

ADDENDUM

Date Issued:	Jan 7, 2025
Project:	Intermountain Health RAD Room Remodel 3741 West 12600 South Riverton, Utah 84065
Addendum Number:	1

The Contractors submitting proposals on the above-captioned project shall be governed by the following addendum, changes and explanations to the drawings and specifications and shall submit their bids in accordance therewith.

Item Number	General Items Description
1	Contractor's dumpster shall have provision to cover dumpster when not in use to prevent debris from flying away.
2	Contractor shall be responsible for disposing of any waste or packaging generated by the owner's vendor (GE) as it relates to equipment packaging and installation. Coordinate with vendor for packaging to be disposed.

Sheet Number	Drawings
Architectural Drawings	
G001	Revise note for vendor equipment installation as indicated.
A110	Add sheet. Add keynote 01.15 as indicated.
A111	Revise ICRA barriers as indicated. Add keynote 01.13 and 09.25 as indicated.
A112	Add keynote 21.01 as indicated.
Structural Drawings	
S100	Add sheet.

Attachments:

S100, G001, A110, A111, A112, Physicist's Shielding Report

Intermountain Health

Riverton Hospital Radiology Room Remodel

3741 West 12600 South
Riverton, Utah 84065

Construction Documents

NOTES ON VENDOR EQUIPMENT INSTALLATION

GE DRAWINGS FOR XRAY UNIT INSTALLATION HAVE BEEN INCLUDED AS PART OF THE CONSTRUCTION DOCUMENTS FOR COORDINATION PURPOSES. THE OWNER, INTERMOUNTAIN HEALTH, SHALL PAY GE DIRECTLY FOR THEIR CONSTRUCTION WORK. GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL COORDINATE WITH GE INSTALLATION DRAWINGS, AND PROVIDE REQUIRED WORK SCHEDULING DURING CONSTRUCTION. **ITEMS MENTIONED AS "PROVIDED BY OTHERS" IN THE GE DRAWINGS SHALL BE PROVIDED BY GENERAL CONTRACTOR AND THEIR SUB-CONTRACTORS.** IF THERE IS ANY CLARIFICATION REQUIRED, CONTRACTORS SHALL CHECK WITH THE A/E DESIGN TEAM DURING THE BIDDING PHASE.

CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ANY WASTE OR PACKAGING GENERATED BY THE OWNER'S VENDOR (GE) AS IT RELATES TO EQUIPMENT PACKAGING AND INSTALLATION. COORDINATE WITH VENDOR FOR PACKAGING TO BE DISPOSED.

DESIGN TEAM	
ARCHITECT NJRA Architects, Inc. 5223 South Ascension Way, Suite 350 Murray, Utah 84123 Phone: 801.364.9259 Contacts: Project Manager: Robert Howell Email: robhow@njraarchitects.com	
MECHANICAL ENGINEER VBFA 181 E 5600 S #200 Murray, UT 84123Phone: Contacts: 801.530.3148 Project Manager: Jared Smith Email: jsmith@vbfa.com	
ELECTRICAL ENGINEER Spectrum Engineers 324 S State St Suite 400 Salt Lake City, UT 84111 Phone: 801.328.5151 Contacts: Project Manager: Brendan Arlto Email: brendan.arlto@speceng.com	
STRUCTURAL ENGINEER Reaveley Engineers 515 E 100 S #1200 Salt Lake City, UT 84102 Phone: 801.466.3883 Contacts: Project Manager: Cameron Luvvardi Email: cluvvardi@reaveley.com	



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Intermountain Health
Riverton Hospital
Radiology Room Remodel

3741 West 12600 South
Riverton, Utah 84065

NJRA Project #	24230.00
Construction Documents	Oct. 25, 2024
I Addendum #01	Jan 7, 2025

Cover Sheet

G001



November 15, 2024

Robert Howell
NJRA Architects
5223 S. Ascension Way, Suite 350
Murray, UT 84123

Subject: Intermountain Riverton Hospital Radiation Room Remodel – Structural Evaluation

Robert,

Background:

At your request, I have evaluated the Radiation Room on Level 1 of Intermountain Health Riverton Hospital, located at 3741 W 12600 S, Riverton, UT 84065 for the new equipment loads per the GE Healthcare Definium XR656 HD drawings dated 10/25/2024. Per your email dated September 26, 2024, I understand that the existing slotted channel framing layout will remain unchanged for the new equipment. The current equipment in use is a Philips unit.

Existing Structure/Equipment:

According to the record drawings, the floor slab in the room is comprised of a 6" thick concrete slab on grade reinforced with #4 bar at 16 inches on center each way. This is the case for the three radiation equipment rooms aligned east to west. The level two structure is comprised of a 3 1/2" lightweight concrete slab over 3" W deck (6 1/2" total) with composite wide-flanged beams.

Observation:

On October 24, 2024, I observed the existing slotted channel framing above the ceiling. Key observations include:

- Framing layout: P1001 finish rails spaced approximately 3'-6" on center and P1001 lash rails spaced roughly 4'-0" on center. Telestrut vertical hangers are also spaced at approximately 4'-0" on center.
- Connections: Telestrut hangers are mounted to lash and deck connection struts with 1/2-inch thick mounting plates. Deck connection struts are either P1001 or P5500 sections with two post-installed expansion anchors at each post into the underside of the concrete deck.
- Bracing: Diagonal P1000 bracing is present in both directions.
- Fasteners: 1/2-inch typical slotted channel framing bolts.
- Beam clamps are used where beams obstruct telestrut hangers.

Due to limited access, dimensional information, bracing spacing, and expansion anchor details could not be verified.

Equipment:

The existing Philips equipment drawings indicate the ceiling-mounted tube crane, with cable carrier rail, motor, and extension rails, weighs approximately 922 lbs.

515 EAST 100 SOUTH SUITE 1200 • SALT LAKE CITY, UT 84102
reaveley.com

According to the GE Healthcare Definium drawings, the ceiling support OTS with bridge and cable chain weighs 1,219 lbs, the wall stand weighs 626 lbs, and the table weighs 838 lbs. The new ceiling equipment weighs more than the existing equipment. The vendor drawings reference reuse of the existing slotted channel framing finish rails.

Table Anchorage:

According to the GE Healthcare Definium drawings page 9, the table base anchorage requires a minimum embedment of 3.54" into the concrete. The existing vendor supplied M8x190 anchors were evaluated and found sufficient to resist the seismic forces.

