

ADDENDUM NO. 2

TO THE PLANS AND SPECIFICATIONS FOR:

TNRB Auditoriums 151 & 251 Remodel

Prepared by

Brigham Young University
Planning & Construction Dept.
240 Brewster Physical Plant
Provo, Utah 84602
26 March 2024

This Addendum issued 26 March 2024 is for all persons preparing bids and as such shall be made a part of the contract documents. This Addendum consists of this cover sheet and 42 pages. In case of any conflict between the drawings, specifications, and this Addendum, this Addendum shall govern. All changes, corrections, deletions and/or additions to the initial bidding documents shall be included in the Bidder's proposal. Receipt of this Addendum shall be acknowledged on the Bid proposal forms.

Approved by:



Anthony R. Burdette, Director of Construction

26 March 2024

Date

**BRIGHAM YOUNG UNIVERSITY
REMODEL AUDITORIUMS 151 & 251
N. ELTON TANNER BUILDING (TNRB)
Work Order No. M3728**

**ADDENDUM NO. 2
26 MARCH 2024**

OWNER/ARCHITECT

Brigham Young University
Stanton Woods, 245 BRWB, (801) 422-5695

These instructions are intended to provide additional information and/or clarification to that which is contained in the construction documents issued to bid. Contractor to review upon receipt and will be required to certify with the submission of their bid that these documents have been received. Bids submitted by the contractor shall reflect all costs associated with the changes contained herein.

ATTACHMENTS:

1. Drawing Sheets:
 - a. G001: Addendum #2 revisions note added to title block.
 - b. AD102: Two upper concrete steps to be cut so that modified steps align with adjacent steps and allow for additional seating.
 - c. AD151: Keynote revised for sloped ceiling and access for fire sprinkler system work.
 - d. AD152: Ceilings near intersection of gridlines B and 6 to be part of base bid and not Alternate #1.
 - e. A151: Ceiling heights changed. Ceiling tile keynote revised, sloped ceiling keynote revised.
 - f. A152: Ceilings near intersection of gridlines B and 6 to be part of base bid and not Alternate #1. Ceiling heights revised.
 - g. A351: Ceiling heights in both 151 and 251 have changed. Floor to existing bottom of deck dimensions have been added.
 - h. A551: Additional information has been provided to details 4, 7, 11, 12.
2. Specification Sections:
 - a. Section 072100 – Thermal Insulation
 - b. Section 078400 – Firestopping
 - c. Section 079200 – Joint Sealants
 - d. Section 092116 – Gypsum Board Assemblies
3. Bidder Questions:
 - a. See Attached List of Questions & Responses

**BRIGHAM YOUNG UNIVERSITY
REMODEL AUDITORIUMS 151 & 251
N. ELTON TANNER BUILDING (TNRB)
Work Order No. M3728**

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26 MARCH 2024**

QUESTIONS FROM BIDDERS

Question 1: The following specifications are listed within the Project Manual's table of contents, but no specifications are shown: 072100 - Thermal Insulation, 078400 - Firestopping, 079200 - Joint Sealants, 092116 - Gypsum Board Assemblies.

Response: Specification Sections 072100, 078400, 079200, 092116 are included as part of Addendum #02.

Question 2: Per the Bid Form, Alternate #1 is labeled as 'New Fountain Piping.' Please confirm whether the ceiling work shown on AD152 and A152 is to be included in this alternate.

Response: The two ceilings adjacent to Auditorium 251 are to be part of the base bid, and not part of Alternate #1. Sheets AD152 and A152 have been updated to show this revision.

Question 3: Please clarify the requirements for the rigid foam to be placed under the wheelchair platforms.

Response: Foam under wheelchair platforms to be Extruded Polystyrene Board Insulation. Details 11 and 12 on sheet A551 have been updated. See page 3 of specification section 072100. This section is part of Addendum #02.

Question 4: Please provide the existing deck height for Auditorium 251 Ceiling.

Response: Auditorium 251: From Level 2 to the bottom of the existing deck is 14'-6 3/4". Auditorium 151: From Level 1 to bottom of the existing deck is 14'-6 3/4". Both of these measurements have been added to sheet A351.

Question 5: In Auditorium 151, in the sloped ceiling area, it is highly likely that additional sprinkler heads will be required due to the width of the Gyp Ceiling Clouds exceeding 4 feet. Could a note be provided on the plans to either fully remove this section of the gypsum ceiling or to remove portions as necessary for the installation of the new fire sprinkler system?

Response: Sections of the sloped ceiling may be removed to provide access to the fire sprinkler system. Areas that are affected need to be repaired to match adjacent areas. This includes gypsum board thicknesses, texture, and paint. Keynote #11 on sheet AD151 and Keynote #2 on sheet A151 have been revised and clouded.

Question 6: Please advise if we are to paint the existing door frames.

Response: Portions of door frame that is within auditoriums to be painted.

Question 7: Please advise if the existing fire sprinklers are hard pipe or whips. If its hard pipe is the contractor responsible for replacing the existing hard pipe heads with whips

Response: Existing fire sprinklers and heads are hard piped. Contractor to replace hard pipe heads and replace them with whips and new heads.

Question 8: Specs allow for Armstrong ceiling products to be used on this project. Please advise if this is acceptable. Or if only USG is acceptable.

Response: USG Frost 490 or Armstrong Ultima High NRC 1941A are acceptable. Keynotes on sheets A151 and A251 have been aligned to specifications.

Question 9: Specs calls for 3 different types ceiling tiles please advise which of these are to be used.

Response: Use Acoustical Panels Type ACT-2, as described on page 2 of specification section 095100.

Question 10: Can a spec please be provided for the wire mesh and the rebar that is wanted. Detail 12/A551 Calls for steel wire mesh. However, the picture appears to be bent rebar please advise what is wanted in the concrete? Also please advise of the size of rebar wanted.

Response: Wire mesh to be 6x6 W1.4/W1.4 WWF Steel Wire Mesh. Rebar to be #4 size. Details 11 and 12 on sheet A551 have been revised to reflect clarification.

Question 11: Can a spec please be provided for the metal framing that is wanted. Detail 4 calls for new metal framing. Please advise the size of the stud and gauge.

Response: Metal frame sizes have been added to detail 4 on sheet A551. Refer to Specification Section 092116 – Gypsum Board Assemblies for non-loadbearing requirements. Section 092116 is part of Addendum #02.

BRIGHAM YOUNG UNIVERSITY

REMODEL AUDITORIUMS 151 & 251 PHYSICAL FACILITIES

N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2

ABBREVIATIONS

&	And	FIN.	Finish
L	Angle	FLR.	Floor
@	At Centerline	FLUOR.	Fluorescent
∅	Diameter or Round	FURN.	Furnish, Furnished
·	Square Feet	GA.	Guage
⊥	Perpendicular	GYP.	Gypsum
#	Pound, Number	HDWD.	Hardwood
(E)	Existing	HDWR.	Hardware
AC.	Air Conditioning	HORIZ.	Horizontal
ACC.	Access	HT.	Height
ACOUS.	Acoustical	HVAC	Heating Ventilating & A/C
ADD.	Addendum	INSUL.	Insulation
ADDL.	Additional	L	Length
A.F.F.	Above Finished Floor	MATL.	Material
ALUM.	Aluminum	MAX.	Maximum
ALT.	Alternate	MECH.	Mechanical
APPROX.	Approximate	MANUF.	Manufacturer
ARCH.	Architect(ural)	MIR.	Mirror
AVG.	Average	MISC.	Miscellaneous
BD.	Board	MTL.	Metal
BET.	Between	N.I.C.	Not In Contract
BF.	Board Feet	NO.	Number
BITUM.	Bituminous	N.T.S.	Not To Scale
BLDG.	Building	O.C.	On Center(s)
BLKG.	Blocking	OPNG	Opening
CAB.	Cabinet	OPP.	Opposite
CHAM.	Chamfer	O.T.S.	Open To Structure
CL.	Centerline	P.LAM.	Plastic Laminate
CLG.	Ceiling	PLBG.	Plumbing
CLR.	Clear(ance)	PLYWD.	Plywood
CMU.	Concrete Masonry Unit	PREFAB.	Prefabricate
COL.	Column	PREFIN.	Prefinished
CONC.	Concrete	P.S.F.	Pounds per Square Foot
CONSTR.	Construction	P.S.I.	Pounds per Square Inch
CONT.	Continuous	QTY.	Quantity
CONTR.	Contractor	RAD.	Radius
DBL.	Double	REQD.	Required
DEMO.	Demolish, Demolition	RESIL.	Resilient
DIA.	Diameter	SPECS.	Specifications
DIM.	Dimension	SQ.	Square
DN.	Down	S.S.	Stainless Steel
DR.	Door	STD.	Standard
DET.	Detail	STL.	Steel
DWG.	Drawing	TYP.	Typical
EA.	Each	T.O.	Top of
ELEC.	Electric(al)	VAT.	Vinyl Asbestos Tile
ELEV.	Elevation	VCT.	Vinyl Composition Tile
EQ.	Equal	VERT.	Vertical
EQUIP.	Equipment	W/O	Without
EST.	Estimate	SCHED.	Schedule
EXIST.	Existing	SIM.	Similar

NOTE: SEE OTHER CONSULTANT DRAWINGS FOR ADDITIONAL ABBREVIATION INFORMATION

APPROVALS

Ole M. Smith, Assistant Administrative Vice Pres. -- Physical Facilities

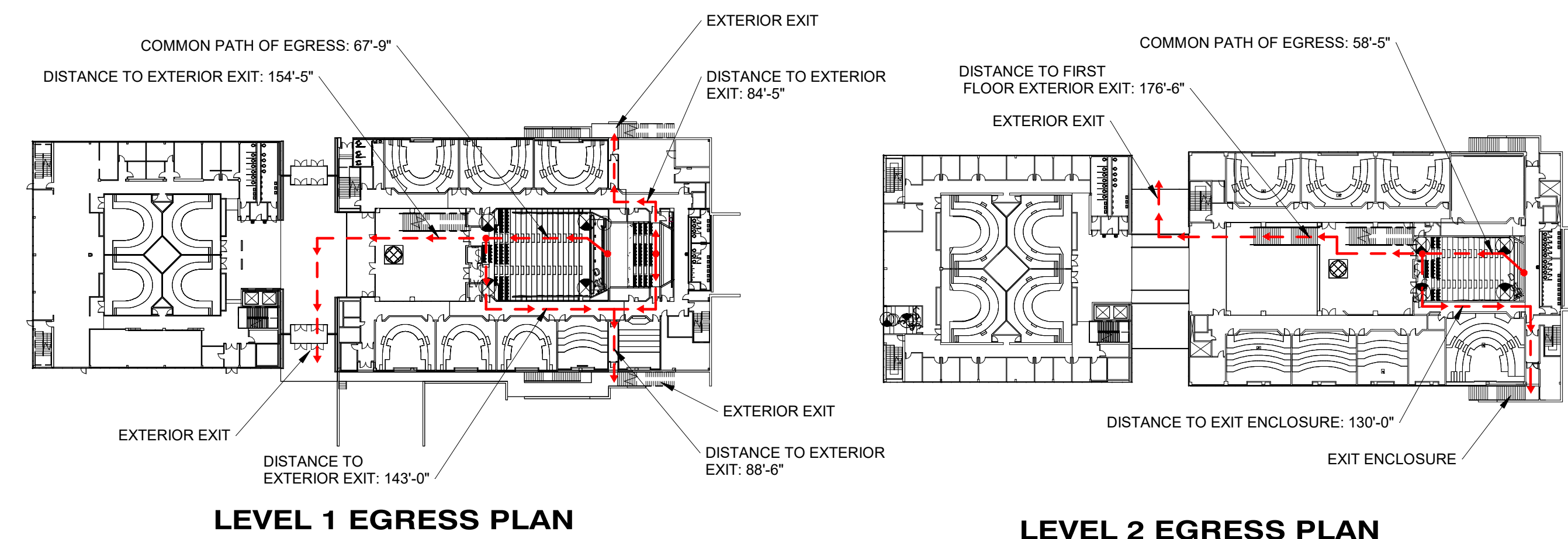
Richard Nelson, Managing Director -- Physical Facilities Planning Department

SYMBOLS LEGEND

DRAWING INDEX

Sheet Number	Sheet Name	Sheet Number	Sheet Name
M3728 G001	COVER SHEET	M3728 P1.1	2nd & 3rd LEVEL PLUMBING DEMOLITION PLANS
M3728 AD101	LEVEL 1 DEMOLITION PLAN	M3728 P1.2	2nd & 3rd LEVEL ALTERNATE 1 PLUMBING PLANS
M3728 AD102	LEVEL 2 DEMOLITION PLAN		
M3728 AD151	LEVEL 1 DEMOLITION REFLECTED CEILING PLAN	M3728 E1.1	LEVEL 1 DEMOLITION LIGHTING PLAN
M3728 AD152	LEVEL 2 DEMOLITION REFLECTED CEILING PLAN	M3728 E1.2	LEVEL 2 DEMOLITION LIGHTING PLAN
M3728 A101	LEVEL 1 FLOOR PLAN	M3728 E2.1	LEVEL 1 LIGHTING PLAN
M3728 A102	LEVEL 2 FLOOR PLAN	M3728 E2.2	LEVEL 2 LIGHTING PLAN
M3728 A151	LEVEL 2 REFLECTED CEILING PLAN	M3728 E3.1	LEVELS 1 & 2 POWER PLANS
M3728 A152	LEVEL 1 REFLECTED CEILING PLAN	M3728 E4.1	ELECTRICAL SCHEDULES, SYMBOLS & DETAILS
M3728 A251	INTERIOR FINISH ELEVATIONS & FINISH SCHEDULE	M3728 E4.2	ELECTRICAL SCHEDULES
M3728 A351	AUDITORIUMS - SECTION VIEWS	M3728 OIT-1	LEVEL 1 DEMOLITION PLAN
M3728 A551	CEILING & FLOOR DETAILS	M3728 OIT-2	LEVEL 2 DEMOLITION PLAN
M3728 M1.1	DEMOLITION PLAN AND DETAILS	M3728 OIT-3	LEVEL 1 DEMOLITION REFLECTED CEILING PLAN
M3728 M1.2	NEW MECHANICAL PLAN AND SCHEDULE	M3728 OIT-4	LEVEL 2 DEMOLITION REFLECTED CEILING PLAN
M3728 M1.3	DEMOLITION & NEW MECHANICAL PLANS AND SCHEDULES	M3728 OIT-5	LEVEL 1 FLOOR PLAN
M3728 M2.1	NEW 1st & 2nd LEVEL FIRE SPRINKLER PLANS	M3728 OIT-6	LEVEL 2 FLOOR PLAN
		M3728 OIT-7	LEVEL 1 REFLECTED CEILING PLAN
		M3728 OIT-8	LEVEL 2 REFLECTED CEILING PLAN

