT (lbs)	MAX HEAT OUTPUT (W)	WEIGHT (kg)
E	1	MAGNET (MAG)	8184	11731	2400	5320
A	2	REAR PEDESTAL (PED)	-	212	-	96
A	3	PATIENT TABLE (PT)	-	463	-	210
E	4	MAGNET RUNDOWN UNIT (MRU)	-	-	-	-
A	5	POWER, GRADIENT, RF CABINET (PGR)	32402	3347	9502	1518
B	6	MAIN DISCONNECT PANEL (MDP)	900	126	264	57
A	7	INTEGRATED COOLING CABINET	5115	1288	1500	584
A	8	PENETRATION PANEL (PP)	-	-	-	-
E	9	MAGNET MONITOR (MON)	-	-	-	-
A	10	OPERATOR CONSOLE (GOC)	4944	133	1450	60.4
E	11	DC LIGHTING CONTROLLER	-	-	-	-
D	12	METAL DETECTOR (HAND HELD)	-	-	-	-
B	13	DIMPLEX CHILLER	204593	4300	59998	1950
B	14	MANUAL WATER BYPASS	-	-	-	-
B	15	WATER FILTER	-	-	-	-
B	16	REMOTE GRAPHIC DISPLAY (RGD)	-	-	-	-
E/C	17	A/C UNIT				
C	18	MINIMUM OPENING FOR EQUIPMENT DELIVERY IS 40 IN. W X 82 IN. H, CONTINGENT ON A 72 IN. CORRIDOR WIDTH				
C	19	MINIMUM OPENING FOR EQUIPMENT DELIVERY IS 43 IN. W X 82 IN. H, CONTINGENT ON A 96 IN. CORRIDOR WIDTH				
C	20	WARNING! 5 GAUSS LINE OUTSIDE THE MAGNET ROOM LIMITS				
E	21	DEFINE RF SHIELD'S INSET ACCORDING TO PROVISIONS MADE BY THE RF SHIELD VENDOR				
E	22	COUNTER TOP FOR EQUIPMENT- PROVIDE GROMMETED OPENINGS AS REQUIRED TO ROUTE CABLES				
E	23	BASE CABINET FOR STORAGE OF: SURFACE COILS, PATIENT POSITIONING PADS, PHANTOMS, ETC.				
C	24	LOUVERED DOORS - REFER TO PREINSTALL MANUAL FOR REQUIREMENTS				

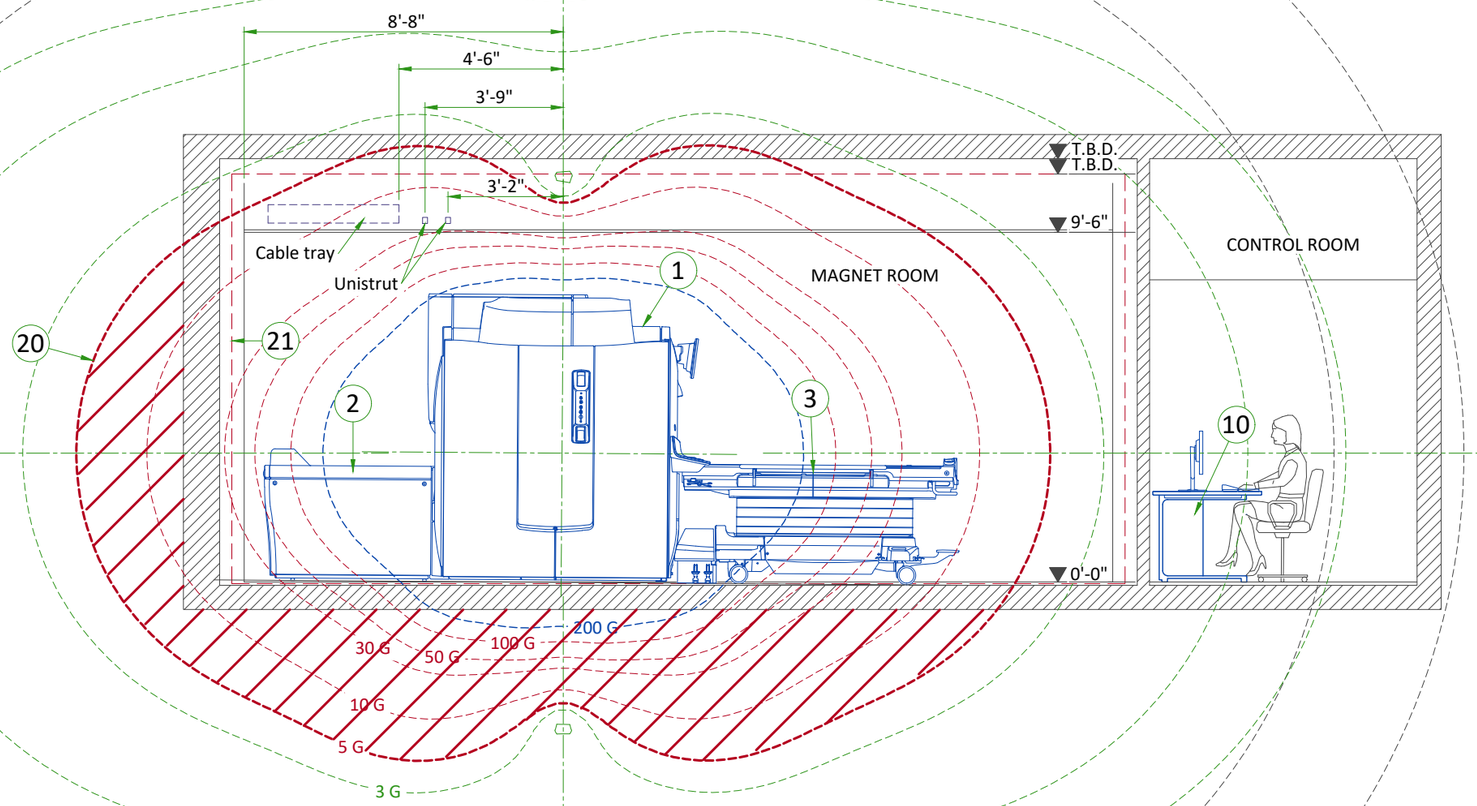
RF SHIELD - 100 dB ATTENUATION

EXAM ROOM HEIGHT

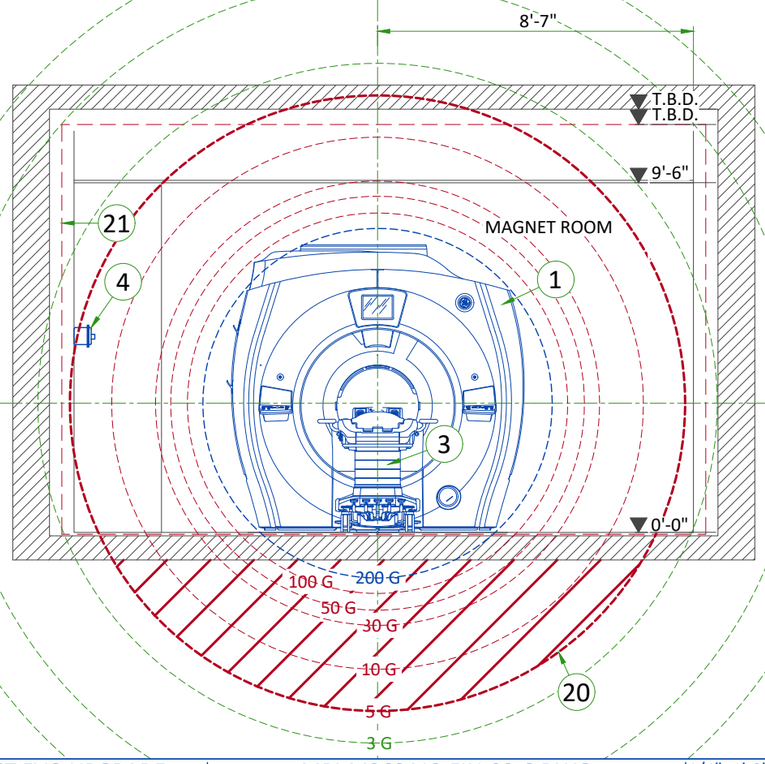
FINISHED FLOOR TO SLAB HEIGHT	T.B.D.
FALSE CEILING HEIGHT	9'-6"

For Accessory Sales: (866) 281-7545 Options 1, 2, 1, 2 or mail to: gehcaccessorysales@ge.com

SIDE VIEW WITH MAGNETIC FIELD



FRONT VIEW WITH MAGNETIC FIELD



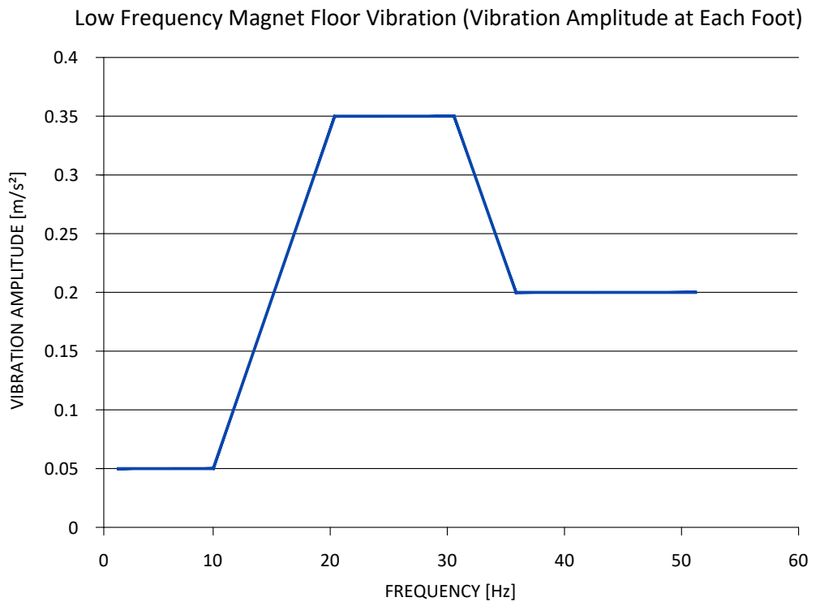
ACOUSTICS SPECIFICATIONS

Acoustic and vibroacoustic information is provided for site planning and architectural design activities. It is the customer's responsibility to hire a qualified acoustic engineer for solutions to further attenuate this transmitted noise and vibration, if required. The actual room noise level may vary based on room design, optional equipment, and usage:

Control Room: 62dBA
Equipment Room: 80dBA
Magnet Room: 124dBA*
(maximum sound pressure level at magnet bore isocenter)

* Frequency: 20 Hz to 20kHz

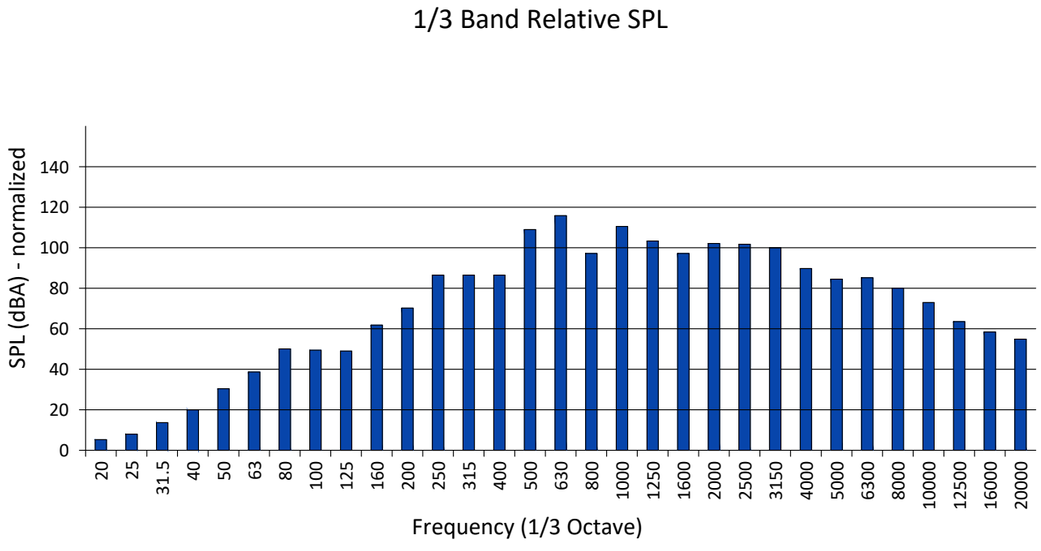
FREQUENCY (Hz)	AMPLITUDE (m/s^2)
2	0.05
10	0.05
20	0.35
30	0.35
35	0.2
50	0.2



ISOGAUSS PLOTS

* The isogauss contour plots depicted on this drawing represent magnetic fringe fields resulting from the normal operation of the magnet provided with the MR system. The actual magnetic field intensity at any point in the vicinity of the magnet when installed may vary from the contour plots due to factors such as the concentrating effects of nearby ferrous objects ambient magnetic fields, including the earth's magnetic field. Therefore, the contours shown are only approximations of actual field intensities found at a corresponding distance from the magnet's isocenter.

SOUND PRESSURE SPECTRAL DISTRIBUTION



MAGNETIC PROXIMITY LIMITS

Gauss (mT) Limit	Equipment
0.5 gauss (0.05mT)	Nuclear camera
1 gauss (0.1mT)	Positron Emission Tomography scanner, Linear Accelerator, Cyclotrons, Accurate measuring scale, Image intensifiers, Bone Densitometers, Video display (tube), CT scanner, Ultrasound, Lithotriptor, Electron microscope, Digital X-Ray
3 gauss (0.3mT)	Power transformers, Main electrical distribution transformers
5 gauss (0.5mT)	Cardiac pacemakers, Neurostimulators, Biostimulation devices
10 gauss (1mT)	Magnetic computer media, Line printers, Film processor, X-ray tubes, Emergency generators, Commercial laundry equipment, Food preparation area, Water cooling equipment, HVAC equipment, Major mechanical equipment room, Credit cards, watches, and clocks, Air conditioning equipment, Fuel storage tanks, Motors greater than 5 horsepower
50 gauss (5mT)	Metal detector for screening, LCD panels, Telephones
No Limit	Digital Detectors

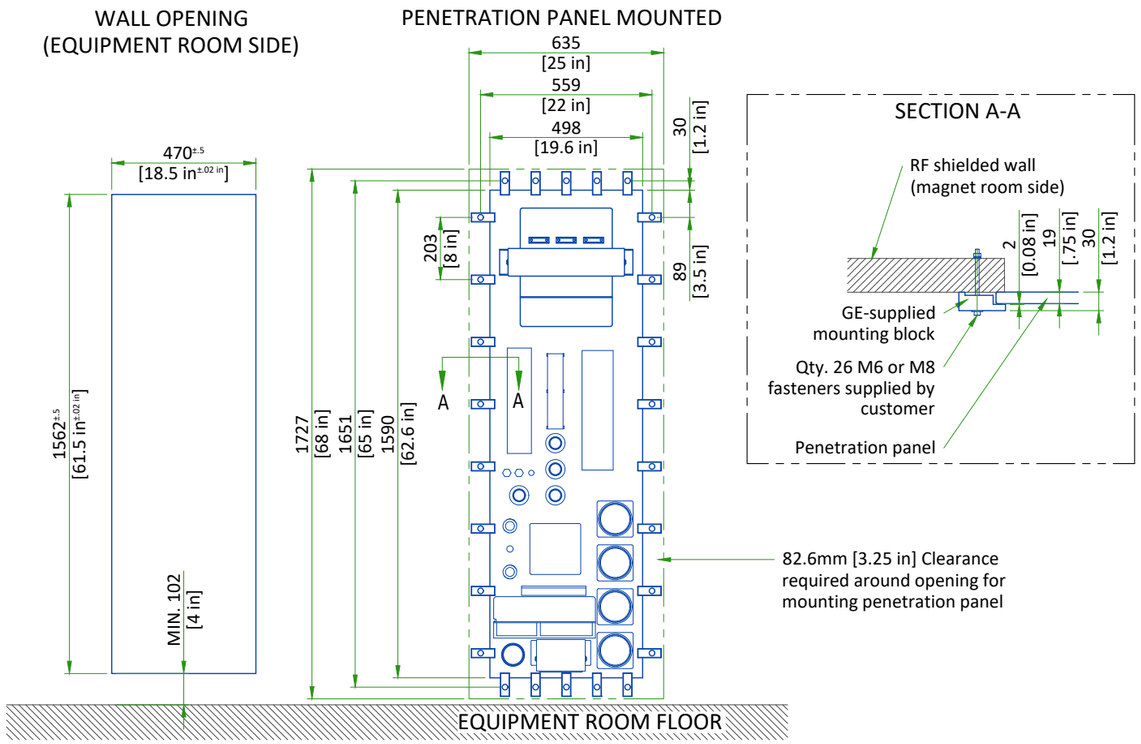
The customer must provide detail defining ferrous material below the magnet to the Project Manager so the GE Healthcare MR Siting and Shielding team can review for compliance.