Wall Stand Anchorage:

According to the GE Healthcare Definium drawings page 9, the vendor supplied M10x150 anchors were evaluated and found sufficient to resist the seismic forces.

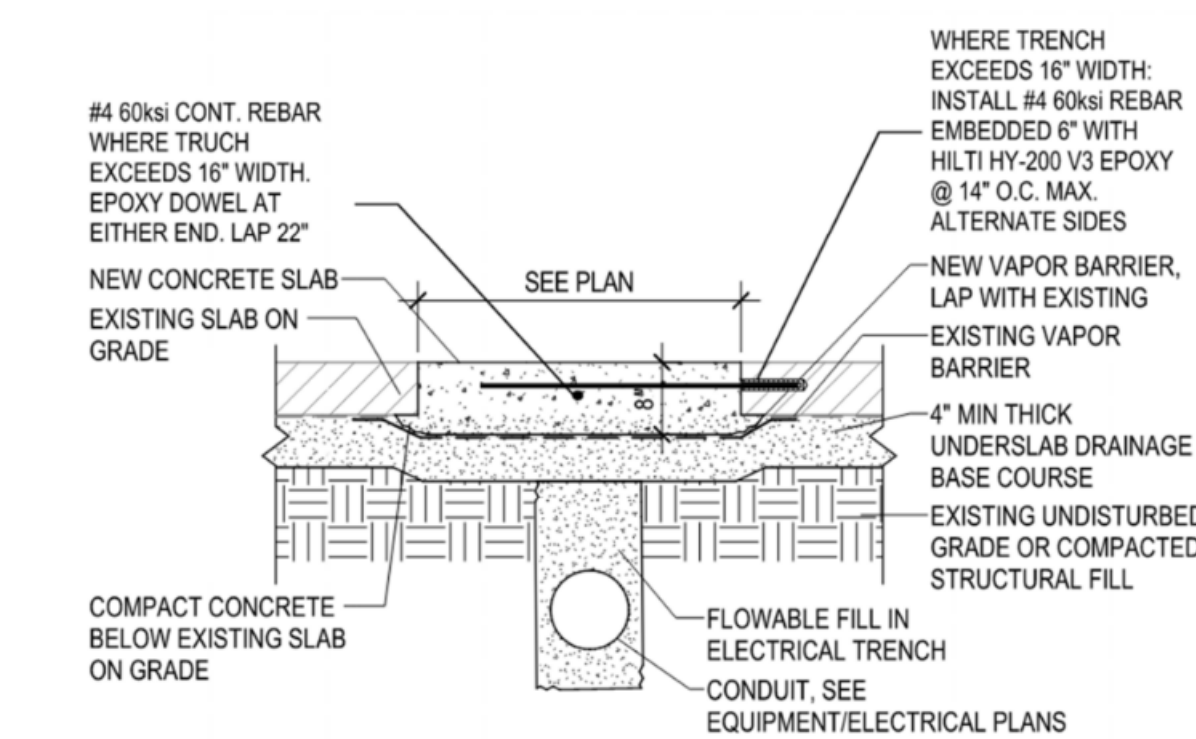
Ceiling Support:

The existing Unistrut grid system, evaluated using proprietary software and Unistrut technical data, is adequate for the new ceiling-mounted equipment. Any loose bolts, missing hardware, or visible non-compliance should be reported to the structural engineer. Bolts should be tightened to the following specifications:

Bolt Size	Required Torque (ft.-lbs)	Max Torque (ft.-lbs)
1/4"-20	6	7
7/16"-18	11	15
1/2"-16	19	25
5/8"-13	50	70
3/4"-11	100	125
1"-10	125	135

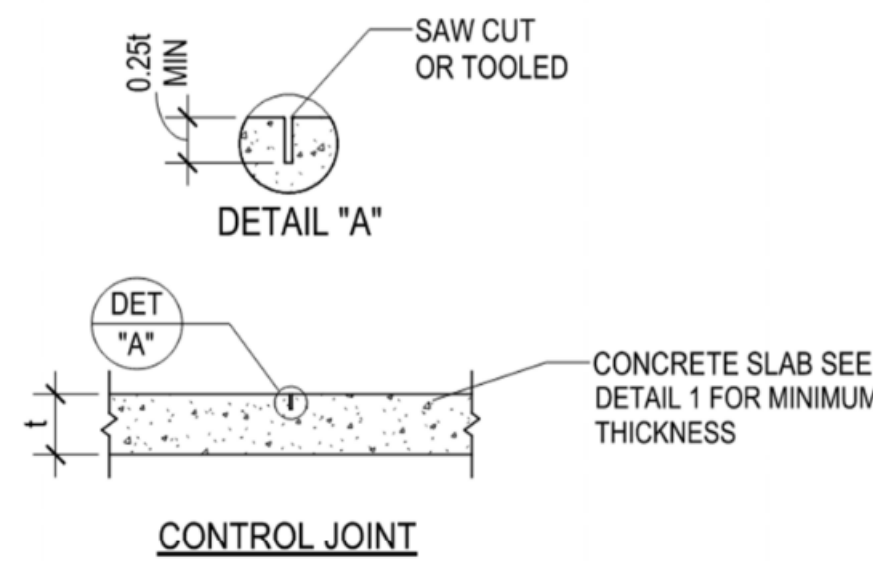
Concrete Slab Work:

Trench fill for electrical, mechanical, or plumbing installations should follow Detail 1 and comply with specification sections 033000 and 312323.33. Conduits less than 3 inches in diameter may be backfilled with compacted granular fill or clean sand. Control joints in the new concrete should match existing joint locations or be spaced a maximum of 2 feet on center to minimize cracking.



1 TYPICAL CONCRETE SLAB ON GRADE PROFILE AT TRENCH
NO SCALE

Within twelve hours of concrete placement, the contractor should install control joints in the new concrete to match existing control joint locations or maximum two feet on center across the width of the trench. These joints will help limit cracking of the new concrete.



2 TYPICAL CONCRETE SLAB ON GRADE CONTROL JOINT DETAIL
NO SCALE

Special Inspections:

To comply with the International Building Code, I advise the owner to engage a qualified quality assurance agency to:

- Inspect post-installed mechanical or epoxy anchors per their respective ICC Evaluation Report.
- Inspect concrete mix design and placement per International Building Code Section 1705.3.

Should you have any questions or require further clarification, please feel free to contact me.

