

ADDENDUM

Date Issued:	Mar 23, 2026
Project:	Intermountain Health Life Flight Simulator 2284 160 N Salt Lake City, UT 84116
Addendum Number:	1

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

Item Number	General Items Description
1	See Structural Addendum #01.
2	<p>Q. RFI response referred to A401 for finishes. A401 refers to a finish schedule found on A603A. Is this sheet available?</p> <p>A. See attached Finish Plan & Finish Schedule, sheet A403.</p>
2	<p>Q. A401 Keynote 11.09 States to provide a grommet in countertop. No Millwork is shown on drawings. Are we expected to cover any millwork, or does Keynote 12.09 apply to all? If so, can drawings be provided?</p> <p>A. There is no millwork as part of the scope. See updated keynote 11.09, sheet A401. See updated keynotes added to indicate Owner furnished, Owner installed furniture items, sheet A401.</p>
3	<p>Q. EP101 drawing shows 3 EPOs one line only shows 2. Please indicate what the third is for? Are all three line voltage EPOs?</p> <p>A. The two EPO's in the Clinical Simulation room are for the MOOG system and based on MOOG documentation this appears to be a control voltage signal.</p> <p>The single EPO in Aviation Simulation is for the Leonardo equipment and this a control voltage EPO connected to the UPS/shunt trip breaker.</p>
4	<p>Q. EP101 shows 2 4" conduits at the bottom of the building. Are these intended to be the main conduits for all power and data for the flight sim building? If so are we able to run the individual conduits in lieu of the 4" conduit as we feel the 4" conduit may not be sufficient size for the circuit runs required EP101 shows two push button devices in the top right hand corner. We believe these use to power the roll up door. Please confirm these are no longer required EP101 appears to show a wire mold symbol in the lower left corner of the building below "LA-1 J box. Please confirm there is no need for a wire mold Spec</p>

Item Number	General Items Description
	<p>Section 26 05 33 2.6 (A) requires putty pads. Given the location of the project does this spec section still apply? Are there panel schedules available?</p> <p>A. The (2) 4" conduits are only for data cabling running up to the data closet on the 3rd floor.</p> <p>Confirmed, they were for the roll-up door and are no longer needed.</p> <p>Intent is to have a receptacle raceway in the storage closet off of the clinical simulation space.</p> <p>Putty pads are required anywhere devices are installed in fire-rated walls.</p> <p>Panel schedules have not been created for this project.</p>
5	<p>Q. A401 there are many division 11 notes OFCI. Please provide information on these items to provide accurate pricing. Manufacture, specs, etc.</p> <p>A. See updated Division 11 notes, sheet A401.</p>
6	<p>Q. Keynote 9.03/A401 calls for a certain wall type with insulation and vapor barrier. Dimension plans nor structural appear to show this wall detail or indicate what wall detail is to be used throughout. Please confirm what type of wall is desired.</p> <p>A. This wall type is very similar to a type "B" wall. However, it differs in that it requires exterior sheathing and an interior vapor barrier. See typical wall section detail, 2/A351.</p>
7	<p>Q. Per note 11.03/A401 please explain what the extent of installing the motion base would be.</p> <p>A. The extent of the contractor's installation for the motion base is installing and mounting the various components (motion base, hydraulic cabinet, etc.) but not assembling the actual base components (rams and frame).</p> <p>See attached pictures.</p>

Item Number	General Items Description
	

Specification Section	Project Manual
061600	Sheathing
072100	Thermal and Acoustical Insulation
02600	Vapor Retarders
087100	Door Hardware

Attachments:

Structural Addendum #01, Sheet A351, A401, A403, A601A; Specification Section 061600, 072100, 072600, 087100

Life Flight Simulator

Addendum 01

Structural Revisions

March 23, 2026

SE001

1. Revised Section 4.2.A to clarify wood sheathing panel requirements.
2. Added note 6 in Section 4.3.A that all wall, roof, and floor diaphragm sheathing shall be fire-retardant-treated wood (FRTW).

SF101

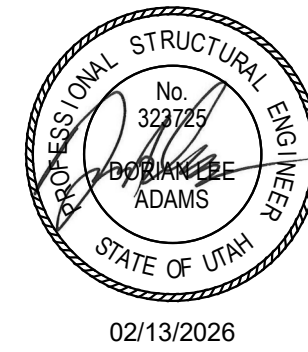
1. Added note 6 that all wood structural panels shall be fire-retardant-treated wood (FRTW).

SW601

1. Revised note 5 in wood diaphragm schedule.

End of Addendum 01





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1. Design Criteria

- Governing Building Code
A. Risk Category II
- Floor Live Loading
A. Floor Live Load 100 psf
- Roof Loading
A. Roof Live Load 40 psf
- Earthquake
A. Seismic Design Category D
B. Spectral Response Accelerations:
S_s = 1.541 g S_w = 1.233 g
S₁ = 0.549 g S₂ = 0.641 g
C. Site Class D Default
D. Basic Seismic-Force-Resisting System Light framed (cold-formed steel) walls sheathed with wood structural panels
R = 6.50 Q_s = 3.00
E. Importance Factor, I_e 1.0
F. Redundancy Factor, ρ 1.0
G. Analysis Procedure Equivalent Lateral Force (Static)
H. Seismic Design Coefficient, C_s 0.190
I. Design Base Shear 9 kips

2. Concrete

- Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-19, "Building Code Requirements for Structural Concrete".
A. Concrete mix design requirements shall be as follows:

Location	Fo at 28 days (psi)	Max W/C Ratio	Air Content (%)	Max Aggregate Size	Exposure Classes*
Footings	3000	0.50	-	1"	FO S0 C0 W1

* Exposure Classes are per ACI 318, Section 19.3.1.1, where F, S, C and W are exposure categories for freezing and thawing, sulfate, and corrosion protection of reinforcement, and contact with water, respectively.
- Cementitious Materials (ASTM C 150)
A. Type of cement shall be Type I or II.
B. Fly Ash (ASTM C618, Class C, F, or N): maximum fly ash content as a percentage of total weight of cementitious materials shall be 25 percent.
- Aggregates:
1. For concrete with exposure class W1, evidence shall be submitted that aggregates comply with the following:
a. Aggregates are not alkali-silica reactive or measures to mitigate alkali-silica reactivity have been established.
b. Aggregates are not carbonate reactive.
- Concrete Density (Maximum Air-Dry Weight):
1. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot. Aggregate shall be ASTM C33.
- Steel Reinforcement
1. ASTM A615 Grade 60, F_y = 60,000 psi min. unless noted otherwise.
- Admixtures:
1. Air-entraining admixtures, comply with ASTM C 260 (when used).
a. Tolerance on air content as delivered shall be +/- 1.5%.
b. When air content of a trowel finished floor slab exceeds 3%, there is an increased risk for delaminations and spalling to occur. When this situation is present, the Contractor shall pay special attention to the finishing procedures to help minimize such risks. Refer to ACI 302.1R-15 "Guide for Concrete Floor and Slab Construction" for proper finishing guidelines.
2. The use of super reducers is allowed, but not required.
3. Calcium chloride or admixtures containing calcium chloride shall not be added to the concrete mix.
G. Chloride Ion: Maximum water-soluble chloride ion concentrations in hardened concrete at age between 28 and 42 days contributed from the ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed a maximum, by weight of cementitious materials, of 1.00% for concrete with exposure class C0.
H. Shrinkage Limit: Interior slabs on grade shall have a drying shrinkage limit of 0.040% tested in accordance with ASTM C157. Shrinkage test results shall be submitted with mix designs.
I. Only one grade or type of concrete shall be poured on the site at any given time.

- Formwork shall comply with ACI Standards Publication 347 and all project specifications. The Contractor shall be responsible for the design, detailing, care, placement and removal of the formwork and shores.
A. Pre-camber forms and screeds with a camber of 1/4 inch per every 10 foot of span to compensate for dead load deflection, unless noted otherwise.
- Concrete cure requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".
A. Cast-in-place Concrete: Specified Cover
1. Concrete not exposed to weather or in contact with ground: Slabs, Walls, Joists; #11 bars and smaller 3/4"
2. Minimum Spacing of Reinforcement
A. For parallel reinforcing bars in a horizontal layer, clear spacing between bars shall be at least the greatest of 1 inch, nominal diameter of the bars considered, and 1/4 times the nominal maximum size of coarse aggregate in the concrete.
B. If scheduled reinforcing cannot meet these provisions, notify the Engineer of Record.
- Construction Joints and Control Joints
A. All horizontal and vertical construction joints shall have a surface intentionally roughened to 1/4 inch amplitude. A continuous 2x4 keyway may be used on elements other than shear walls.
B. Provide reinforcement dowels to match the member reinforcement across the joint, unless noted otherwise. For dowels across construction joints and wall to footing connections of concrete shear walls, refer to specific project plans, schedules, and details.
C. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any one direction.
D. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. See typical details for joint configuration.
E. All sawcut control joints shall be completed within 12 hours of concrete placement.
- Detailing: All reinforcing shall be detailed, bolted & supported to comply with ACI 315, "Details and Detailing of Concrete Reinforcement Reinforcing Steel Institute (CRSI) recommendations. Reinforcing bars shall not be welded unless specifically shown on drawings.
A. All reinforcing shall be developed in compliance with the CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE SCHEDULE. As indicated in the drawings or upon approval of the Engineer of Record, standard tension hooks or headed bars developed by the TENSION HOOK DEVELOPMENT SCHEDULE.
B. All embedded elements and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
C. Use chairs or other support devices recommended by CRSI to support and tie reinforcement bars prior to placing concrete.
D. Where required, reinforcement is to be terminated in a standard hook or headed bar anchor. Refer to the TENSION HOOK DEVELOPMENT SCHEDULE and the REINFORCEMENT END HOOK SCHEDULE as appropriate.
E. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
F. All reinforcing shall be bent cold and shall be bent only once at the same location. All reinforcing shall be shop bent, unless otherwise permitted by the Engineer of Record.
- No aluminum conduit or product containing aluminum or any other material injurious to concrete shall be embedded in concrete.
- Unless otherwise noted, all slabs on grade shall be 4 inches thick.