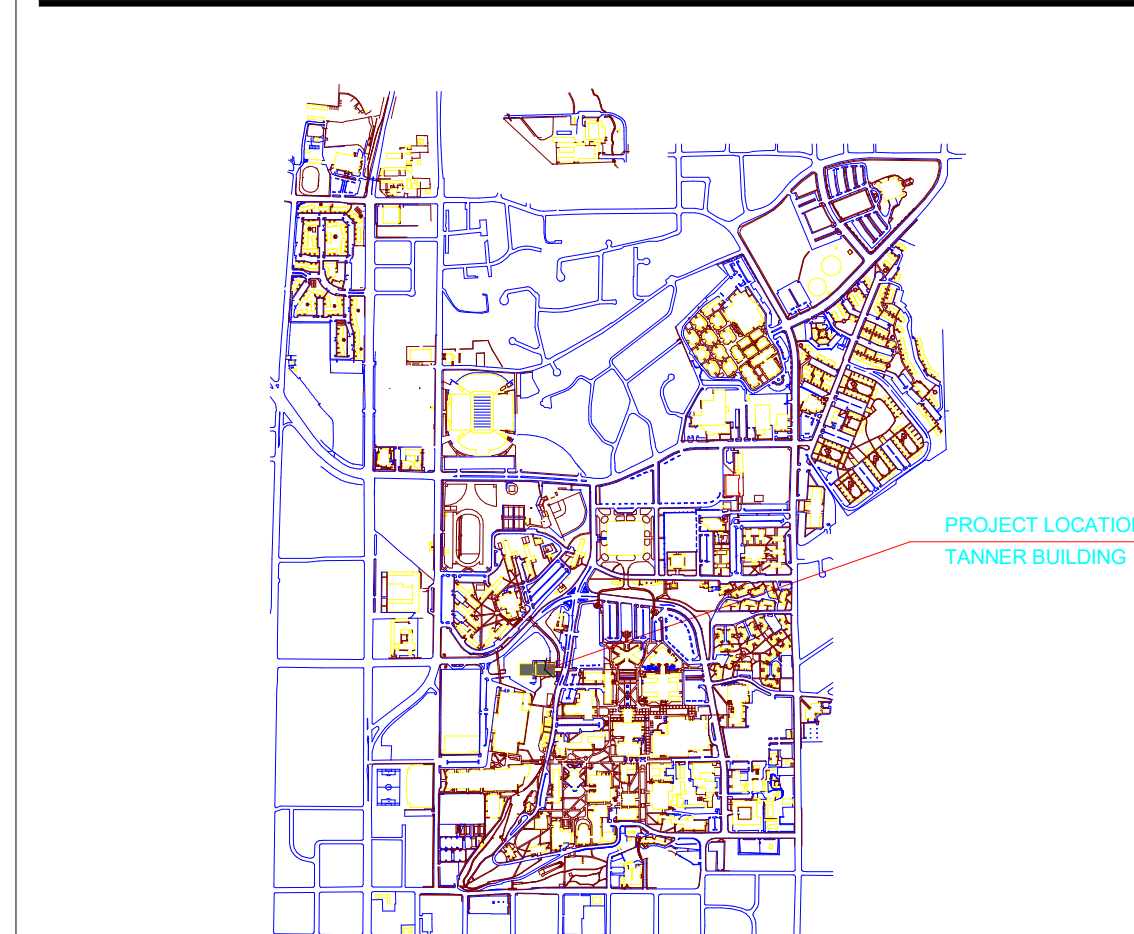
EGRESS PLAN



NOT-IN-CONTRACT (NIC) COORDINATION LIST

Not-in-Contract (NIC) Coordination List	Furnished by BYU	Installed by BYU / Vendor	Installed by General Contractor	Furnished by General Contractor
General				
Oil				
Podiums, Equipment Cabinets, with mounting hardware, etc. (power and rough electrical in Contract)	x	x		
Auxiliary Source Reinforcement with mounting hardware, etc. (power and rough electrical in Contract)	x	x		
Projectors (power and rough electrical for controls in Contract)	x	x		
Projection Screens (power and rough electrical for controls in Contract)	x	x	x	
Projection Screen Boxes, ceiling-recessed			x	x
Flat Panel Displays and Digital Signage with mounting hardware (backing, power and rough electrical in Contract)	x	x		
Systems				
CCTV Cameras with mounting hardware (power and rough electrical in Contract)	x	x		
Smart Boards and Interactive Marker Boards with mounting hardware (power and rough electrical in Contract)	x	x		
Building Directories (power, data, and rough electrical in Contract)	x	x		
All AV systems (power and rough electrical in Contract)	x	x		
All Data Pathways, Termination Boxes, Cabling, Terminations to Wall Plates and Patch Panels, Warranty			x	x
All Data Racks			x	x
All Cable Tray			x	x
Cable Pass Systems complete, Terminations, Wall Racks, Cable Hangers, Wall Plugs, Insulated bags (1¢ per cable pass generation)	x	x		
Wireless Access Points (Power and Data in Contract)	x	x		
Interiors				
Movable Furniture and Seating	x	x		
Fixed Seating in Auditorium and Meeting Rooms	x	x		
Carpet and Carpet Base, LVF, Rubber Base	x	x		
Systems				
Mechanical Controls Hardware (both system and terminal units) by Atkinson or Johnson Controls	x	x	x	
Mechanical Controls Rackwork			x	x
Mechanical Controls Programming (Software - both system and terminal units) by Atkinson or Johnson Controls	x	x		
Project Specific				
Moving Existing Equipment	x			

PROJECT LOCATION PLAN



GENERAL NOTES

CODE COMPLIANCE

THIS PROJECT SHALL BE COMPLETED ACCORDING TO THE LATEST EDITION OF THE FOLLOWING STANDARDS & AMENDMENTS TO THOSE STANDARDS AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION:

- 2021 IBC (International Building Code)
- 2021 IEBC (International Existing Building Code)
- 2021 IFC (International Fire Code)
- 2020 NEC (National Electrical Code)
- 2021 IECC (International Energy Conservation Code)
- 2021 IFGC (International Fuel Gas Code)
- NEMA (National Electrical Manufacturer's Assoc.)
- 2021 IMC (International Mechanical Code)
- 2021 IPC (International Plumbing Code)
- 1997 Uniform Code for Building Conservation
- NFPA (National Fire Protection Association)
- UL (Underwriters Laboratories, Inc.)
- State & Local Building Authority & Codes

OCCUPANCY CLASS.: Section 305

USE: Assembly

CONSTRUCTION TYPE: Section 601

IEBC ALTERATION LEVEL: 2

OCCUPANT LOAD (Work Area):
ROOM 151
(1) occupant per fixed seat
(1) occupant per 150 sqft.

ROOM 251
(1) occupant per fixed seat
(1) occupant per 150 sqft.

TOTALS:

BUILDING SQFT, LEVEL 1 & 2: 82,910 sqft.

WORK AREA SQFT: 5200 sqft.

FIRE PROTECTION: Fully sprinkled
Section 903

EGRESS: Unchanged
REQUIRED PLBG. FIXTURES: Unchanged

PROJECT DIRECTORY

- BYU Planning PM: Stanton Woods
801-422-5695
stanton_woods@byu.edu
- BYU Building Code Analyst:
Keith Martin
801-422-5571
keith_martin@byu.edu
- Please CC project correspondence to the following:
Tony Burdette anthony_burdette@byu.edu
Bob Coleman robert_coleman@byu.edu



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FAX: (801) 422-0566

DATE: 03/14/24
DESIGNER: SW
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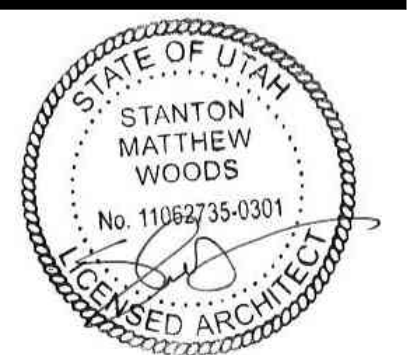
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PLANNING DIR:

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REVISIONS

1	Addendum #02	3/26/2024
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BRIGHAM YOUNG UNIVERSITY
REMODEL AUDITORIUMS 151 & 251
PHYSICAL FACILITIES
N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2



COVER SHEET

WORK ORDER & SHEET NO.

**M3728
G001**



FACILITIES PLANNING

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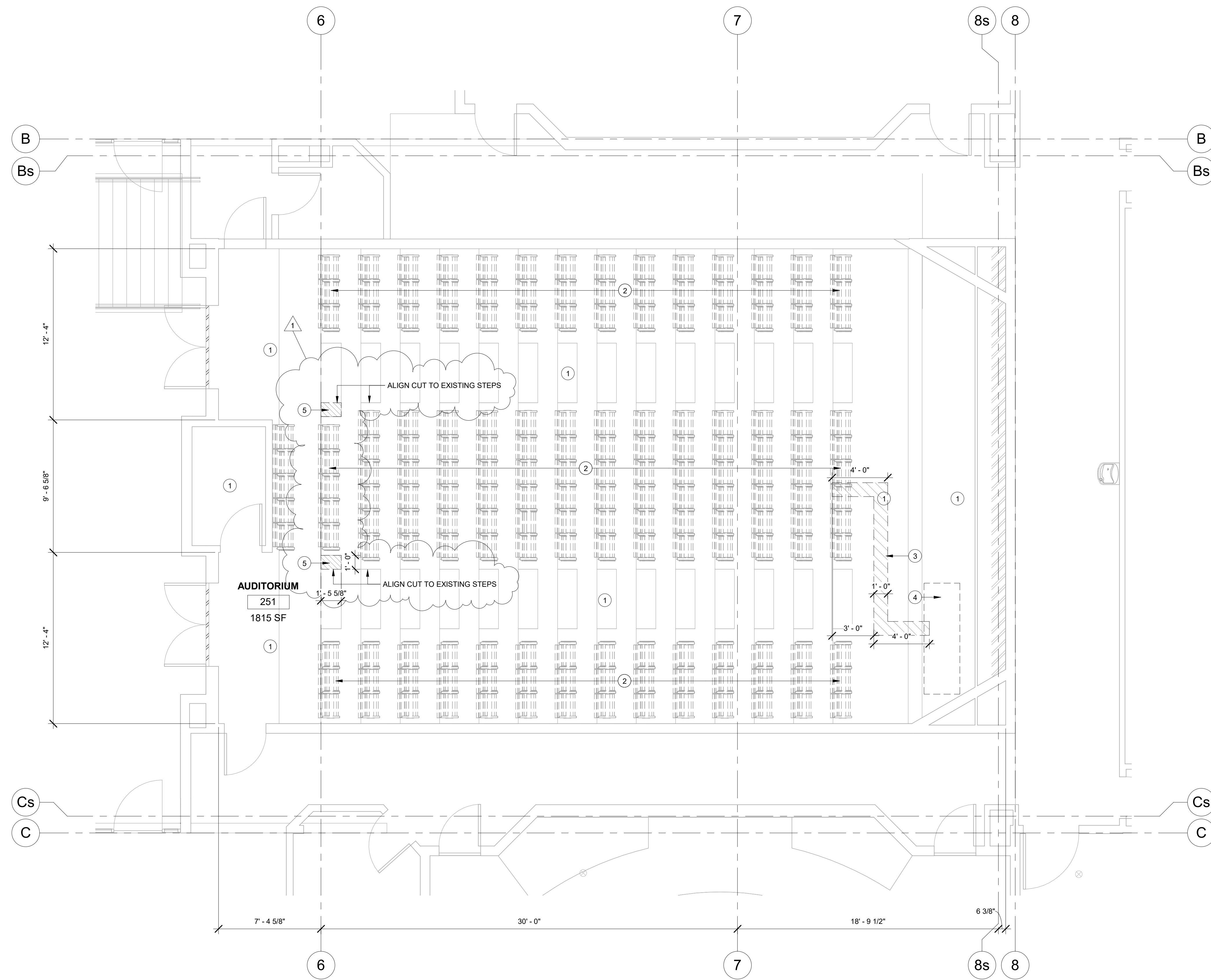
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REVISIONS

1 Addendum #02 3/26/2024

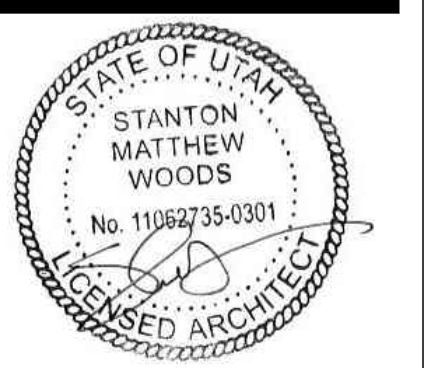
REFERENCE NOTES

- 1 CONTRACTOR TO REMOVE & DISPOSE OF EXISTING CARPET
- 2 CONTRACTOR TO REMOVE & DISPOSE OF EXISTING FIXED THEATER SEATING
- 3 SAWCUT & DEMO SECTION OF CONCRETE FLOOR & STEPS FOR NEW POWER & DATA CONDUITS. SEE ELECTRICAL AND OIT PLANS FOR CONDUIT SIZING, CONNECTIONS, AND TERMINATIONS. FILL IN WITH NEW CONCRETE
- 4 EXISTING PODIUM & TABLE TO BE REMOVED BY OWNER PRIOR TO DEMOLITION
- 5 SAWCUT & DEMO SECTION OF CONCRETE STEP. STEPS TO BE THE SAME WIDTH AS LOWER STEPS IN AISLE. SMOOTH PATCH & GRIND DEMO AREA AS NEEDED TO PROVIDE ACCEPTABLE CARPET SUBSTRATE



M3728 LEVEL 2 DEMOLITION FLOOR PLAN
1/4" = 1'-0"

BRIGHAM YOUNG UNIVERSITY
REMODEL AUDITORIUMS 151 & 251
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N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2



LEVEL 2 DEMOLITION PLAN

WORK ORDER & SHEET NO.

M3728
AD102



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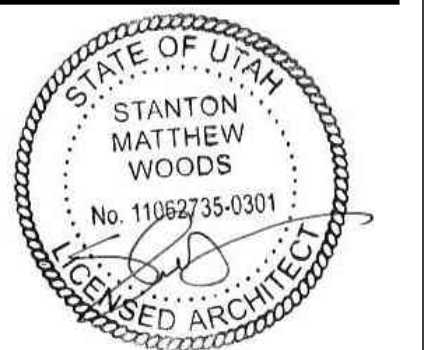
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CLIENT APPROVAL DATE

REVISIONS

1	Addendum #02	3/26/2024
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BRIGHAM YOUNG
 UNIVERSITY
 REMODEL AUDITORIUMS 151 & 251
 PHYSICAL FACILITIES
 N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2



**LEVEL 1
 DEMOLITION
 REFLECTED
 CEILING PLAN**

WORK ORDER & SHEET NO.

**M3728
 AD151**

REFERENCE NOTES

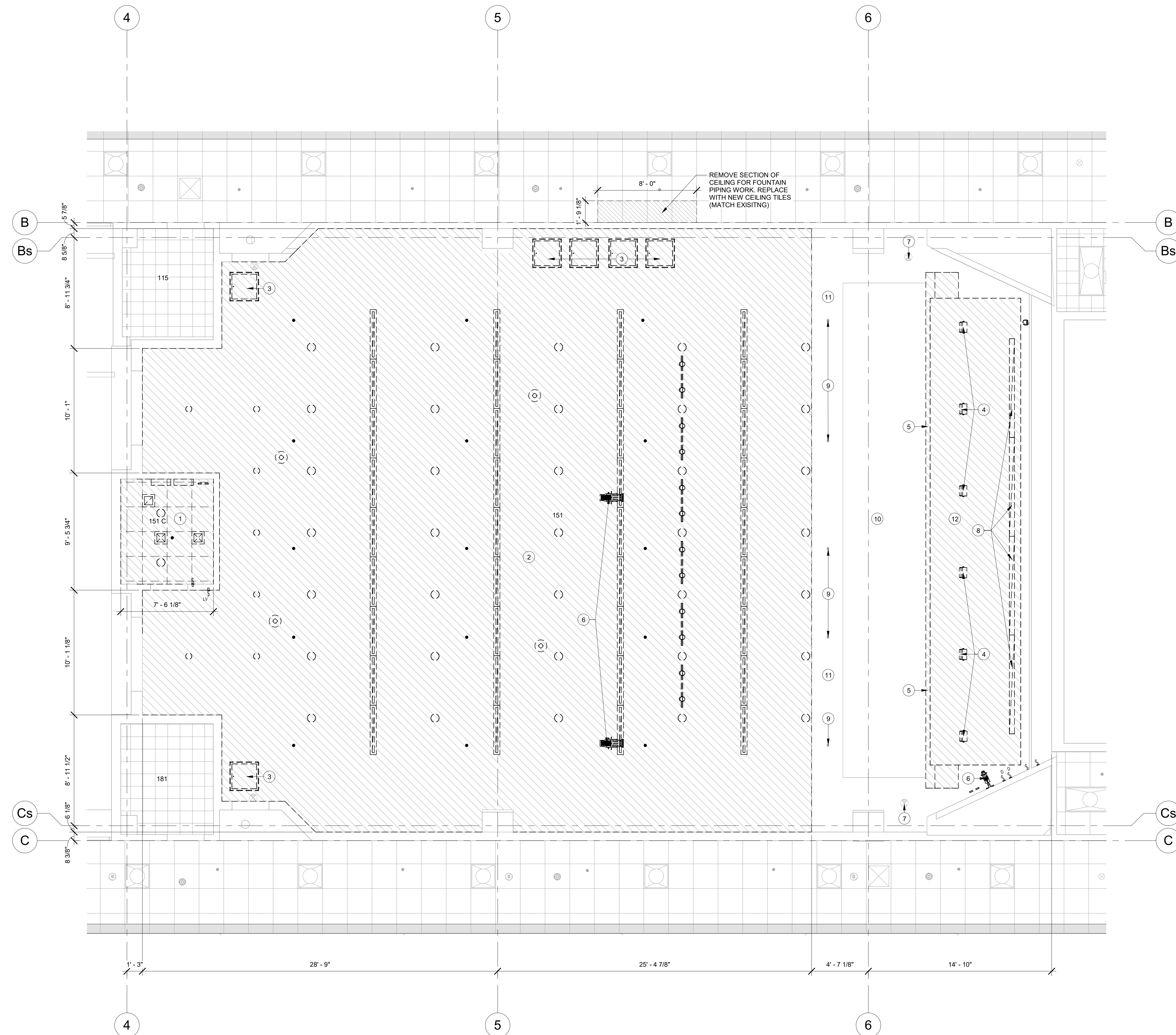
- 1 DEMO EXISTING ACT CEILING, INCLUDING LIGHTING, HVAC GRILLES, FIRE SPRINKLER SYSTEM TO REMAIN AND INSTALL NEW HEADS W/ FLEX CONNECTOR (SEE PLUMBING PLAN)
- 2 DEMO EXISTING GYPSUM BOARD CEILING, INCLUDING LIGHTING, HVAC GRILLES, FIRE SPRINKLER SYSTEM TO REMAIN AND INSTALL NEW HEADS W/ FLEX CONNECTOR (SEE PLUMBING PLAN)
- 3 CEILING ACCESS DOORS TO BE REMOVED BYU OIT CREWS TO REMOVE SURFACE MOUNTED SPEAKERS, USING CONTRACTOR PROVIDED SCAFFOLDING
- 5 REMOVE EXISTING SPEAKER ARRAY
- 6 REMOVE EXISTING STAGE LIGHTING, BYU TO SURPLUS
- 7 EXISTING LIGHT FIXTURE TO REMAIN
- 8 REMOVE/DEMO SURFACE MOUNTED LINEAR LIGHT FIXTURE, REFER TO ELECTRICAL DEMO PLANS
- 9 EXISTING FIRE SPRINKLER SYSTEM WITHIN SLOPED CEILING TO REMAIN AS-IS
- 10 EXISTING UPPER GYPSUM BOARD CEILING CLOUD TO REMAIN IN PLACE, PATCH AND REPAIR ANY EXISTING & NEW DAMAGE. PAINT ENTIRE CLOUD. SEE FINISH SCHEDULE FOR PAINT COLOR
- 11 EXISTING SLOPED SECTION OF CEILING TO REMAIN. PATCH AND REPAIR ANY EXISTING & NEW DAMAGE. IF SECTIONS ARE CUT OUT FOR ACCESS ABOVE, HOLES ARE TO BE REPAIRED WITH SIMILAR MATERIALS AND THICKNESSES. PAINT ENTIRE CEILING. SEE FINISH SCHEDULE FOR PAINT COLOR
- 12 MODIFY EXISTING GYPSUM BOARD CEILING CLOUD. CUT OUT MIDDLE SECTION FOR NEW OVERHEAD PROJECTOR. PATCH & REPAIR ALL SIDES AND CORNERS. MODIFY EXISTING SUPPORTS TO INSTALL CLOUDS TO HEIGHT SHOWN ON SHEET A351. SLOPE OF CLOUD TO REMAIN THE SAME. PATCH AND REPAIR CLOUD ONCE IN FINAL RAISED POSITION. SEE FINISH SCHEDULE FOR PAINT COLOR