Sincerely,

Camero T. Lusvardi, PE
Senior Engineer
(801) 745-7357
cl Lusvardi@reaveley.com

1/6/2025 3:15:30 PM

1

Floor Plan Level 1

SCALE: 1" = 20'-0"

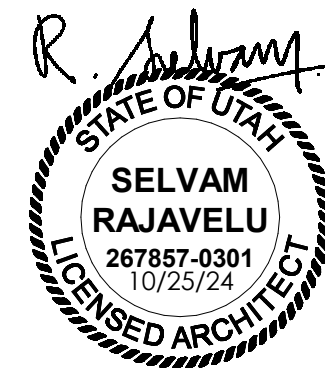


KEYED NOTES

01.15 LINE INDICATES CONTRACTOR ENTRANCE AND EQUIPMENT AND MATERIALS DELIVERY PATH. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING FINISHES ALONG THIS PATH. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE ALONG THIS PATH AS A RESULT OF CONSTRUCTION ACTIVITIES OR MATERIALS AND EQUIPMENT DELIVERY. CONTRACTOR SHALL PROVIDE DUMPSTER WITH COVER. COORDINATE DUMPSTER LOCATION WITH OWNER.

NJRA
ARCHITECTS

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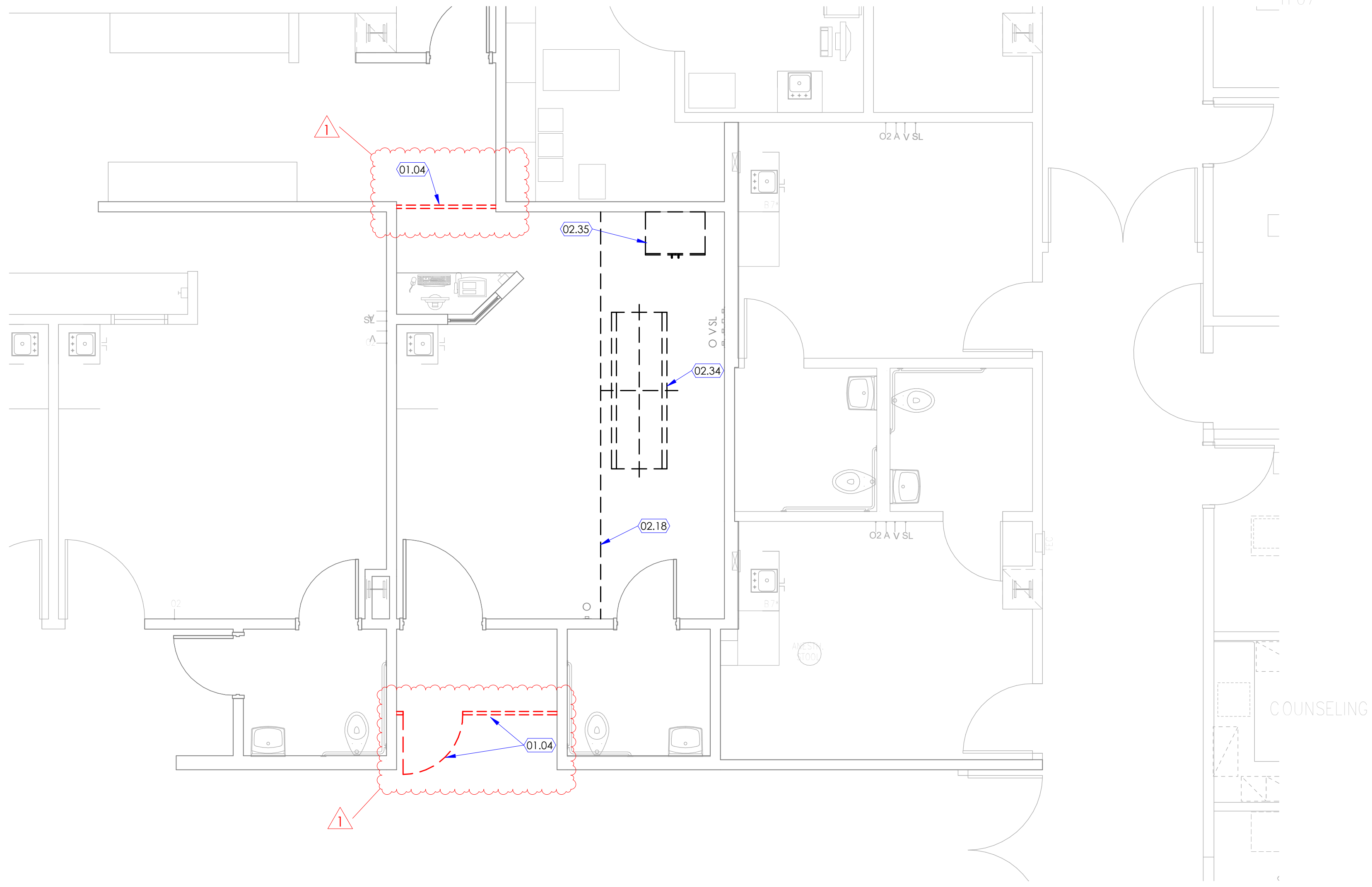
Intermountain Health
Riverton Hospital
Radiology Room Remodel