3. Cold-Formed Steel

- General Conditions
A. The cold-formed steel framing drawings and details provide the general design intent and do not cover all conditions. The Contractor shall provide cold-formed framing as required to complete the wall section geometry as shown in the architectural drawings, including additional studs and connections as required to provide a complete installation. The Contractor shall provide engineering for conditions not specifically detailed in the construction drawings.
- Material
A. Studs:
1. Base metal thickness of less than 54 mil: ASTM A1003 or A653, F_y = 33 ksi.
2. Base metal thickness of 54 mil or greater: ASTM A1003 or A653, F_y = 50 ksi.
B. Track, Connection Clips, and Miscellaneous Shapes:
1. Base metal thickness of less than 54 mil: A1003 or A653, F_y = 33 ksi.
2. Base metal thickness of 54 mil or greater: A1003 or A653, F_y = 50 ksi
- Design, fabrication and construction shall comply with the following Codes and Standards from the American Iron and Steel Institute (AISI):
A. AISI S100-16(2020) w/S2-20: "North American Specification for the Design of Cold-Formed Steel Structural Members" 2016 Edition (Reaffirmed 2020), with Supplement 2, 2020 Edition
B. AISI S202-20: "Code of Standard Practice for Cold-Formed Steel Framing," 2020
C. AISI S202-20: "North American Standard for Cold-Formed Steel Nonstructural Framing," 2020
D. AISI S240-20: "North American Standard for Cold-Formed Steel Structural Framing," 2020
E. AISI S400-20: "North American Standard for Seismic Design of Cold-Formed Steel Structural Systems," 2020
- Cold-Formed Steel Framing
A. All cold-formed steel (and/or) joist framing members along with all runner, bridging, and end track shall be of the designation shown on the plans, schedules, and details. The framing member designators used in the plans, schedules, and details follow the convention established by the Steel Stud Manufacturers' Association (SSMA) and the North American Steel Framing Alliance (NASFA). Framing members provided shall comply with the designations according to this convention. See Steel Stud Manufacturers Association-Nonmember for an explanation of the stud or track designations.
B. All components shall be galvanized.
C. Where not noted in the drawings, all framing members shall have a base metal thickness of 33 mil or greater.
D. All jamb, header, and sill components shall be continuous without splices unless noted otherwise. Jamb's shall extend continuous from floor to floor, roof, or wind girt.
E. Web purchases in header stud or joist members shall not be located within 12 inches of the support.
F. Fasteners for steel stud construction shall be self-drilling and self-tapping meeting ASTM C1513. Screw-type fasteners shall penetrate the joined materials with a minimum of three threads exposed. Finish, install, and tighten screws per the manufacturer's recommendations and per the sizes indicated in the details. The minimum screw-type fastener size shall be #10 for any connection, unless noted otherwise, or the manufacturers' minimum recommended size for framing clips and bridging. Screws shall have a center-to-center spacing of at least 3 times the nominal diameter of the screw unless noted otherwise. Screws shall have center-to-center-to-edge-of-steel dimensions of at least 1.5 times the nominal diameter of the screw unless noted otherwise.

- See the Typical Steel Stud Wall Bridging Detail for wall stud bridging requirements. Proprietary bridging systems may be used upon submission, review, and approval by the Architect/Engineer. Cold-rolled channel (or steel angle) bridging shall not be used without suitable full-depth angle clips fastened to the studs and channel or angle to prevent stud roll-over.
- Connection clips as specified in the schedules and details use The Steel Network (TSN) products as the basis of design. Other manufacturer's connection clips must be submitted for review and approved by the Architect/Engineer prior to use and shall clearly indicate all ICC/IRPMO code reports, load capacities and engineering associated with their use. Follow all manufacturers' requirements for the use of these products. Follow required screw patterns as required by the manufacturer based on the number of screws indicated. Web purchases shall not be located within 6 inches of connection clips.
- Proprietary headers, jamb studs, and other miscellaneous framing may be substituted for framing as shown in the STEEL STUD FRAMING SCHEDULE but must be submitted to the Engineer of Record & reviewed prior to ordering material or fabricating & installing such components. Substitutes for substitution of such components must clearly state what is being substituted and show equivalence to the components being replaced.
- Wall studs must self fully top and bottom wall track with 1/8" maximum gap between the stud and the track.
- Welding:
A. The steel stud contractor shall contact the Quality Assurance Agency prior to beginning any welds. A program of joint preparation and welding procedures should be worked out between the two parties before the welding is started so that correct welds will be made from the beginning.
B. Certification of Welders: All shop and field welding shall be executed by AWS Certified welders who have been specifically certified for the process of welding being performed. The welder's certification will be considered as being current unless the welder is not engaged in the process of welding being performed for a period exceeding six months or there is a specific reason to question a welder's ability as required by AWS. Certification and records must comply with AWS Standards. Certification and appropriate records must be provided to the Architect prior to beginning work.
C. Unless noted otherwise, all welded connections shall be done using 1/8 inch AWS type 6013 or 7014 rod with a welding heat of 60-110 amperes depending on the gauge of material and the fit of the parts. Wire tying of framing components shall not be permitted. Welds and damaged coatings on studs shall be repaired with zinc galvanizing repair paint.
- The contractor shall submit shop drawings with complete elevations and details defining member sizes, locations, and connection details for review. Shop drawings shall be submitted prior to fabrication.
- Submittals with Prefabricated Systems or systems intended to replace conventional framing herein shall have complete shop drawings and calculations of all elements for review and bear the stamp of a Professional Engineer licensed in the State of the Project.

4. Wood

- Fabrication and construction shall comply with the following Codes and Standards:
A. American Wood Council National Design Specification for Wood Construction 2018 Edition and Supplement (NDS and NDS Supplement)
B. American Wood Council Special Design Provisions for Wind and Seismic 2021 Edition (SDPWS)
- Materials
A. Wood Sheathing Panels: All sheathing panels shall be rated by the American Plywood Association (APA). Sheathing shall be fire-retardant-treated wood (FRTW) in accordance with IBC Section 2303.2 or fire-retardant-rated sheathing with a valid ICC-ES evaluation report. Fire-retardant-rated sheathing shall be LP FlameBlock (ESR-1365) or approved equivalent. Panels shall bear the stamp of an approved testing and grading agency. Panels shall be grade DCC PS 1 or PS 2 with exterior glue with the following panel span rating or better, unless noted otherwise:

Area to be sheathed	Span Rating	Minimum Thickness
Roofs	4/0/20	1 1/2"
Floors	24 o.c. or 48/24	1-1/8" T&G
Walls	24/0	1 1/2"
- Nails as referenced in these documents shall meet the tolerances in ASTM F1667 and have the following properties or better, unless noted otherwise:

Nail Size	Length	Common		Galvanized Box	
		Shank Diameter	Dowel Bending Yield Strength (psi)	Shank Diameter	Dowel Bending Yield Strength (psi)
6d	2"	1.188"	0.113"	100,000	100,000
8d	2-1/2"	1.398"	0.131"	100,000	113,000
10d	3"	1.172"	0.148"	90,000	128,000
16d	3-1/2"	1.568"	0.162"	90,000	136,000
20d	4"	2"	0.192"	80,000	90,000
- Nails as referenced in these documents shall meet the tolerances in ASTM F1667 and have the following properties or better, unless noted otherwise:
When used to attach sheathing panels, nails shall be common or galvanized box type nails. All other nails shall be common type nails.
- Fasteners referenced in these documents shall comply with the International Building Code and shall meet the requirements of the National Design Specification (NDS) for Wood Construction, unless noted otherwise.
Screws used for wood framing and sheathing fastening shall be carbon steel or alloy steel wood screws or structural screws, corrosion protected as required by exposure conditions, and shall be approved per ICC-ES Evaluation Report. Screws shall be designed and installed to provide equal or greater shear and withdrawal capacity than the nails specified in IBC Table 2304.10.2 (Fastening Schedule).
Drywall screws shall not be permitted.
- When used to attach sheathing panels, screws shall be coarse-thread wood screws or proprietary structural screws approved for wood structural panel fastening.
All screws shall be installed in accordance with the manufacturer's published installation instructions and applicable ICC-ES Evaluation Report.

- Special Treatments
A. Fire-Retardant-Treated Wood:
1. Fire retardant-treated wood shall meet requirements in IBC Section 2303.2. Fire-retardant-treated wood shall be treated to meet a flame spread index of 25 or less and show no evidence of significant progressive combustion when the test is continued for 20 minutes per ASTM E 84 or UL 723.
2. Treatment methods shall provide permanent protection to all surfaces.
3. All fire retardant-treated wood products shall be labeled per the requirements of section 2303.2.4 of the IBC.
4. Strength adjustment factors resulting from fire retardant treatment shall be determined based on the requirements of IBC sections 2303.2.5 and all subsections thereof. Strength adjustment factors for the preservative treatments used shall be submitted to the Engineer of Record for review prior to procurement of materials.
5. Moisture content of fire retardant treated wood shall be 19% or less for lumber and 15% or less for structural panels prior to use.
6. All wood structural panels used for wall sheathing and horizontal diaphragms (roof and floor) shall be fire-retardant-treated wood (FRTW) in accordance with IBC Section 2303.2 or fire-retardant-rated sheathing with a valid ICC-ES evaluation report. Fire-retardant-rated sheathing shall be LP FlameBlock (ESR-1365) or approved equivalent.
- Fasteners, including nuts and washers, in contact with treated wood shall meet the following criteria as per IBC Section 2304.10.6:
1. Fasteners in contact with fire-retardant-treated wood shall be hot-dipped galvanized steel, stainless steel, silicon bronze or copper. Fasteners other than nails, wood screws, timber nails, and lag screws may be mechanically-deposited zinc-coated steel with coatings meeting ASTM B 695, Class 55 minimum.

- Cold-Formed Steel Framing and Carpentry
A. General
Cold-formed steel framing shall be designed and constructed in accordance with the International Building Code and AISI S100 and AISI S240, unless noted otherwise.
B. Fasteners
Fasteners for cold-formed steel framing, including framing connections and attachment of sheathing, shall be self-drilling or self-tapping screws manufactured from carbon steel and coated for corrosion protection as required by exposure conditions.
Fasteners shall comply with ASTM C1513, ASTM C1002, as applicable, and shall be installed in accordance with the manufacturer's published installation instructions.
Drywall screws shall not be permitted for structural cold-formed steel connections unless specifically approved by the Engineer of Record.
C. Sheathing Attachment
Attachment of sheathing to cold-formed steel framing shall comply with AISI S240 and the approved construction documents. Screw size, spacing, and edge distances shall be as shown on the drawings or as required by the applicable evaluation report or standard.
D. Blocking and Bridging
Provide blocking, bridging, and bracing for cold-formed steel members as required by AISI S240 and the approved construction documents. Blocking shall be installed to maintain member alignment and load transfer.
E. Openings and Framing Reinforcement
Framing at openings, headers, jamba, and sills shall be reinforced as shown on the drawings and in accordance with AISI S240.
- Cold-Formed Steel Framing Connections
A. General
Cold-formed steel framing connections shall be designed and constructed in accordance with AISI S100 and AISI S240, unless noted otherwise.
B. Screw Fasteners
Screws used for cold-formed steel framing connections shall be self-drilling or self-tapping screws sized and installed to achieve the required connection capacities. Screws shall be installed in accordance with manufacturer requirements.
Proprietary connectors used in cold-formed steel framing systems shall be installed in accordance with the connector manufacturer's published instructions and applicable evaluation reports.
C. Capacity Requirements
Framing connections shall be designed to resist the required axial, shear, and uplift forces. Where connection capacities are not explicitly shown on the drawings, the Contractor shall submit product data demonstrating compliance.