NOTE:
 CONTRACTOR TO PROVIDE & INSTALL SCAFFOLDING AND DANCE FLOOR TYPE WORKING PLATFORM FOR DEMOLITION AND NEW CONSTRUCTION.

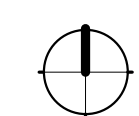
CONTRACTOR TO PROVIDE ACCESS TO BYU OIT INSTALLERS TO REMOVE EXISTING OIT ITEMS SUCH AS SPEAKERS, PROJECTORS, DISPLAYS ETC.

CONTRACTOR TO ALSO PROVIDE ACCESS TO BYU OIT INSTALLERS TO INSTALL NEW OIT SPEAKERS, PROJECTORS, ETC. THIS IS TO HAPPEN BEFORE SCAFFOLDING IS TAKEN DOWN.

DIAGONAL HATCH AREA INDICATES SECTION OF CEILING TO BE REMOVED OR ALTERED



1 DEMOLITION CEILING PLAN
 1/4" = 1'-0"





FACILITIES PLANNING

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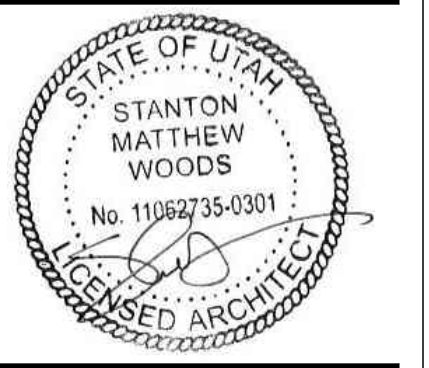
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BRIGHAM YOUNG
UNIVERSITY
REMODEL AUDITORIUMS 151 & 251
PHYSICAL FACILITIES
N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2



**LEVEL 2
DEMOLITION
REFLECTED
CEILING PLAN**

WORK ORDER & SHEET NO.

**M3728
AD152**

REFERENCE NOTES

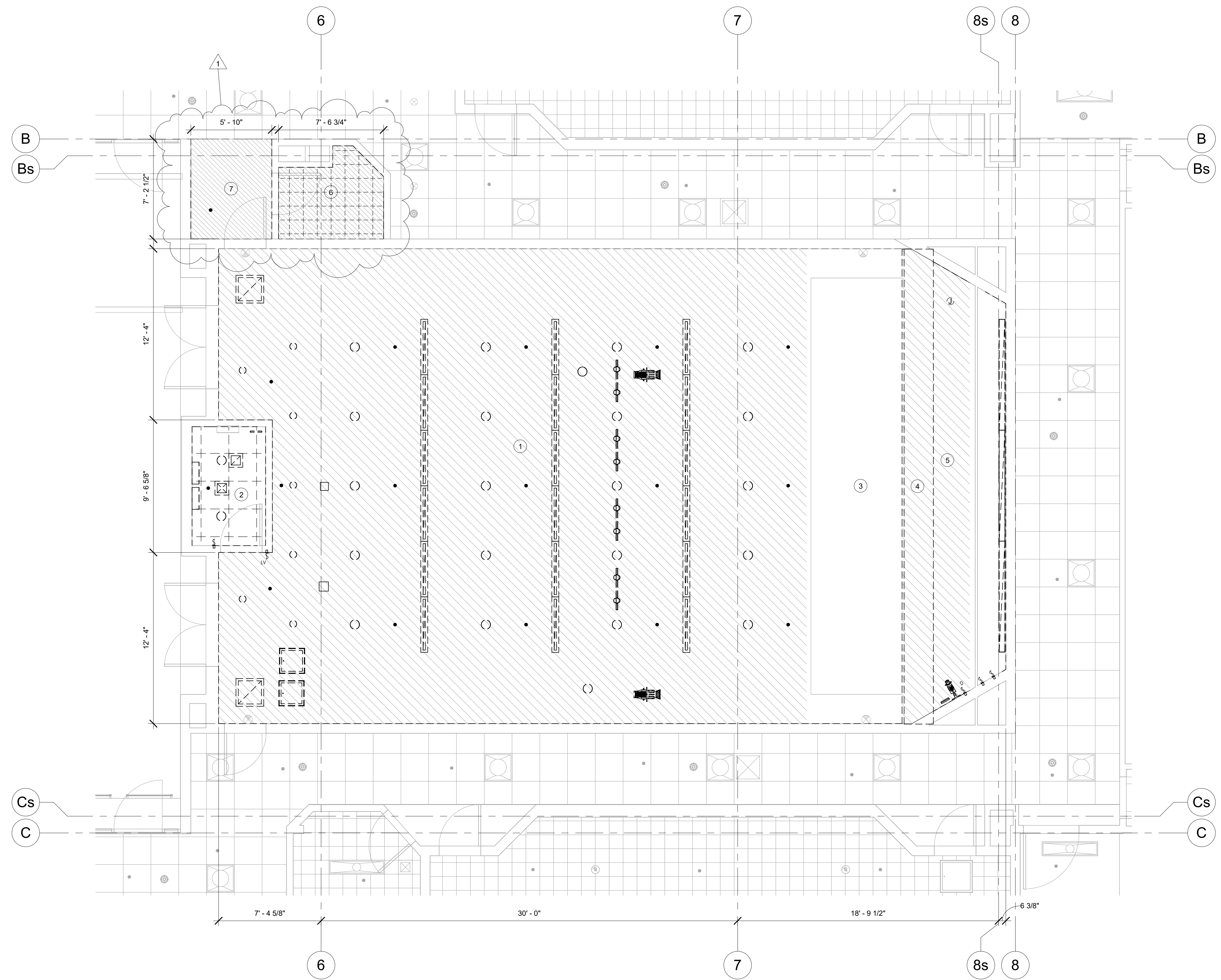
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- 2 DEMO EXISTING ACT CEILING, INCLUDING LIGHTING, HVAC GRILLES, FIRE SPRINKLER SYSTEM TO REMAIN AND INSTALL NEW HEADS W/ FLEX CONNECTOR (SEE PLUMBING PLAN)
- 3 EXISTING UPPER GYPSUM BOARD CEILING CLOUD TO REMAIN IN PLACE. PATCH AND REPAIR ANY EXISTING & NEW DAMAGE. PAINT ENTIRE CLOUD. SEE FINISH SCHEDULE FOR PAINT COLOR
- 4 REMOVE EXISTING SPEAKER ARRAY
- 5 MODIFY EXISTING GYPSUM BOARD CEILING CLOUD. CUT OUT MIDDLE SECTION FOR NEW OVERHEAD PROJECTOR. PATCH & REPAIR ALL SIDES AND CORNERS. MODIFY EXISTING SUPPORTS TO INSTALL CLOUDS TO HEIGHT SHOWN ON SHEET A351. SLOPE OF CLOUD TO REMAIN THE SAME. PATCH AND REPAIR CLOUD ON/OFF IN FINAL RAISED POSITION. SEE FINISH SCHEDULE FOR PAINT COLOR
- 6 DEMO 1x1 CEILING SYSTEM FOR DEMOLITION ACCESS TO FOUNTAIN PIPE WORK. REPLACE WITH NEW 2x2 ACT CEILING SYSTEM
- 7 DEMO HARD LID GYPSUM BOARD CEILING SYSTEM FOR DEMOLITION ACCESS TO FOUNTAIN PIPE WORK. REPLACE WITH NEW 2x2 ACT CEILING SYSTEM

NOTE:
CONTRACTOR TO PROVIDE & INSTALL SCAFFOLDING AND DANCE FLOOR TYPE WORKING PLATFORM FOR DEMOLITION AND NEW CONSTRUCTION.

CONTRACTOR TO PROVIDE ACCESS TO BYU OIT INSTALLERS TO REMOVE EXISTING OIT ITEMS SUCH AS SPEAKERS, PROJECTORS, DISPLAYS ETC.

CONTRACTOR TO ALSO PROVIDE ACCESS TO BYU OIT INSTALLERS TO INSTALL NEW OIT SPEAKERS, PROJECTORS, ETC. THIS IS TO HAPPEN BEFORE SCAFFOLDING IS TAKEN DOWN.

DIAGONAL HATCH AREA INDICATES SECTION OF CEILING TO BE REMOVED OR ALTERED



M3728 LEVEL 2 DEMOLITION
REFLECTED CEILING PLAN
1/4" = 1'-0"



FACILITIES PLANNING
 240 BRWB PROVO, UTAH 84602
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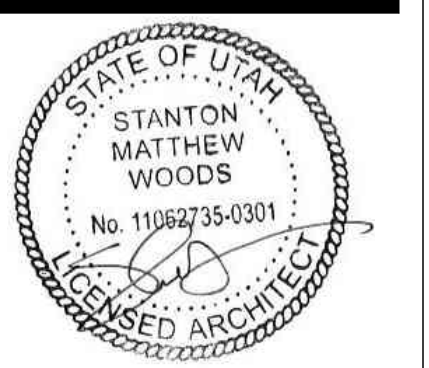
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 PLANNING DIR:

CLIENT APPROVAL DATE

REVISIONS

1	Addendum #02	3/26/2024
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BRIGHAM YOUNG
 UNIVERSITY
 REMODEL AUDITORIUMS 151 & 251
 PHYSICAL FACILITIES
 N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2



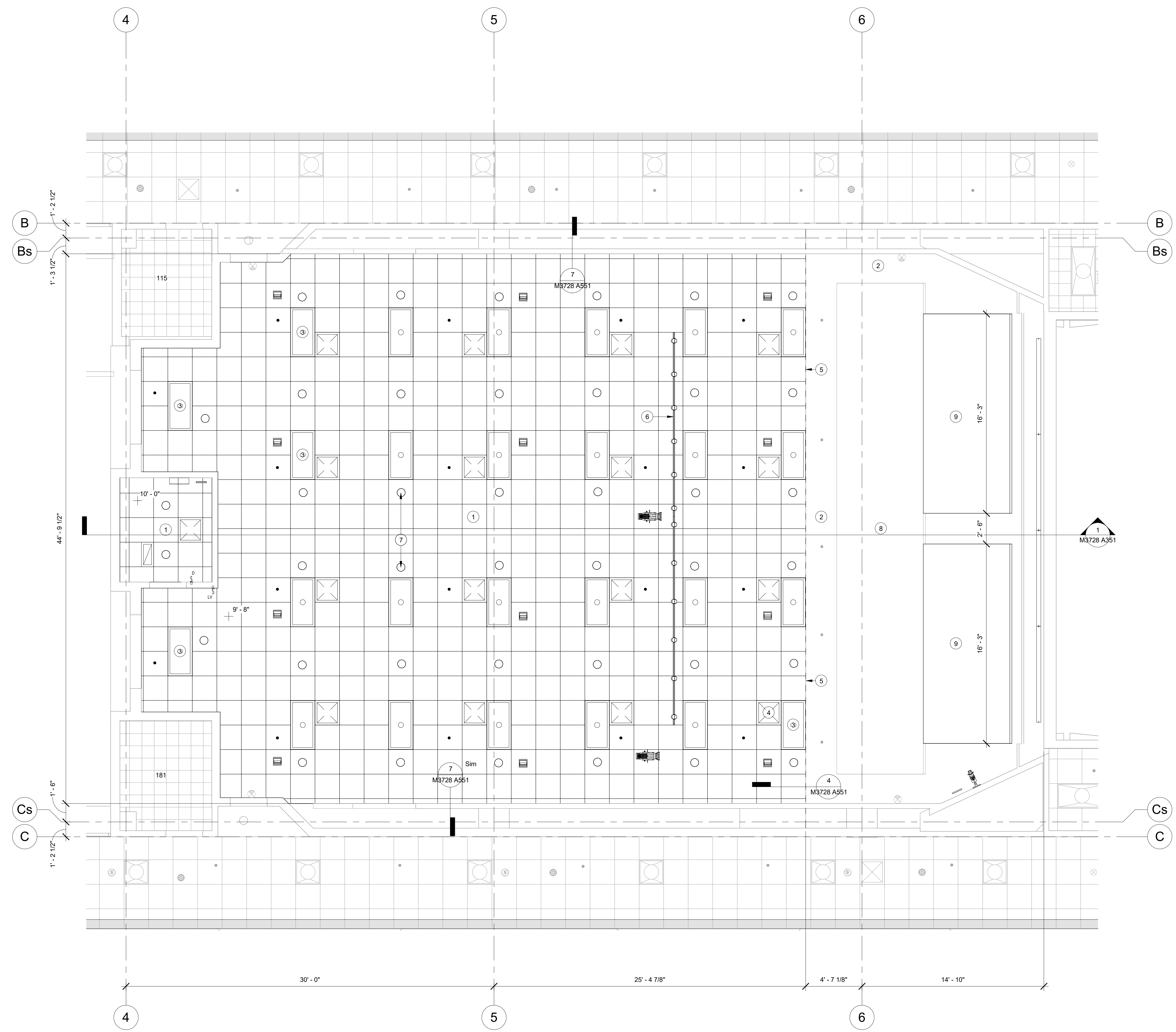
**LEVEL 1
 REFLECTED
 CEILING PLAN**

WORK ORDER & SHEET NO.