3741 West 12600 South
Riverton, Utah 84065

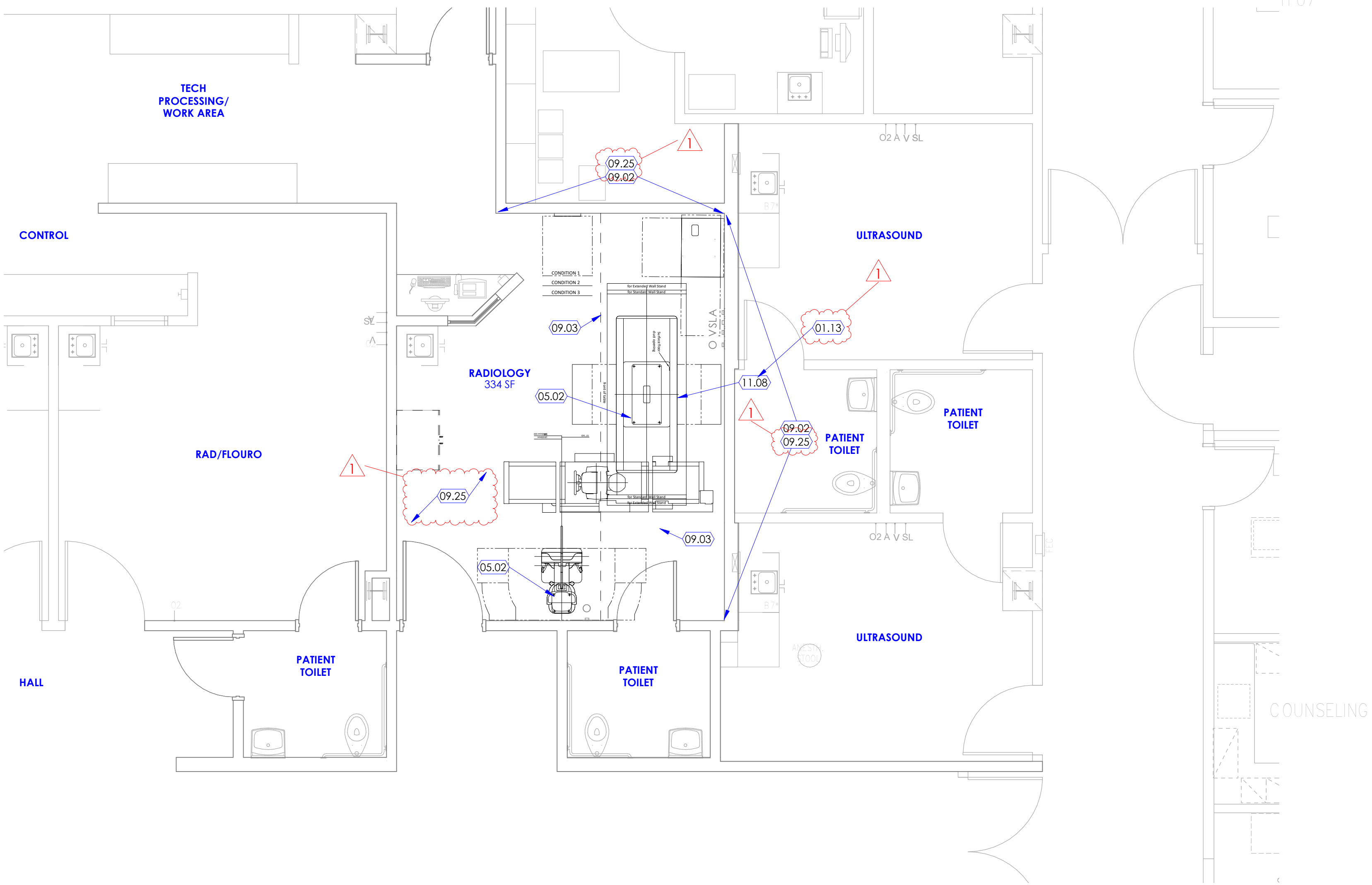
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Floor Plan
Level 1 -
Overall