STEEL MASS LIMITS TO MAGNET ISOCENTER (3x3 m [10x10 ft] AREA UNDER MAGNET)

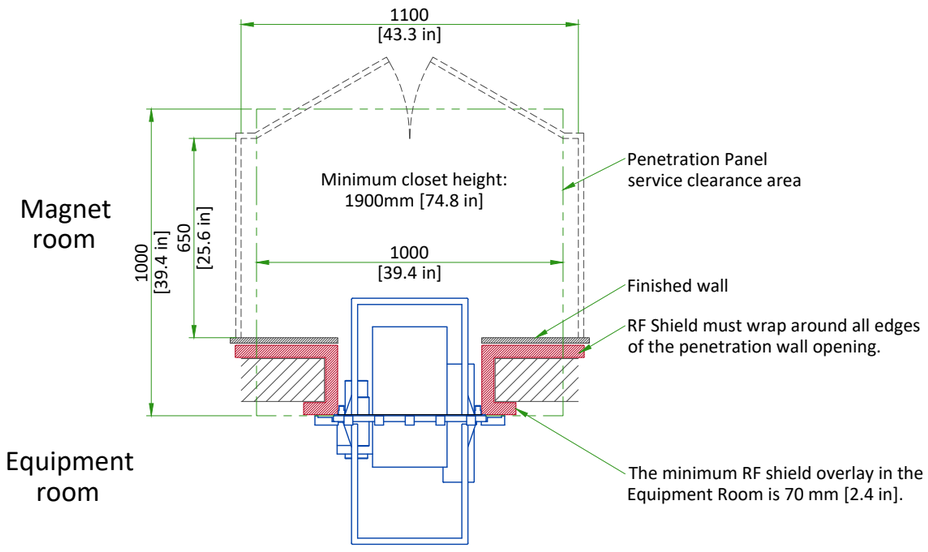
Limits Of Steel Mass		Distance Below Top Surface Of Floor	
kg/m^2	lbs/ft^2	mm	in
0	0	0 - 76	0-3
9.8	2	76 - 127	3-5
14.7	3	127 - 254	5-10
39.2	8	254 - 330	10-13
98.0	20	330+	13+

The actual field strength can be affected by Magnetic shielding, Earth's magnetic field, other magnetic fields and stationary or moving metal. This information must be used to evaluate potential site interaction of GE Healthcare equipment with other non-GE Healthcare equipment. Magnetic shielding can be installed to prevent interaction between the magnet and nearby sensitive devices. The GE Healthcare Project Manager of Installation (PMI) can work with the customer to coordinate the magnetic shielding site evaluation. The customer is responsible for installation of all magnetic shielding.

PENETRATION PANEL WALL OPENING



PENETRATION PANEL PLAN VIEW



If the closet depth is less than 1000mm [39.4 in], the closet must have door(s) configured to clear the service area for the Penetration Panel.

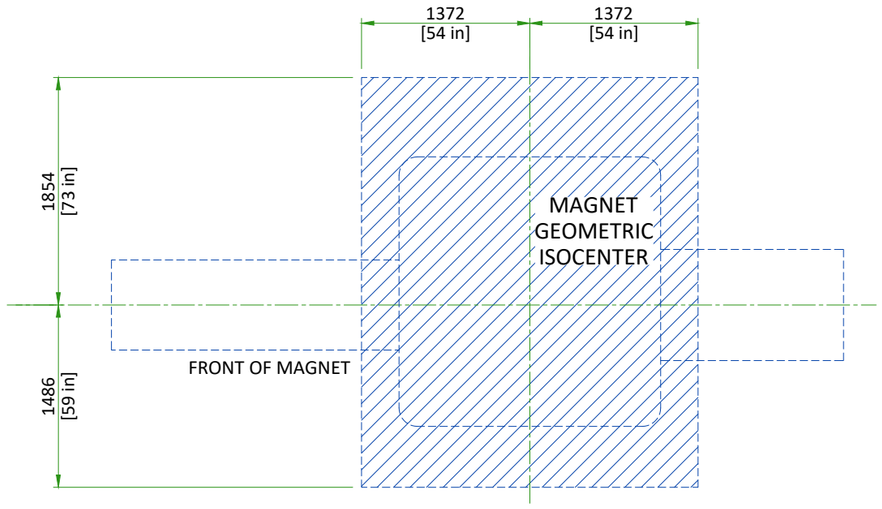
PENETRATION PANEL CLOSET

An enclosure (i.e. closet) must be provided to restrict access to the PEN panels and for storage of excess interconnections.

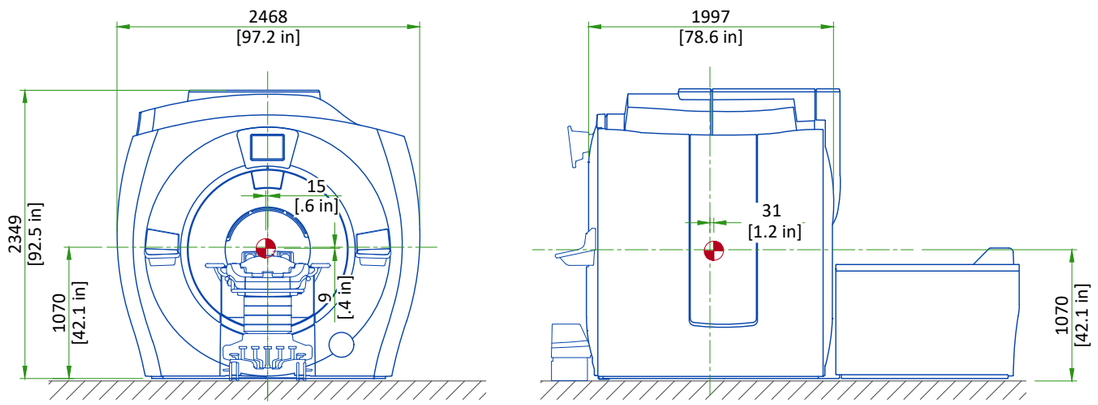
- The PEN closet must have a mechanical locking mechanism to restrict access to the PEN panels
- The PEN closet must maintain the minimum service area outside the 200 Gauss in the magnet room.
- PEN closet must allow free air exchange of **400CFM (680 m³/hour)** between the Magnet room and PEN closet for MR system blowers. Airflow may be achieved through door louvers or other openings in the PEN closet that meet all other PEN closet requirements

MINIMUM MAGNET CEILING HEIGHT (TOP VIEW)

If the ceiling height is between 2500 mm (98.5 in.) and 2667 mm (105 in.), the flexible main lead extension for low ceiling height (2.5M Low Ceiling Kit-Passive, M7000GM) is required for ramping the magnet. Contact the GEHC PMI and GEHC Service Field Engineer for further evaluation.



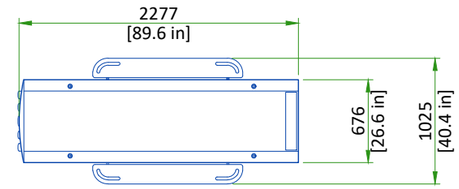
MAGNET ENCLOSURE



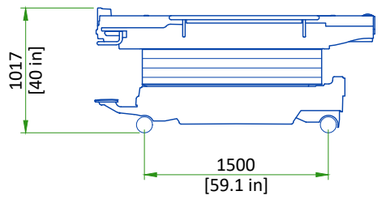
Note:
Center of gravity is approximate and includes the GE Healthcare supplied VibroAcoustic Dampening Kit, but does not include cryogens, gradient assembly, side mounted electronics, or enclosures.
Enclosure dimensions are for reference only, NOT FOR SITE PLANNING USE.
Center of gravity

PATIENT TRANSPORT TABLE (PT)

TOP VIEW

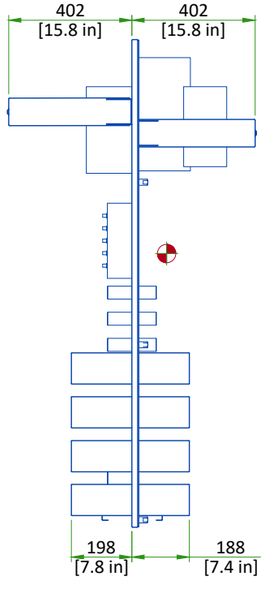


SIDE VIEW

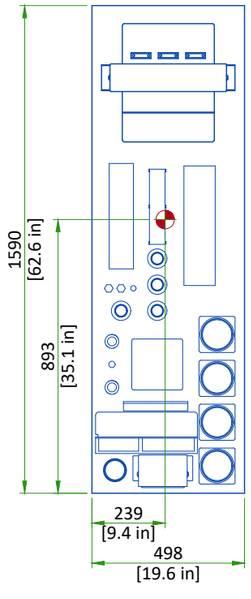


PENETRATION PANEL

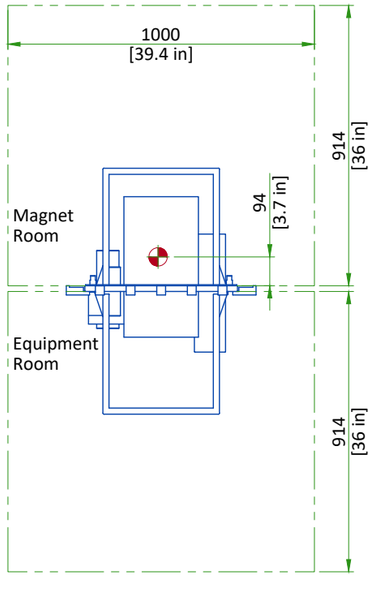
SIDE VIEW



FRONT VIEW



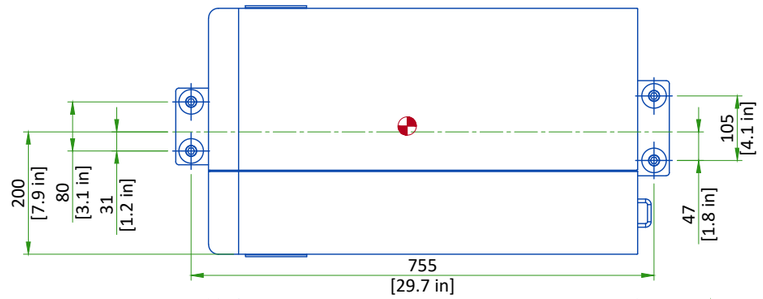
TOP VIEW

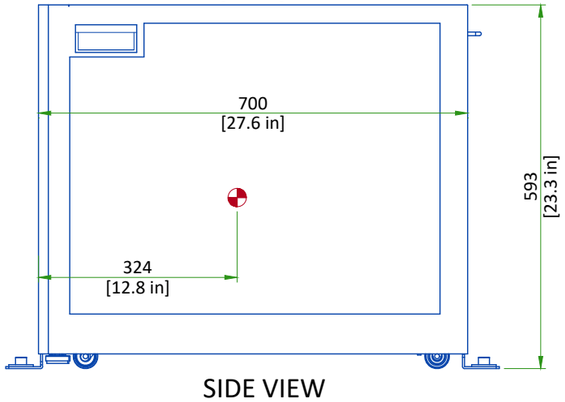


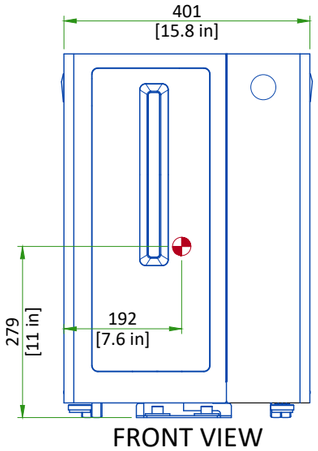
Center of Gravity
SCALE 1:20

GLOBAL OPERATORS CABINET (GOC)

TOP VIEW



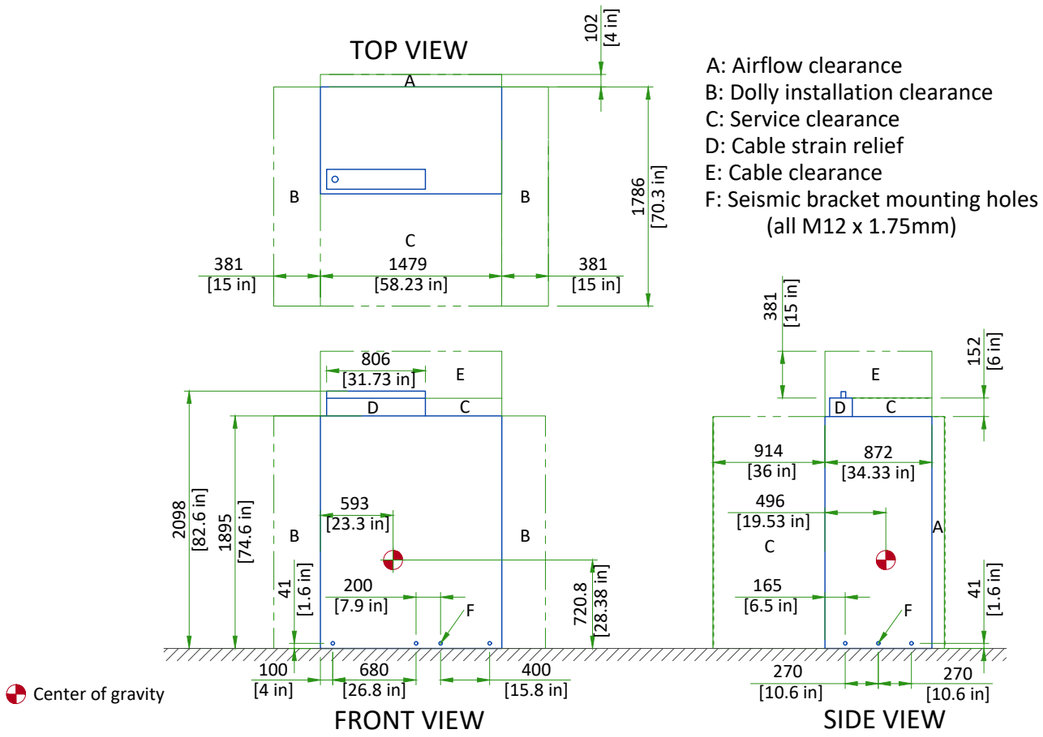




Center of Gravity
SCALE 1:10
SIDE VIEW
FRONT VIEW

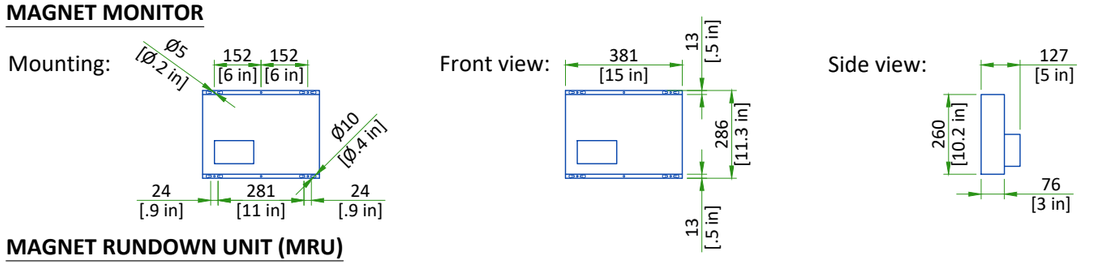
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POWER, GRADIENT, RF CABINET (PGR)

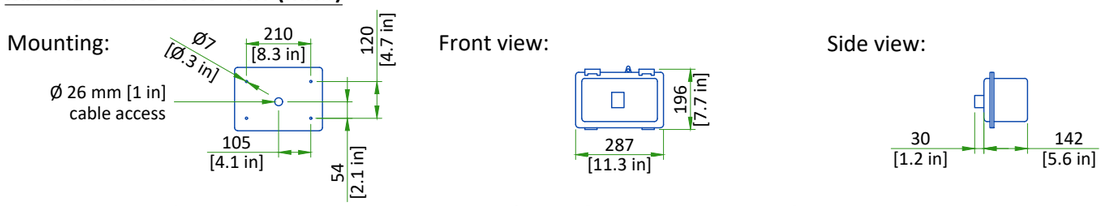


MAGNET MONITOR AND MAGNET RUNDOWN UNIT (MRU)

MAGNET MONITOR



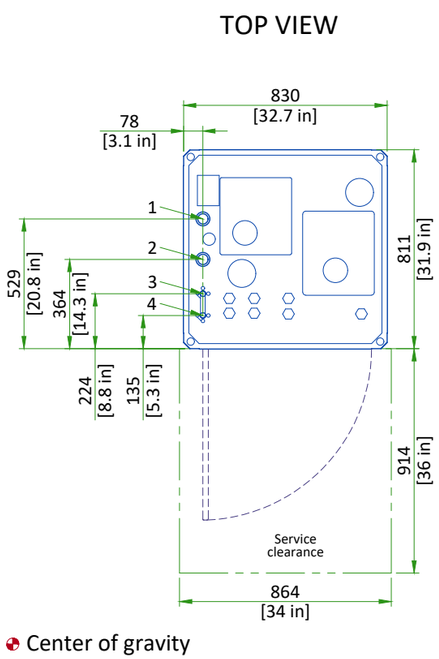
MAGNET RUNDOWN UNIT (MRU)

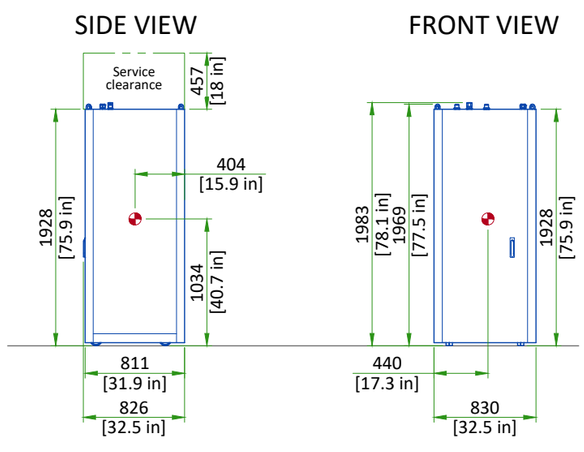


The bottom edge of the MRU must be mounted 1524 ±25 mm [60 ± 1 in] above the magnet room floor.