**M3728
 A151**

REFERENCE NOTES

- 1 NEW LAY-IN CEILING TILE SYSTEM, CEILING TILE TYPE TO BE 'ACT-2' AS LISTED IN SPECIFICATIONS
- 2 EXISTING SLOPED SECTION OF CEILING TO REMAIN. PATCH AND REPAIR ANY EXISTING & NEW DAMAGE. IF SECTIONS ARE CUT OUT FOR ACCESS ABOVE, HOLES ARE TO BE REPAIRED WITH SIMILAR MATERIALS AND THICKNESSES. PAINT ENTIRE CEILING. SEE FINISH SCHEDULE FOR PAINT COLOR
- 3 NEW 2X4 LED PANEL LIGHTING. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION
- 4 NEW HVAC GRILLES. REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION
- 5 REPAIR EDGE OF EXISTING ANGLED GYP. BD. CEILING SO THAT NEW ACT CEILING CAN BUTT UP TO EDGE. SEE DETAIL 7/A551
- 6 NEW STAGE LIGHTING & SUPPORT. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION
- 7 NEW CAN LIGHTING. SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION
- 8 EXISTING UPPER GYPSUM BOARD CEILING CLOUD TO REMAIN IN PLACE. PATCH AND REPAIR ANY EXISTING & NEW DAMAGE. PAINT ENTIRE CLOUD. SEE FINISH SCHEDULE FOR PAINT COLOR
- 9 MODIFY EXISTING GYPSUM BOARD CEILING CLOUD. CUT OUT MIDDLE SECTION FOR NEW OVERHEAD PROJECTOR. PATCH & REPAIR ALL SIDES AND CORNERS. MODIFY EXISTING SUPPORTS TO INSTALL CLOUDS TO HEIGHT SHOWN ON SHEET A351. SLOPE OF CLOUD TO REMAIN THE SAME. PATCH AND REPAIR CLOUD ONCE IN FINAL RAISED POSITION. SEE FINISH SCHEDULE FOR PAINT COLOR



1 NEW CEILING PLAN
 1/4" = 1'-0"

REFERENCE NOTES

- 1 NEW LAY-IN CEILING TILE SYSTEM, CEILING TILE TYPE TO BE NOTED AS LISTED IN SPECIFICATIONS.
- 2 NEW 2x4 LED PANEL LIGHTING, SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- 3 NEW HVAC GRILLES, REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION.
- 4 NEW STAGE LIGHTING & SUPPORT, SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- 5 NEW CAN LIGHTING, SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- 6 NEW SPOTLIGHT FIXTURE, SEE ELECTRICAL PLANS FOR ADDITIONAL INFORMATION.
- 7 NEW LIGHT FIXTURE ABOVE WHITEBOARDS, SEE ELEC. PLANS.
- 8 EXISTING UPPER GYPSUM BOARD CEILING CLOUD TO REMAIN IN PLACE. PATCH AND REPAIR ANY EXISTING & NEW DAMAGE. PAINT ENTIRE CLOUD, SEE FINISH SCHEDULE FOR PAINT COLOR.
- 9 MODIFY EXISTING GYPSUM BOARD CEILING CLOUD, CUT OUT MIDDLE SECTION FOR NEW OVERHEAD PROJECTOR, PATCH & REPAIR ALL SIDES AND CORNERS. MODIFY EXISTING SUPPORTS TO INSTALL CLOUDS TO HEIGHT SHOWN ON SHEET A351. SLOPE OF CLOUD TO REMAIN THE SAME. PATCH AND REPAIR CLOUD ONCE IN FINAL RAISED POSITION. SEE FINISH SCHEDULE FOR PAINT COLOR.
- 10 OVERHEAD CAST PROJECTOR, PROVIDE DATA & POWER CONNECTION, BYU OIT TO INSTALL, SEE ELECTRICAL & OIT PLANS FOR ADDITIONAL INFORMATION.
- 11 NEW EMERGENCY LIGHT FIXTURE, SEE ELEC. PLANS.
- 12 MODIFY FIRESPRINKLER SYSTEM TO NEW CEILING LAYOUT, REFER TO MECHANICAL PLANS.



FACILITIES PLANNING
 240 BRWB PROVO, UTAH 84602
 PHONE: (801) 422-5504
 FAX: (801) 422-0566

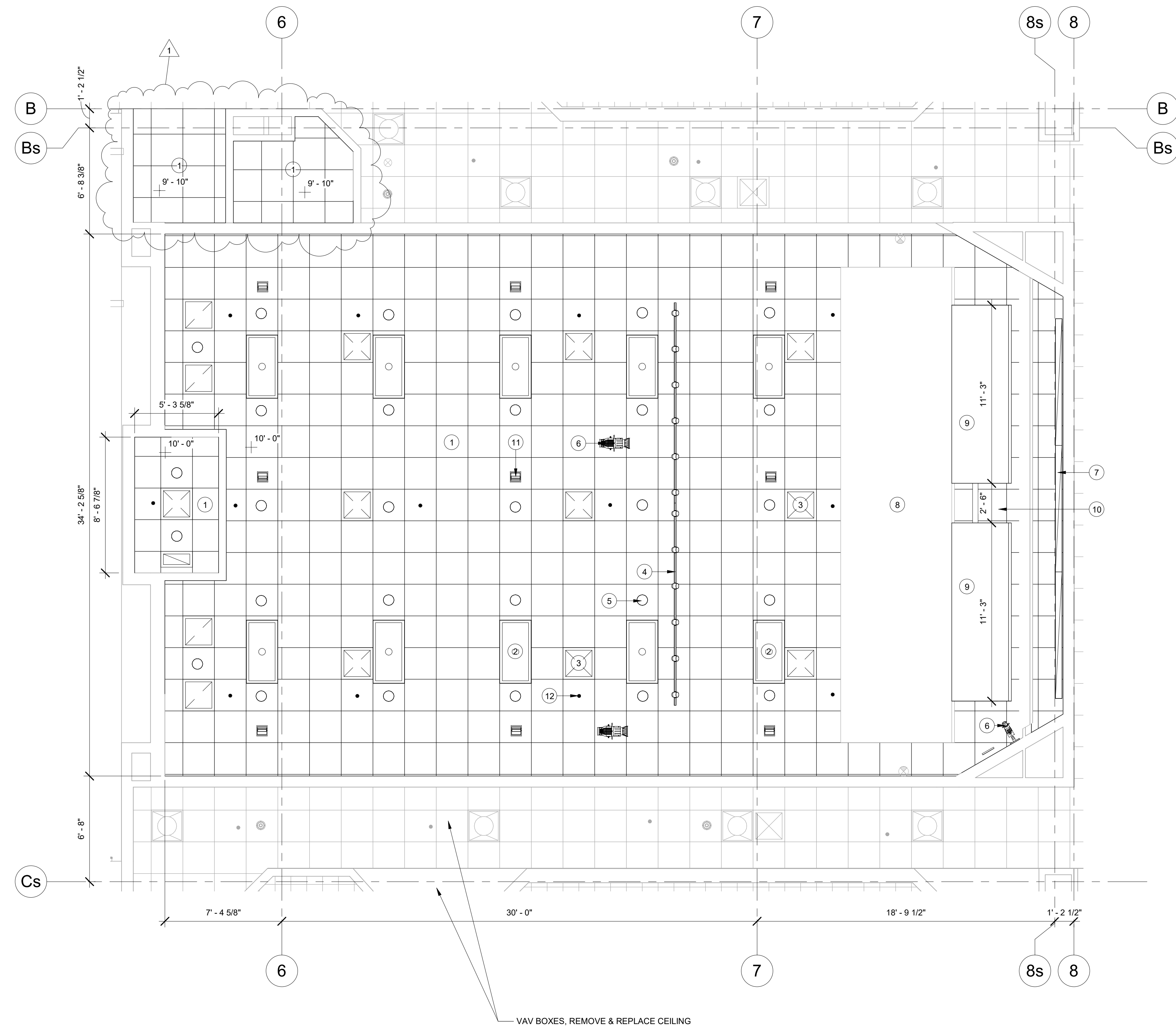
DATE: 03/14/24
 DESIGNER: SW
 DRAWN BY: SW

ADA CHECK: _____
 CODE CHECK: _____
 STRUCTURAL: _____
 UTILITIES DIR: _____
 PLANNING DIR: _____

CLIENT APPROVAL DATE

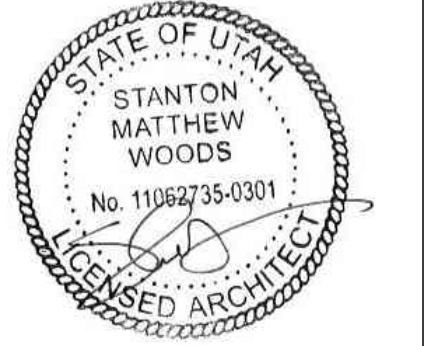
REVISIONS

1	Addendum #02	3/26/2024
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M3728 LEVEL 2 REFLECTED CEILING PLAN
 1/4" = 1'-0"

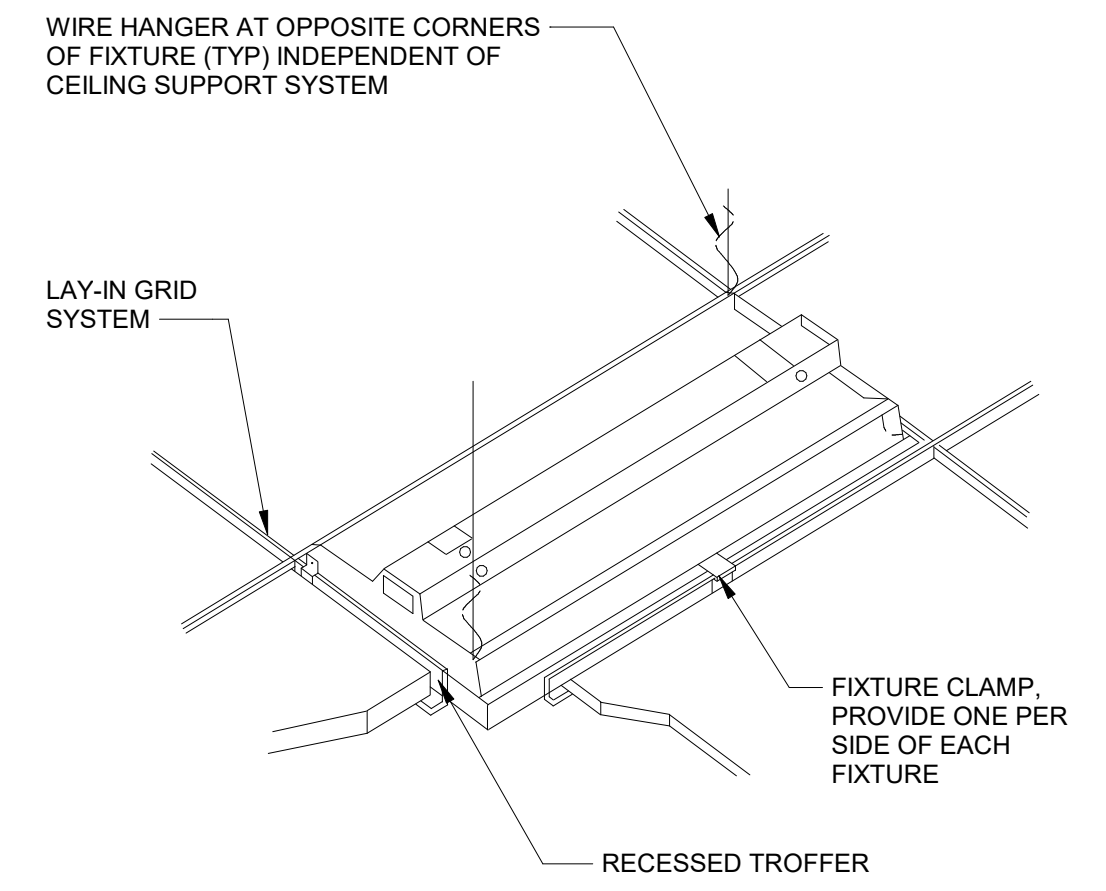
BRIGHAM YOUNG UNIVERSITY
 REMODEL AUDITORIUMS 151 & 251
 PHYSICAL FACILITIES
 N. ELDON TANNER BUILDING (TNRB) - LEVEL 1 & 2



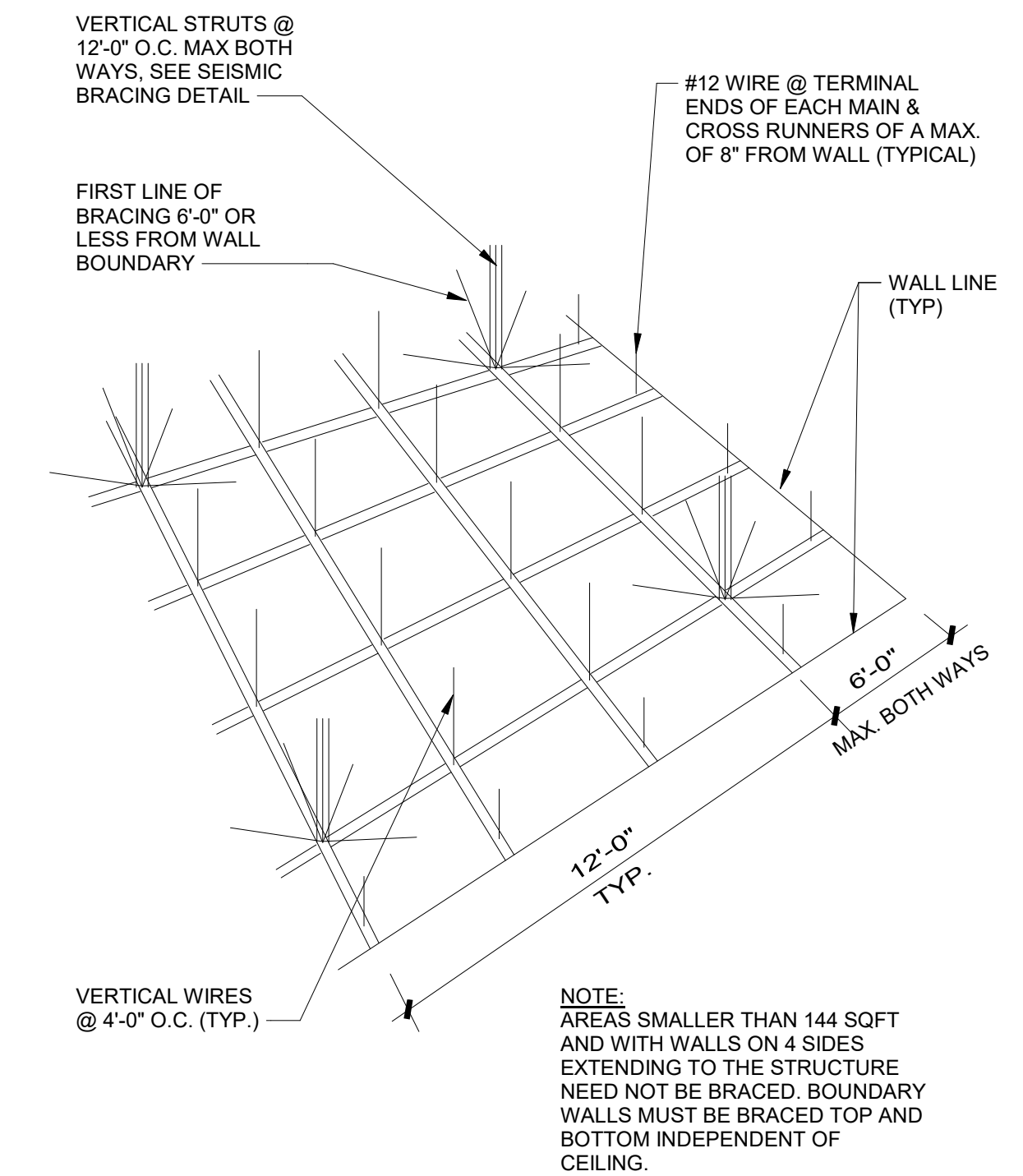
LEVEL 2 REFLECTED CEILING PLAN

WORK ORDER & SHEET NO.