A110

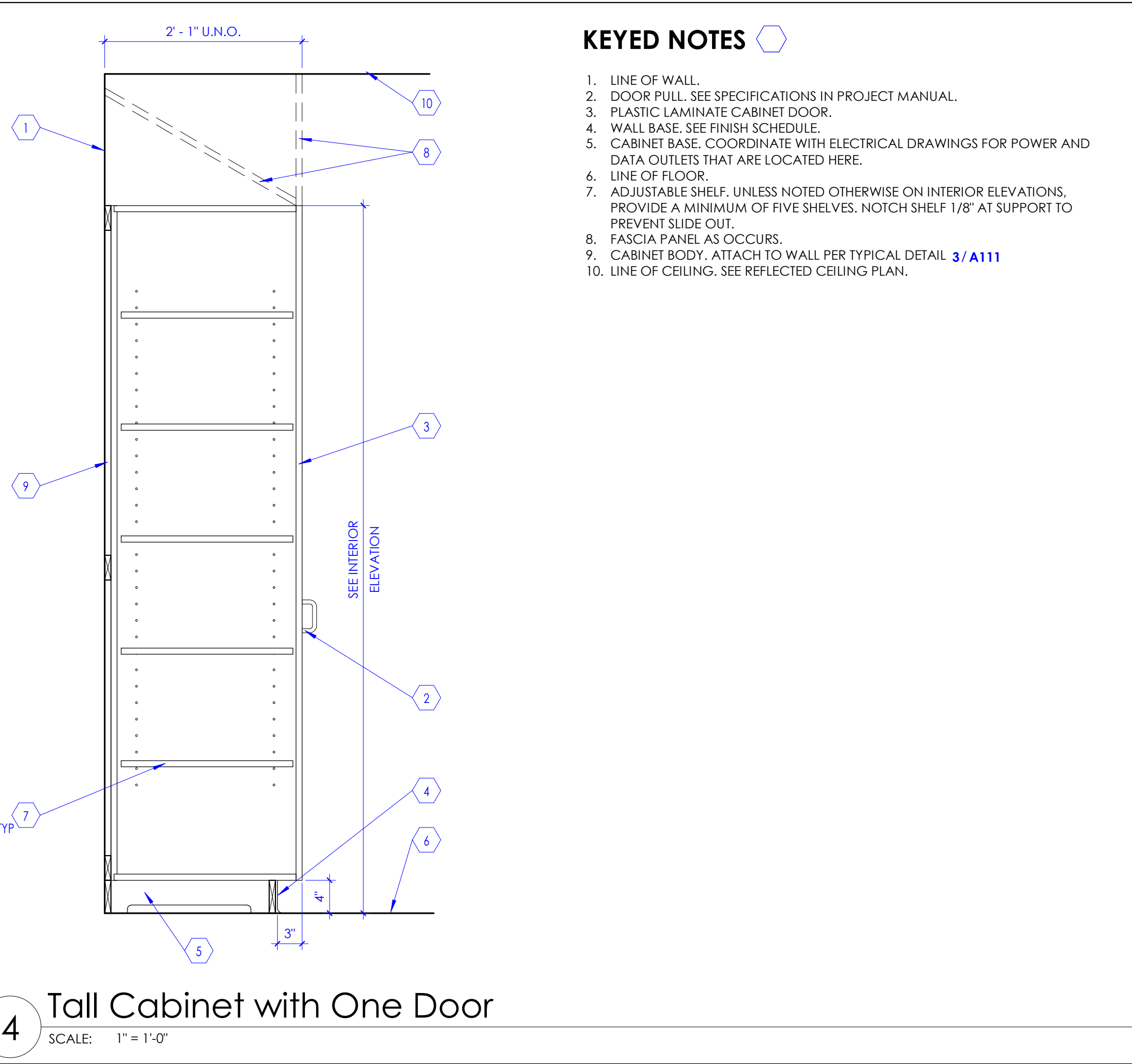
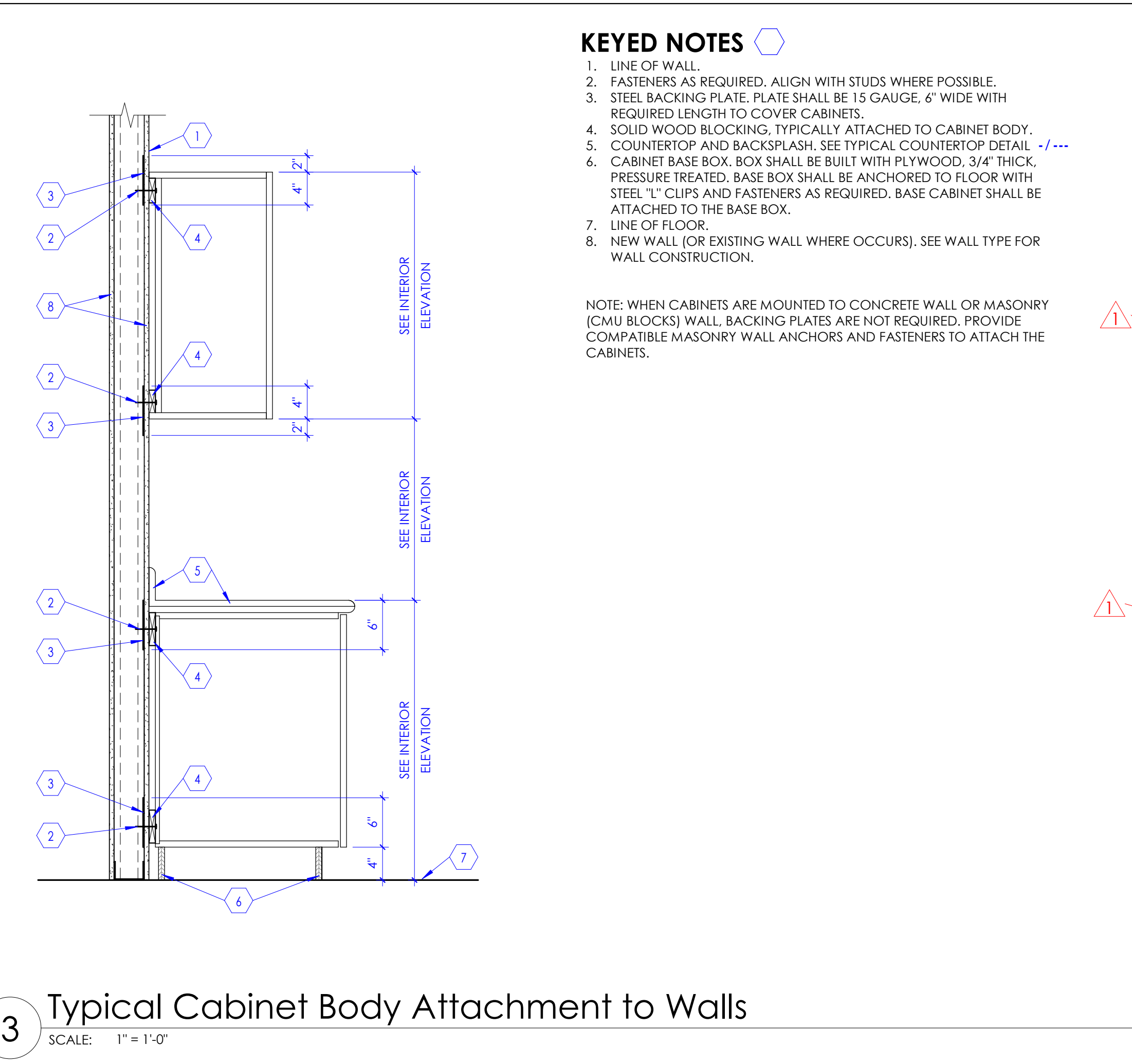


1 Demolition Floor Plan Level 1
SCALE: 1/4" = 1'-0"



2 Floor Plan Level 1
SCALE: 1/4" = 1'-0"

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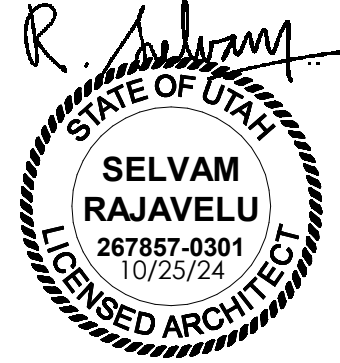