SCALE 1:20

PLATFORM INTEGRATED COOLING CABINET (pICC)



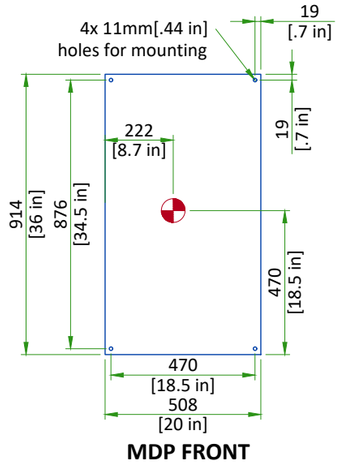


PICC WATER SUPPLY AND RETURN CONNECTIONS	
Item	**Description**
1	Facility return
2	Facility supply
3	City Water Return for Cryocooler compressor backup
4	City Water Supply for Cryocooler compressor backup

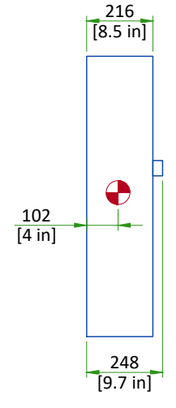
Center of gravity

NOT TO SCALE

MAIN DISCONNECT PANEL (MDP)



MDP FRONT VIEW

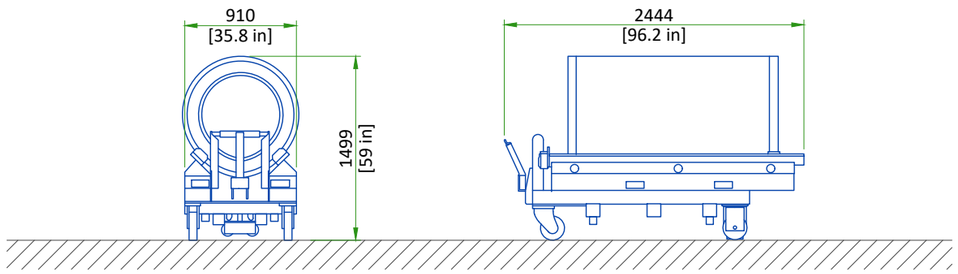


MDP SIDE VIEW

SCALE 1:20

Center of gravity

GRADIENT COIL REPLACEMENT



Front view of the IRMW Gradient Side view of the IRMW Gradient

EQUIPMENT	DIMENSIONS LxWxH		WEIGHT		NOTE
	mm	in	kg	lbs	
Replacement IRMW gradient coil assembly on a shipping cradle/cart	910x2444x1499	35.8x96.2x59	1449	3194	Initial gradient coil assembly is shipped installed in the magnet. Shipping/installation cart is used to install re-placement coil assembly only.

The weight bearing structure of the site should support any additional weight of the main replacement parts occurring during maintenance of the magnet, throughout the whole lifecycle of the MR.

STRUCTURAL NOTES

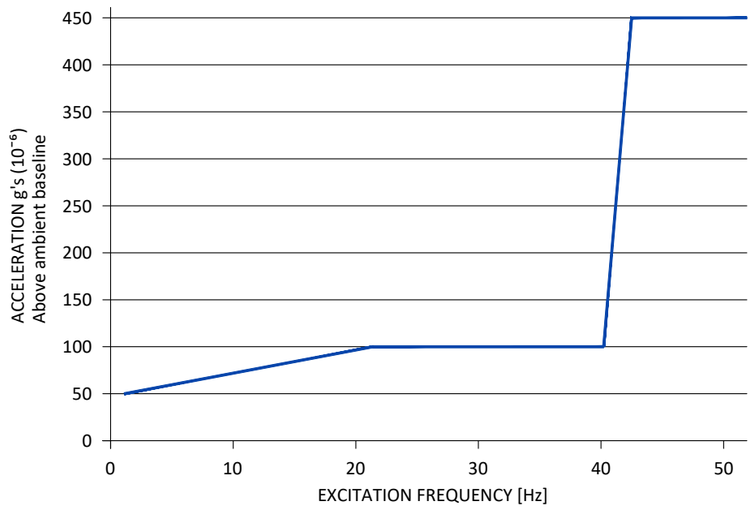
- All units that are wall mounted or wall supported are to be provided with supports where necessary. Wall supports are to be supplied and installed by the customer or his contractors.
- Dimensions are to finished surfaces of room.
- Certain MR procedures require an extremely stable environment to achieve high resolution image quality. Vibration is known to introduce field instabilities into the imaging system. The vibration effects on image quality can be minimized during the initial site planning of the mr suite by minimizing the vibration environment. See PROXIMITY LIMITS, PATIENT TABLE DOCK ANCHOR MOUNTING REQUIREMENTS AND VIBROACOUSTIC DAMPENING KIT details for additional information.
- Standard steel studs, nails, screws, conduit, piping, drains and other hardware are acceptable if properly secured. Any loose steel objects can be violently accelerated into the bore of the magnet. Careful thought should be given to the selection of light fixtures, cabinets, wall decorations, etc. To minimize this potential hazard. For safety, all removable items within the magnet room such as faucet handles, drain covers, switch box cover plates, light fixture components, mounting screws, etc. must be non-magnetic. If you have a specific question about material, bring it to the attention of your GE project manager of installations.
- Floor levelness refer to MAGNET ROOM FLOOR SPECIFICATIONS DETAIL, this floor levelness requirement is important for accurate patient table docking.
- Non-movable steel such as wall studs or hvac components will produce negligible effect on the active shield magnet.
- Customer's contractor must provide all penetrations in post tension floors.
- Customer's 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.
- Customer's 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.
- Customer's contractor to provide and install appropriate supports for the storage of excess cables.
- 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"

VIBRATION SPECIFICATIONS

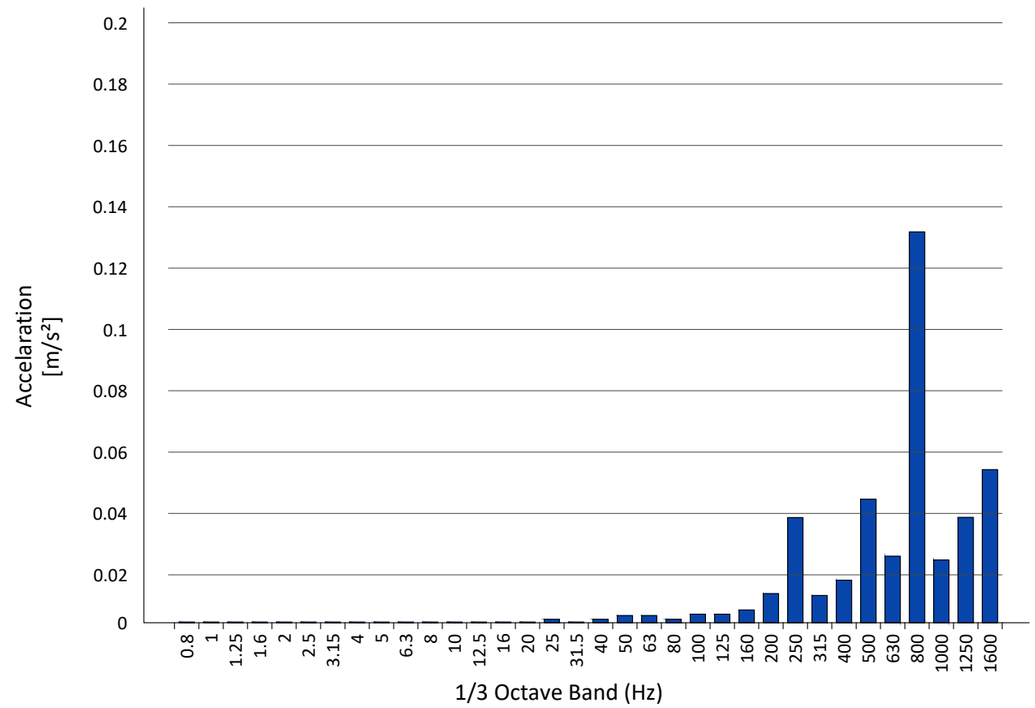
Excessive vibration can affect MR image quality. Vibration testing must be performed early in the site planning process to ensure vibration is minimized. Both steady state vibration (exhaust fans, air conditioners, pumps, etc.) and transient vibrations (traffic, pedestrians, door slamming, etc.) must be assessed. The magnet cannot be directly isolated from vibration. Any vibration issue must be resolved at the source.

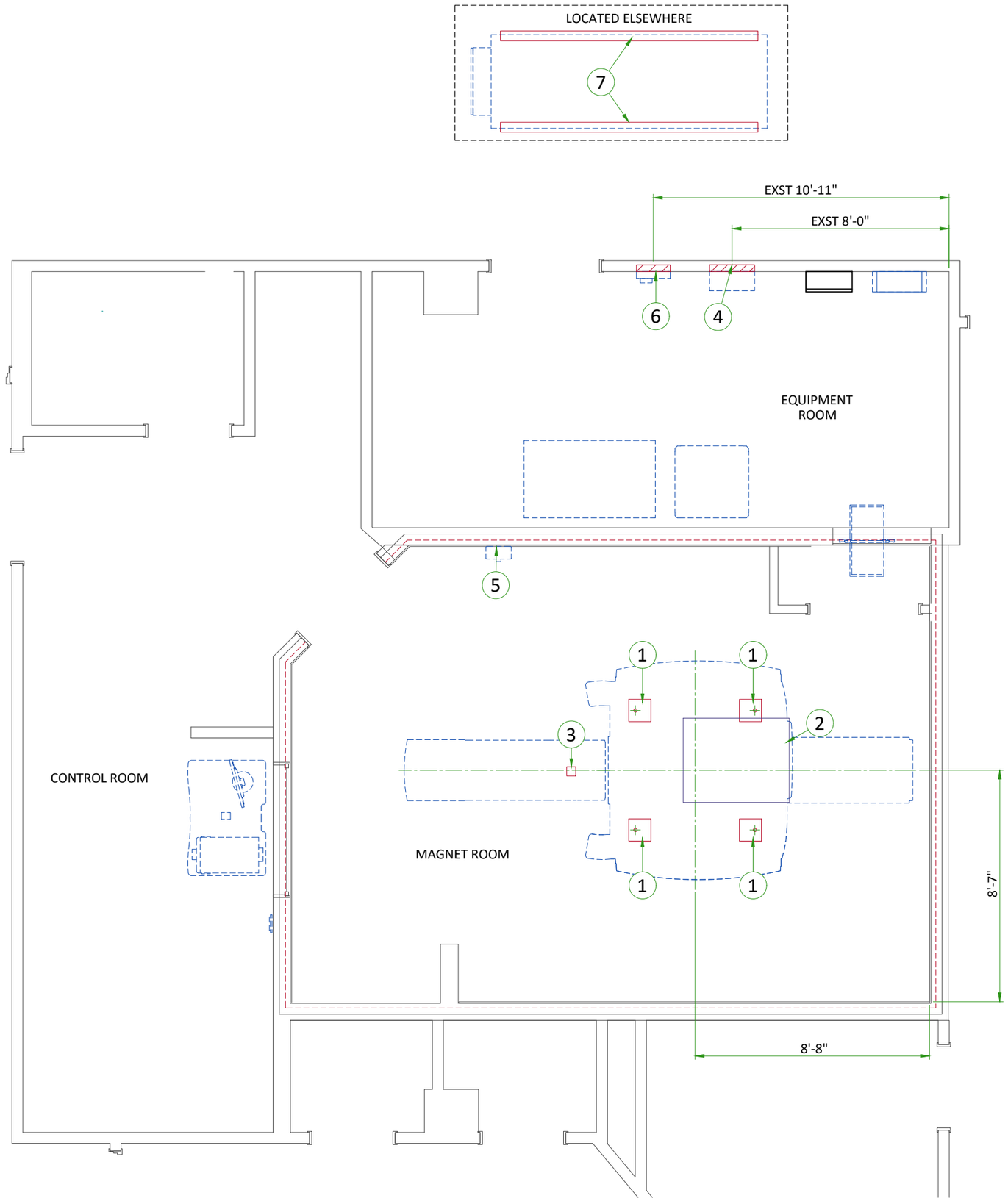
Transient vibration levels above the specified limits in the MR Site Vibration Test Guidelines must be analyzed. Any transient vibration that causes vibration to exceed the steady-state level must be mitigated.

MAGNET STEADY-STATE VIBRATION SPECIFICATIONS



VIBRATION TRANSMITTED THROUGH VIBROACOUSTIC MAT

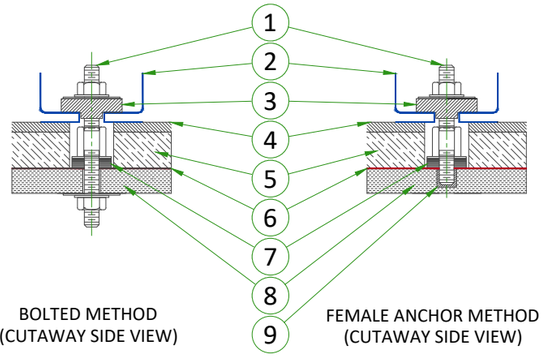




ITEM	DESCRIPTION
	(GE SUPPLIED / CONTRACTOR INSTALLED)
1	Vibroacoustic dampening kit (see floor structural detail)
2	Magnet cable concealment kit
	(CONTRACTOR SUPPLIED & INSTALLED)
3	Patient table dock rebar free area
4	Structural wall backing for Main Disconnect Panel (Upgrade: verify existing location and review structural support to be reused if adequate.
5	Existing structural wall backing for Magnet Rundown Unit
6	Existing structural wall backing for Magnet Monitor
7	Two I-beam runners are to support chiller feet at both ends. Refer to Dimplex manual.

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PATIENT TABLE DOCK ANCHOR MOUNTING REQUIREMENTS



1 Removable Anchor Rod (Male insert)
2 Dock
3 Clamp bracket
4 Finished floor
5 Filler Board or Grout
6 RF Shield
7 Conductive Fibrous Washer (RF seal)
8 Concrete
9 Female Anchor Insert

- The RF Shield vendor must design and install the dock anchor bolt
- The dock anchor hole must be drilled **after** the Magnet is installed
- The dock anchor must not contact floor rebar or other structural steel
- The dock anchor must electrically contact the RF shield at point of entry
- The RF shield vendor must perform a pull test on the anchor (equal to the clamping force).