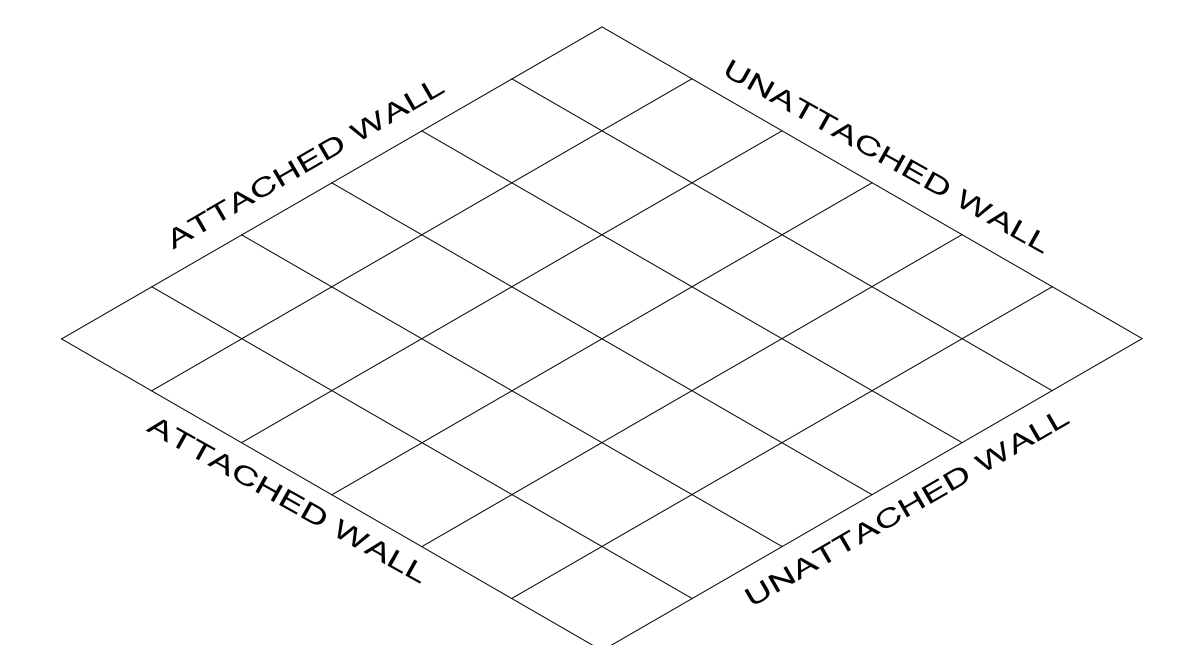
M3728
A152



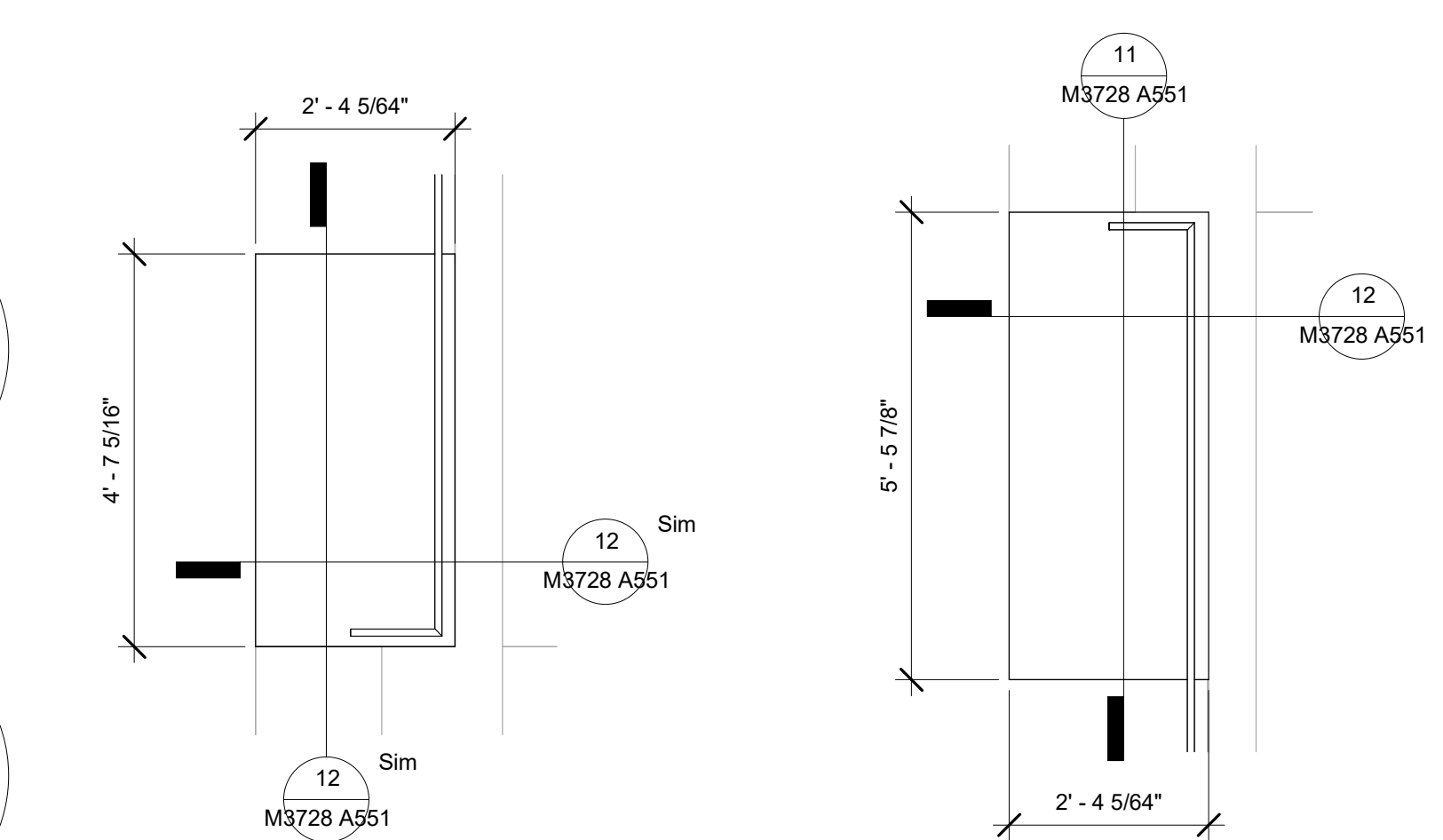
8 M3728 - RECESS. LIGHT FIXT. MOUNTING DET
1" = 1'-0"