- ### KEYED NOTES
- 01.04 DUST PARTITION (FROM FLOOR TO CEILING) WITH DOORS AS REQUIRED TO ACCESS CONSTRUCTION ZONE. LOCATE AND ALIGN PARTITION WITH CEILING GRID (AND/OR) GYPSUM BOARD CEILING WHERE OCCURS) ABOVE AS MUCH AS POSSIBLE FOR TIGHT SEAL. IF THERE IS A CONFLICT, WHERE PARTITION ABUTS CEILING, MOVE ITEMS MOUNTED ON CEILING SUCH AS EXIT SIGN, FIRE/SMOKE ALARM, LIGHT FIXTURE, DIFFUSER, RETURN AIR GRILLE, SENSOR, ETC. TEMPORARILY AWAY FROM THE LOCATION. PROVIDE ANTE ROOM AS INDICATE. MAINTAIN NEGATIVE PRESSURE IN THE CONSTRUCTION ZONE WITH REQUIRED PORTABLE VACUUM MACHINE (OR EXHAUST FANS), WITH HEPA FILTERS. TEMPORARY FLEXIBLE HOSE TYPE DUCTS TO EXHAUST FILTERED AIR AS INDICATED. DUST PARTITION SHALL BE FIRE RATED, POLYCARBONATE, TRANSLUCENT, PLASTIC PANELS WITH METAL FRAMES ON ALL SIDES. INSTALL PARTITION PER MANUFACTURER'S RECOMMENDATIONS. PARTITION MANUFACTURER SHALL BE "EDGE-GUARD" OR EQUIVALENT. MOVE ACCESS DOOR TO THE CONSTRUCTION ZONE AS REQUIRED DURING THE CONSTRUCTION PHASE. SEE "ICRA" (INFECTION CONTROL RISK ASSESSMENT) REQUIREMENTS AND ICRA WORK PERMIT FORM IN THE PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS.
 - 01.13 CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF VENDOR'S EQUIPMENT PACKAGING. COORDINATE WITH VENDOR AS REQUIRED.
 - 02.18 FLOOR COVERING EXISTING TO BE REMOVED. REMOVE FLOOR COVERING ONLY BENEATH EXISTING X-RAY TABLE. REMOVE COVERING TO EXISTING SEAM IN FLOOR.
 - 02.34 X-RAY EQUIPMENT. EXISTING TO BE REMOVED BY OWNER'S VENDOR. NOT IN CONTRACT.
 - 02.35 MILLWORK. EXISTING TO BE REMOVED AND RELOCATED. CAREFULLY REMOVE MILLWORK AND STORE DURING DEMOLITION PHASE TO BE USED IN NEW CONSTRUCTION PHASE.
 - 05.02 X-RAY UNIT MOUNTING PLATE O.F.C.I. SEE VENDOR (G.E.) DRAWINGS FOR INSTALLATION REQUIREMENTS.
 - 09.02 PAINT. PAINT ENTIRE WALL FROM FLOOR TO CEILING TO MATCH EXISTING.
 - 09.03 FLOOR COVERING. PROVIDE NEW SHEET VINYL FLOOR COVERING TO MATCH ADJACENT SHEET VINYL. SHEET VINYL SHALL BE MANNINGTON BIOSPEC MD IN THE COLOR SANDORFI 15023.
 - 09.25 PATCH WALLS AS REQUIRED WITH EQUIVALENT LEAD (Pb) SHIELDING. SEE PHYSICIST'S REPORT.
 - 11.08 X-RAY EQUIPMENT. NOT IN CONTRACT. VENDOR INSTALLED. COORDINATE WITH EQUIPMENT VENDOR AS REQUIRED. SEE ELECTRICAL DRAWINGS. SEE VENDOR DRAWINGS.

- ### GENERAL NOTES
- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.
 - B. SEE SHEET A505A FOR CABINET LEGEND.
 - C. SEE SHEET A601A FOR DOOR SCHEDULE.
 - D. SEE SHEET A602A FOR WINDOW SCHEDULE.
 - E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.



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Demo and
New Floor
Plan Level 1

A111



3741 West 12600 South
Riverton, Utah 84065

NJRA Project #	24230.00
Construction Documents	Oct. 25, 2024
1 Addendum #01	Jan 7, 2025

Demo and
New
Reflected
Ceiling Plan
Level 1
A112



KEYED NOTES

- 02.02 DRYWALL- EXISTING TO BE REMOVED AS REQUIRED.
- 02.21 ACCESS PANEL EXISTING TO BE REMOVED AND RELOCATED.
- 02.22 UNISTRUT X-RAY TIE MOUNTING ASSEMBLY- EXISTING TO REMAIN.
- 02.25 LIGHT FIXTURE- EXISTING TO BE REMOVED.
- 09.17 PAINT, PAINT ENTIRE CEILING TO MATCH EXISTING COLOR.
- 09.19 PATCH DRYWALL- RELOCATE LIGHT FIXTURE PENETRATION AS REQUIRED.
COORDINATE WITH LIGHTING EQUIPMENT. PATCH DRYWALL AS REQUIRED, SEE
VENDOR DRAWINGS, SEE ELECTRICAL DRAWINGS.
- 10.25 ACCESS PANEL, REUSE FROM PREVIOUS DEMO PHASE, COORDINATE EXACT
LOCATION WITH VENDOR EQUIPMENT, SEE VENDOR DRAWINGS.
- 21.01 FIRE SPRINKLER HEAD- EXISTING TO BE RELOCATED, RELOCATE FIRE SPRINKLER
HEAD TO NEW LOCATION AS REQUIRED.
- 26.03 LIGHT FIXTURE- REPLACE EXISTING LIGHT FIXTURES WITH NEW LED FIXTURES, SEE
ELECTRICAL DRAWINGS.

GENERAL NOTES

- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.
- B. SEE SHEET A505A FOR CABINET LEGEND.
- C. SEE SHEET A601A FOR DOOR SCHEDULE.
- D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.





November 7, 2024

Gavin Swenson
Riverton Hospital – Intermountain Healthcare
3741 W 12600 S
Riverton, UT 84065

RE: Riverton Hospital- Intermountain Healthcare Replacement Radiographic Room Definium 656 HD

Dear Mr. Swenson,

Enclosed, please find the calculations for the amount of shielding required in the **Riverton Hospital- Intermountain Healthcare Radiographic Room (replacement unit Definium 656 HD) located at Riverton Hospital 3741 W 12600 S Riverton Utah 84065**. The enclosed calculations are based on information you provided and current radiation protection operational guidelines with regards to X-ray patient workloads, etc. in NCRP Report No. 147. **If you do not agree with the factors and assumptions used and find them insufficient, please contact me as the calculations may not be valid. If the use of the surrounding areas or the position of the X-ray equipment changes, the shielding specifications must be re-evaluated to ensure proper radiation safety for all areas.**

Installing the specified **required** shielding will reduce the exposure to less than the regulatory required levels, i.e. 0.02 mSv/week (2 mrem/week) or 1 mSv/year (100 mrem/year) to members of the general public, and 0.1 mSv/week (10 mrem/week) or 5 mSv/year (500 mrem/year) to occupationally exposed employees. If there is existing lead, you can measure the existing thickness and subtract the exiting thickness from the calculations. A narrative description of the shielding requirements and recommendations follows.

General Comments:

- Walls are to be constructed with leaded (Pb) drywall of specified thickness with the lead (Pb) extending from the floor to a height of at least seven feet unless lead is required in the ceiling then the leaded drywall must extend all the way to the ceiling from the floor. The screws/nails do NOT need to be capped with lead (Pb).
- All electrical outlets, switches, and other penetrations of all shielded walls are to be backed with the same thickness of lead (Pb) as the wall that they penetrate.
- The door and jamb are to be lined with the same thickness of lead (Pb) as the wall that they penetrate, unless specified otherwise. Be sure that the leaded doorframe overlaps the lead (Pb) in the gypsum drywall.
- As part of the control booth wall the patient viewing window (at least 1 sq. ft. viewable area) and windowsill must have the same lead (Pb) equivalency as the wall that they penetrate. Be sure the leaded windowsill overlaps the lead (Pb) in the gypsum drywall. The viewing window center may not be closer than 24 inches to the booth's open edge
- To guarantee a safe operator's position, the exposure switch must be located at least 39 inches (1 meter) from the end of the control barrier.