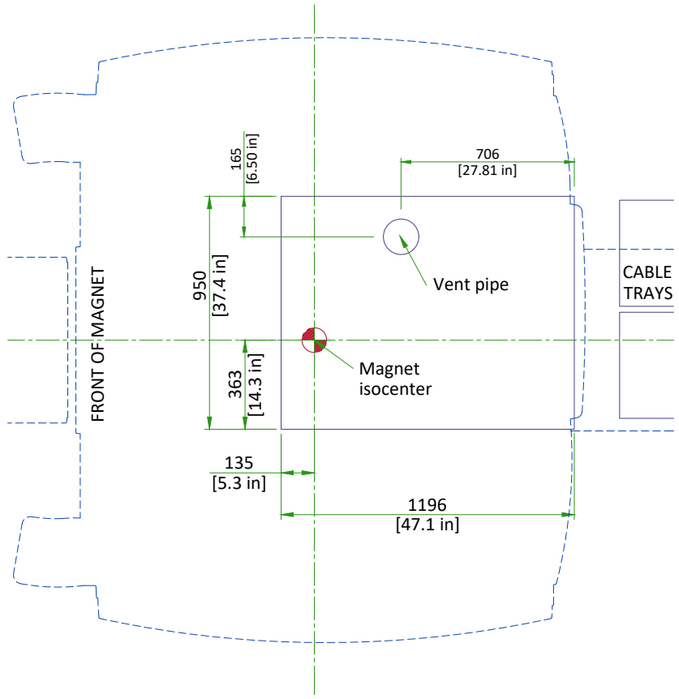
The dock anchor properties must comply with the following requirements:

a. Anchors must be two-part assembly (male/female)
b. Female side must be expansion- or epoxy-type
c. Male side must be a bolt or threaded rod with appropriate-sized nut (bolt or rod must be removable - not epoxied or cemented in place)
d. Anchors must be electrically conductive
e. Anchors must be non-magnetic
f. Anchors must not induce galvanic corrosion with the RF shield
g. Anchors must be commercially procured
h. The anchor rod hole clearance in the table frame anchor base is 11mm [0.43 in]. The anchor rod diameter must be sized appropriately.
i. Anchors must meet the following clamping force: 2,669 N [600 lb]
j. The anchor rod must extend 60 mm ± 13 mm [2.25 in ± 0.5 in] above the finished floor
k. The anchor rod must be less tha 152 mm [6 in] in total length (length above the floor plus embedded length)
l. If underside of deck is metallic, then insulating bushing must be added to through bolt hardware to prevent grounding of shield at this point.

NOT TO SCALE

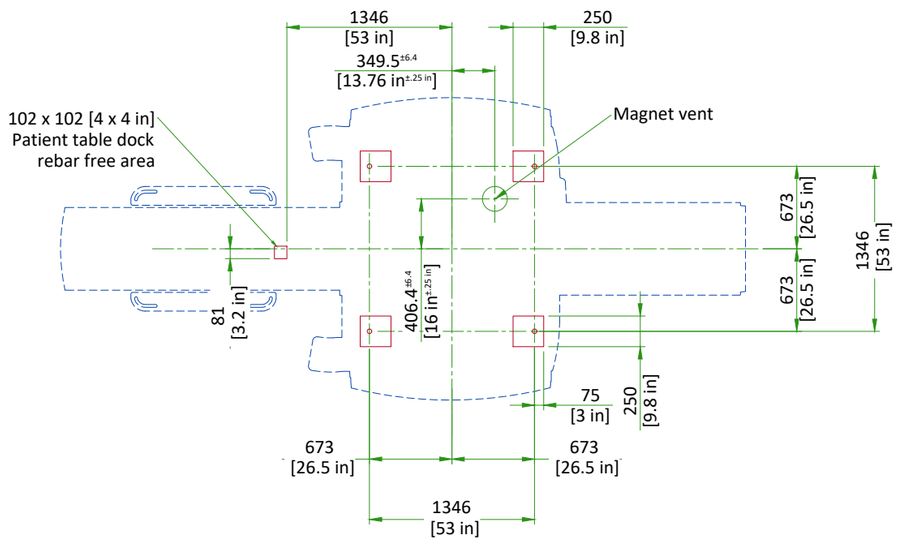
CABLE CONCEALMENT

This drawing gives two methods of locating this assembly in the room.
1) Measure to isocenter
2) Measure to vent pipe

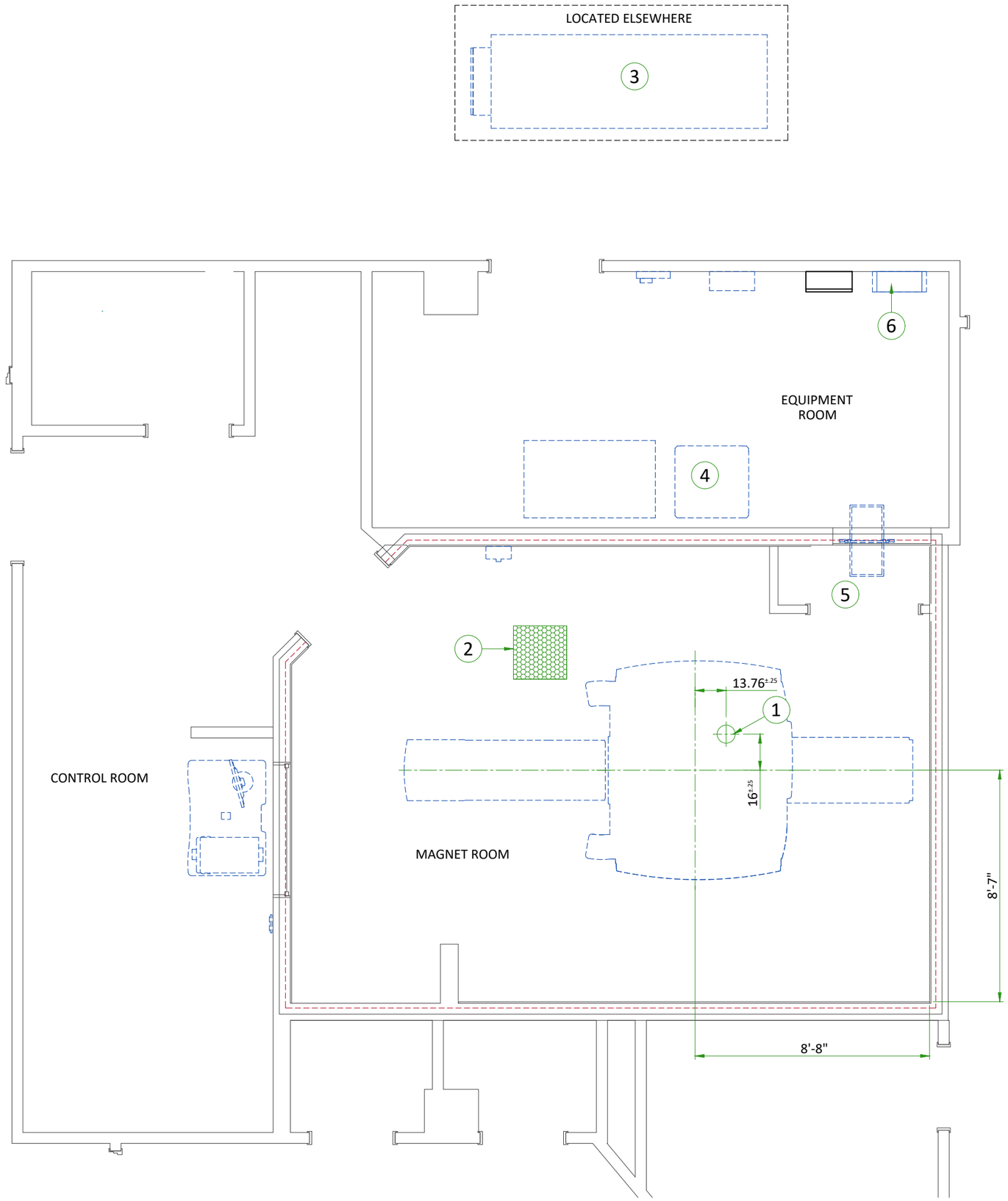


SCALE 1:25

MAGNET MOUNTING



NOT TO SCALE



ITEM	DESCRIPTION
1	Cryogen vent (200mm [8"] O.D.)
2	Emergency exhaust vent - refer to magnet room vent requirements (reuse existing)
3	(2) 50mm [2"] I.D. High pressure hoses and (2) 50mm [2"] to 38mm [1.5"] Reducers
4	38mm [1.5"] NPT Male connectors, (2) 38mm [1.5"] copper lines (insulated) and (2) shut off valves. Refer to chilled water block diagram.
5	Closet must allow free air exchange of 400 CFM between magnet room and closet
6	Provide as needed - low pressure rubber multipurpose hose, inside dia. 1/2" working pressure range: 250 to 499 PSI - refer to the manual city water back-up system detail

MECHANICAL/PLUMBING NOTES

- All piping, fittings, supports, hoses, clamps, ventlation systems, etc. are to be supplied and installed by the customer or his contractors.
- For complete design and requirements, specifications and guidelines refer to the pre-installation manual: system cooling, cryogen venting, waveguides and exhaust venting.
- An emergency water cooling back-up supply is recommended for continuous cryogen compressor operation. if using an open loop back-up design, ensure a drain is provided. please refer to the pre-install manual for optional back-up coolant supply requirements

TEMPERATURE AND HUMIDITY SPECIFICATIONS

IN-USE CONDITIONS

	MAGNET ROOM	CONTROL ROOM	EQUIPMENT ROOM
Temperature	15-21°C	15-32°C	15-32°C [3]
	59-69.8°F	59-89.6°F	59-89.6°F [3]
Temperature gradient [1]	**≤ 3°C/h**	**≤ 3°C/h**	**≤ 3°C/h**
	≤ 5°F/h	**≤ 5°F/h**	**≤ 5°F/h**
Relative humidity	30% to 60%	30% to 70%	30% to 70%
Humidity gradient [2]	**≤ 5%/h**	**≤ 5%/h**	**≤ 5%/h**

NOTE
1) Operating temperature gradient limits shall be between -3°C/hr (-5°F/hr) and 3°C/hr (5°F/hr), when averaged over 1 hour
2) Operating humidity gradient limits shall be between -5% RH/hr and 5% RH/hr (5°F/hr), when averaged over 1 hour
3) Maximum ambient temperature is derated by 1°C per 300 m above 2000 m (not to exceed 2600 m).

AIR RENEWAL

According to local standards.

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.

MAGNET ROOM VENTING REQUIREMENTS

HVAC VENT REQUIREMENTS

- HVAC vendor must comply with Magnet room temperature and humidity specifications and RF shielding specifications.
- RF Shield vendor must install open pipe or honeycomb HVAC waveguides.
- All serviceable parts in the Magnet room (e.g.: diffusers) must be non-magnetic.
- Waveguides must be nonmagnetic and electrically isolated.
- Incoming air must contain at least **5% air** from outside the Magnet room (inside or outside the facility) to displace residual helium.

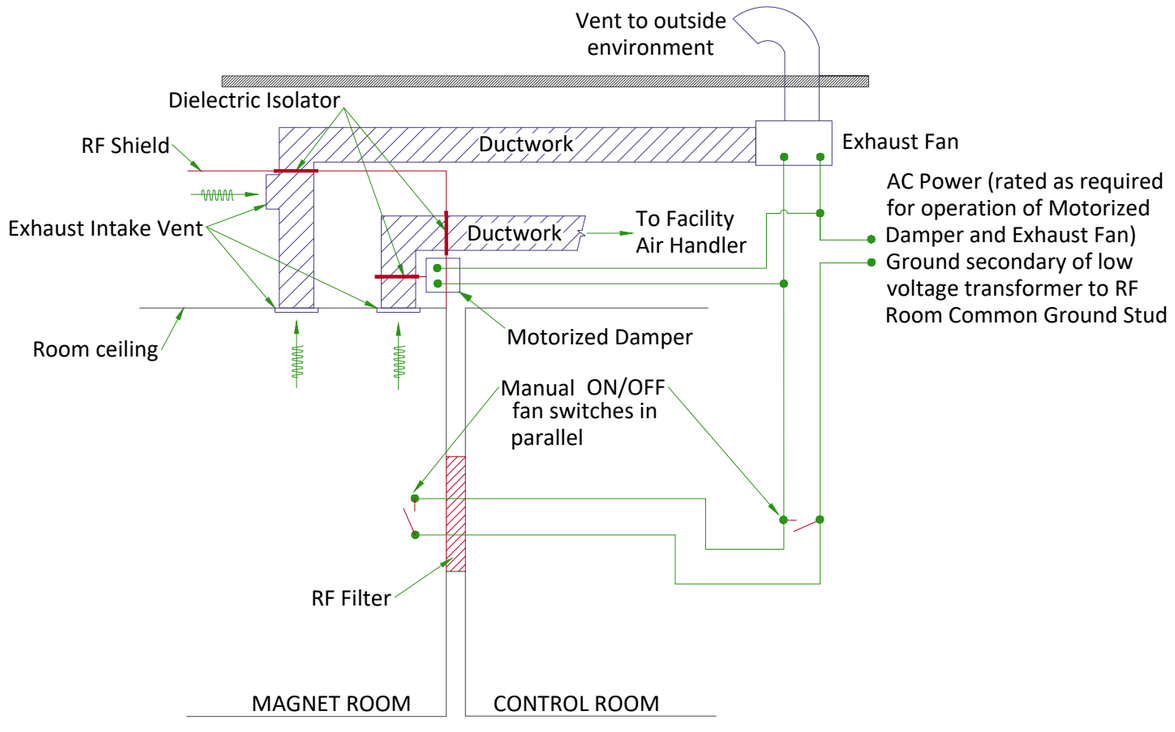
EMERGENCY VENT REQUIREMENT

- Exhaust vent system is supplied by the customer.
- All items within the RF enclosure must be non-magnetic.
- The exhaust vent system must be tested and operational before the magnet is installed.
- The exhaust intake vent must be located near the magnet cryogenic vent at the highest point on the finished or drop ceiling.
- The Magnet room exhaust fan and exhaust intake vent must have a capacity of at least **1200 CFM (34 m^3/min)** with a minimum of **12 room air exchanges per hour.**
- The exhaust fan must be placed above RF shielding located outside 10 gauss (1mT) and with appropriate waveguide.
- The system must have a manual exhaust fan switch near the Operator Workspace and in the Magnet room near the door (the switches must be connected in parallel).
- All system components must be accessible for customer inspection, cleaning and maintenance

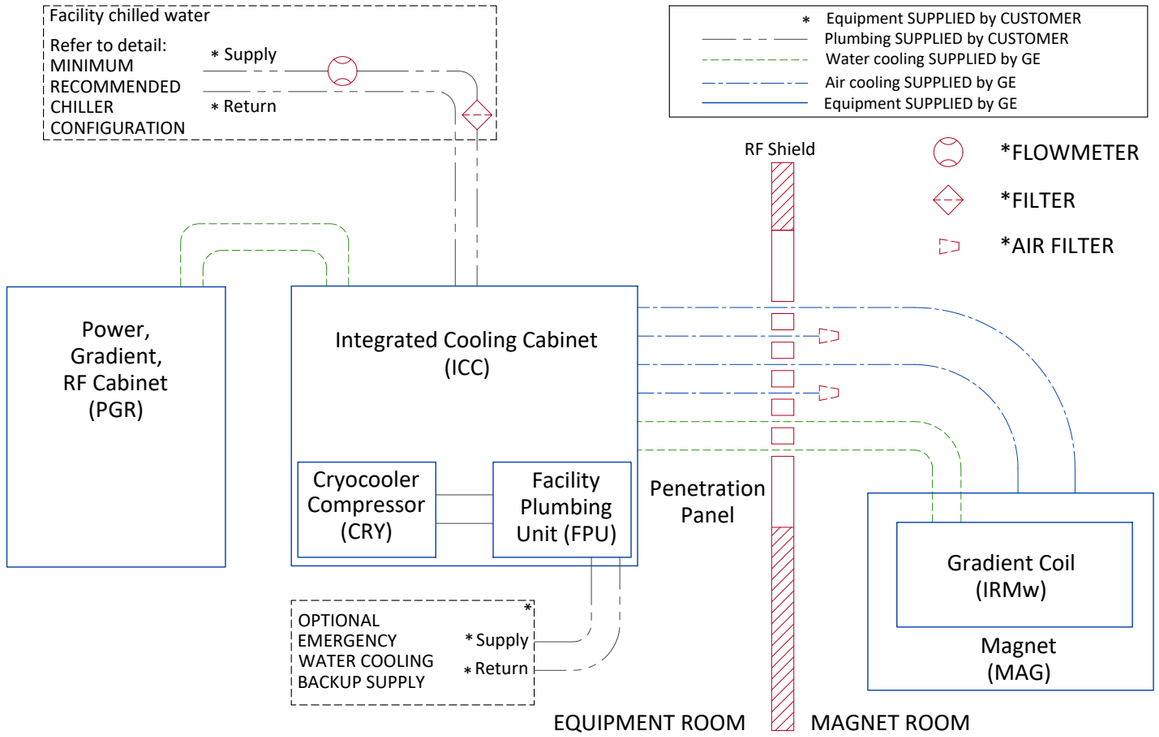
HEAT DISSIPATION DETAILS

DESCRIPTION	ROOM	IDLE W		AVERAGE		MAX	
		W	btu	W	btu	W	btu
Magnet (MAG) and Patient Table (PT)	Magnet	561	1915	1200	4095	2400	8189
Main Disconnect Panel (MDP)	Equipment	132	450	132	450	264	901
Power, Gradient, RF Cabinet (PGR)	Equipment	4298	14665	4866	16603	9502	32421
Integrated Cooling Cabinet (ICC)	Equipment	250	853	600	2046	1000	3410
Cryocooler Compressor (CRY) (Inside ICC)	Equipment	500	1706	500	1706	500	1706
Magnet Monitor (MON)	Equipment	240	819	240	819	240	819
Operator Workspace equipment (OW)	Control	1450	4947	1450	4947	1450	4947
Penetration Panel (PP)	Equipmet	0	0	0	0	0	0