5. Miscellaneous

- Post-Installed Anchors in Concrete
A. Anchorage to hardened concrete shall include all mechanical and adhesive anchors and epoxy doweled reinforcing bars of size, quantity, spacing, and embedment as shown on the drawings. Additional anchors shall not be used without approval from the Engineer of Record prior to installation.
B. Special inspection is required during the installation of all post-installed anchors. Refer to applicable code evaluation reports and the Quality Assurance and Statement of Special Inspections sections of the General Structural Notes.
C. Anchorage to Concrete
1. All post-installed anchors into hardened concrete shall be selected from the following pre-approved products, unless noted otherwise:

Product	Evaluation Report
Steel Screw Anchor	ICC ESR-3027
Hill Kwik HUS-EZ	ICC ESR-3889
DeWall Screw-Bolt+	ICC ESR-3889
Simpson Titan HD	ICC ESR-2713
- Steel Expansion/Wedge Anchor

Product	Evaluation Report
Hill Kwik Bolt T22	ICC ESR-4266
DeWall Power-Stub+ SD2	ICC ESR-2502
Simpson Strong-Bolt 2	ICC ESR-3037
- Adhesive Anchor System

Product	Evaluation Report
Hill HIT-HY 200	ICC ESR-4868
Hill Kwik-X	ICC ESR-5065
Hill HIT-RE 300 V3	ICC ESR-3814
DeWall AC208+	ICC ESR-4027
DeWall Pure 110+	ICC ESR-3298
Simpson SET-363	ICC ESR-4067

- Adhesive anchors shall be installed into concrete having a minimum age of 21 days. For installations sooner than 21 days, consult the adhesive manufacturer.
- Alternate anchors or adhesives are permitted with approval of the Engineer of Record. The Contractor shall submit the proposed anchor product data and code evaluation report demonstrating the anchor is equivalent to or exceeds the capacity of the specified anchor.
- Installation of adhesive anchors horizontally or upwardly inclined to support sustained tension loads shall be performed by personnel certified by an applicable certification program. Certification shall include written and performance tests in accordance with the ACI/CRSI Adhesive Anchor Installer Certification program, or equivalent. Proof of current certification shall be submitted to the Engineer of Record for approval prior to commencement of installation.
- Adhesive shall be installed according to the Manufacturer's Printed Installation Instructions and applicable code evaluation reports including:
1. Hole diameter, depth, and cleaning procedure
2. Adhesive mixing, preparation, and placement
3. Installation torque
- Locate all existing reinforcement and embedded items prior to drilling into concrete or masonry elements. Do not damage rebar or embeds while drilling or installing anchors.
- GROUT: All defective or abandoned holes with non-shrink grout or an injectable epoxy adhesive matching the surrounding concrete compressive strength. Consult the Architect for additional requirements at architecturally exposed concrete.
- Carbon steel anchors are limited to use in dry, interior locations.
- Holes for post-installed anchors may not be core drilled unless specifically allowed by the manufacturer's installation instructions and the code evaluation report. Holes shall not be re-used unless approved by the manufacturer.

6. Special Inspections

- The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specifications for additional requirements in each section. Notes and specific details on the drawings shall take precedence over General Structural Notes and general details.
- The architectural drawings are the prime contract drawings. Consultant drawings by other disciplines are supplementary to the architectural drawings. All omissions or conflicts, including dimensions, between the various elements of the consultants' drawings and/or specifications shall be brought to the attention of the Architect before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Architect without additional cost to the Owner. Any work done by the Contractor after discovery of such discrepancy shall be done at the Contractor's risk.
- The structural drawings shall be used in conjunction with the architectural drawings. Primary structural elements and overall structural layout are indicated within the structural plans and details. Some secondary elements, architectural layouts, alcoves, elevations, slopes, depressions, curbs, mechanical equipment and electrical equipment, are not indicated within the structural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in the architectural, structural and/or other consultants' drawings.
- Shoring and Bracing Requirements
A. Floor and Roof Structures - The General Contractor is responsible for the method and sequence of all structural erection. The Contractor shall provide temporary shoring and bracing as the method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof and floor attachments. The building shall be considered stable until all connections are complete.
B. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self-supporting.
- Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the Contractor of the responsibility of completing the project according to the contract documents. The General Contractor shall review and mark all shop drawings prior to submitting them to the Architect for review. Shop drawings made from reproductions of (these) contract drawings will be rejected.
- Project Coordination: It shall be the responsibility of the General Contractor to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the General Contractor and shall be coordinated with the Architect/Engineers. The order of construction is the responsibility of the General Contractor. It is the Contractor's obligation to provide all items necessary for the chosen procedure.
- Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, Contractor shall notify Architect/Engineer prior to fabrication or construction within that area.
- Notice of Copyright: The structural drawings, plans, schedules, notes and details are hereby copyrighted by Reaveley Engineers. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the project is not to be construed as publication in derogation of Reaveley Engineers' reserved rights. The documents defining the structure are instruments of service prepared by Reaveley Engineers for one use only. Furthermore, these documents shall not be reproduced, or copied, in whole or in part by the Contractor or subcontractors for preparation of shop drawings or other submittals.

7. Quality Assurance

- Quality Assurance Agency Requirements
A. The Owner shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. The QAA shall provide all information necessary for the building official to determine conditions that the agency meets the applicable requirements.
1. The QAA shall be objective, competent and independent from the Contractor responsible for the work being inspected. The agency shall disclose to the building official and the registered design professional in responsible charge possible conflicts of interest so that objectivity can be confirmed.
2. The QAA shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.
3. The QAA shall employ experienced personnel educated in conducting, supervising and evaluating tests and special inspections. Experience or training is considered relevant where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities.
4. The QAA shall send copies of all inspection and testing reports to the building official, Owner, Architect, Engineer of Record and Contractor. Reports shall indicate that the work inspected was or was not completed in conformance to the approved construction documents. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the Architect and Engineer of Record.
5. The QAA shall submit a final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests. The final report shall be distributed to the building official, Owner, Architect and Engineer of Record in a timely manner prior to the completion of the project.
- Contractor Responsibilities
A. The Contractor shall submit a written statement of responsibility to the building official and the Owner or the owner's authorized agent prior to the commencement of work on the systems or components listed in the statement of special inspections. The Contractor's statement of responsibility shall contain acknowledgement or awareness of the special requirements contained in the statement of special inspections.
B. Notification of QAA: The Contractor shall notify the QAA in a timely manner so that inspection and testing may be performed as outlined in the statement of special inspections.
- Structural Observations by the Engineer of Record
A. The Engineer of Record will perform structural observations at critical phases of the project as listed below. Observations will be made on a periodic basis throughout the construction of the structural system. Copies of the observation report will be distributed to the Architect, Contractor, Owner, and QAA.
B. The contractor shall notify the Engineer of Record at least 48 hours in advance before any of the following actions.
1. Placing concrete in formwork.

- Completing the fastening of any sheathing on wall, roof, or floor system.
- Observation visits to the site by the Engineer of Record or the Engineer's field representatives shall not be construed as inspection or approval of construction.

8. Statement of Special Inspections

- The following materials, systems and components require special inspection or testing per Chapter 17 of the International Building Code (IBC).
- For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases, periodic inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task. Frequency marked with (E) designates periodic inspections that must be performed prior to or upon completion of every task and for each member, welded joint, and bolted connection.
- Special inspections during fabrication are not required where the work is done on the premises of a fabricator approved by the authority having jurisdiction for fabrication as shown on the drawings. At the Owner's discretion, periodic inspections, testing, or auditing of the fabricator's quality control processes may be performed by the Owner's quality assurance agency. At completion of fabrication, the fabricator shall submit a certificate of compliance for submission to the building official, as specified in Section 1704.5, stating that the work was performed in accordance with the approved construction documents.

Item	Frequency	Detailed Instructions
Reinforcing steel	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of ice, mud, oil, or other deleterious coatings that decrease bond; that it is located and spaced properly; that hooks, bends, laps, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report; and that minimum clear spacing requirements between bars and lap splices are in accordance with the Detailing provisions of the General Structural Notes.
Cast-in bolts & embeds	Periodic	Inspection of anchors or embeds cast in concrete.
Post-installed adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	Continuous	All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report. Horizontally or upwardly inclined anchors that resist sustained tension loads require qualified installers.
Post-installed mechanical anchors	Periodic	Post-installed anchors shall be specially inspected as required by the approved ICC-ES report.
Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents, ACI 318, Ch. 19, 24.1-26.4.4; and IBC 1904.1.1904.2
Concrete sampling for strength tests, slump, air content, and temperature	Continuous	Samples for strength tests shall be taken in accordance with ASTM C172, cured per ASTM C31 and tested in accordance with ASTM C39 by a testing agency complying with ASTM C1017. Acceptance criteria for strength tests shall be per ACI 318 Section 25.12.3. For each mix placed, samples shall be taken not less than once a day, nor less than once for each 150 yd ³ of concrete, nor less than once for each 5000 Ft ² of surface area for slabs or walls. At time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.
Concrete placement	Continuous	
Curing temperature and techniques	Periodic	Verify that the ambient temperature for concrete is kept at +50°F for at least 7 days after placement. High-early-strength concrete shall be kept at +50°F for at least 3 days. Accelerated curing methods may be used (see ACI 318, 26.5.3). All concrete materials, reinforcement, forms, files, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio shall be maintained.
In-situ strength verification	Periodic	Verify that adequate strength has been achieved prior to the removal of shores and forms.
Formwork	Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.

Item	Frequency	Detailed Instructions
Wind-Force-Resisting Systems (WFRS)	Periodic	Periodic inspections of welding operations. If fastener spacing is less than 4 inches on center: Verify that proper screw attachment, bolting, anchoring and other fastening of shear walls, diaphragms, drag struts, braces, shear panels and hold-downs has occurred. Performed by code inspection firm. Periodic inspections of welding operations.
Seismic-Force-Resisting Systems (SFRS) of structures assigned to Seismic Design Category C, D, E, or F	Periodic	If the sheathing is structural panel or steel sheets on both sides of the SFRS assembly or if the fastener spacing is less than 4 inches on center, on one or both sides of the SFRS assembly: Verify that proper screw attachment, bolting, anchoring and other fastening of shear walls, shear panels, braces, diaphragms, drag struts, and hold-downs has occurred.

STRUCTURAL DRAWING LIST	
SHT NO.	SHT NAME
SE001	GENERAL STRUCTURAL NOTES
SE002	LEGENDS & ABBREVIATIONS
SF101	FLOOR AND ROOF FRAMING PLANS
SF102	STRUCTURAL FRAMING ELEVATIONS
SW501	TYPICAL COLD-FORMED STEEL STUD DETAILS
SW502	STEEL STUD DETAILS
SW503	STEEL STUD ROOF DETAILS
SW601	STEEL STUD WALL AND WOOD SCHEDULES AND DETAILS

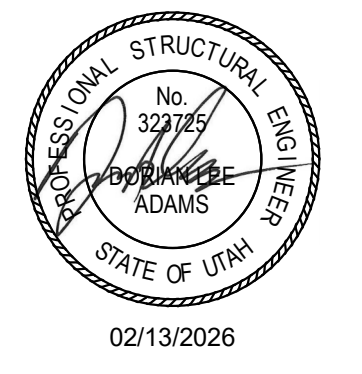
Intermountain Health
Intermountain Life Flight
Life Flight Simulator

2284 E 160 N
Salt Lake City, UT 84115

NJRA Project # 25252.00
BID SET FEB 13, 2026
A1 ADDENDUM #1 MAR 23, 2026

GENERAL
STRUCTURAL
NOTES

SE001



EXISTING BUILDING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DETAILING, FABRICATING, ERECTING OR INSTALLING ANY STRUCTURAL ELEMENT. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN TEAM IN A TIMELY MANNER SUCH THAT WORK WILL NOT BE DELAYED.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING OF EXISTING STRUCTURE DURING CONSTRUCTION.