Corporate: 214 E. Huron Street, Ann Arbor, MI 48104 (734) 662-3197 Fax: (734) 662-9224

Regional: 50 E. 91st Street, Suite 211, Indianapolis, IN 46240 (317) 581-1911 Fax: (317) 581-1931

Salt Lake City, UT  Sussex, WI  Springfield, IL

www.mpcphysics.com  mpc@mpcphysics.com

WORKLOAD

For the Radiographic Room a workload of 280 mA-min/week was used in the following calculations.

RADIOGRAPHIC ROOM SHIELDING SPECIFICATIONS**Control Area (North on Floor Plan Overall):**

Required shielding: 0.14 mm lead (Pb equivalence) (1/32-inch lead)

North Wall (adjacent to cardiac room):

Required shielding: 0.27 mm lead (Pb equivalence) (1/32-inch lead)

East Wall (adjacent to ultrasound):

Required shielding: 1.57 mm lead (Pb) equivalence (1/16-inch lead)

South Wall (adjacent to corridor):

Required shielding: 0.99 mm lead (Pb) equivalence (1/16-inch lead)

Note: the image bucky/receptor attenuation of primary beam is not considered, but typically equates to 0.85 mm lead therefore 1/32-inch lead is sufficient

West Wall (adjacent to rad/fluoro room):

Required shielding: 0.19 mm lead (Pb) equivalence (1/32-inch lead)

Room Entrance Door:

Required shielding: 0.16 mm lead (Pb) equivalence (1/32-inch lead)

Ceiling:

Required shielding: 0.24 mm lead (Pb) equivalence (1/16-inch lead)
Or a minimum of 0.9 inches standard weight concrete or 1.2 inches light weight concrete

Floor:

Building is on grade – no shielding is necessary

NOTE: When the required shielding varies from wall-to-wall MPC recommends installing the greater thickness (i.e. 1/16" lead) in ALL walls to avoid confusion during installation.

It is advised you keep a copy of this letter and shielding calculations on-site for as long as this procedure room is in service. If you have any questions regarding these calculations or if I may be of any further assistance, please contact me at 208-860-6260. Thank you for selecting Medical Physics Consultants for your services.

Sincerely,



Lisa M. Bosworth, M.S.
Medical Physicist

Date: **11/7/2024**

Facility: **Riverton Hospital-Intermountain Healthcare**

Room: **Room**

Physicist: **Lisa Bosworth**

Account #: 9999

Shielding Report #: 961559541



BARRIER: Control Area (North on floor plan)

WorkLoad Type: Rad Room (all)

Desired Radiation Level (mSv per week): 0.10 Occupational

Occupancy Factor: 100.0% Full Occupancy

Workload (table) in mA min per week: 240

Workload (chest) in mA min per week: 40

Workload (fluoro) in mA min per week: 0

Distance from table tube to barrier (meters): 2.6 or 8.5 ft

Distance from chest tube to barrier (meters): 2.6 or 8.5 ft

Distance from table patient to barrier (meters): 2.6 or 8.5 ft

Distance from chest patient to barrier (meters): 3.8 or 12.5 ft

Fluoro Field Size (sq cm): 0

% of table workload that is Primary: 0% Scatter Only

% of chest workload that is Primary: 0% Scatter Only

Total Radiation incident on barrier (mGy): 0.55

Lead shielding needed: 0.14 mm or 1/32 inch
Concrete shielding needed: 1.38 cm or 0.5 inches

Exposure Behind 2.8 cm gypsum = 0.1475 mSv/Week

Exposure Behind 0.8 mm lead = 0.0047 mSv/Week

Exposure Behind 1.6 mm lead = 0.0005 mSv/Week

BARRIER: North Wall (adjacent to cardiac rm)

WorkLoad Type: Rad Room (all)

Desired Radiation Level (mSv per week): 0.02 Public

Occupancy Factor: 50.0% Exam room, etc.

Workload (table) in mA min per week: 240

Workload (chest) in mA min per week: 40

Workload (fluoro) in mA min per week: 0

Distance from table tube to barrier (meters): 2.6 or 8.5 ft

Distance from chest tube to barrier (meters): 3.5 or 11.5 ft

Distance from table patient to barrier (meters): 2.6 or 8.5 ft

Distance from chest patient to barrier (meters): 5.3 or 17.5 ft

Fluoro Field Size (sq cm): 0

% of table workload that is Primary: 0% Scatter Only

% of chest workload that is Primary: 0% Scatter Only

Total Radiation incident on barrier (mGy): 0.53

Lead shielding needed: 0.27 mm or 1/32 inch
Concrete shielding needed: 2.49 cm or 1.0 inches

Exposure Behind 2.8 cm gypsum = 0.0711 mSv/Week

Exposure Behind 0.8 mm lead = 0.0023 mSv/Week

Exposure Behind 1.6 mm lead = 0.0002 mSv/Week

Date: **11/7/2024**
Facility: **Riverton Hospital-Intermountain Healthcare**
Room: **Room**



BARRIER: **East Wall (adjacent to ultrasound)** WorkLoad Type: Rad Room (all)
Desired Radiation Level (mSv per week): 0.02 Public
Occupancy Factor: 75.0% Partial Occupancy
Workload (table) in mA min per week: 240
Workload (chest) in mA min per week: 40
Workload (fluoro) in mA min per week: 0
Distance from table tube to barrier (meters): 1.4 or 4.5 ft
Distance from chest tube to barrier (meters): 2.6 or 8.5 ft
Distance from table patient to barrier (meters): 1.4 or 4.5 ft
Distance from chest patient to barrier (meters): 2.6 or 8.5 ft
Fluoro Field Size (sq cm): 0
% of table workload that is Primary: 5% Laterals
% of chest workload that is Primary: 0% Scatter Only
Total Radiation incident on barrier (mGy): 27.05