5 M3728 - SEISMIC BRACING LAYOUT
1" = 1'-0"

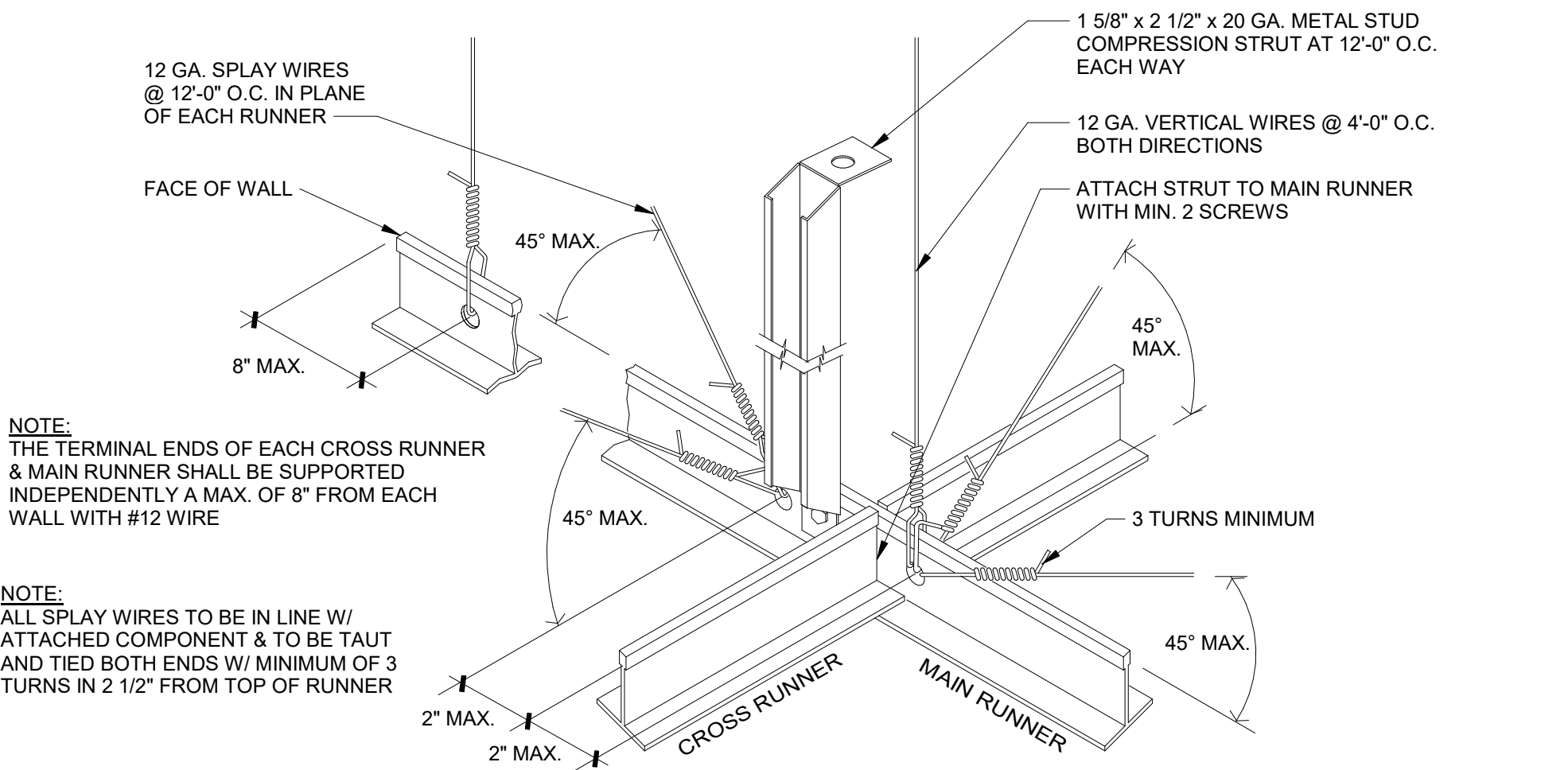


1 M3728 - PERIM. CLIP LAYOUT
1" = 1'-0"

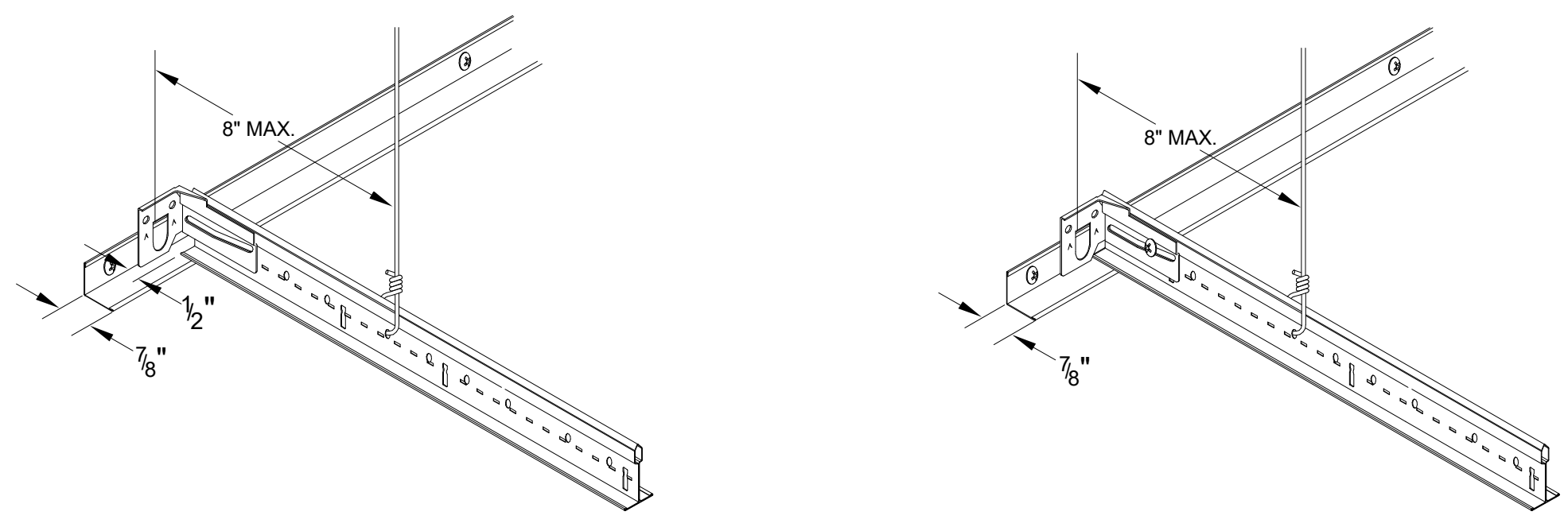


10 NORTH WHEELCHAIR PLATFORM
1/2" = 1'-0"

9 SOUTH WHEELCHAIR PLATFORM
1/2" = 1'-0"

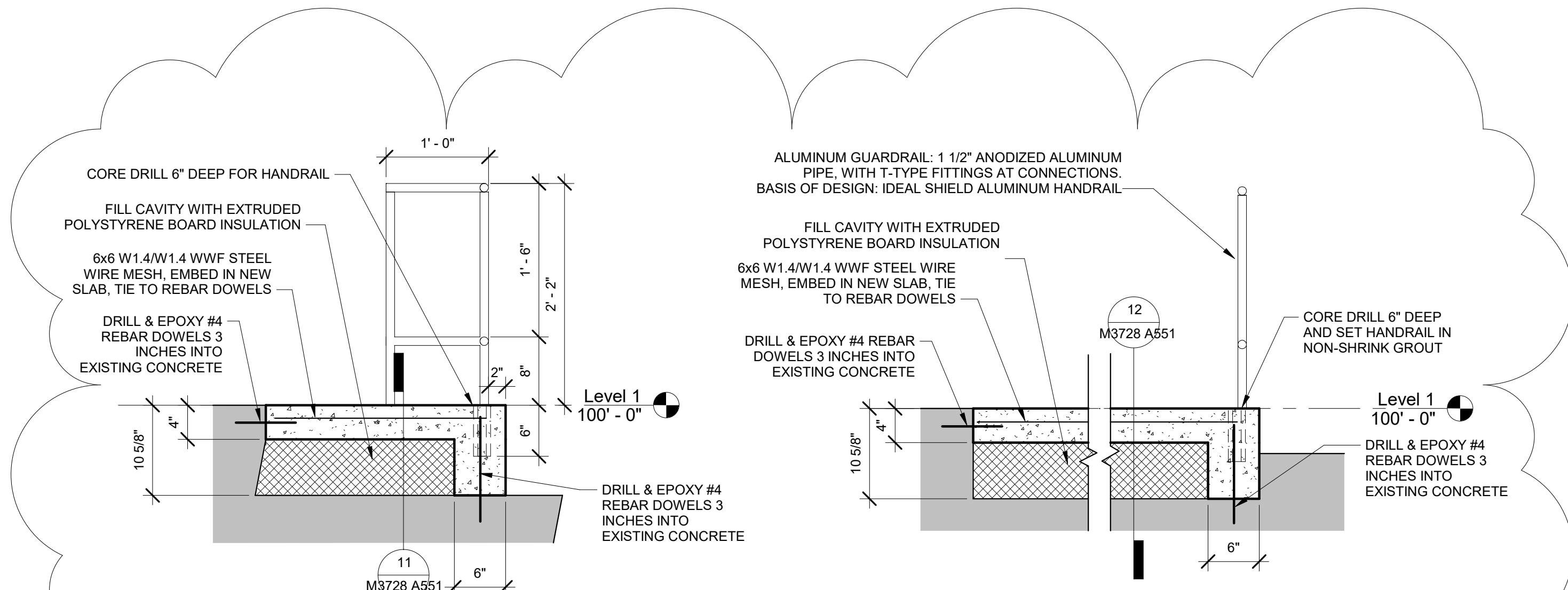


6 M3728 - SEISMIC BRACING
1" = 1'-0"



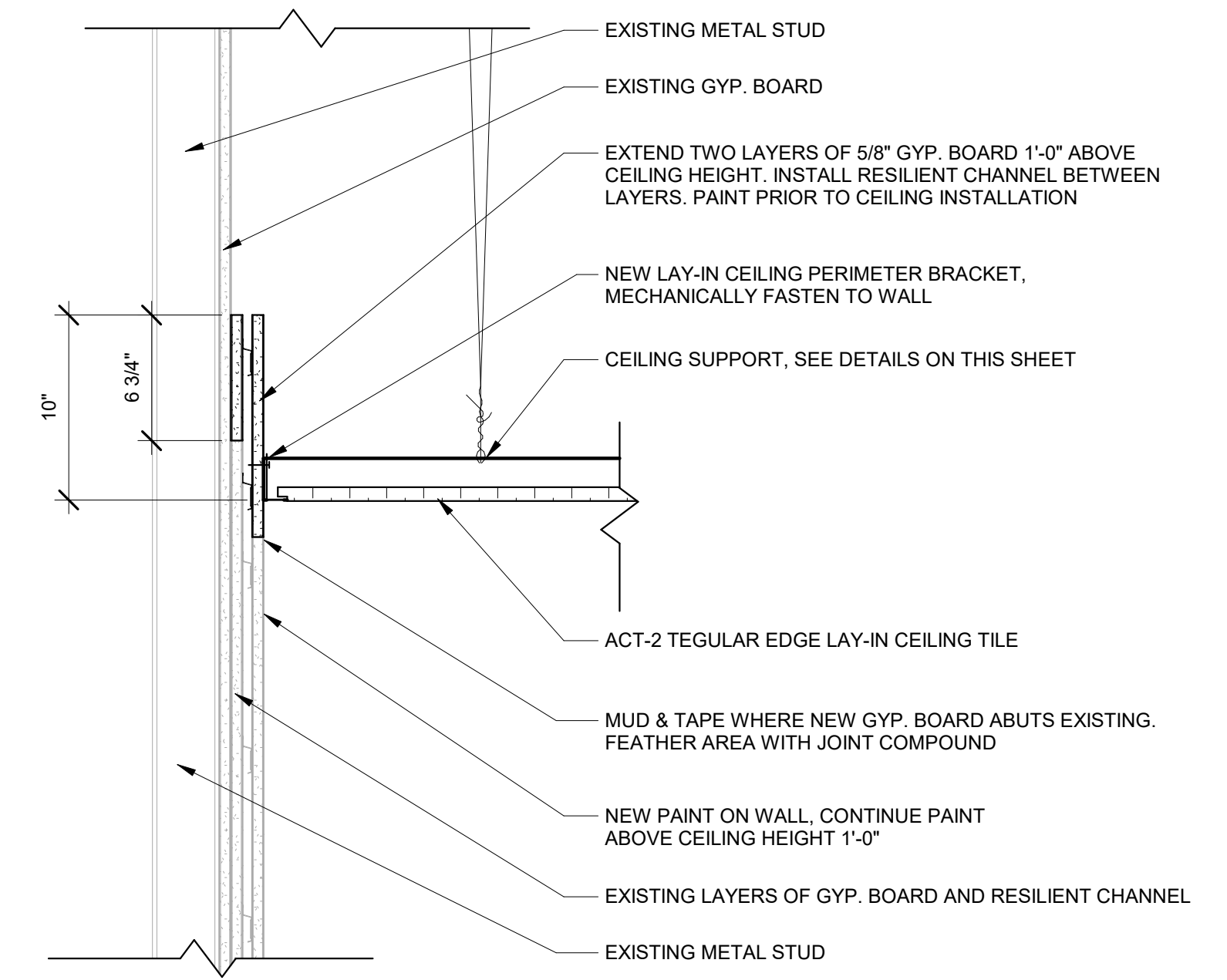
3 M3728 - PERIM. CLIP DET @ UNATCHD. WALL
1" = 1'-0"

2 M3728 - PERIM. CLIP DET @ ATCHD. WALL
1" = 1'-0"

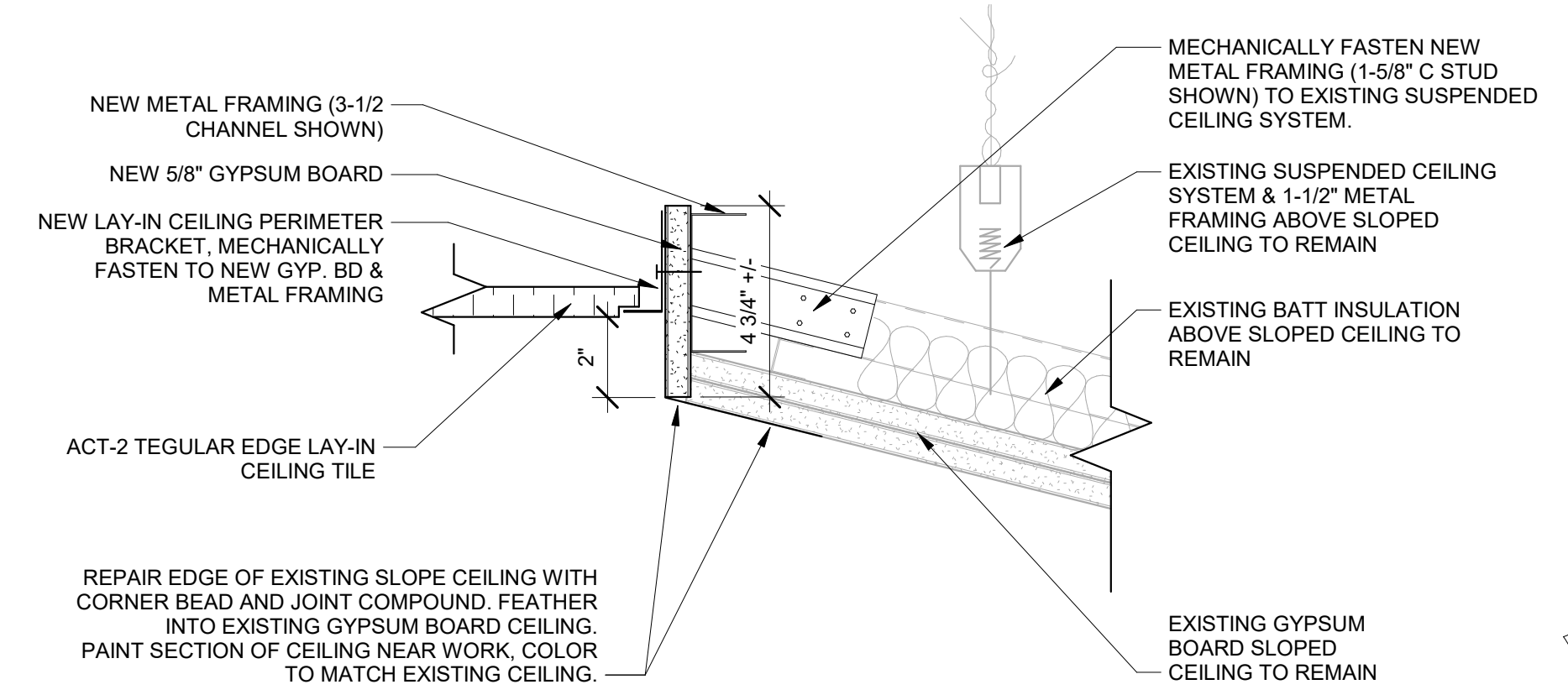


12 CROSS SECTION - B
1" = 1'-0"

11 CROSS SECTION - A
1" = 1'-0"



7 NEW CEILING TO EXISTING WALL
1 1/2" = 1'-0"



4 EXISTING TO NEW CEILING TRANSITION
3" = 1'-0"



**SECTION 072100
THERMAL INSULATION**

PART 1 GENERAL

UPDATED OCTOBER 2021

1.01 SECTION INCLUDES

LOOK FOR CHANGES IN BOLD

- A. Board insulation at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, and exterior wall behind exterior wall finish.
- B. Sound attenuation batt insulation in interior wall construction and above ceilings where indicated on drawings.
- C. Low-density spray foam insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

- A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 031119 - Insulating Concrete Forming: Polystyrene insulation used for forms.
- C. Section 042723 - Cavity Wall Unit Masonry: Masonry walls enclosing insulation.
- D. Section 072119 - Foamed-In-Place Insulation: Plastic foam insulation other than boards.
- E. Section 072123 - Loose Fill Insulation: Granular and bead insulation.
- F. Section 072126 - Blown Insulation: Blown-in, gravity-held fibrous insulation.
- G. Section 072129 - Sprayed Insulation: Sprayed-on, adhered fibrous insulation.
- H. Section 072500 - Weather Barriers: Separate air barrier and vapor retarder materials.
- I. Section 075300 - Elastomeric Membrane Roofing: Installation requirements for board insulation over low slope roof deck specified in this section.
- J. Section 075400 - Thermoplastic Membrane Roofing: Installation requirements for board insulation over low slope roof deck specified in this section.
- K. Section 078400 - Firestopping: Insulation as part of fire-rated through-penetration assemblies.
- L. Section 092116 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2016.
- B. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2016.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2016.
- E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.
- F. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2016a.
- G. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies; 2017.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

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- D. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.05 QUALITY ASSURANCE

- A. Quality Assurance Requirements:
 1. Installer Qualification: Use licensed contractor and installers with minimum of 5 years experience.
 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.
 3. Provide a five year warranty covering materials.

1.06 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation Under Concrete Slabs: Extruded polystyrene (XPS) board.
- B. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.
- C. Insulation Inside Masonry Cavity Walls: Extruded polystyrene (XPS) board.
- D. Insulation Inside Prefabricated Wall Panels: Polyisocyanurate board.
- E. Insulation Over Metal Stud Framed Walls, Continuous: Extruded polystyrene (XPS) or mineral fiber board.
- F. Insulation in gaps and crevices of exterior wall components, door frames, and widow frames: [Low-density spray polyurethane foam].
- G. Insulation in Metal Framed Walls: Sound attenuation batt insulation with no vapor retarder.
- H. Insulation Above Lay-In Acoustical Ceilings: Batt insulation with no vapor retarder. At locations shown on drawings.
- I. Insulation Over Roof Deck: Polyisocyanurate board.

2.02 FOAM BOARD INSULATION MATERIALS

UPDATED OCT 2021

- A. Expanded Polystyrene (EPS) Board Insulation: **Tapered** insulation. Complies with ASTM C578.
 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 3. Board Size: 48 inch by 96 inch.
 4. Board Thickness: Tapered inch.
 5. Board Edges: Square.
 6. Type and Compressive Resistance: Type XI, 5 psi (35 kPa), minimum.
 7. Type and Water Absorption: Type XI, 4.0 percent by volume, maximum, by total immersion.
 8. Type and Thermal Resistance, R-value: Type XI, 3.1 (0.55) per 1 inch thickness at 75 degrees F mean temperature.
 9. Manufacturers:
 - a. AFM Corp; _____: www.r-control.com/#sle.
 - b. Diversifoam Products; _____: www.diversifoam.com
 - c. InsulFoam LLC; InsulFoam _____: www.insulfoam.com
 - d. InsulFoam LLC; R-Tech _____: www.insulfoam.com
 - e. InsulFoam LLC; InsulFoam Below Grade Insulation _____: www.insulfoam.com
 - f. Mar-flex Waterproofing & Building Products; ArmorFoam 25: www.mar-flex.com

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- B. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with natural skin surfaces.
 - 1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
 - 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88) per 1 inch thickness at 75 degrees F mean temperature.
 - 5. Board Edges: Square.
 - 6. Type and Water Absorption: Type IV, 0.3 percent by volume, maximum, by total immersion.
 - 7. Manufacturers:
 - a. Dow Chemical Company; STYROFOAM HIGHLOAD 40: www.dowbuildingsolutions.com
 - b. Kingspan Insulation LLC; GreenGuard XPS Type IV, 25 psi: www.kingspan.com
 - c. Owens Corning Corporation; FOAMULAR Extruded Polystyrene (XPS) Insulation: www.ocbuildingspec.com
 - d. Amoco Foam Products
- C. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
 - 1. Classifications:
 - a. Type II:
 - 1) Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of core foam.
 - 2) Compressive Strength: Classes 1-2-3, Grade 1 - 16 psi (110 kPa), minimum.
 - 3) Thermal Resistance, R-value: At 1-1/2 inch thick; Class 1, Grades 1-2-3 - 8.4 (1.48) at 75 degrees F.
 - 2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 4. Water Vapor Permeance: 1.2 perm, maximum, at 1 inch thickness, and when tested in accordance with ASTM E96/E96M, desiccant method.
 - 5. Board Size: 48 inch by 96 inch.
 - 6. Board Thickness: As Indicated on drawings inch.
 - 7. Board Edges: Square.
 - 8. Manufacturers:
 - a. Carlisle Coatings & Waterproofing, Inc; R2+ Matte: www.carlisleccw.com
 - b. Dow Chemical Company; THERMAX Brand _____: www.dowbuildingsolutions.com
 - c. Hunter Panels; Xci CG: www.hunterpanels.com
 - d. Johns Manville; CI Max: www.jm.com
- D. Glass-Fiber-Reinforced Polyisocyanurate (ISO) Board Insulation with Facers Both Sides and Providing Interior Finish System: Rigid cellular foam, complying with ASTM C1289.
 - 1. Compressive Strength: 16 psi, minimum.
 - 2. Thermal Resistance, R-value: Type I, Class 2, at 1-1/2 inch thick; 9.0 at 75 degrees F.
 - 3. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
 - 4. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 5. Board Size: 48 inch by 96 inch.
 - 6. Board Thickness: As indicated on drawings inch.
 - 7. Board Edges: Square.
 - 8. Manufacturers:
 - a. Dow Chemical Company; THERMAX Heavy Duty: www.dowbuildingsolutions.com.
- E. Polyisocyanurate Board Insulation with Facers Both Sides: Rigid cellular foam, complying with ASTM C1289.
 - 1. Classifications:
 - a. Type II:

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- 1) Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of core foam.
- 2) Compressive Strength: Classes 1-2-3, Grade 1 - 16 psi (110 kPa), minimum.
- 3) Thermal Resistance, R-value: At 1-1/2 inch thick; Class 1, Grades 1-2-3 - 8.4 (1.48) at 75 degrees F.
2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
4. Board Size: 48 inch by 96 inch.
5. Board Thickness: As indicated on drawings inch.
6. Board Edges: Square.
7. Manufacturers:
 - a. Carlisle Coatings & Waterproofing, Inc; R2+ Matte: www.carlisleccw.com
 - b. Dow Chemical Company; THERMAX Brand _____: www.dowbuildingsolutions.com
 - c. GAF; EnergyGuard Polyiso Insulation: www.gaf.com/#sle.
 - d. Hunter Panels; Xci Foil (Class A): www.hunterpanels.com
 - e. Johns Manville; AP Foil-Faced: www.jm.com

2.03 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. **Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit. Update 10/21**
 1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 4. Formaldehyde Content: Zero.
 5. Thickness: As Indicated on Drawings.
 6. Manufacturers:
 - a. CertainTeed Corporation; _____: www.certainteed.com
 - b. Johns Manville; _____: www.jm.com
 - c. Owens Corning Corporation; EcoTouch PINK FIBERGLAS Insulation: www.ocbuildingspec.com
- C. **Mineral Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84. Updated 10/21**
 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 2. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.
 3. Thickness: As Indicated on Drawings.
 4. Manufacturers:
 - a. Johns Manville; MinWool Sound Attenuation Fire Batts: www.jm.com
 - b. Knauf Insulation; EcoBatt Insulation: www.knaufinsulation.com
 - c. ROCKWOOL (ROXUL, Inc); COMFORTBATT: www.rockwool.com
 - d. ROCKWOOL (ROXUL, Inc); AFB: www.rockwool.com
 - e. ROCKWOOL (ROXUL, Inc); AFB evo™: www.rockwool.com
 - f. Thermafiber, Inc; SAFB: www.thermafiber.com
 - g. Thermafiber, Inc; SAFB FF: www.thermafiber.com

2.04 ACCESSORIES

- A. **Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer. Updated 10/21**

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1. Length as required for thickness of insulation material and penetration of deck substrate.
- B. **Adhesively Attached, Spindle-Type Anchors:**
 1. **Description:** Plate welded to projecting spindle; capable of holding insulation of thickness indicated securely in position indicated with self-locking washer in place; and complying with the following requirements:
 - a. **Plate:** Perforated galvanized carbon-steel sheet, 0.030 in (0.75mm) thick by 2 in (50mm) square.
 - b. **Spindle:** Copper-coated, low carbon steel; fully annealed; 0.105 in (2.62 mm) in diameter; length to suit depth of insulation indicated.
 2. **Manufacturers and Products:**
 - a. **AGM Industries, Inc.:** Perforated TACTOO Insulation Hangers.
 - b. **Gemco;** Spindle Type Perforated Base Insulation Hangers.
- C. **Insulation Retaining Washers:**
 1. **Description:** Self Locking washers formed from 0.016 in (0.4mm) thick galvanized steel sheet with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 in (38mm) square or in diameter.
 2. **Manufacturers and Products:**
 - a. **AGM Industries, Inc;** RC150
 - b. **AGM Industries, Inc;** SC150
 - c. **Gemco;** R-150.
 - d. **Gemco;** S-150.
- D. **Insulation Standoff:**
 1. **Description:** Spacer fabricated from galvanized mild-steel for fitting over spindle of insulation anchor to maintain air space of 1 in (25 mm) between face of insulation and substrate to which anchor is attached.
 2. **Basis of Design Manufacturer and Product:** Gemco; Clutch Clip.
- E. **Anchor Adhesive:**
 1. **Description:** Product with demonstrated capability to bond insulation anchors securely to substrates indicated without damaging insulation, fasteners, and substrates.
 2. **Manufacturers and Products:**
 - a. **AGM Industries, Inc.;** TACTOO GPA72 Adhesive.
 - b. **Gemco;** Tuff-Bond Hanger Adhesive.
- F. **Polyethylene Vapor-Retarder Membrane:**
 1. **Description:** Fire-retardant reinforced polyethylene vapor-retarder membrane comprised of two outer layers of polyethylene film laminated to an inner reinforcing layer consisting of either a non-woven grid of nylon cord or polyester scrim.
 - a. **Physical Properties:**
 - (1) **Vapor Permeance:** Maximum 0.13 perm (7.4 ng/Pa x s x sq. m); ASTM E 96/E 96M.
 2. **Surface Burning Characteristics:**
 - a. **Flame Spread:** 25 or less.
 - b. **Smoke Developed:** 450 or less.
 3. **Manufacturers and Products:**
 - a. **Raven Industries;** Dura-Skrim 2FR.
 - b. **Reef Industries, Inc.,** Griffolyn Type T-55 FR.
 4. **Accessories:**
 - a. **Sealing Tape:** Asphalt based tape with double-sided adhesive and release liner provided by vapor-retarder manufacturer.
 - (1) **Manufacturers and Products:**

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- (a) Raven Industries; Butyl Seal Tape (TP2BR).
- (b) Reef Industries, Inc., Griffolyn Division; Fab Tape.
- b. Seaming Tape: Pressure-sensitive tape for seaming and bonding joints and penetrations in vapor-retarder membrane provided by vapor-retarder manufacturer.
 - (1) Manufacturers and Products:
 - (a) Raven Industries; Vapor Bond Tape (TVB4).
 - (b) Reef Industries, Inc., Griffolyn Division; Pressure Sensitive Tape.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Apply adhesive to back of boards:
 - 1. Three continuous beads per board length.
 - 2. Full bed 1/8 inch thick.
- B. Install boards horizontally on foundation perimeter.
 - 1. Place boards to maximize adhesive contact.
 - 2. Install in running bond pattern.
 - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- C. Extend boards over expansion joints, unbonded to foundation on one side of joint.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- E. Immediately following application of board insulation, place protective boards over exposed insulation surfaces.
 - 1. Install boards horizontal or vertical from base of foundation to top of insulation.
 - 2. Butt boards tightly, with joints staggered from insulation joints.