MAGNET ROOM EXHAUST FAN SCHEMATIC



CHILLED WATER BLOCK DIAGRAM

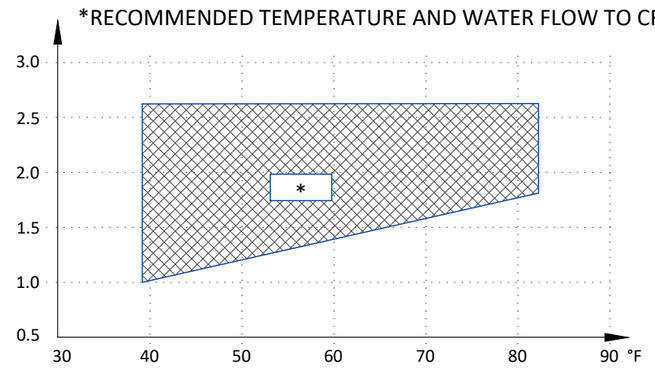


LIQUID COOLANT SPECIFICATIONS

PARAMETER	REQUIREMENTS
Availability	Continuous
Antifreeze	No more than 50% propylene glycol water or ethylene glycol water
Minimum Flow	114 L/min [30 gpm]
Maximum Flow	132 L/min [35 gpm]
Maximum Pressure Drop in ICC at Minimum Flow	2.2 bar (32.0 psi) with 50% propylene glycol-water; 1060 kg/m³ density 1.4 bar (20.3 psi) with pure water; 994 kg/m³ density
Maximum Pressure Drop in ICC at Maximum Flow	2.9 bar (42 psi) with 50% propylene glycol-water; 1060 kg/m³ density 1.9 bar (27.6 psi) with pure water; 994 kg/m³ density
Temperature rise at Minimum Flow	7.3°C (13°F) with 50% propylene glycol-water; 3346 J/(kg K) specific heat; 1060 kg/m³ density; 49 kW heat
Temperature rise at Maximum Flow	6.3°C (11.3°F) with 50% propylene glycol-water; 3346 J/(kg K) specific heat; 1060 kg/m³ density; 49 kW heat
Maximum inlet pressure to ICC	6 bar [87 psi]
Chiller size	Minimum 49 kW
Condensation protection	Facility plumbing to the ICC must be properly routed and insulated to prevent equipment damage or safety hazards
Minimum continuous heat load	7.5 kW
Inlet temperature to ICC	5 to 15°C [41 to 59° F]
Customer supplied feeder hose (from main water supply to ICC)	38.1 mm [1.5 in] minimum hose inside diameter
Water quality	Refer to pre-installation manual for detailed specifications

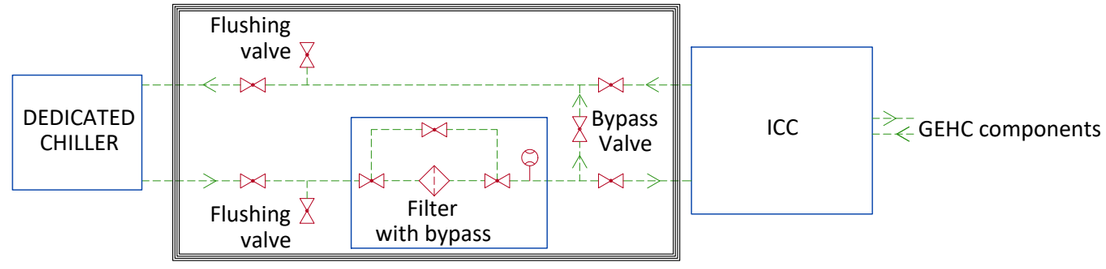
CITY WATER BACKUP SPECIFICATIONS FOR COMPRESSOR

INLET WATER FLOW/TEMPERATURE FOR CRYOCOOLER COMPRESSOR



	MIN	MAX
INLET TEMP	39.2°F (4°C)	82.4°F (28°C)
INLET FLOW	1.0 gpm (4 l/min)	2.6 gpm (10 l/min)
TEMP RISE	89.6°F at 1.0 gpm (32°C at 4 l/min flow)	53.6°F at 2.6 gpm (12°C at 10 l/min flow)
HEAT DISSIPATION (kW)	7.2 kW	
PRESSURE DROP	8.7 psi at 2.1 gpm flow (60 kPa at 8 l/min flow)	

MINIMUM RECOMMENDED CHILLER CONFIGURATION



FLOW METER

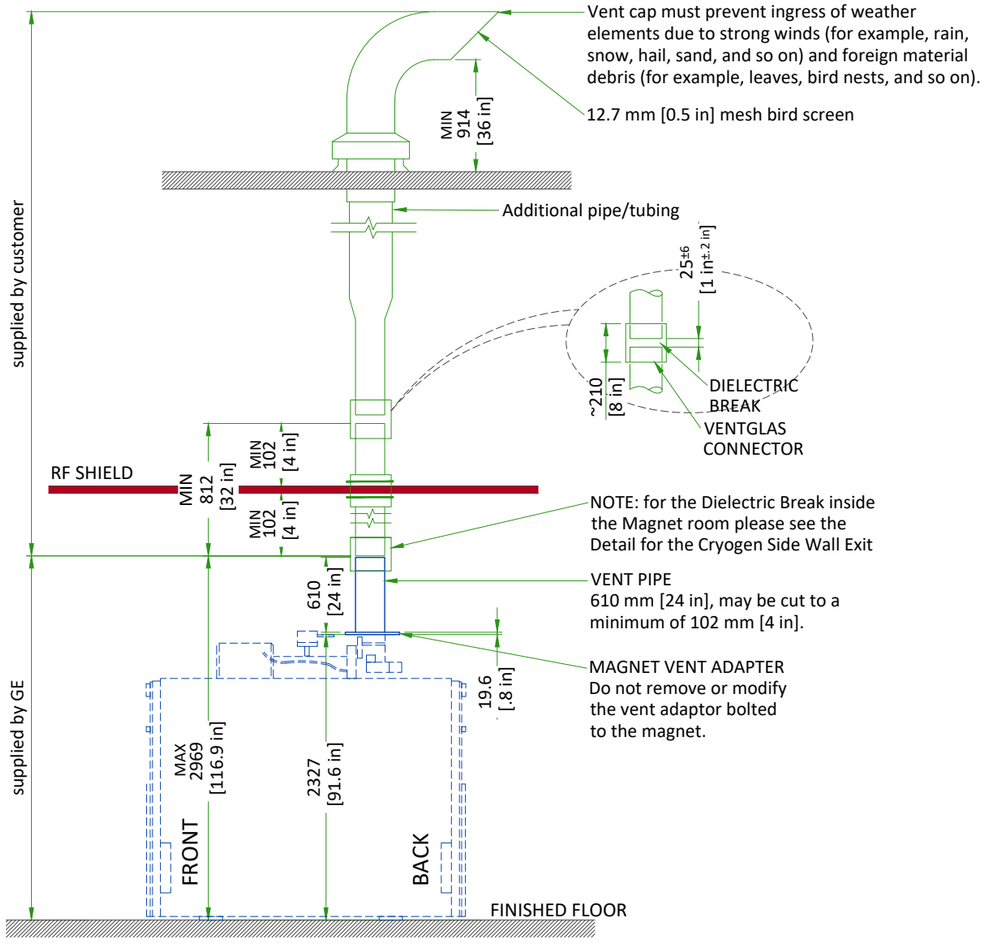
VALVE

FILTER

Equipment supplied by GEHC

Customer/contractor supplied and installed

TYPICAL CRYOGENIC VENT PIPE DETAIL



Waveguide is contractor supplied. Minimum 812 mm [32 in]. Must extend at least 100 mm [4 in] on magnet room side of the wall/ceiling and 25±6 mm [1±0.25 in] from the GE supplied pipe below isolation joint. Magnet room end must not be more than 2969 mm [117 in]above finished floor.

1. The 203 mm [8 in] OD vent material must be one of the following materials with the wall thickness indicated:
a. SS 304: Minimum 0.89 mm [0.035 in]; Maximum 3.18 mm [0.125 in]
b. AL 6061-T6: Minimum 2.11 mm [0.083 in]; Maximum 3.18 mm [0.125 in]
c. CU DWV, M or L: Minimum 2.11 mm [0.083 in]; Maximum 3.56 mm [0.140 in]
2. Either tubes or pipes may be used and must be seamless or have welded seams

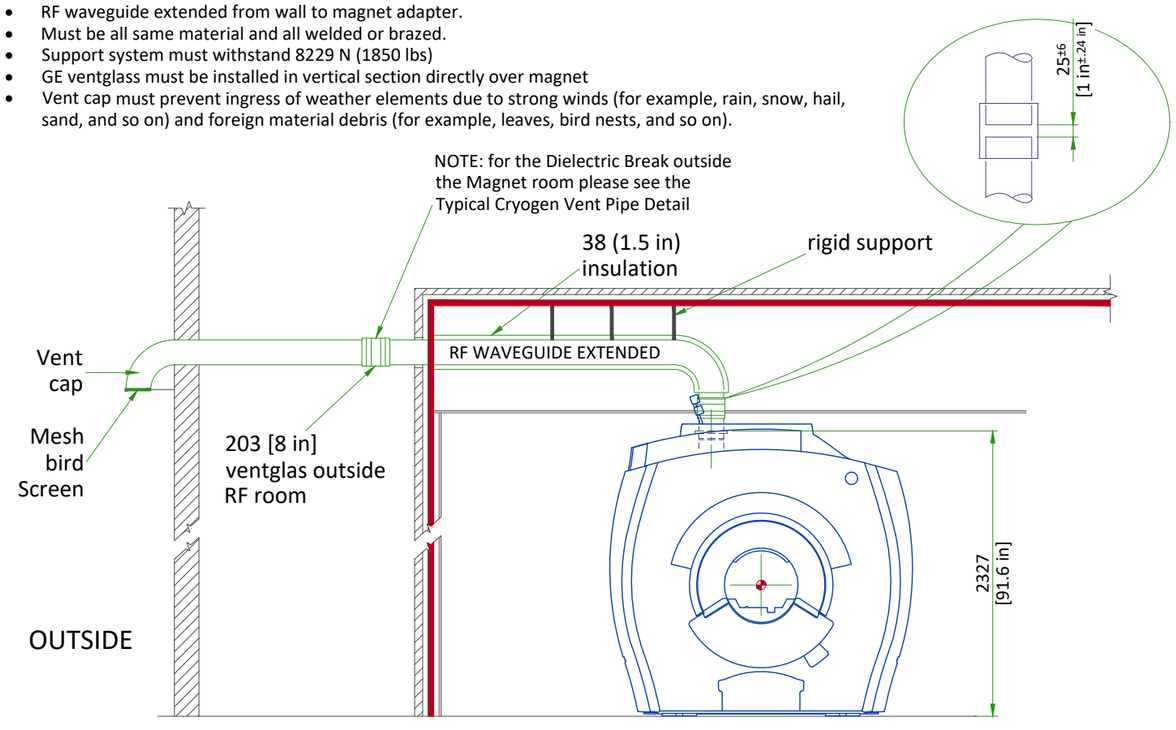
NOTE
All welds on the pipe must be ground down to a smooth 203 mm [8 in] diameter so that it can be clamped to the Ventglas with enough force.

3. Corrugated pipe or spiral duct must not be used
4. If required, bellows pipe less than 300 mm [12 in] in length may be used as a thermal expansion joint
5. The vent pipe must withstand the maximum pressure listed in the Pre-Installation Manual
6. Waveguide vent material must match the outside diameter of the magnet flanged vent adapter

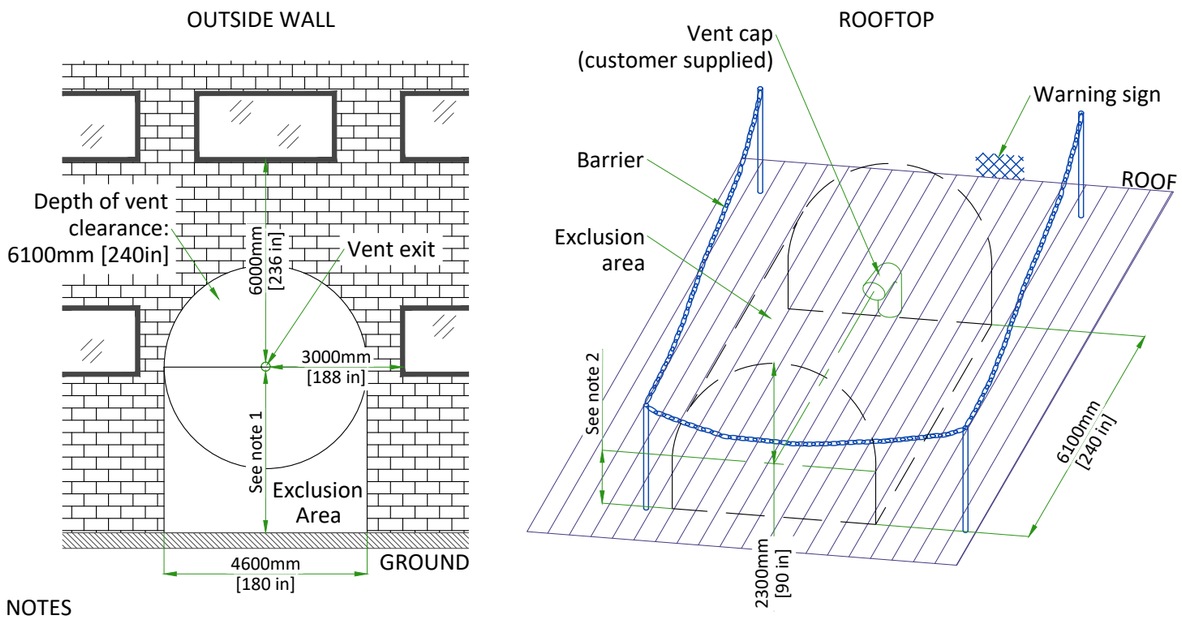
TYPICAL CRYOGEN SIDE WALL EXIT WITH LONG SWEEP ELBOW

KEY COMPONENTS :

- RF waveguide extended from wall to magnet adapter.
- Must be all same material and all welded or brazed.
- Support system must withstand 8229 N (1850 lbs)
- GE ventglass must be installed in vertical section directly over magnet
- Vent cap must prevent ingress of weather elements due to strong winds (for example, rain, snow, hail, sand, and so on) and foreign material debris (for example, leaves, bird nests, and so on).



CRYOGENIC VENTING (EXTERIOR)



NOTES

(1) Restricted area: minimum distance between vent pipe and ground is 3660mm [144 in]. Barriers are required. Public area: barriers are not required if height is > 5000mm [197 in].