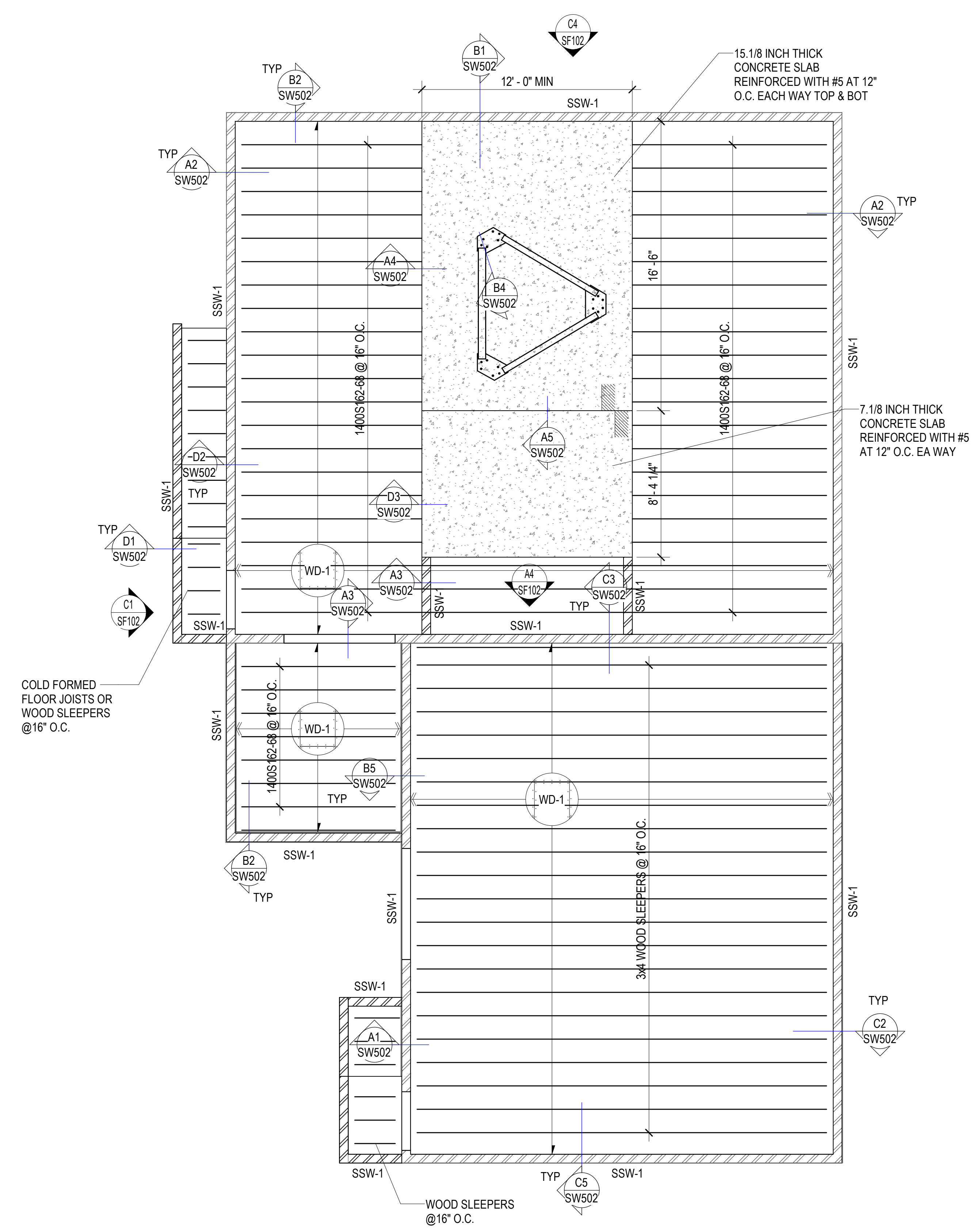
SLAB ON GRADE PLAN NOTES

1. ALL SLABS ON GRADE SHALL BE 4 INCHES THICK, UNLESS NOTED OTHERWISE. SEE TYPICAL CONCRETE SLAB ON GRADE PROFILE DETAIL FOR SUBGRADE REQUIREMENTS.
2. SEE ARCHITECTURAL, CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE WORK AT DOORS, SIDEWALKS, ETC.
3. SEE ARCHITECTURAL DRAWINGS AND FINISH SCHEDULE FOR SLAB DEPRESSIONS, SLOPES TO DRAINS AND SLAB AREAS TO RECEIVE FLOOR TILE.
4. SUBMIT SLAB ON GRADE CONTROL JOINT PLAN FOR REVIEW.

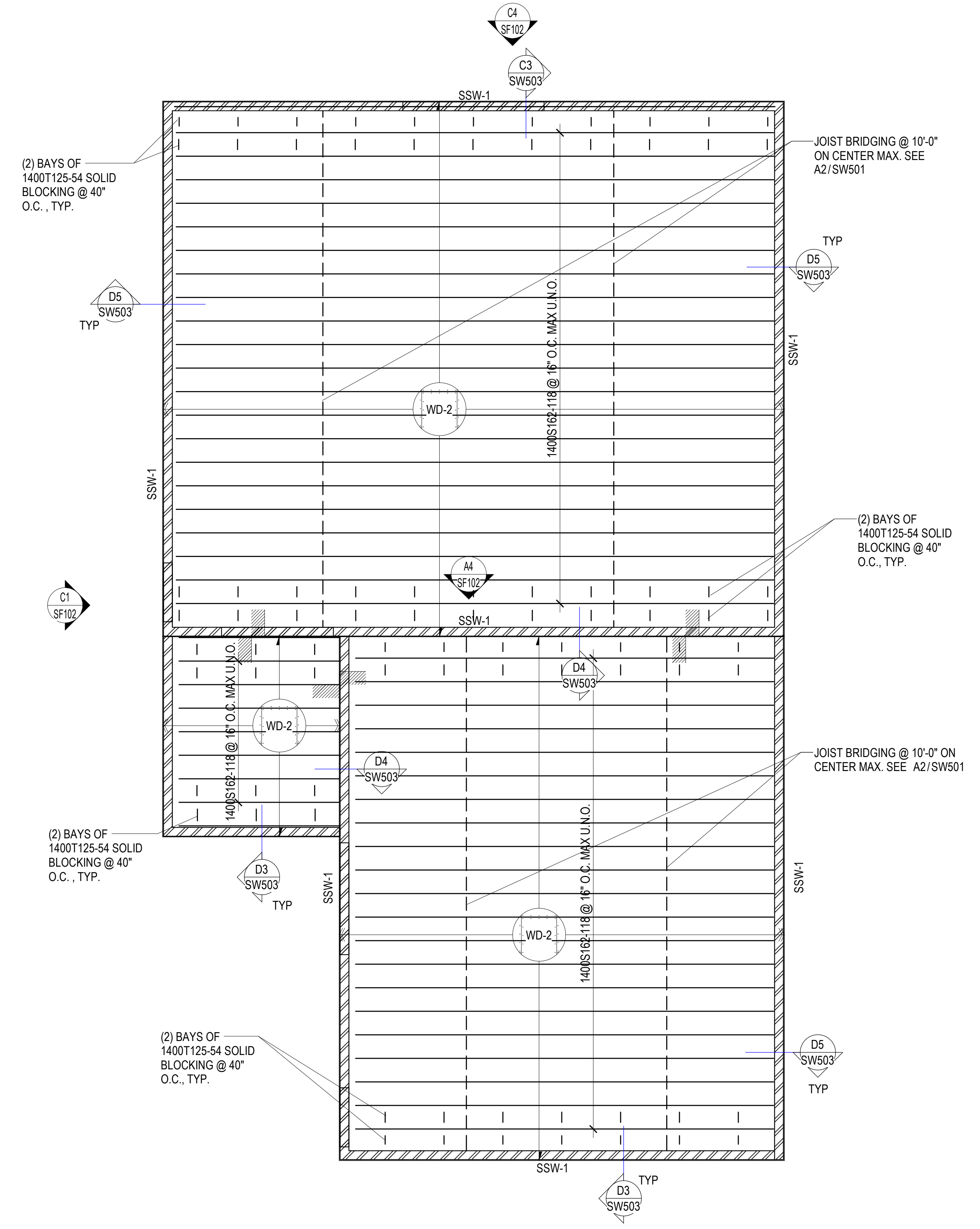
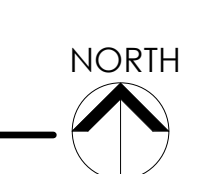
NOTE:
PROTECT EXISTING SLAB ON GRADE. DO NOT ANCHOR ANYTHING INTO THE EXISTING SLAB ON GRADE.

NOTES:

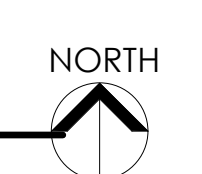
1. ALIGN WALL STUDS WITH ROOF JOISTS PER DETAIL D1/SW601.
2. PROVIDE AN ADDITIONAL WALL STUD, BACK TO BACK, UNDER THE BEARING POINTS OF BACK TO BACK ROOF JOISTS.
3. SEE SHEET SW601 FOR DIAPHRAGM SCHEDULE AND DETAIL.
4. SEE SHEET SW601 FOR STEEL STUD WALL SCHEDULE.
5. USE 8-3/4" HILTI HY 200 V3 + HIT-Z WITH 4" EMBEDMENT FOR CONNECTION OF SCISSORLIFT TO CONCRETE.
6. ALL WOOD STRUCTURAL PANELS SHALL BE FIRE-RETARDANT-TREATED WOOD (FRTW).