Lead shielding needed: 1.57 mm or 1/16 inch			
Concrete shielding needed: 11.63 cm or 4.6 inches			
Exposure Behind	2.8	cm gypsum =	5.4432 mSv/Week
Exposure Behind	0.8	mm lead =	0.1722 mSv/Week
Exposure Behind	1.6	mm lead =	0.0187 mSv/Week

BARRIER: **South Wall (adjacent to Corridor)** WorkLoad Type: Rad Room (all)
Desired Radiation Level (mSv per week): 0.02 Public
Occupancy Factor: 20.0% Corridors, Patient Rooms, Lounge, etc
Workload (table) in mA min per week: 240
Workload (chest) in mA min per week: 40
Workload (fluoro) in mA min per week: 0
Distance from table tube to barrier (meters): 3.3 or 11 ft
Distance from chest tube to barrier (meters): 2.7 or 9 ft
Distance from table patient to barrier (meters): 3.3 or 11 ft
Distance from chest patient to barrier (meters): 0.6 or 2 ft
Fluoro Field Size (sq cm): 0
% of table workload that is Primary: 0% Scatter Only
% of chest workload that is Primary: 100% Through Bucky
Total Radiation incident on barrier (mGy): 21.34

Lead shielding needed: 0.99 mm or 1/16 inch			
Concrete shielding needed: 7.81 cm or 3.1 inches			
Exposure Behind	2.8	cm gypsum =	1.1449 mSv/Week
Exposure Behind	0.8	mm lead =	0.0362 mSv/Week
Exposure Behind	1.6	mm lead =	0.0039 mSv/Week

Bucky / Image receptor attenuation of primary beam is not considered, but typically = 0.85 mm lead, or 7 cm concrete.

BARRIER: **West Wall (adjacent to rad/fluoro)** WorkLoad Type: Rad Room (all)

Desired Radiation Level (mSv per week): 0.02 Public
 Occupancy Factor: 50.0% Exam room, etc.
 Workload (table) in mA min per week: 240
 Workload (chest) in mA min per week: 40
 Workload (fluoro) in mA min per week: 0
 Distance from table tube to barrier (meters): 3.9 or 13 ft
 Distance from chest tube to barrier (meters): 2.4 or 8 ft
 Distance from table patient to barrier (meters): 3.9 or 13 ft
 Distance from chest patient to barrier (meters): 2.4 or 8 ft
 Fluoro Field Size (sq cm): 0
 % of table workload that is Primary: 0% Scatter Only
 % of chest workload that is Primary: 0% Scatter Only
 Total Radiation incident on barrier (mGy): 0.31

Lead shielding needed: 0.19 mm or 1/32 inch			
Concrete shielding needed: 1.79 cm or 0.7 inches			
Exposure Behind	2.8	cm gypsum =	0.0421 mSv/Week
Exposure Behind	0.8	mm lead =	0.0013 mSv/Week
Exposure Behind	1.6	mm lead =	0.0001 mSv/Week

BARRIER: **Room Entrance Door** WorkLoad Type: Rad Room (all)

Desired Radiation Level (mSv per week): 0.05 Occupational - Multiple Sources
 Occupancy Factor: 100.0% Full Occupancy
 Workload (table) in mA min per week: 240
 Workload (chest) in mA min per week: 40
 Workload (fluoro) in mA min per week: 0
 Distance from table tube to barrier (meters): 4.5 or 15 ft
 Distance from chest tube to barrier (meters): 3.0 or 10 ft
 Distance from table patient to barrier (meters): 4.5 or 15 ft
 Distance from chest patient to barrier (meters): 1.8 or 6 ft
 Fluoro Field Size (sq cm): 0
 % of table workload that is Primary: 0% Scatter Only
 % of chest workload that is Primary: 0% Scatter Only
 Total Radiation incident on barrier (mGy): 0.33

Lead shielding needed: 0.16 mm or 1/32 inch			
Concrete shielding needed: 1.59 cm or 0.6 inches			
Exposure Behind	2.8	cm gypsum =	0.0892 mSv/Week
Exposure Behind	0.8	mm lead =	0.0028 mSv/Week
Exposure Behind	1.6	mm lead =	0.0003 mSv/Week

Date: **11/7/2024**
 Facility: **Riverton Hospital-Intermountain Healthcare**
 Room: **Room**



BARRIER: Ceiling WorkLoad Type: Rad Room (all)
 Desired Radiation Level (mSv per week): 0.02 Public
 Occupancy Factor: 100.0% Full Occupancy
 Workload (table) in mA min per week: 240
 Workload (chest) in mA min per week: 40
 Workload (fluoro) in mA min per week: 0
 Distance from table tube to barrier (meters): 3.3 or 11 ft
 Distance from chest tube to barrier (meters): 3.6 or 12 ft
 Distance from table patient to barrier (meters): 4.2 or 14 ft
 Distance from chest patient to barrier (meters): 3.9 or 13 ft
 Fluoro Field Size (sq cm): 0
 % of table workload that is Primary: 0% Scatter Only
 % of chest workload that is Primary: 0% Scatter Only
 Total Radiation incident on barrier (mGy): 0.23

Lead shielding needed: 0.24 mm or 1/32 inch			
Concrete shielding needed: 2.27 cm or 0.9 inches			
Exposure Behind	2.8	cm gypsum =	0.0607 mSv/Week
Exposure Behind	0.8	mm lead =	0.0019 mSv/Week
Exposure Behind	1.6	mm lead =	0.0002 mSv/Week

BARRIER: Floor WorkLoad Type: Rad Room (all)
 Desired Radiation Level (mSv per week): 0.02 Public
 Occupancy Factor: 0.0% Unoccupiable
 Workload (table) in mA min per week: 240
 Workload (chest) in mA min per week: 40
 Workload (fluoro) in mA min per week: 0
 Distance from table tube to barrier (meters): or ft
 Distance from chest tube to barrier (meters): or ft
 Distance from table patient to barrier (meters): or ft
 Distance from chest patient to barrier (meters): or ft
 Fluoro Field Size (sq cm): 0
 % of table workload that is Primary: 0% Scatter Only
 % of chest workload that is Primary: 0% Scatter Only
 Total Radiation incident on barrier (mGy): 0

Lead shielding needed: 0.00 mm or 0 inch			
Concrete shielding needed: 0.00 cm or 0.0 inches			
Exposure Behind	2.8	cm gypsum =	0.0000 mSv/Week
Exposure Behind	0.8	mm lead =	0.0000 mSv/Week
Exposure Behind	1.6	mm lead =	0.0000 mSv/Week