3.03 BOARD INSTALLATION AT EXTERIOR WALLS

- A. Apply adhesive to back of boards:
 - 1. Three continuous beads per board length.
 - 2. Full bed 1/8 inch thick.
- B. Install rigid insulation directly to steel studs or exterior grade sheathing at 16 inches on center with manufacturer recommended mechanical fasteners, and tape joints with manufacturer's minimum 4 inch wide sealant tape; comply with ASTM E2357.
- C. Install boards horizontal or vertical on walls.
 - 1. Install in running bond pattern.
 - 2. Butt edges and ends tightly to adjacent boards and to protrusions.
- D. Extend boards over expansion joints, unbonded to wall on one side of joint.
- E. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.04 BOARD INSTALLATION AT CAVITY WALLS

- A. Apply adhesive to back of boards:
 - 1. Three continuous beads per board length.
 - 2. Full bed 1/8 inch thick.
- B. Install boards to fit snugly between wall ties.

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1. Place membrane surface against adhesive.
 2. Place membrane surface facing out, and tape seal board joints.
- C. Install boards horizontal or vertical on walls.
1. Place boards to maximize adhesive contact.
 2. Install in running bond pattern.
 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.05 BOARD INSTALLATION UNDER CONCRETE SLABS

- A. Place insulation under slabs on grade after base for slab has been compacted.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

3.06 BOARD INSTALLATION OVER LOW SLOPE ROOF DECK

- A. Board Installation Over Roof Deck, General:
1. See applicable roofing specification section for specific board installation requirements.
 2. Ensure vapor retarder is clean and dry, continuous, and ready for application of roofing system.
 3. Fasten insulation to deck in accordance with roofing manufacturer's written instructions.
 4. Do not apply more insulation than can be covered with roofing in same day.

3.07 BATT INSTALLATION

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.08 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements, for additional requirements.
- B. Coordination of Tests and Inspections:
 1. Testing and inspection by owner.
 2. Notify owner in writing of schedule for testing and inspection.
 3. Cooperate with owners testing agency.
 4. Allow access to insulation work areas and staging.
 5. Do not cover air barrier and insulation work until tested, inspected, and accepted.

3.09 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

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**SECTION 078400
FIRESTOPPING**

UPDATED MARCH 2022

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Firestopping systems.
 - 1. Fire Ratings: See Drawings for required fire resistance rated construction.
 - 2. Firestopping: Material, or a combination of materials, that has been approved by a nationally recognized third party testing agency. Firestopping installed as prescribed by its listing, is used to maintain the fire resistance rated construction system to protect openings made by voids, penetrations, blank openings, construction joints, and intersecting walls of non-fire rated construction.
- B. Firestopping of all joints, penetrations and perimeter containment conditions in fire resistance rated and smoke resistant assemblies, whether indicated on drawings or not.
- C. Firestopping shall be detailed by the Architect following methods prescribed by the approved manufacturer, their technical listings and by Engineering Judgements made by the approved manufacturer engineer. The contractor, his sub-contractor and the approved manufacturer shall specifically submit to the Architect for each firestop system to be used.

1.02 RELATED REQUIREMENTS

- A. **Section 220517 - Sleeves and Sleeve Seals for Plumbing Piping. Updated March 2022**
- B. **Section 230517 - Sleeves and Sleeve Seals for HVAC Piping.**

1.03 REFERENCE STANDARDS

- A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems; 2013a.
- B. ASTM E1966 - Standard Test Method for Fire Resistive Joint Systems; 2007 (Reapproved 2011).
- C. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestops; 2014b.
- D. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers; 2010a (Reapproved 2015).
- E. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus; 2015b.
- F. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies; 2013.
- G. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi; 2015.
- H. ITS (DIR) - Directory of Listed Products; current edition.
- I. FM 4991 - Approval Standard for Firestop Contractors; 2013.
- J. FM (AG) - FM Approval Guide; current edition.
- K. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems; Current Edition, Including All Revisions.
- L. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.
- M. UL (FRD) - Fire Resistance Directory; current edition.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.

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- B. Schedule of Firestopping: List each type of penetration, fire rating of the penetrated assembly, and firestopping test or design number.
- C. Label: Provide a pre-manufactured label from the company of product submitted that identifies the firestopping system, test or design number, the date of installation and the name of the company and individual installing.
 - 1. Provide a label for each penetration or at 15'-0" on center maximum.
- D. Product Data: Provide data on product characteristics, performance ratings, and limitations.
- E. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- G. Installer Qualification: Submit qualification statements for installing mechanics.

1.05 QUALITY ASSURANCE

- A. Nationally Recognized Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
 - 1. Listing in UL (FRD) will be considered as constituting an acceptable test report.
 - 2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
 - 3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists. Engineering judgments to be documented on the construction documents and incorporated into the as-built plans.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
 - 1. Trained by manufacturer.
 - 2. UL Qualified Firestop Contractor or:
 - 3. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
 - a. Verification of minimum three years documented experience installing firestop work.
 - b. Verification of at least five satisfactorily completed projects of comparable size and type.
 - c. Licensed by local authorities having jurisdiction (AHJ).

1.06 MOCK-UP

- A. Pre-installation mock-up or first install mock-up of the types of fire stopping to be performed. Install one firestopping assembly representative of each fire rating design required on project. (Joint Assemblies, Penetrations and Perimeter Containment)
 - 1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.
 - 2. Mock-up should show the manufacturer recommended label that identifies manufacturer, system number, date of installation, firestop installation company and name of installer.
- B. If accepted, mock-up will represent minimum standard for the Work.
- C. If accepted, mock-up may remain as part of the Work.

1.07 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
- B. Provide ventilation in areas where solvent-cured materials are being installed.

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PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Firestopping Manufacturers:
 - 1. 3M Fire Protection Products; _____: www.3m.com/firestop
 - 2. Hilti, Inc: www.us.hilti.com
 - 3. Specified Technologies Inc; _____: www.stifirestop.com

2.02 MATERIALS

- A. Firestopping Materials: Approved and listed materials meeting the assembly rating requirements.
- B. Prohibited Materials: _____
 - 1. Do not use Intumescent tape applied to the outside or the inside of steel stud track for head of wall or wall to floor construction, whether by manufacture pre-applied or field applied.
 - 2. Do not use residential canned spray products.
- C. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.
- D. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- E. Provide approved and listed materials as required for:
 - 1. Filling voids and cavities with moldable putty, intumescent caulking, bricks, pillow sealants, wraps, spray sealants and mortars.
 - 2. Factory and field assembled devices using sleeves/collars, mechanical devices and cast in assemblies.
 - 3. Forming/Backing Materials: Mineral or ceramic batts, blankets and boards.
 - 4. Duct and Pipe covering materials.
- F. Fire Ratings: See Drawings for required fire rated construction and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

- A. Perimeter Fire Containment Firestopping: Use approved and listed system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of the floor assembly.
 - 1. Movement: In addition, provide systems that have been tested to show movement capability as indicated.
 - 2. Temperature Rise: In addition, provide systems that have been tested to show T Rating as indicated.
 - 3. Air Leakage: In addition, provide systems that have been tested to show L Rating as indicated.
 - 4. Where floor assembly is not required to have a fire rating, provide systems that have been tested to show L Rating as indicated.
- B. Head-of-Wall Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use any system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of floor or wall, whichever is greater.
 - 1. Movement: In addition, provide systems that have been tested to show movement capability as indicated.
- C. Floor-to-Floor, Wall-to-Wall, and Wall-to-Floor Joints, Except Perimeter, Where Both Are Fire-Rated: Use any system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
 - 1. Movement: In addition, provide systems that have been tested to show movement capability as indicated.
 - 2. Air Leakage: In addition, provide systems that have been tested to show L Rating as indicated.

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3. Watertightness: In addition, provide systems that have been tested to show W Rating as indicated.
 4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.
- D. Through Penetration Firestopping: Use any system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
1. Temperature Rise: In addition, provide systems that have been tested to show T Rating as indicated.
 2. Air Leakage: In addition, provide systems that have been tested to show L Rating as indicated.
 3. Watertightness: In addition, provide systems that have been tested to show W Rating as indicated.
 4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOP SYSTEM AND LABELING

- A. Firestopping: Approved materials by this section with a system listed to meet project requirements.
- B. Labeling: Penetrations, joints and perimeter containment to be labeled with a premanufactured firestop system adhesive label.
 1. Label shall be from the same manufacturer as product being used.
 2. Label to show Product, System number, Installation company, Installer and Date.
- C. Ensure fire rated construction is identified as per 2018 IBC 703.7.
 1. Fire Ratings: See Drawings and existing conditions.

PART 3 EXECUTION

3.01 EXAMINATION AND PRE-CONSTRUCTION MEETING

- A. Contractor to verify openings and penetrations meet all requirements of the listed system and do not proceed until they are ready to receive the work of this section.
- B. Schedule a pre-construction meeting with the Owner, Contractor, Installer, and Product Representative to coordinate and discuss firestop work as it relates to various trades and review the overall fire resistant construction requirements for the project.

3.02 PREPARATION

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond and listing of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.
- C. Verify system can be installed against substrate.

3.03 INSTALLATION

- A. Install materials in manner described in listed fire stop system report and in accordance with manufacturer's instructions, completely closing openings.
- B. Do not cover installed firestopping until inspected by Owner's third party inspector and/or Construction Project Manager.
- C. Install labeling required by code and by this section. Coordinate specific wording and location of labeling with owner through the BYU Construction Project Manager.

3.04 FIELD QUALITY CONTROL

- A. A Testing Agency employed and paid by Owner and/or the BYU Construction Project Manager will examine penetration firestopping in accordance with FM4991, ASTM E2174, and ASTM E2393. The Testing Agency and/or Owner Construction Project Manager will perform destructive testing on a maxi

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imum of 10% of the firestopping work, unless poor test results dictate that more testing is needed. Contractor to repair all testing locations.

- B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements. All repairs must be made at the contractor's expense and per the firestopping manufacturer's recommendations.
- C. A visual inspection during firestop installation work to be coordinated by the contractor with the BYU Construction Project Manager and the Owner's Testing Agency. The contractor must show that used containers and wrappings match the required quantity of product that should have been used to perform the work in accordance with manufacturer's recommendations. Check for expiration dates on materials.
- D. Examine UL fire stop system labels and ensure they contain the required information and are permanent.
- E. Ensure identification and marking of fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions meets the labeling requirements of 2018 IBC 703.7.

3.05 CLEANING

- A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION AND CLOSEOUT

- A. Protect adjacent surfaces from damage by material installation.
- B. Include documentation that will identify maintenance of fire stop assemblies required by the adopted codes for future owner reference per Closeout Section 017800-3.01.
- C. Confirm that all "Engineering Judgments" related to firestopping work are clearly shown on the redlined as-built documents maintained by the contractor during construction.
- D. Firestopping manufacture's datasheets and cutsheets based on listed tests shall be included in the O&M manuals.
- E. Provide a photo portfolio in the O&M manual for each penetration, joint and perimeter containment showing labeling of the system and plan grid line location of each label.

END OF SECTION

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SECTION 079200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.
- D. Owner-provided field quality control.

1.02 RELATED REQUIREMENTS

- A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.
- B. Section 071300 - Sheet Waterproofing: Sealing cracks and joints in waterproofing substrate surfaces using materials specified in this section.
- C. Section 072500 - Weather Barriers: Sealants required in conjunction with air barriers and vapor retarders.
- D. Section 078400 - Firestopping: Firestopping sealants.
- E. Section 079513 - Expansion Joint Cover Assemblies: Sealants forming part of expansion joint cover assemblies.
- F. Section 087100 - Door Hardware: Setting exterior door thresholds in sealant.
- G. Section 092116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.
- H. Section 092216 - Non-Structural Metal Framing: Sealing between framing and adjacent construction in acoustical and sound-rated walls and ceilings.
- I. Section 093000 - Tiling: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.
- J. Section 233100 - HVAC Ducts and Casings: Duct sealants.

1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2015.
- B. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014a.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- G. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- H. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2013.
- I. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015.
- J. SWRI (VAL) - SWR Institute Validated Products Directory; Current Listings at www.swrionline.org.

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1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 7. Sample product warranty.
 - 8. Certification by manufacturer indicating that product complies with specification requirements.
 - 9. SWRI Validation: Provide currently available sealant product validations as listed by SWRI (VAL) for specified sealants.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- E. Samples for Verification: Where custom sealant color is specified, obtain directions from Owner and Architect and submit at least two physical samples for verification of color of each required sealant.
- F. Installation Plan: Submit at least four weeks prior to start of installation.
- G. Field Quality Control Plan: Submit at least two weeks prior to start of installation.
- H. Installation Log: Submit filled out log for each length or instance of sealant installed.
- I. Field Quality Control Log: Submit filled out log for each length or instance of sealant installed, within 10 days after completion of inspections/tests; include bagged test samples and photographic records, if any.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- D. Installation Plan: Include schedule of sealed joints, including the following.
 - 1. Approximate date of installation, for evaluation of thermal movement influence.
- E. Field Quality Control Plan:
 - 1. Visual inspection of entire length of sealant joints.
 - 2. Destructive field adhesion testing of sealant joints, except interior sealant joints.
 - a. For each different sealant and substrate combination, allow for one test every 100 feet in the first 1000 linear feet, and one test per 1000 linear feet thereafter, or once per floor on each elevation.
 - b. If any failures occur in the first 1000 linear feet, continue testing at frequency of one test per 500 linear feet at no extra cost to Owner.

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1.06 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Dow Chemical Company; _____: consumer.dow.com/en-us/industry/ind-building-construction.html
 - 2. Sika Corporation; _____: www.usa-sika.com
 - 3. Tremco Commercial Sealants & Waterproofing; _____: www.tremcosealants.com
- B. Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
 - 1. Dow Chemical Company; _____: consumer.dow.com/en-us/industry/ind-building-construction.html
 - 2. Sika Corporation; _____: www.usa-sika.com
 - 3. Tremco Commercial Sealants & Waterproofing; _____: www.tremcosealants.com

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Wall expansion and control joints.
 - b. Joints between door, window, and other frames and adjacent construction.
 - c. Joints between different exposed materials.
 - d. Openings below ledge angles in masonry.
 - e. Other joints indicated below.
 - 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - 1) Exception: Such gaps and openings in gypsum board and plaster finished stud walls and suspended ceilings.
 - 2) Exception: Open-, membrane-, and through-penetrations in sound-rated assemblies that are also fire-rated assemblies.
 - c. Other joints indicated below.
 - 3. Do not seal the following types of joints.
 - a. Intentional weepholes in masonry.
 - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - d. Joints where installation of sealant is specified in another section.
 - e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.