A1 LEVEL 1 FRAMING PLAN
SCALE: 1/4" = 1'-0"



A4 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

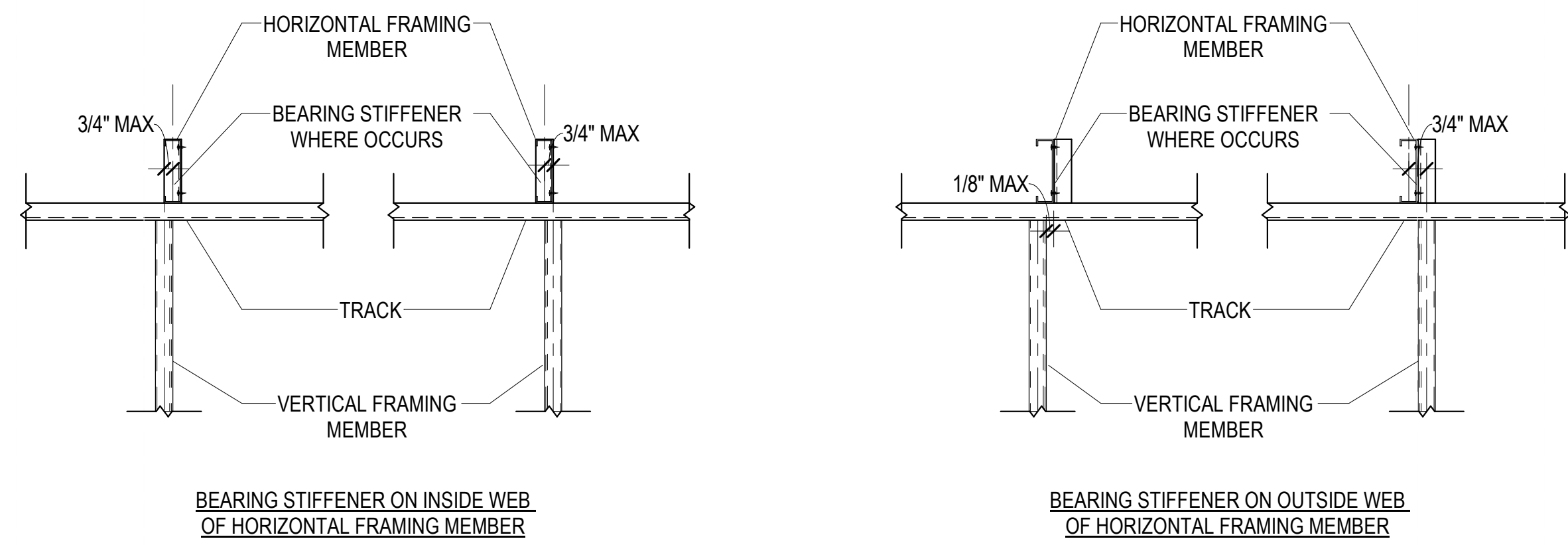
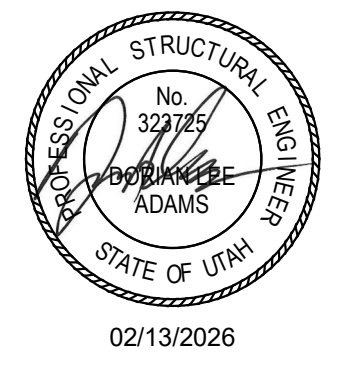


Intermountain Health
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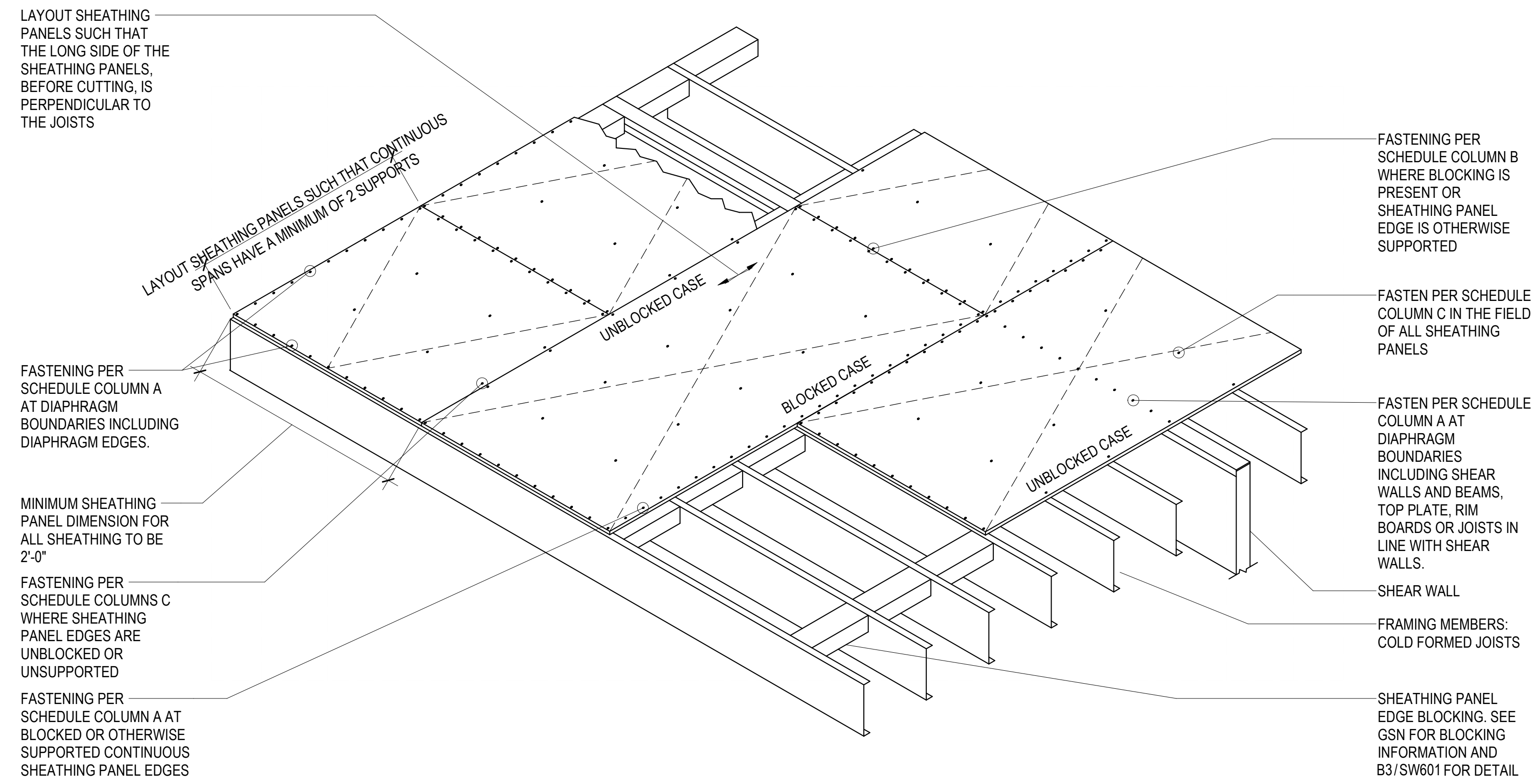
FLOOR AND
ROOF
FRAMING
PLANS

SF101



NOTE: PROVIDE 600T125-54 x 12\"/>

D1 TYPICAL IN LINE FRAMING DETAIL
SW601/ NO SCALE

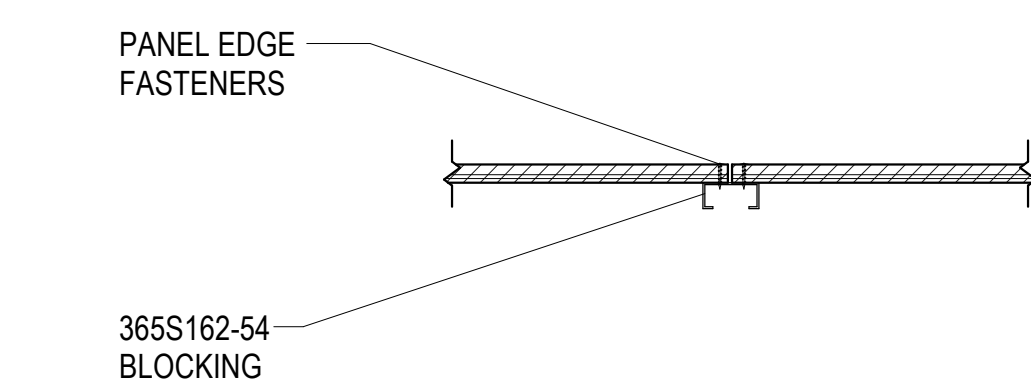


B1 WOOD DIAPHRAGM ISOMETRIC DETAIL
SW601/ NO SCALE

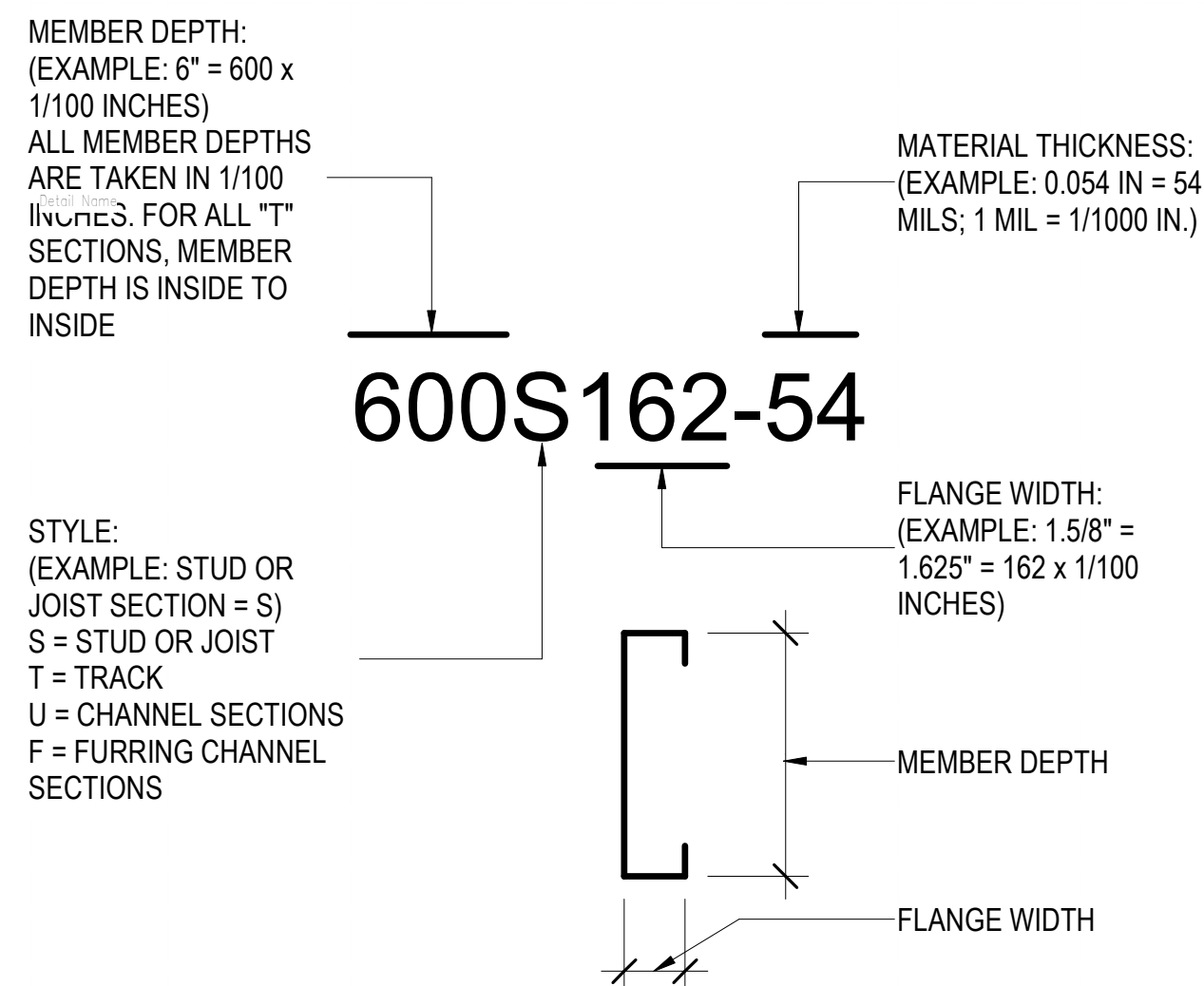
WOOD DIAPHRAGM SCHEDULE						
MARK	MINIMUM WOOD SHEATHING THICKNESS	WOOD SHEATHING EDGES	SCREW SPACING			MINIMUM SCREW SIZE
			A	B	C	
WD-1	1-1/8\"/>	BLOCKED	6"	6"	12"	#8
WD-2	15/32\"/>	NO BLOCKING REQ'D	6"	6"	12"	#8