(2) The bottom of the 90° elbow must be at least 914mm [36 in] above the roof deck (or higher if at risk of being blocked by drifting snow, sand, or other potential obstructions.)

NOT TO SCALE

MAGNET CRYOGENIC VENT SYSTEM PRESSURE DROP MATRIX

Outer dia. of pipe (D)	Distance of vent system component from magnet		Pressure drop for straight pipe		Std sweep 45° elbow		Long sweep 45° elbow		Std sweep 90° elbow		Long sweep 90° elbow		90° miter bend	
	m	ft	kPa/m	psi/ft	kPa	psi	kPa	psi	kPa	psi	kPa	psi	kPa	psi
8 in. (200mm)	0.00-3.05	0-10	1.629	0.072	3.877	0.562	2.585	0.375	7.269	1.054	4.846	0.703	14.539	2.108
	3.05-6.10	10-20	2.784	0.123	6.393	0.927	4.262	0.618	11.987	1.738	7.992	1.159	23.975	3.476
	6.10-9.15	20-30	4.172	0.184	8.712	1.263	5.808	0.842	16.535	2.369	10.890	1.579	32.670	4.737
	9.15-12.2	30-40	5.391	0.238	10.847	1.573	7.231	1.049	20.338	2.949	13.559	1.966	40.677	5.898
	12.20-15.25	40-50	6.460	0.286	12.812	1.858	8.541	1.239	24.023	3.483	16.015	2.322	48.046	6.967
	15.25-18.30	50-60	7.394	0.327	14.620	2.120	9.747	1.413	27.413	3.975	18.275	2.650	54.826	7.950
	18.29-24.39	60-80	8.913	0.394	17.813	2.583	11.875	1.722	33.400	4.843	22.266	3.229	66.799	9.686
	24.39-30.49	80-100	10.049	0.444	20.514	2.974	13.676	1.983	38.463	5.577	25.642	3.718	76.926	11.154
10 in. (250mm)	0.00-6.10	0-20	0.824	0.036	2.382	0.345	1.588	0.230	4.467	0.648	2.978	0.432	8.934	1.295
	6.10-12.22	20-40	1.607	0.071	4.035	0.585	2.690	0.390	7.565	1.097	5.043	0.731	15.130	2.194
	12.22-18.29	40-60	2.239	0.099	5.477	0.794	3.651	0.529	10.269	1.489	6.846	0.993	20.537	2.978
	18.29-24.39	60-80	2.745	0.121	6.733	0.976	4.489	0.651	12.625	1.831	8.416	1.220	25.249	3.661
	24.39-30.49	80-100	3.145	0.139	7.827	1.135	5.218	0.757	14.676	2.128	9.784	1.419	29.353	4.256
12 in. (300mm)	0.00-6.10	0-20	0.424	0.019	1.486	0.215	0.991	0.144	2.786	0.404	1.858	0.269	5.573	0.808
	6.10-12.22	20-40	0.829	0.037	2.501	0.363	1.667	0.242	4.689	0.680	3.126	0.453	9.377	1.360
	12.22-18.29	40-60	1.169	0.052	3.408	0.494	2.272	0.329	6.389	0.926	4.260	0.618	12.779	1.853
	18.29-24.39	60-80	1.453	0.064	4.218	0.612	2.812	0.408	7.908	1.147	5.272	0.764	15.816	2.293
	24.39-30.49	80-100	1.688	0.075	4.941	0.716	3.294	0.478	9.263	1.343	6.176	0.895	18.527	2.686
14 in. (350mm)	0.00-6.10	0-20	0.235	0.010	0.970	0.141	0.647	0.094	1.819	0.264	1.213	0.179	3.639	0.528
	6.10-12.22	20-40	0.459	0.020	1.619	0.235	1.079	0.157	3.036	0.440	2.024	0.293	6.072	0.880
	12.22-18.29	40-60	0.652	0.029	2.209	0.320	1.473	0.214	4.142	0.601	2.761	0.400	8.284	1.201
	18.29-24.39	60-80	0.817	0.036	2.745	0.398	1.830	0.265	5.147	0.746	3.431	0.498	10.293	1.493
	24.39-30.49	80-100	0.958	0.042	3.231	0.469	2.154	0.312	6.059	0.879	4.039	0.586	12.117	1.757
16 in. (400mm)	0.00-6.10	0-20	0.184	0.008	0.875	0.127	0.584	0.085	1.641	0.238	1.094	0.159	3.283	0.476
	6.10-12.22	20-40	0.356	0.016	1.444	0.209	0.962	0.140	2.707	0.392	1.804	0.262	5.413	0.785
	12.22-18.29	40-60	0.508	0.022	1.968	0.285	1.312	0.190	3.689	0.535	2.460	0.357	7.379	1.070
	18.29-24.39	60-80	0.642	0.028	2.451	0.355	1.634	0.237	4.596	0.666	3.064	0.444	9.191	1.333
	24.39-30.49	80-100	0.759	0.034	2.896	0.420	1.931	0.280	5.430	0.787	3.620	0.525	10.861	1.575

Notes

1. Refer to Magnet Room Venting manual 5850263-1EN for specifications of distances >100 ft (30.49 m).
2. Elbows with angles greater than 90 deg must not be used
3. Data in Table is based on the following facts and assumptions:
   a. Initial flow conditions at magnet interface
   b. EM energy (13MJ) is dumped to He during quench and rises He temperature to 10 Kelvin
   c. Gas temperature starting at 10 Kelvin and increase with length determined by thermal energy balance
   d. 90% He is assumed to be evacuated within 30 sec. None left after quench.
   e. Absolute roughness is assumed to be 0.25 mm.
   f. R/D = 1.0 for standard sweep elbows, R/D = 1.5 for long sweep elbows where D = outer diameter of pipe; R = radius of bend

3. The total pressure drop of the entire cryogenic vent system must be less than 17 psi (117.2 kPa). The calculation starts at the magnet vent interface and ends at the termination point outside the building.

LIGHTING REQUIREMENTS

- All lighting fixtures and associated components must meet all RF shielded room and RF grounding requirements (e.g., track lighting is not recommended due to possible RF noise).
- All removable lighting fixtures and associated components must be non-magnetic.
- All lighting must use direct current (the DC must have less than 5% ripple).
- 300 lux must be provided at the front of the magnet for patient access and above the magnet for servicing.
- Fluorescent lighting must not be used in the magnet room.
- Lighting must be adjusted using a discrete switch or a variable DC lighting controller.
- SCR dimmers or rheostats must not be used.
- DC LED lighting may be used if the DC power converter and RF sources are all located outside the magnet room RF shield.

  NOTE: LED lighting could cause image quality issues due to RF interference. Make sure a MR-compatible LED lighting solution is chosen.
- Battery chargers (e.g., used for emergency lighting) must be located outside the magnet room.
- LED Lighting or short filament length incandescent bulbs are recommended.
- Linear lamps are not recommended due to the high burnout rate.

CONNECTIVITY REQUIREMENTS

Your new GE Healthcare imaging modality will require local and remote connectivity to enable our full range of digital support:

- Local connectivity - This allows your system to connect to local devices such as PACS and modality worklist. We will require network information to configure the system(s), and a live ethernet port(s) prior to the delivery of the system(s).
- Remote connectivity - Your GE Healthcare service warranty includes InSite™ (applicable to InSite capable products), a powerful broadband-based service which enables digital tools that can help guard your hospital against equipment downtime and revenue loss by quickly connecting you to a GE Healthcare expert.

Depending on product family and software version, imaging systems can be connected in one of the following methods:

1. TLS over TCP Port 443 (Preferred method for new products) via:
   a. DNS resolution
   b. Customer-provided Proxy or
   c. GE Proxy (Available in some regions)
2. Site-to-Site IPsec VPN tunnel

Please provide the GE project manager with the contact information for the resource that can provide information required to set up these connections. GEHC will send out communication to these contacts, which will include the project's Connectivity requirements, and a Connectivity form. This form will need to be completed and returned to GEHC prior to delivery of the system to ensure the system is tested and connectivity is enabled prior to the completion of the installation.

ELECTRICAL NOTES

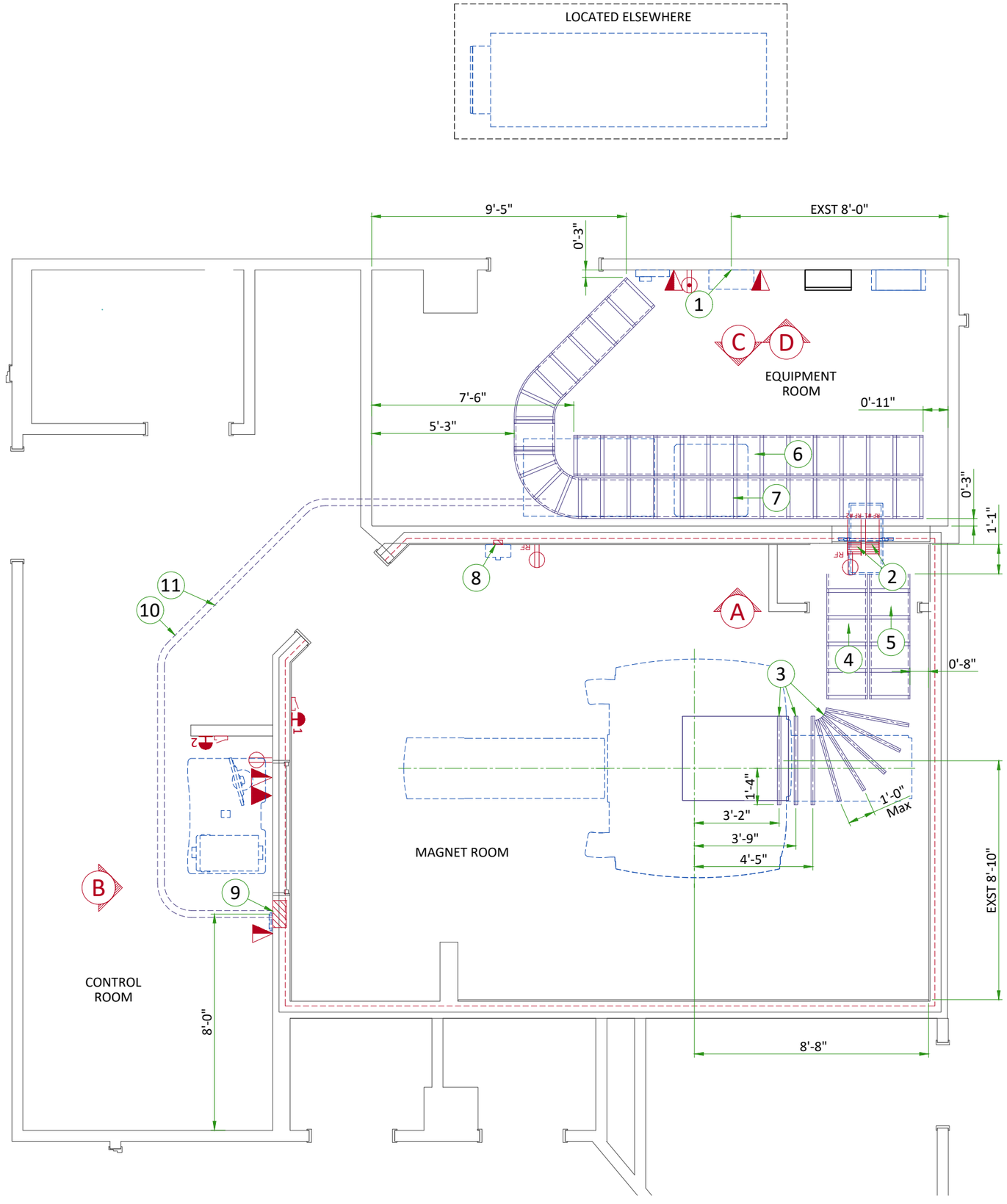
1. All wires specified shall be copper stranded, flexible, thermo-plastic, color coded, cut 10 foot long at outlet boxes, duct termination points or stubbed conduit ends. All conductors, power, signal and ground, must be run in a conduit or duct system. Electrical contractor shall ring out and tag all 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 distritbution 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 pigtails at all junction points.
- Grounding is critical to equipment function and patient safety. Site must conform to wiring specifications shown on this plan.



Item	Electrical Layout Item List
1	Main disconnect panel (MDP)
2	RF Filters - grounded to RF shield at Common Ground Stud
3	Non-ferrous unistrut cable support 36" [915]
4	Non-ferrous cable ladder 18" x 6" [450 x 150]
5	Non-ferrous cable ladder for gradient cables 18" x 6" [450 x 150]
6	Cable tray for gradient cables 18" x 6" [450 x 150]
7	Cable ladder 18" x 6" [450 x 150]
8	Existing box in wall 4" x 4" x 2" [100 x 100 x 50] (MRU)
9	Box in wall 12" x 8" x 6" [300 x 200 x 150] (Operators console)
10	Conduit above RF screen 2" [50]
11	Conduit above RF screen 3" [75]

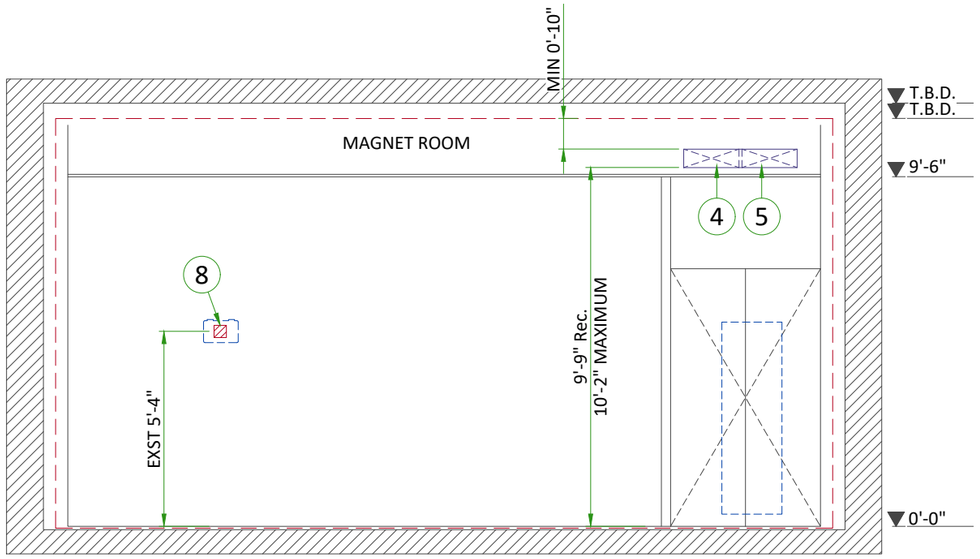
ITEM	QTY	Electrical Outlet Legend Customer/contractor supplied and installed items unless otherwise specified. Height above floor determined by local codes unless otherwise specified.
		System emergency off (EO1, 2), (recommended height 1.2m [48"] above floor)
		Door interlock switch
		Emergency exhaust fan switch 1.2m [48"] height recommended)
		Duplex hospital grade, dedicated wall outlet 120-v, single phase power
		Network outlet
		Dedicated telephone lines/network connection
		Duplex hospital grade, dedicated outlet 120-v emergency, single phase power, 15a
RF		Duplex hospital grade, dedicated outlet 120-v, single phase outlet routed through RF filter

Additional Conduit Runs
(Contractor Supplied and Installed)

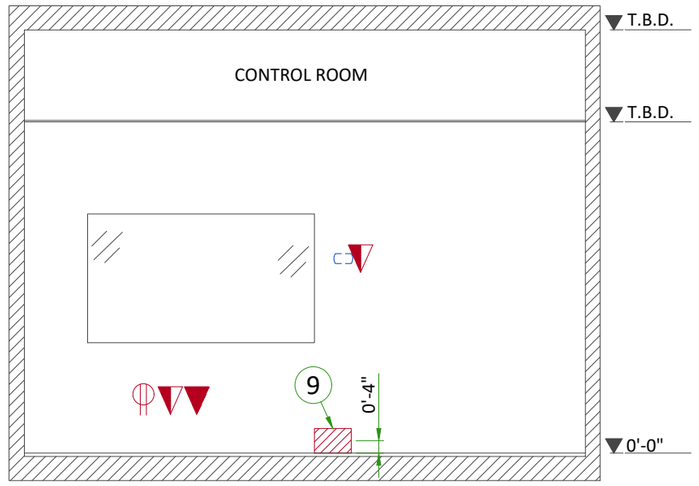
From (Bubble # / Item)		To (Bubble # / Item)	Qty	Size	
				In.	mm
1	Main Disconnect Panel	Power, Gradient, RF cabinet	1	As req'd	As req'd
		Integrated Cooling Cabinet	1	As req'd	As req'd
		System emergency off 2	1	1/2	16
	System emergency off 2	Penetration Panel	1	1/2	16
	Door switch	Power, Gradient, RF cabinet	1	3/4	20
	System emergency off 1	Penetration Panel	1	3/4	20
8	Magnet Rundown Unit	Magnet	1	1	25
		RF filter #1	1	As req'd	As req'd
	RF filter #1	120-V 1Ø Power	1	As req'd	As req'd
	Room Light	RF filter #2	1	As req'd	As req'd
	RF filter #2	Facility emergency power	1	As req'd	As req'd

Existing Electrical Note:
Use existing duct/conduits where possible. Additional duct/conduit runs may be necessary if existing system is inadequate in size and/or location for this installation. Verify existing size and location.