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C. Interior Joints: Use non-sag polyurethane sealant, paintable, unless otherwise indicated.

2.03 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section 016116.
- B. Colors: As indicated on drawings.

2.04 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Color: To be selected by Architect from manufacturer's standard range.
 - 2. Manufacturers:
 - a. Dow Chemical Company; 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html
 - b. Dow Chemical Company; 795 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html
 - c. Sika Corporation; Sikasil WS-290: www.usa-sika.com
 - d. Sika Corporation; Sikasil WS-295: www.usa-sika.com
 - e. Tremco Commercial Sealants & Waterproofing; Spectrem 1: www.tremcosealants.com
 - f. Tremco Commercial Sealants & Waterproofing; Spectrem 2: www.tremcosealants.com
 - g. Substitutions: See Section 016000 - Product Requirements.
- B. Type ____ - Hybrid Urethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 35 percent, minimum.
 - 2. Color: To be selected by Architect from manufacturer's standard range.
 - 3. Manufacturers:
 - a. Substitutions: See Section 016000 - Product Requirements.
- C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: To be selected by Architect from manufacturer's standard range.
 - 4. Manufacturers:
 - a. Sherwin-Williams Company; Stampede-1/-TX Polyurethane Sealant: www.sherwin-williams.com
 - b. Tremco Commercial Sealants & Waterproofing; Dymeric 240 FC: www.tremcosealants.com

2.05 SELF-LEVELING SEALANTS

- A. Self-Leveling Silicone Sealant: ASTM C920, Grade P, Uses M and A; single-component, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
 - 1. Movement Capability: Plus 100 percent, minus 50 percent, minimum.
 - 2. Hardness Range: 0 to 15, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: To be selected by Architect from manufacturer's standard range.
 - 4. Service Temperature Range: Minus 40 to 180 degrees F.
 - 5. Manufacturers:
 - a. Sika Corporation; Sikasil 728SL: www.usa-sika.com
 - b. Tremco Commercial Sealants & Waterproofing; Spectrem 900SL: www.tremcosealants.com

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2.06 ACCESSORIES

- A. Backer Rod: Cylindrical open cellular foam rod compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 1. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

- A. See Section 014000 - Quality Requirements for additional requirements.

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- B. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- C. Non-Destructive Adhesion Testing: If there are any failures in first 100 linear feet, notify Architect immediately.
- D. Destructive Adhesion Testing: If there are any failures in first 1000 linear feet, notify Architect immediately.
- E. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
- F. Repair destructive test location damage immediately after evaluation and recording of results.

END OF SECTION

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SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

UPDATED 2/21, 10/21

1.01 SECTION INCLUDES

SEE CHANGES IN BOLD

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Acoustic insulation.
- E. Gypsum sheathing.
- F. Cementitious backing board.
- G. Gypsum wallboard.
- H. Joint treatment and accessories.
- I. Acoustic (sound-dampening) wall and ceiling board.

1.02 RELATED REQUIREMENTS

- A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 072100 - Thermal Insulation: Acoustic insulation.
- C. Section 072500 - Weather Barriers: Water-resistive barrier over sheathing.
- D. Section 078400 - Firestopping: Top-of-wall assemblies at fire rated walls.
- E. Section 093000 - Tiling: Tile backing board.

1.03 REFERENCE STANDARDS

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2010 (Reaffirmed 2016).
- C. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).
- D. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- F. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- G. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
- H. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014.
- I. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2012.
- J. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.
- K. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2016.

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- L. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
- M. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.
- N. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
- O. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.
- P. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel; 2013.
- Q. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing; 2013a.
- R. ASTM C1288 - Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets; 2014.
- S. ASTM C1325 - Specification for Non-Asbestos Fiber-Mat Reinforced Cementitious Backer Units; 2017.
- T. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014a.
- U. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels; 2015.
- V. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.
- W. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).
- X. GA-216 - Application and Finishing of Gypsum Board; 2016.
- Y. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association; 2016.
- Z. GA-600 - Fire Resistance Design Manual; 2015.
- AA. UL (FRD) - Fire Resistance Directory; current edition.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.
- C. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- E. Submit structural calculations and details stamped by a structural engineer licensed in the state of Utah showing the design of the members and their attachment to each other and to the building structure. THE STRUCTURAL DESIGN MUST BE REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 3 years of experience.

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PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
 - 1. See PART 3 for finishing requirements.
- B. Interior Partitions: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC as indicated calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- C. Shaft Walls at HVAC Shafts: Provide completed assemblies with the following characteristics:
 - 1. Air Pressure Within Shaft: Sustained loads of 5 lb./sq ft with maximum mid-span deflection of L/240.
 - 2. Acoustic Attenuation: STC of 35-39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- D. Fire Rated Assemblies: Provide completed assemblies with the following characteristics:
 - 1. Fire Rated Partitions: UL listed assembly No. _____; ____ hour rating.
 - 2. Fire Rated Ceilings and Soffits: One (1) hour fire rating.
 - 3. Fire Rated Structural Column Framing: UL listed assembly No. _____; ____ hour rating.
 - 4. Fire Rated Structural Beam Framing: UL listed assembly No. _____; ____ hour rating.
 - 5. Fire Rated Shaft Walls: UL listed assembly No. _____; ____ hour rating.
 - 6. Fire Rated Area Separation Walls: UL listed assembly No. _____; 1 hour rating.
 - 7. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.02 METAL FRAMING MATERIALS

- A. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. Clarkwestern Dietrich Building Systems LLC; ____: www.clarkdietrich.com
 - 2. Jaimes Industries; ____: www.jaimesind.com
 - 3. Marino; ____: www.marinoware.com
 - 4. Phillips Manufacturing Co; ____: www.phillipsmfg.com
 - 5. **CEMCO Steel; www.cemcosteel.com** **Updated 2/21**
- B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/360 at 5 psf.
 - 1. Studs: "C" shaped with flat or formed webs with knurled faces. (1 5/8" x 3 5/8" wide Typical at interior walls - 1 5/8" x 6" studs typical at exterior walls)
 - 2. Runners: U shaped, sized to match studs.
 - 3. Ceiling Channels: C-shaped.
 - 4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
 - 5. Resilient Furring Channels: 1/2 inch depth, for attachment to substrate through both legs; both legs expanded metal mesh.
 - a. Products:
 - 1) Same manufacturer as other framing materials.
- C. Shaft Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.
 - 1. Products:
 - a. Same manufacturer as other framing materials.
- D. Area Separation Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with specified performance requirements.

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- E. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- F. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.
- G. Non-Loadbearing Framing Accessories:
 - 1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
 - 2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
 - a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
 - 3. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. American Gypsum Company; ____: www.americangypsum.com
 - 2. CertainTeed Corporation; ____: www.certainteed.com
 - 3. Georgia-Pacific Gypsum; Dense Shield Tile Baker: www.gpgypsum.com.
 - 4. USG Corporation; ____: www.usg.com
 - 5. Substitutions: See Section 016000 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 - 3. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.
 - c. ____: 1/4 inch.
 - d. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
 - 4. Paper-Faced Products:
 - a. American Gypsum Company; FireBloc Type X Gypsum Wallboard.
 - b. Continental Building Products; Firecheck Type X.
 - c. Georgia-Pacific Gypsum; ToughRock Fireguard X.
 - d. National Gypsum Company; Gold Bond BRAND Fire-Shield Gypsum Board.
- C. Abuse Resistant Wallboard:
 - 1. Application: High-traffic areas indicated.
 - 2. Surface Abrasion: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 3. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 4. Soft Body Impact: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 5. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 6. Paper-Faced Type: Gypsum wallboard as defined in ASTM C1396/C1396M.
 - 7. Type: Fire resistance rated Type X, UL or WH listed.
 - 8. Thickness: 5/8 inch.
 - 9. Edges: Tapered.
 - 10. Paper-Faced Products:
 - a. American Gypsum Company; M-Bloc AR Type X.
 - b. CertainTeed Corporation; Extreme Abuse Resistant Drywall with M2Tech.
 - c. Continental Building Products; Protecta AR 100 Type X with Mold Defense.

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- d. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold Guard Abuse-Resistant.
 - e. National Gypsum Company; Gold Bond Hi-Abuse XP Gypsum Board.
11. Products:
- a. American Gypsum Company; M-Bloc AR Type X.
 - b. Continental Building Products; Protecta AR 100 Type X with Mold Defense.
 - c. Continental Building Products; Rapid Deco Level 5 Type X with Protecta.
 - d. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold Guard Abuse-Resistant.
 - e. National Gypsum Company; Gold Bond Hi-Abuse XP Gypsum Board.
- D. Impact Resistant Wallboard:
- 1. Application: High-traffic areas indicated.
 - 2. Surface Abrasion: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 3. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 4. Soft Body Impact: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 5. Hard Body Impact: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 6. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 7. Paper-Faced Type: Gypsum wallboard as defined in ASTM C1396/C1396M.
 - 8. Type: Fire resistance rated Type X, UL or WH listed.
 - 9. Thickness: 5/8 inch.
 - 10. Edges: Tapered.
 - 11. Products:
 - a. American Gypsum Company; M-Bloc IR Type X.
 - b. Continental Building Products; Protecta HIR 300 Type X with Mold Defense.
 - c. National Gypsum Company; Gold Bond HI-Impact XP Gypsum Board.
 - d. Substitutions: See Section 016000 - Product Requirements.
- E. Backing Board For Wet Areas: One of the following products:
- 1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.
 - 2. Application: Horizontal surfaces behind tile in wet areas including countertops.
 - 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 4. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
 - a. **Thickness: 5/8 inch.** **Update 10/21**
 - b. Products:
 - 1) National Gypsum Company; PermaBase Cement Board: www.nationalgypsum.com
 - 2) USG Corporation: www.usg.com
 - 5. ASTM Cement-Based Board: Non-gypsum-based, cementitious board complying with ASTM C1288.
 - a. **Thickness: 5/8 inch.** **Update 10/21**
 - b. Products:
 - 1) James Hardie Building Products, Inc; HardiBacker: www.jameshardie.com
 - 2) USG Durock Cement Board.
 - 3) Substitutions: See Section 016000 - Product Requirements.
 - 6. **Glass Mat Faced Board: Coated glass mat water-resistant gypsum backing panel as defined in ASTM C1178/C1178M.** **Update 10/21**
 - a. **Regular Type: Thickness 5/8 inch. (16 mm).**
 - b. **Fire-Resistance-Rated Type: Type X core, thickness 5/8 inch. (16 mm).**
 - c. **Products:**
 - 1) **CertainTeed Corporation; Diamondback Tile Backer: www.certainteed.com**

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- 2) **CertainTeed Corporation; Diamondback Type X Tile Backer: www.certainteed.com**
- 3) **Georgia-Pacific Gypsum; DensShield Tile Backer: www.gpgypsum.com**
- 4) **Georgia-Pacific Gypsum; DensShield Fireguard Tile Backer; www.gpgypsum.com**

5) **Substitutions: See Section 016000 - Product Requirements.**

- F. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
- 1. Application: Exterior sheathing, unless otherwise indicated.
 - 2. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
 - 3. Paper-Faced Sheathing: Gypsum sheathing board as defined in ASTM C1396/C1396M, moisture resistant type with water repellent paper faces.
 - 4. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 - 5. **Core Type: Regular and Type X, as indicated.** **Update 10/21**
 - 6. Type X Thickness: 5/8 inch.
 - 7. **Regular Board Thickness: 5/8 inch.** **Update 10/21**
 - 8. Edges: Square.
 - 9. **Glass Mat Faced Products:** **Update 10/21**
 - a. **American Gypsum Company; M-Glass Exterior Sheathing Type X. www.americangypsum.com.**
 - b. **American Gypsum Company; M-Glass 5/8" Exterior Sheathing: www.americangypsum.com**
 - c. **CertainTeed Corporation; GlasRoc 5/8" Exterior Sheathing: www.certainteed.com**
 - d. **CertainTeed Corporation; GlasRoc Type X Exterior Sheathing: www.certainteed.com**
 - e. **Georgia-Pacific Gypsum; DensGlass Sheathing.**
 - f. **Georgia-Pacific Gypsum; DensGlass Fireguard Sheathing.**
 - g. **USG Corporation; USG Securock Brand Ultralight Glass-Mat Sheathing: www.usg.com**
 - h. **USG Corporation; USG Securock Brand Ultralight Glass-Mat Sheathing Firecode X: www.usg.com**
 - i. **Substitutions: See Section 016000 - Product Requirements.**
 - 10. Paper-Faced Products:
 - a. American Gypsum Company; Exterior Gypsum Sheathing.
 - b. CertainTeed Corporation; Type X Sheathing Treated Core.
 - c. Substitutions: See Section 016000 - Product Requirements.

2.04 ACCESSORIES

- A. **Acoustic Insulation: As specified in Section 072100.** **Updated 10/21**
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Water-Resistive Barrier: As specified in Section 072500.
- D. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
 - 1. Rigid Corner Beads: Low profile, for 90 degree outside corners.
 - 2. Expansion Joints:
- E. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.

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2. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 3. Ready-mixed vinyl-based joint compound.
 4. Powder-type vinyl-based joint compound.
 5. Chemical hardening type compound.
 6. Thinsets and mastics for backerboard installations.
- F. High Build Drywall Surfer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
1. Products:
 - a. CertainTeed Corporation; Level V Wall and Ceiling Primer/Surfer with M2Tech: www.certainteed.com
- G. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
- H. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.
- I. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

- A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
1. Fasten runners to structure with short leg to finished side, using appropriate power-driven fasteners at not more than 24 inches on center.
 2. Install studs at spacing required to meet performance requirements.
- B. Shaft Wall Liner: Cut panels to accurate dimension and install sequentially between special friction studs.

3.03 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
1. Level ceiling system to a tolerance of 1/1200.
 2. Laterally brace entire suspension system.
 3. Install bracing as required at exterior locations to resist wind uplift.
- C. Studs: Space studs at 16 inches on center.
1. Extend partition framing to structure where indicated and to ceiling in other locations..
 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
 4. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

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- E. Standard Wall Furring: Install at concrete walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 16 inches on center.
 - 1. Orientation: Vertical.
 - 2. Spacing: As indicated.
- F. Acoustic Furring: Install resilient channels at maximum 24 inches on center. Locate joints over framing members.
- G. Furring for Fire Ratings: Install as required for fire resistance ratings indicated.
- H. Blocking: Install mechanically fastened steel sheet blocking for support of:
 - 1. Framed openings.
 - 2. Wall mounted cabinets.
 - 3. Plumbing fixtures.
 - 4. Toilet partitions.
 - 5. Toilet accessories.
 - 6. Wall mounted door hardware.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 - 1. Place one bead continuously on substrate before installation of perimeter framing members.
 - 2. Place continuous bead at perimeter of each layer of gypsum board.
 - 3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.05 BOARD INSTALLATION

- A. **Comply with ASTM C840, GA-216, and manufacturer's instructions. Install interior gypsum board horizontally, especially in Corridors and Highly Visible Locations.**
- B. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- C. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.
- D. **Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing. Updated 10/21**
 - 1. Paper-Faced Sheathing: Immediately after installation, protect from weather by application of water-resistive barrier.
- E. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- F. Installation on Metal Framing: Use screws for attachment of gypsum board.
- G. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
 - 2. At exterior soffits, not more than 30 feet apart in both directions.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

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- D. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations indicated on drawings. Provide vent area specified.
- E. Exposed finished raw edges are not allowed.
- F. All metal fittings to be bedded and finished to designated finish level.

3.07 JOINT TREATMENT

- A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, bedded and finished with chemical hardening type joint compound.
- B. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- C. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 4. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling, and sanding is not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.
- E. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.08 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

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BRIGHAM YOUNG UNIVERSITY

ADDENDUM RECEIPT

DATE: March 26, 2024

PROJECT:

PROJ. #: WO# M3728

We acknowledge receipt of Addendum Number 2.

COMPANY: _____

BY: _____

TITLE: _____

PLEASE EMAIL SIGNED RECEIPT TO construction@byu.edu