NOTES:
1. SEE DETAIL B1/SW601 FOR TYPICAL LAYOUT OF STRUCTURAL PANEL DIAPHRAGMS.
2. WHERE PANEL EDGE BLOCKING NOT REQUIRED, FASTEN TO JOIST BLOCKING.
3. COMMON FASTENER SPACING CRITERIA:
A. CONTINUOUS WOOD SHEATHING PANEL EDGES AND DIAPHRAGM BOUNDARY EDGES. DIAPHRAGM BOUNDARIES INCLUDE SHEAR WALLS, PERIMETER TRACKS, BEAMS, TOP PLATES, AND RIM BOARDS IN LINE WITH SHEAR WALLS.
B. ALL OTHER PANEL EDGES.
C. INTERMEDIATE PANEL SUPPORTS (IN FIELD FASTENING).
4. ALL WOOD STRUCTURAL PANELS SHALL BE A.P.A. RATED EXPOSURE 1.
5. USE SIMPSON PPHDQ11516B OR ENGINEER APPROVED EQUIVALENT FOR FIRE RETARDANT TREATED SHEATHING.

C1 WOOD DIAPHRAGM SCHEDULE
SW601/ NO SCALE



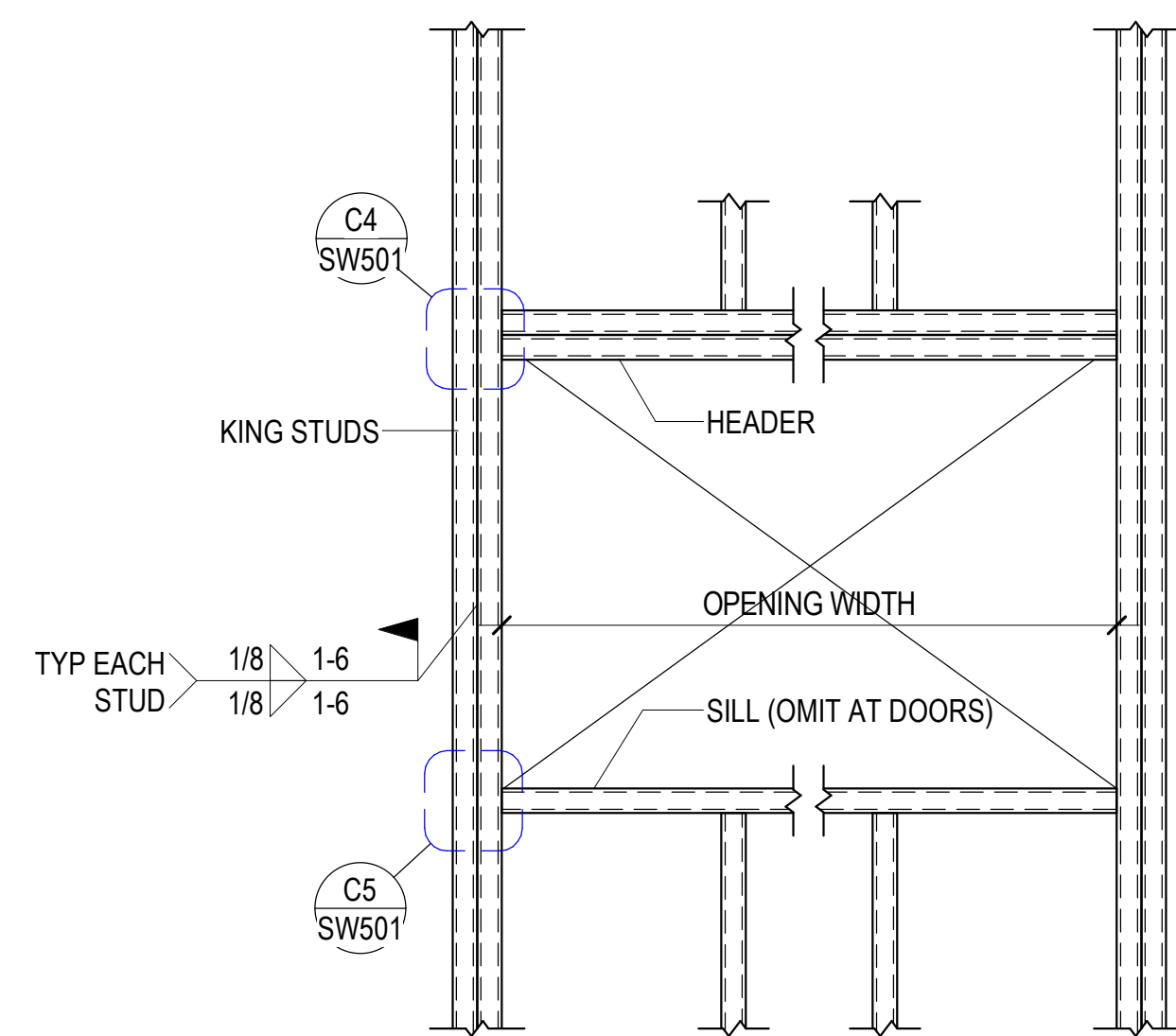
B3 TYPICAL EDGE BLOCKING DETAIL
SW601/ NO SCALE



A2 STEEL STUD MANUFACTURERS ASSOCIATION - NOMENCLATURE
SW601/ NO SCALE

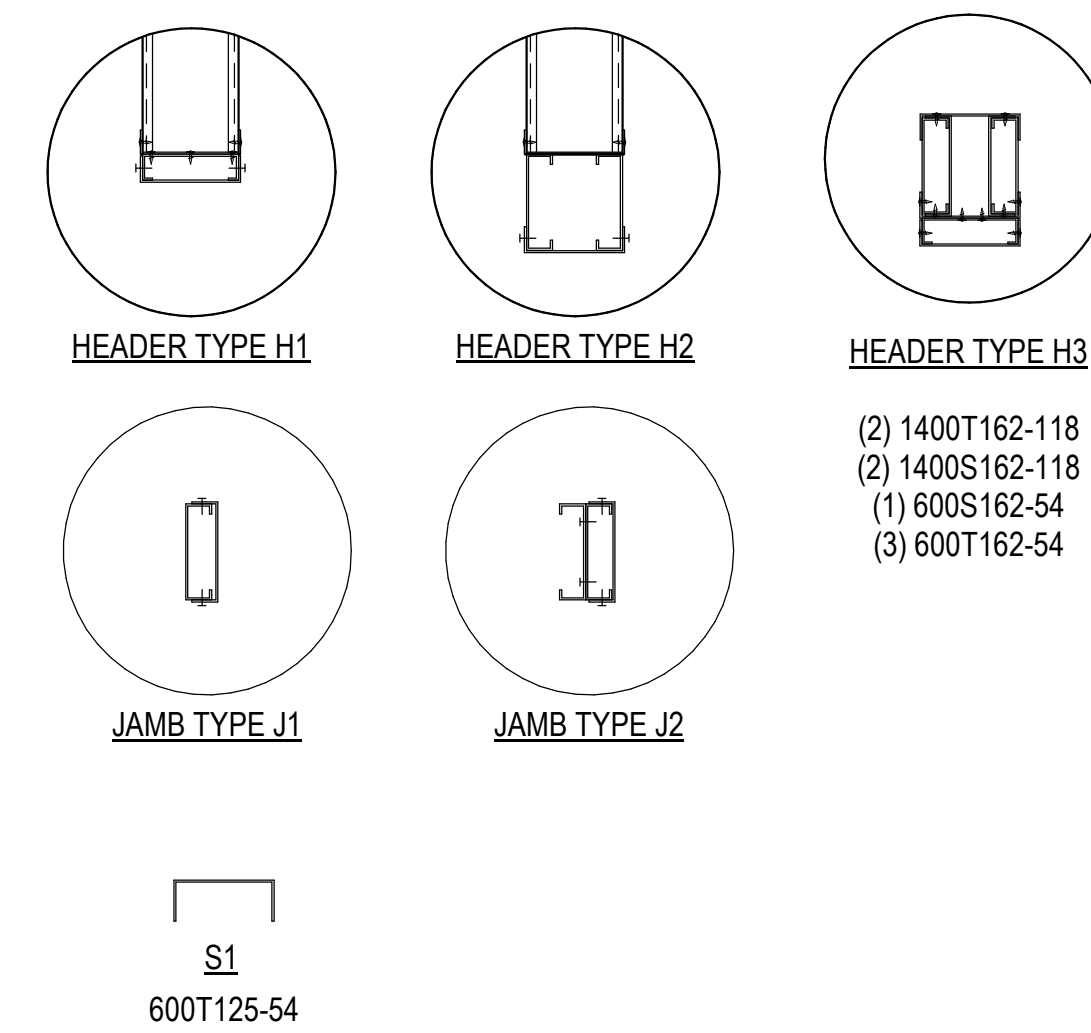
MARK	STEEL STUD WALL SCHEDULE												REMARKS		
	WALL FRAMING				WALL ANCHORAGE				WALL SHEATHING	EDGE FASTENERS		FIELD FASTENERS		STUD BRACING REQUIRED	
	STUDS	SPACING	BOTTOM TRACK	TOP TRACK	END STUDS	BOTTOM TRACK ANCHORAGE	END STUDS OR POST ANCHORAGE	SIZE		SPACING	SIZE	SPACING			
SSW-1	600S162-54	24"	600T125-54	600T125-54	600S162-54	TO CONCRETE FOOTING ONLY - DO NOT FASTEN TO EXIST SLAB ON GRADE. 1/2\"/>	DO NOT ANCHOR TO EXIST CONCRETE SLAB	15/32\"/>	#10	6\"/>	#10	12\"/>	HORIZONTAL BRIDGING @ 48\"/>		

NOTES:
1. ALL STUDS AND TRACK SHALL BE OF ASTM A1003 STRUCTURAL GRADE 50 TYPE H STEEL.
2. WHERE STUD MUST BE CUT DUE TO THE PLACEMENT OF ANCHOR BOLTS OR OTHER PRODUCTS, AN ADDITIONAL STUD SHALL BE INSERTED ALONG SIDE.
3. ALL PANEL EDGES SHALL BE SOLID BLOCKED PER DETAIL B1/SW601.
4. DISTANCE FROM PANEL EDGE TO SCREW SHALL BE NOT LESS THAN 3/8\"/>