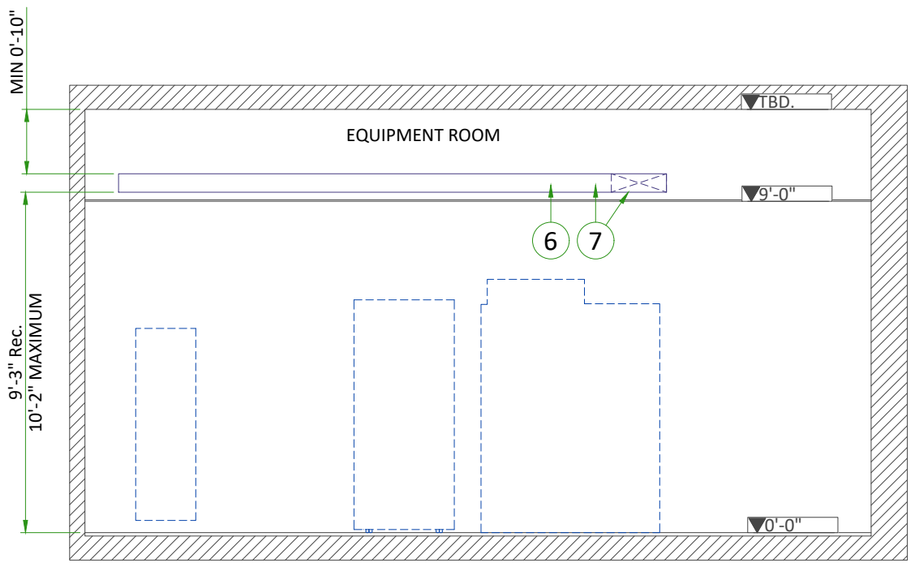
Existing Access Floor Note:
Access flooring in Equipment Room will either need to be removed or accessed and reinforced to support the weight of heavier cabinets. Access flooring in Magnet Room must be removed.


MIN 0'-10"
T.B.D.
T.B.D.
MAGNET ROOM
9'-6"
4
5
8
9'-9" Rec.
10'-2" MAXIMUM
EXST 5'-4"
0'-0"

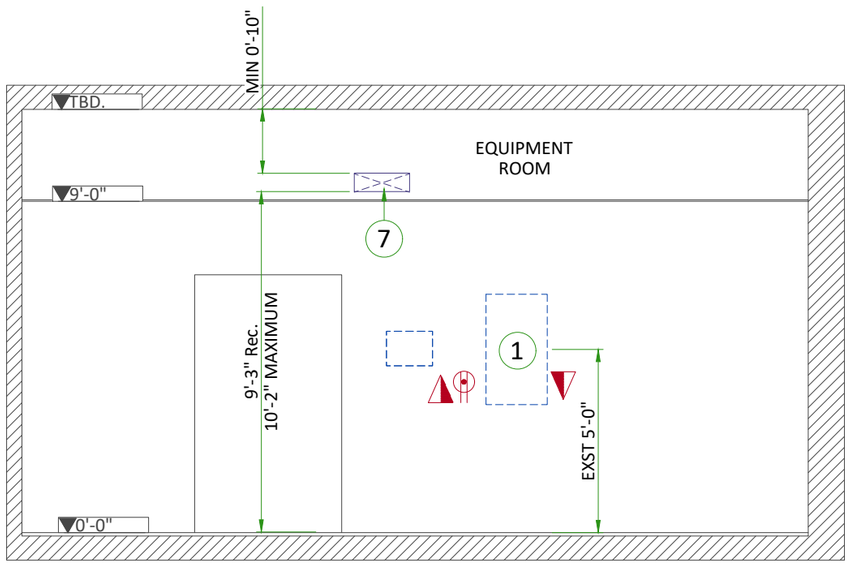
A


T.B.D.
CONTROL ROOM
T.B.D.
9
0'-4"
0'-0"

B


MIN 0'-10"
TBD.
EQUIPMENT ROOM
9'-0"
6
7
9'-3" Rec.
10'-2" MAXIMUM
0'-0"

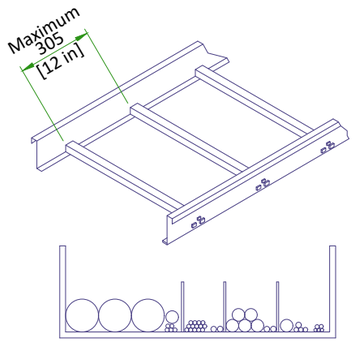
C

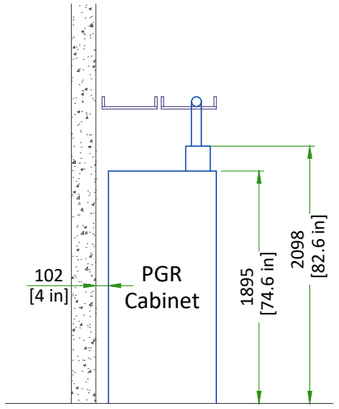

MIN 0'-10"
TBD.
EQUIPMENT
ROOM
9'-0"
7
9'-3" Rec.
10'-2" MAXIMUM
1
EXST 5'-0"
0'-0"

D

CABLE TRAYS IN EQUIPMENT ROOM

CABLE TRAY DETAIL





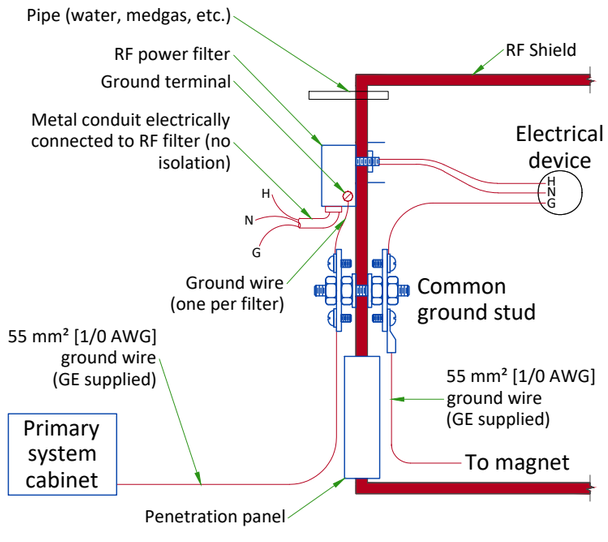
Minimum Cable Tray Width					
	PGR		ICC		OW
	Electrical	Air/Water	Electrical	Air/Water	Electrical
Pen Panel	300 [12 in]	N/A	N/A	450 [18 in]	76 [3 in]
PGR	N/A	N/A	76 [3 in]	150 [6 in]	76 [3 in]
ICC	76 [3 in]	150 [6 in]	N/A	N/A	N/A
OW	76 [3 in]	N/A	N/A	N/A	N/A

NOT TO SCALE

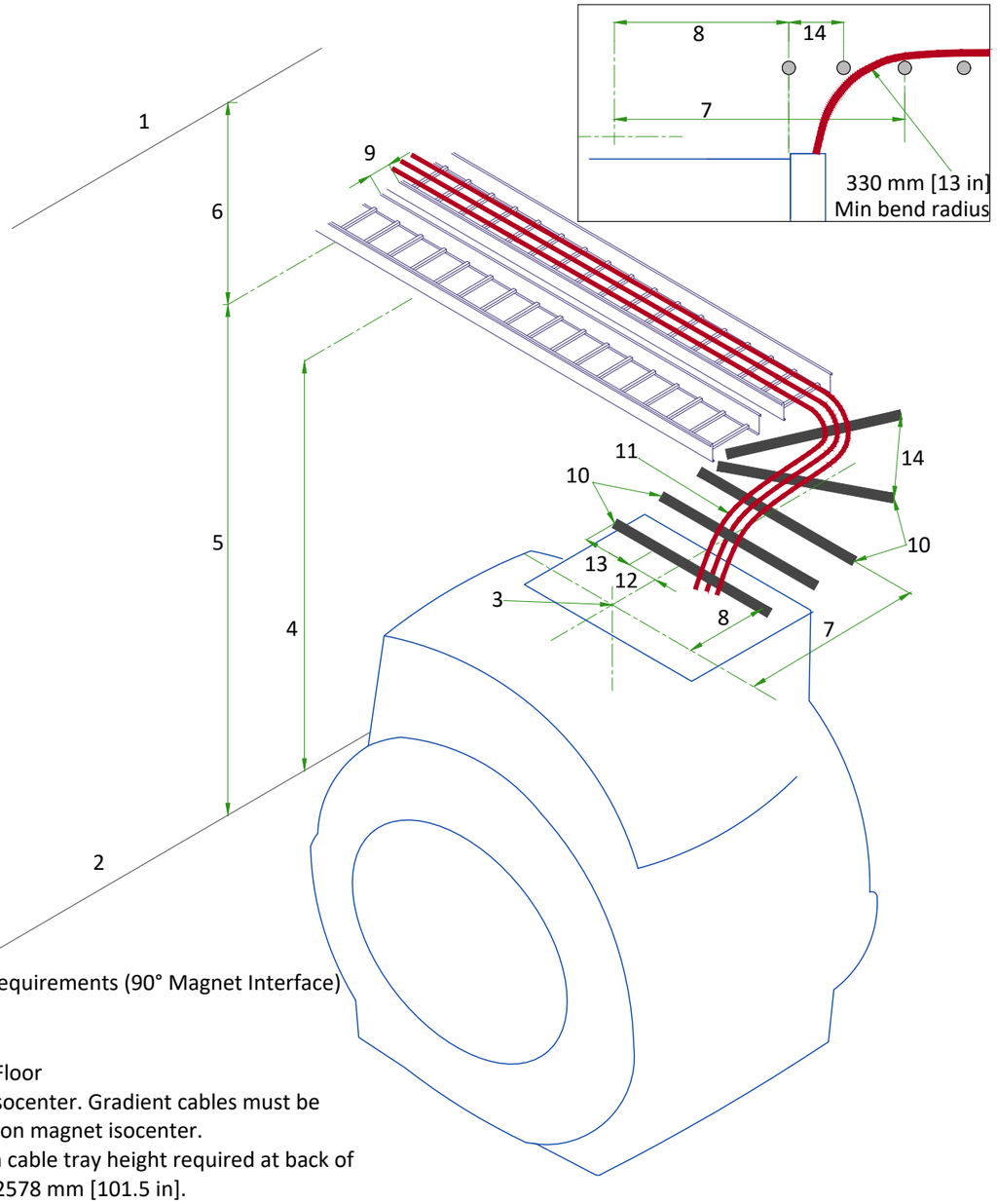
TYPICAL MAGNET ROOM GROUNDING

GROUNDING REQUIREMENTS

- All power lines into the RF shielded room require an RF filter.
- All electrical devices (for example, outlets, light fixtures, and so on) must have a ground wire from device power source and be grounded to the RF Shield at the RF Common Ground Stud.
- Resistance between any two grounded devices must not exceed 0.1 ohm to ensure equal potential ground system within the Magnet Room.
- Do not ground non-MR equipment to the MR ground system.
- The common ground stud must be installed near the penetration point(s) of the GE equipment, into the RF shield between the Equipment Room and Magnet Room.
- For additional information refer to RF Shielded Room manual 5850260-1EN



CABLE TRAYS REQUIREMENTS IN MAGNET ROOM



Cable Tray Requirements (90° Magnet Interface)

1 - Ceiling
2 - Finished Floor
3 - Magnet isocenter. Gradient cables must be centered on magnet isocenter.
4 - Minimum cable tray height required at back of Magnet: 2578 mm [101.5 in].
Tray height may be lower at other points to avoid obstructions.
5 - Maximum height from floor to top of tray (anywhere in Magnet room): 3251 mm [128 in].
6 - Minimum distance from top of cable tray to ceiling or other obstruction: 254 mm [10 in].
7 - Tray end to isocenter: 1336 ±12 mm [52.60 ±0.5 in].
8 - Other cable termination to isocenter: 955 ±12 mm [37.60 ±0.5 in].
9 - Minimum distance between trays: 12 mm [0.5 in].
10 - Non-ferrous cable support.
11 - Minimum gradient cable bend radius 330 mm [13 in].
12 - The center of the gradient cable group is 89 mm [3.5 in] from magnet center.
13 - Outer gradient cable is 450 mm [18 in] from edge of non-ferrous cable support.
14 - Distance between non-ferrous cable support: at least 305 mm [12 in].

POWER REQUIREMENTS

SPECIFICATIONS OF MAIN POWER INPUT

POWER SUPPLY	**380/400/415/480V ±10%, 3 PHASE + GND**
FREQUENCIES	**380/400/415V at 50Hz ± 3Hz, 480V at 60Hz ± 3Hz**
TOTAL SYSTEM 50ms PEAK POWER	**129 kVA**
TOTAL SYSTEM CONTINUOUS POWER	**88 kVA**
STAND-BY POWER	**< 17 kVA**

- Governing electrical codes may require a neutral wire. If present, neutral must be terminated in MDP.
- Power input must be separated from any others which may generate transients (elevators, air conditioning, radiology rooms equipped with high speed film changers...).
- Total voltage harmonic distortion less than 2.5%. Phase imbalance must not exceed 2%.
- Lock-out/Tag-out: The Main Disconnect Panel (MDP) shall provide an external single point lock-out/tag-out feature for the entire system and a means to externally lock-out/tag-out each output breaker independently. Each lock-out/tag-out feature shall accommodate a standard sized lock hasp.

SPECIFICATIONS OF OPTIONAL BACK-UP POWER SUPPLY

MAGNET MONITOR REQUIRES A 100-240 VAC, 50/60 HZ, 3.0 A FACILITY SUPPLIED OUTLET. POWER AT THE OUTLET MUST BE CONTINUOUSLY AVAILABLE.

FOR CRYOCOOLER COMPRESSOR	
POWER INPUT	**380/400/415/480V, THREE-PHASE + G**
POWER REQUIREMENT	**MIN 9kVA**
POWER CONSUMPTION	**MAX 7.2kW / STEADY STATE 6.5kW at 50Hz** **MAX 8.3kW / STEADY STATE 7.5kW at 60Hz**
FREQUENCY	**380/400/415V at 50Hz ± 3Hz, 480V at 60Hz ± 3Hz**
Power to Cryocooler Compressor must be removed when emergency off circuit is actuated.	

CABLES

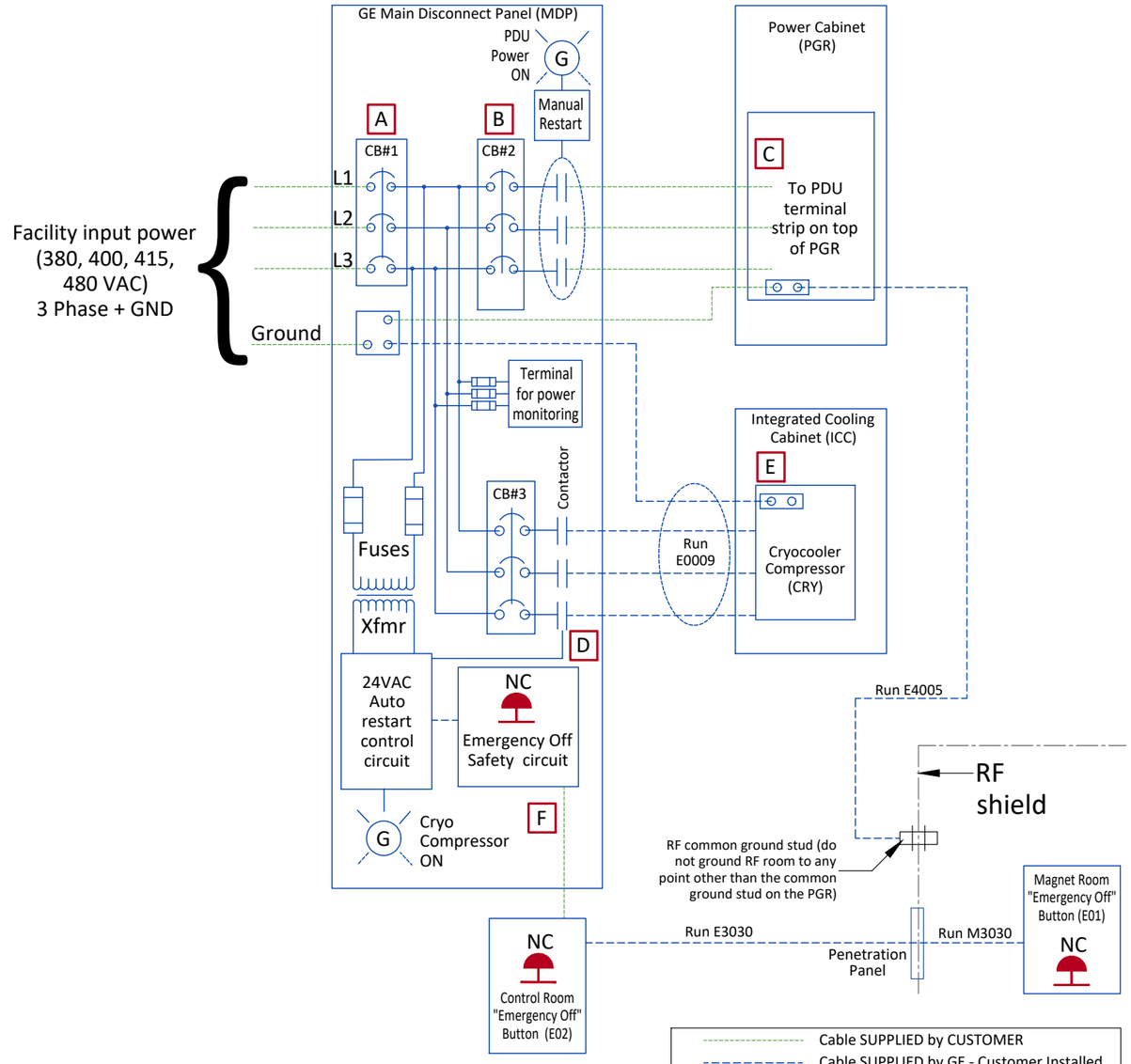
- Power and cable installation must comply with the distribution diagram.
- Size of the Main power input cable is determined by the customer, taking its length and admissible voltage drops into consideration.
- All cables must be isolated and flexible, cable color codes must comply with standards for electrical installation.
- The cables from signaling and remote control (Y,Emergency Off Buttons,L...) will go to Main Panel with a pigtail length of 1.5m [60in], and will be connected during installation.
- Each conductor will be identified and isolated (screw connector).

GROUND SYSTEM

- The equipotential link will be by means of an equipotential bar.
- The grounding point of MDP is directly connected to the building's ground by an isolated copper cable.
- The impedance of the earth bar should be less than or equal to 2 ohms.

GUIDANCE ON SLECTION OF FEEDER AND TRANSFORMER FOR MR SYSTEM			
	Direct feed from facility to MR system	MR system fed by dedicated facility distribution transformer	
Prerequisite Conditions			
MR System Incoming Voltage	480V 3-phase		
Minimum Source short-circuit kVA	7,900 kVA (at source of feeder to MDP)	8,325 kVA (at input to distribution transformer)	
Minimum No-Load Voltage	460V	475V (transformer secondary tapped accordingly)	
Feeder and Transformer Recommendations			
Dedicated Distribution Transformer Recommendations	N/A	Size: 225 kVA Impedance (Z): ≤5% K-Factor: ≥ K=20 200A overcurrent protection on secondary*	Size: 225 kVA Impedance (Z): ≤4% K-Factor: ≥ K=20 200A overcurrent protection on secondary*
Maximum Feeder Length*	280 ft	150 ft	240 ft
Feeder Size - 3-phase power conductors*	3/0 AWG Cu	3/0 AWG Cu	
Feeder Size - Ground (USA)*	6 AWG Cu (equipment grounding conductor)	4 AWG Cu (supply side bonding jumper) 6 AWG Cu (equipment grounding conductor)	
Feeder Size - Ground (Canada)*	6 AWG Cu (bonding conductor)	6 AWG Cu (bonding conductor)	
* NOTE: Recommendations shown apply only to cases defined exactly as shown in this table and when not in conflict with local electrical codes . For all other cases, refer to the local codes and the System Voltage Regulation Calculator located on the GE Healthcare Site Planning Website			

POWER DISTRIBUTION



NOTES:

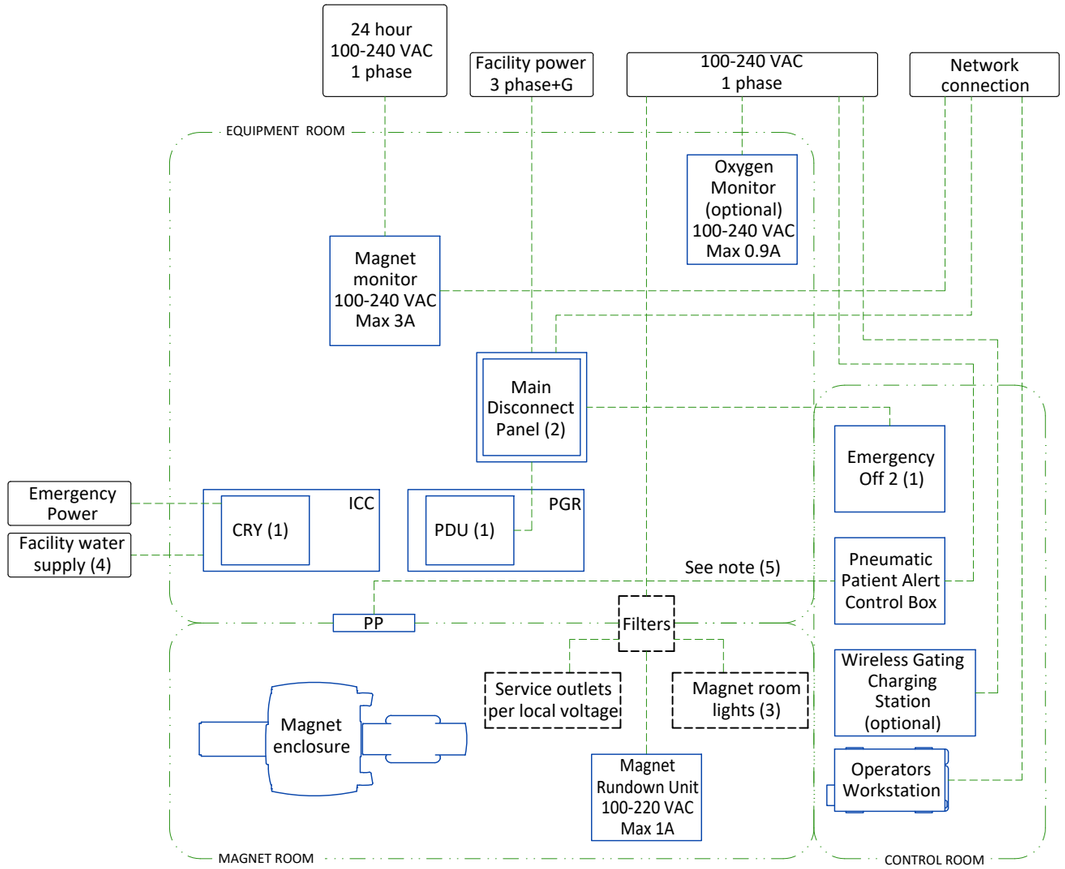
1) Cryocooler Compressor (CRY) must operate 24 hours per day, 7 days per week.
2) Runs E0009, E3030 and M3030 are GE supplied cables. All other wiring is customer supplied and installed.
3) Two remote Emergency Off Maintained Buttons are supplied with the MDP. Emergency Off removes power from all outputs when activated.
4) All MDP output circuits drop out on loss of power. the Cryocooler (CRY) circuit will automatically restart upon restoration of power.
5) MDP Short circuit current rating is 25,000 amperes at 480 VAC.
6) MDP is NRTL labeled.
7) All feeder circuits require dedicated ground wires.

CB	MDP
1	200 A
2	150 A
3	25 A

Accepts following range of standard stranded conductors. All wire types, color and sizing to be selected in accordance with governing electrical code(s).

GE MDP M7100ZA 380V-480V				
Item	Phase		Ground	
	sq mm	AWG/kcmil	sq mm	AWG/kcmil
A	6-120	10-250	16-120	6-250
B	10-120	8-250	35-120	2-250
C	2.5-70	14-2/0	2.5-70	14-2/0
D	2.5-4	14-10	2.5-16	14-10
E	2.5-6	14-10	2.5-6	14-10
F	0.5-10	22-10	-	-

FACILITY SUPPLIED WIRING



This diagram displays minimum power requirements for GE equipment and should be used as a guide to determine appropriate wire sizes per local regulatory requirements.

CRY	Cryocooler Compressor (Inside ICC)
ICC	Integrated Cooling Cabinet
PDU	Power Distribution Unit (inside PGR)
PGR	Power, Gradient, RF Cabinet
PP	Penetration Panel

Notes :

(1) Refer to Power Distribution detail for more information

(2) Size incoming wires from GE equipment according to conductor sizes listed on Power Distribution detail.
A network connection must be provided near the MDP to support power quality monitoring.

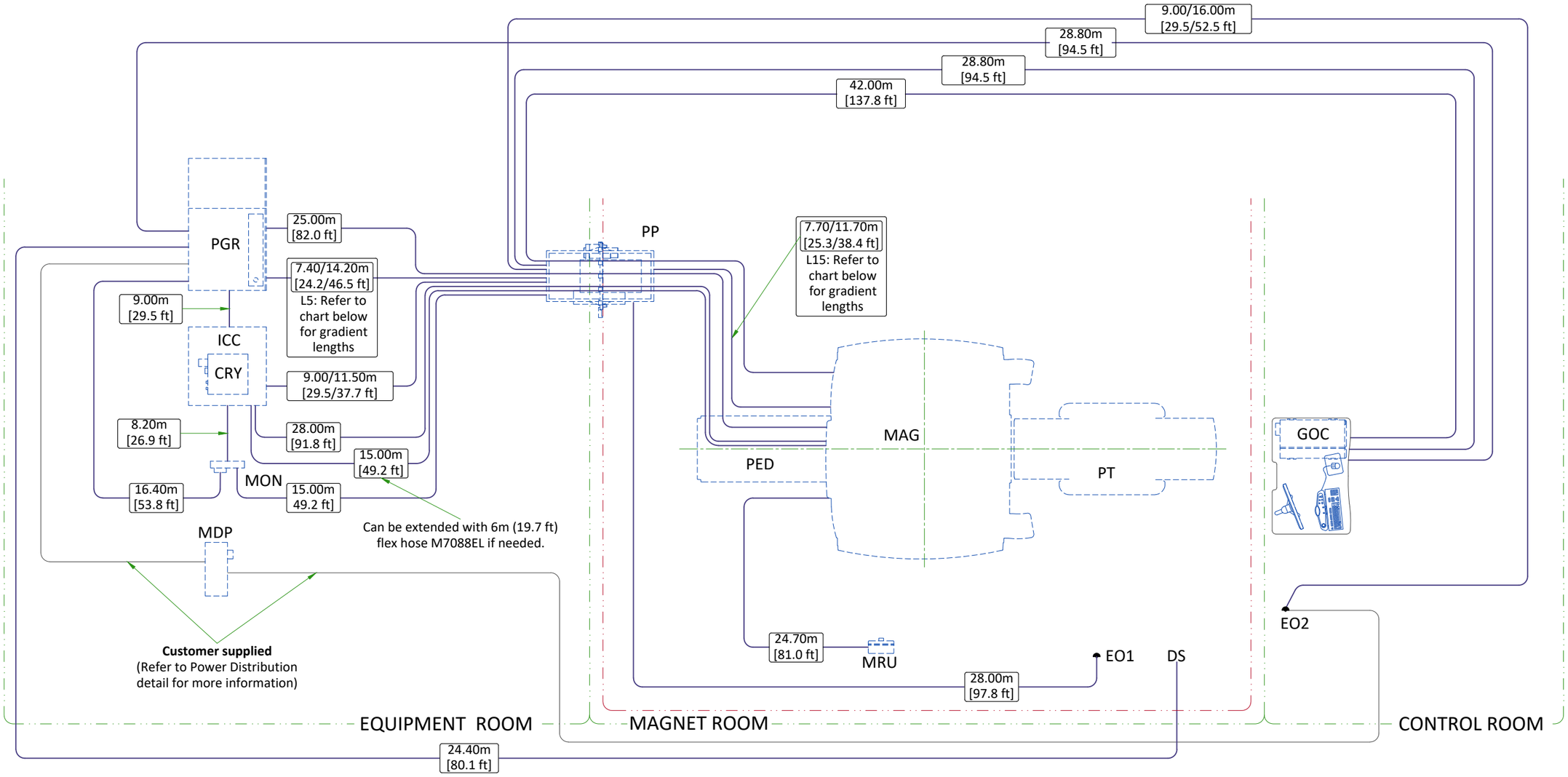
(3) Refer to Lighting Requirements detail

(4) This group contains water lines which shall be routed separate from electrical lines (I.E. power and signal)

(5) A cable is supplied by GE but may be extended if needed.

- - - - - Cable SUPPLIED BY CUSTOMER
——— Equipment SUPPLIED BY GE
_ _ _ _ _ Equipment SUPPLIED BY CUSTOMER

INTERCONNECTIONS



GRADIENT CABLE LENGTH OPTIONS

Length Identifier	Available lengths m (ft)	Proposed
L5	3.7 (12.9)	-
	5.7 (18.7)	-
	7.7 (25.3)	-
	9.7 (31.8)	-
	11.7 (38.4)	-
	13.7 (45.0)	-
	15.7 (51.5)	-
L15	4.6 (15.1)	-
	6.6 (21.6)	-
	8.6 (28.2)	-
	10.6 (34.7)	-
	12.6 (41.3)	-

CABLE ROUTING FOR ACCESSORIES

OPTION	FROM	TO	CABLE LENGTH m (ft)
Magnetic Resonance Elastograpy (MRE)	MRE	Magnet (Isocenter)	Nominal: 7.31 (24) Maximum: 10.06 (33)
	MRE	PP	15.24 (50)
	MRE	Ethernet Hub in PGR	15.24 (50)
	MRE	Customer Supplied Outlet	60Hz: 6.10 (20) 50Hz: 7.62 (25)
Multi-Nuclear Spectroscopy (MNS)	MNS	PGR	9.85 (32.3)
	MNS	PGR	7.85 (25.7)/14 (45.9)
	PP	PGR	8.2 (26.9)/14.35 (47)
Brainwave (BW)	BW	PP	18.3 (60)

GENERAL NOTE: PMI must validate proposed selectables and send confirmation to OTR. Refer to MyProjects if Proposed field is blank.
GOLDSEAL/SILVER PREFERRED NOTE: Cable lengths listed may differ from what is shipped with the system. Contact the Goldseal group for actual lengths to be delivered.
ROOM MOVE NOTE: Cable lengths listed may differ from what is included with reinstalled system. Contact the local field engineer for actual lengths to be delivered.

Order Configuration Options

Configuration	Equipment Room - site option	Magnet Room - site option	Proposed
A	Short	Short	-
B	Long	Short	-
C	Short	Long	-

Product Name (Components)	CAS Number	Location	Container > 55 gal	Haz Class 1	Haz Class 2	Haz Class 3	Stored (lbs)	Stored (gal)	Stored (gas)	Closed (lbs)	Closed (gal)	Closed (gas)	Open (lbs)	Open (gal)
CARBON DIOXIDE TANKS (CO2 gas)	124-38-9	CT 02 Procedure room	Q cylinder		CO2				160 cu. ft. (Total)			160 cu ft. (Total)		
OXYGEN, GAS (Oxygen)	7782-44-7	CT 02 Procedure room	Piped	OXG					N/A			N/A		

City of Aurora Building Division Reviewed for Code Compliance By: *SKirchner*
Date: *Oct 23, 2024*
2021 INTERNATIONAL CODES & 2023 NEC
FIRE/LIFE SAFETY REVIEW ONLY