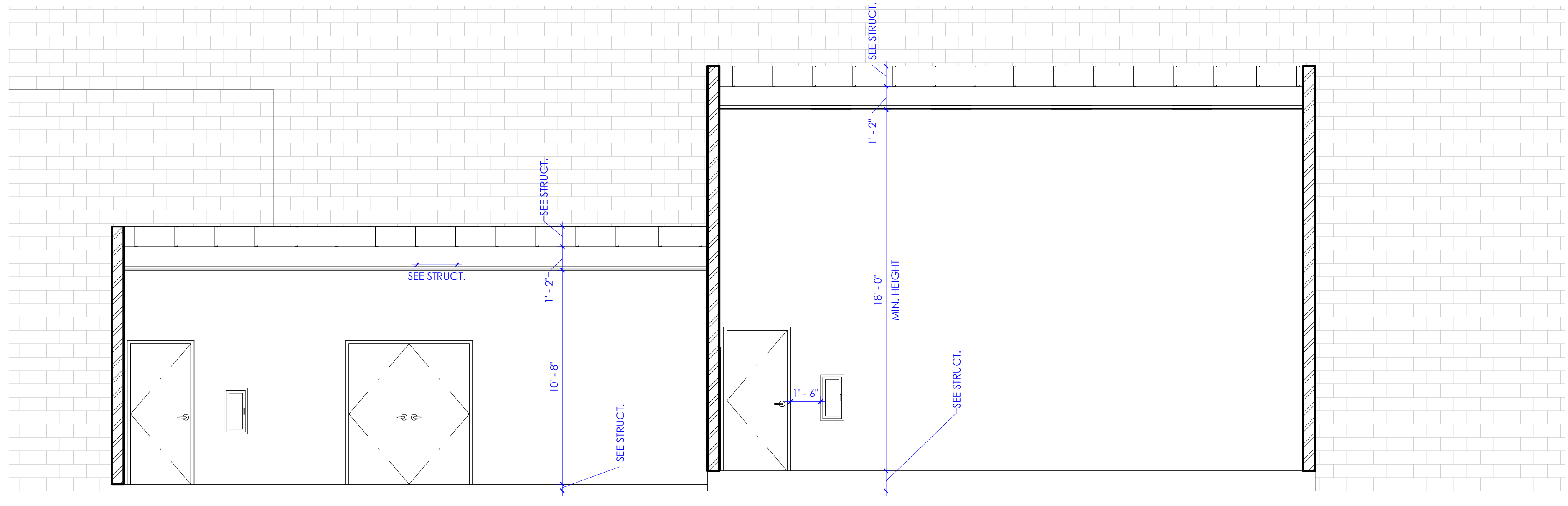
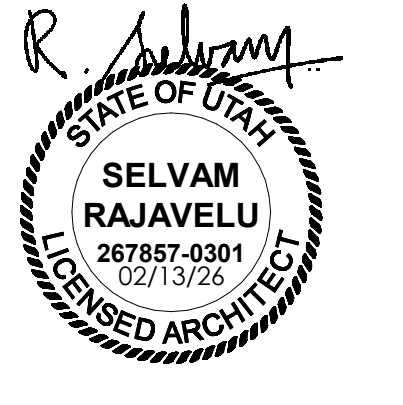


WIDTH OF OPENING	JAMB			SILL	HEADER	TYPE
	SIZE	TYPE	NO. OF KING STUDS	SIZE	SIZE	
UP TO 3'-6"	600S162-54	J1	1	-	600S162-54	H1
	600T162-54				600T162-54	
UP TO 6'-6"	(2) 600S162-54	J2	1	-	(2) 800S162-54	H2
	600T162-54				600T162-54	
34'-5"	(2) 600S162-54	J2	2	-	(2) 1400S162-118	H3
	600T162-54				(1) 600S162-54	
					(2) 1400T162-118	

- NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL OPENINGS IN STUD WALLS.
2. ALL STUD SIZE DESIGNATIONS ARE PER THE STANDARD ESTABLISHED BY THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) AND THE NORTH AMERICAN STEEL FRAMING ALLIANCE (NASFA).
3. AT CONTRACTOR'S OPTION, USE #12 SCREWS @ 12\"/>



B4 TYPICAL STUD WALL FRAMING SCHEDULE WITH FRAMED OPENING DETAIL
SW601/ NO SCALE



1 Life Flight Simulator
SCALE: 1/4" = 1'-0"

KEYED NOTES

1. GYPSUM BOARD, 5/8" THICK, (TYPE 'X', U.N.O.), ATTACHED TO SHEATHING OR METAL STUD.
2. SHEATHING, SEE STRUCTURAL DRAWINGS.
3. STEEL STUD, SEE STRUCTURAL DRAWINGS.
4. BATT INSULATION.
5. VAPOR BARRIER.

NOTE: FOR OTHER WALL ELEMENTS, SEE WALL TYPE 'B' ON WALL TYPES SHEET, A501A. WHILE THIS WALL IS NOT A TYPE 'B' IT REQUIRES SIMILAR ELEMENTS AS A TYPE 'B' WALL.

2 Wall Section, Typical
SCALE: 1 1/2" = 1'-0"

KEYED NOTES

GENERAL NOTES

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

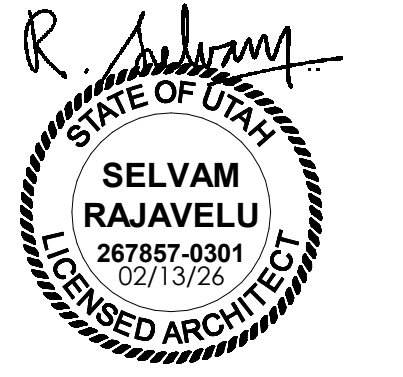
Intermountain Health
Intermountain Life Flight
Life Flight Simulator

2284 1.60 N
 Salt Lake City, UT 84116

NJRA Project # 25252.00
 Bid Set Feb 13, 2025
 Addendum #1 Mar 23, 2026

Wall Sections

A351



KEYED NOTES

- 03.01 CONCRETE BASE. SEE STRUCTURAL DRAWINGS.
- 05.32 GUARDRAIL OR HANDRAIL. RAIL SHALL BE CONSTRUCTED WITH STEEL COMPONENTS PAINTED SAFETY YELLOW. ATTACH HANDRAIL TO WALL OR GUARDRAIL WHEREVER POSSIBLE EVERY 16". OTHERWISE ANCHOR GUARDRAIL AND HANDRAIL TO FLOOR DIAPHRAGM AS REQUIRED AND PROVIDE STAINLESS STEEL ESCUTCHEON AT FLOOR.
- 08.19 ALUMINIUM-FRAMED STOREFRONT SYSTEM WITH 1/4" TEMPERED GLAZING. WINDOW SYSTEM SHALL BE 2" X 4 1/2" TYPE FRAMES. GLAZING SHALL BE OFF-CENTERED (OFFSET SYSTEM). FRAMES SHALL BE CLEAR ANODIZED FINISH. PROVIDE HEAVY DUTY FRAMES AROUND DOORS.
- 09.02 FRAMED FLOOR DIAPHRAGM. SEE STRUCTURAL DRAWINGS.
- 09.03 WALL. STEEL STUD FRAMED WALL WITH EXTERIOR SHEATHING. FINISH WITH EXTERIOR AND INTERIOR DRYWALL AND PAINT. PROVIDE ACOUSTICAL BATT WITHIN CAVITY OF WALL AND VAPOR BARRIER ON INTERIOR SIDE OF STUD. IN ADDITION TO STRUCTURAL DRAWINGS OR ITEMS IN THIS KEYNOTE AND DETAIL 2/A351 OTHER WALL ELEMENTS SHALL ALSO CONFORM TO TYPICAL TYPE "P" WALL. SEE STRUCTURAL DRAWINGS. SEE WALL TYPES. SEE DETAIL 2/A351.
- 09.05 RAISED DISC RUBBER FLOORING TILES. SEE FINISH SCHEDULE.
- 09.08 WALL BASE. SEE FINISH SCHEDULE.
- 09.13 ACOUSTICAL CEILING TILE AND GRID. SEE FINISH SCHEDULE.
- 09.24 LVT FLOOR COVERING. SEE FINISH SCHEDULE.
- 10.18 FIRE PROTECTION CABINET FOR STORING PORTABLE FIRE EXTINGUISHERS. CABINET SHALL BE RECESSED IN WALL. SEE DETAIL 2/A506A.
- 11.01 MOVEABLE STAIR/PLATFORM WITH SAFETY RAILS. OWNER FURNISHED. OWNER INSTALLED.
- 11.02 DOCK LIFT. 6'X8'. VESTIL MANUFACTURING MODEL "W-100-S-48" AND ASSOCIATED CONTROL CABINET AND HYDRAULIC PUMP. CONTRACTOR FURNISHED. CONTRACTOR INSTALLED.
- 11.03 WOOD MOTION BASE. MODEL MB-P-400F/2A/2000KG. VENDOR FURNISHED. CONTRACTOR INSTALLED. ANCHOR TO CONCRETE BASE AS REQUIRED. CONTRACTOR SHALL PROVIDE ELECTRICAL DISCONNECT (LOCATED ELSEWHERE) AND CONDUITS WITHIN CONDUIT AS REQUIRED. SEE ELECTRICAL DRAWINGS. SEE VENDOR DOCUMENTATION IN PROJECT MANUAL FOR SPECIFIC REQUIREMENTS FOR INSTALLATION.
- 11.04 SINGLE GANG CONTROL DESKTOP SWITCH WITH LIGHT AND BUTTON. VENDOR FURNISHED. CONTRACTOR INSTALLED.
- 11.05 COMPRESSOR. SEE VENDOR (MOOG) DOCUMENTATION. SEE MECHANICAL DRAWINGS.
- 11.06 INTEGRATION RACK. VENDOR FURNISHED. CONTRACTOR INSTALLED.
- 11.07 COMPUTER. WALL MOUNTED. COMPUTER NOT IN CONTRACT. OWNER FURNISHED. OWNER INSTALLED. CONTRACTOR SHALL FURNISH AND INSTALL WALL MOUNT FOR VENDOR SUPPLIED COMPUTER. WALL MOUNT SHALL BE ERGOTRON LX WALL MOUNT SYSTEM AS BASIS OF DESIGN.
- 11.08 COMPUTERS. NOT IN CONTRACT. VENDOR FURNISHED. OWNER INSTALLED.
- 11.09 COMPUTER. NOT IN CONTRACT. OWNER FURNISHED. OWNER INSTALLED.
- 11.10 FLIGHT SIMULATOR BY OWNER'S VENDOR. LEONARDO. SEE VENDOR DOCUMENTATION IN PROJECT MANUAL FOR SITE PREPARATION REQUIREMENTS. VENDOR FURNISHED. VENDOR INSTALLED.
- 11.11 TV. MOUNTED ON ARTICULATING ARM MOUNT. TO DISPLAY RECORDINGS. ELECTRICAL BACK BOX AND CONDUIT CONNECTION TO RACK SUPPLIED AND INSTALLED BY CONTRACTOR. TV SHALL BE VENDOR FURNISHED. CONTRACTOR INSTALLED. TV MOUNT SHALL BE CONTRACTOR FURNISHED. CONTRACTOR INSTALLED. PROVIDE ARM CAPABLE OF SUPPORTING 85" TV. PROVIDE PLYWOOD BACKING IN WALL AS REQUIRED TO SUPPORT THE TV BRACKET. PROVIDE POWER, DATA AND HDMI PORT. SEE ELECTRICAL DRAWINGS.
- 11.12 HYDRAULIC CABINET. VENDOR (MOOG) FURNISHED. CONTRACTOR INSTALLED. SEE VENDOR DRAWINGS.
- 11.13 TELEVISION (TV). NOT IN CONTRACT. OWNER FURNISHED. OWNER INSTALLED.
- 12.09 FURNITURE. NOT IN CONTRACT. OWNER FURNISHED. OWNER INSTALLED.
- 22.05 MECHANICAL CEILING CASSETTE. SEE MECHANICAL DRAWINGS.
- 26.01 PLUG STRIPS FOR CHARGING. SEE ELECTRICAL DRAWINGS.
- 26.02 POWER AND DATA AS REQUIRED. SEE ELECTRICAL DRAWINGS.
- 26.03 CONDUIT UNDER FLOOR FOR "UMBILICAL" CONNECTION TO MOTION BASE. SEE ELECTRICAL DRAWINGS.
- 26.04 POWER AND DATA AS REQUIRED IN FUSELAGE FOR PATIENT MONITOR & MANNING. SEE ELECTRICAL DRAWINGS.
- 26.05 CONDUIT FROM RACK TO FUSELAGE. SEE ELECTRICAL DRAWINGS.
- 26.06 CONDUIT FROM RACK TO TV. SEE ELECTRICAL DRAWINGS.
- 26.07 CONDUIT FROM RACK TO CONSOLE. SEE ELECTRICAL DRAWINGS.
- 26.08 FLOOR BOX. PROVIDE POWER, DATA AT FLOOR BOX. SEE ELECTRICAL DRAWINGS.
- 26.09 LIGHTS ON DIMMER. TYPICAL. SEE ELECTRICAL DRAWINGS.
- 26.11 MOTION BASE ELECTRICAL DISCONNECT. CONTRACTOR FURNISHED. CONTRACTOR INSTALLED.

GENERAL NOTES

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

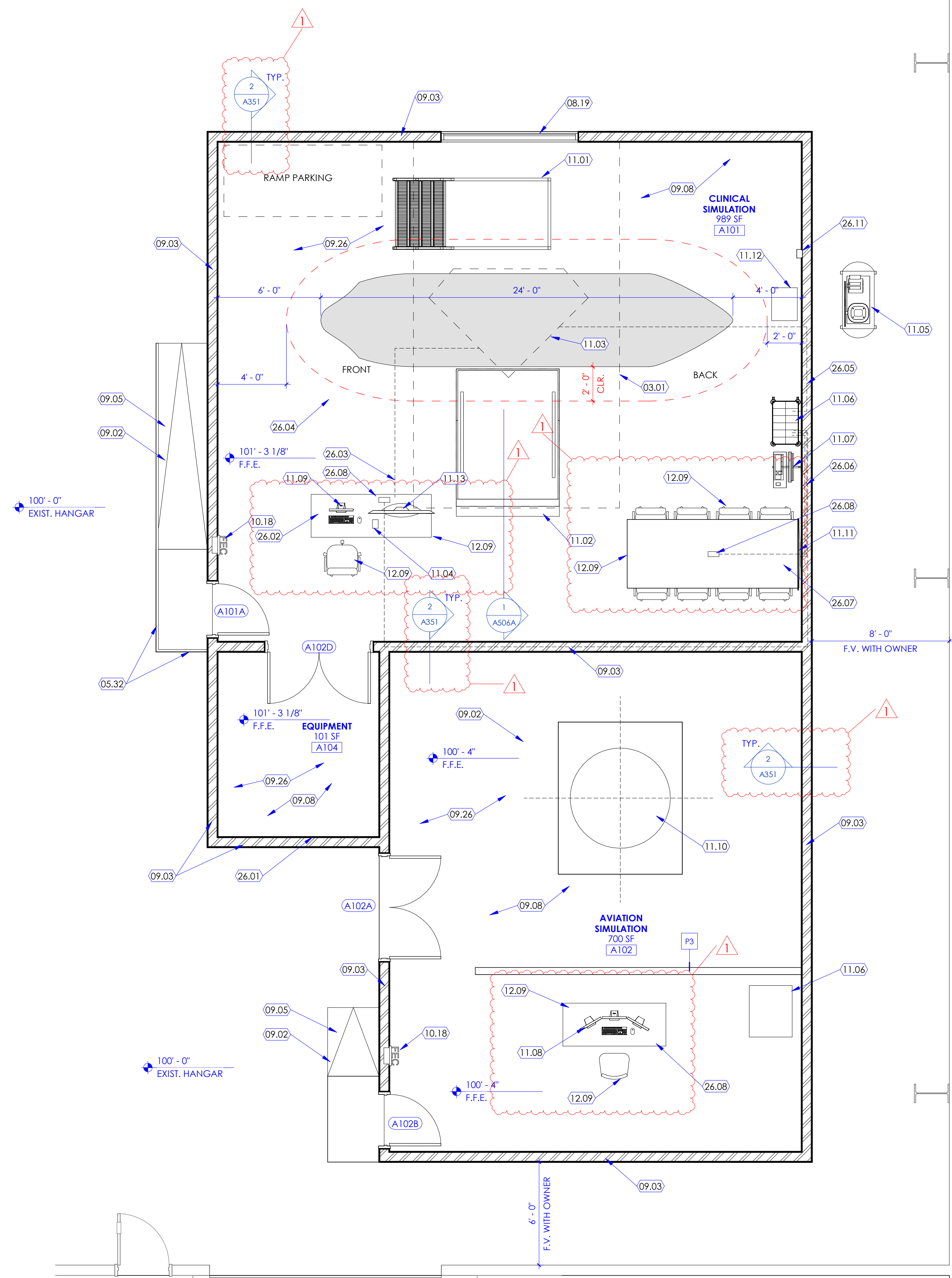
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Feb 13, 2025
Mar 23, 2026

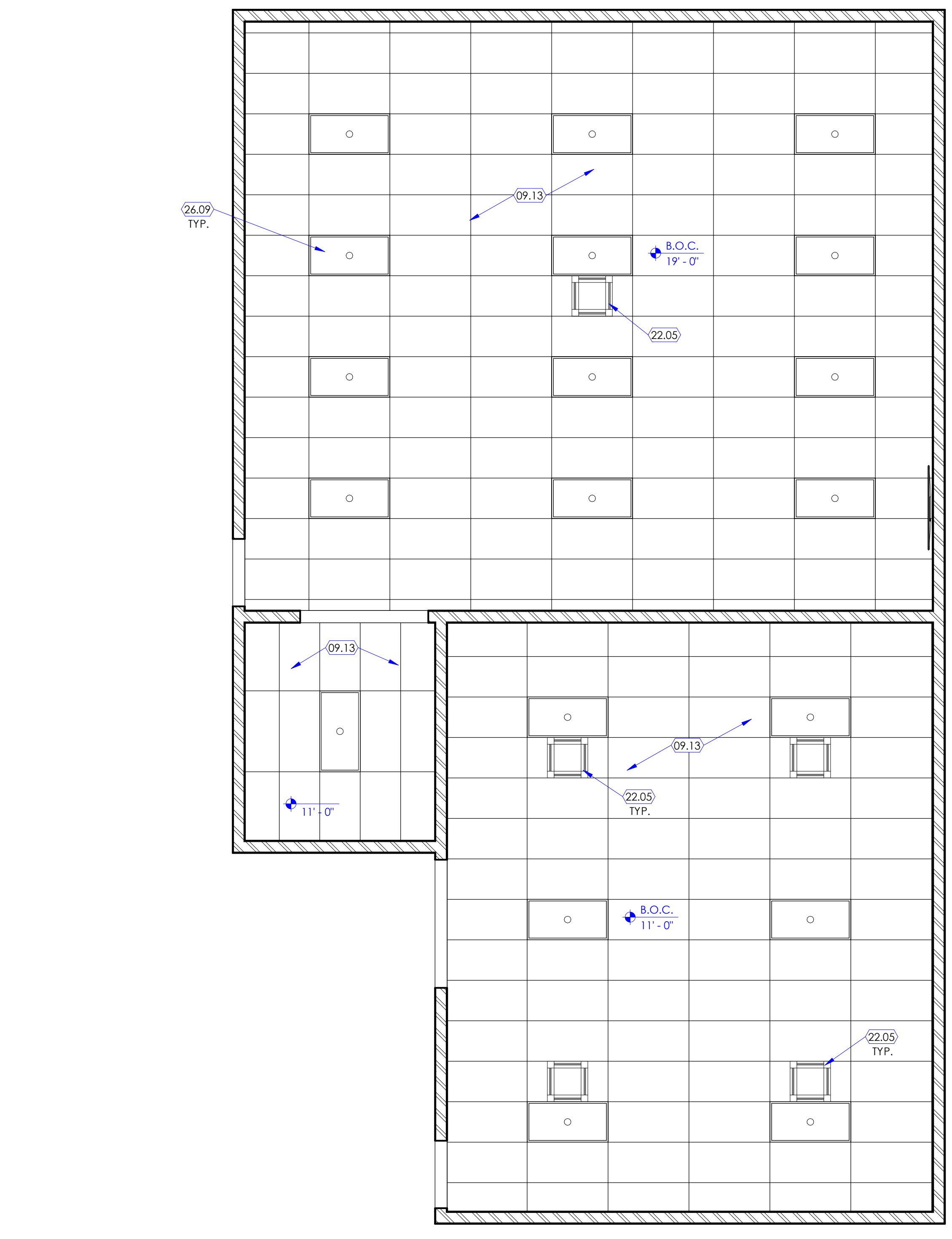
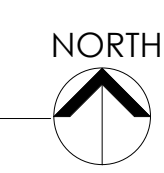
NJRA Project # 25252.00
Bid Set Feb 13, 2025
1 Addendum #1 Mar 23, 2026

Enlarged Views

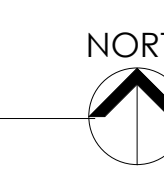
A401



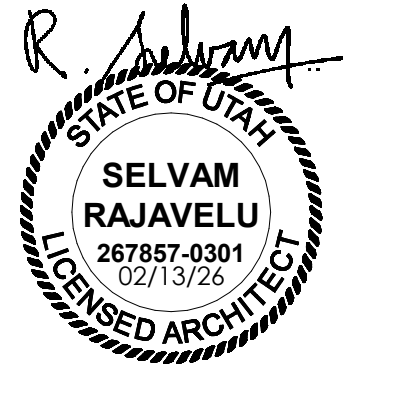
1 Floor Plan Level 1
SCALE: 1/4" = 1'-0"



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



3/23/2026 2:26:33 PM



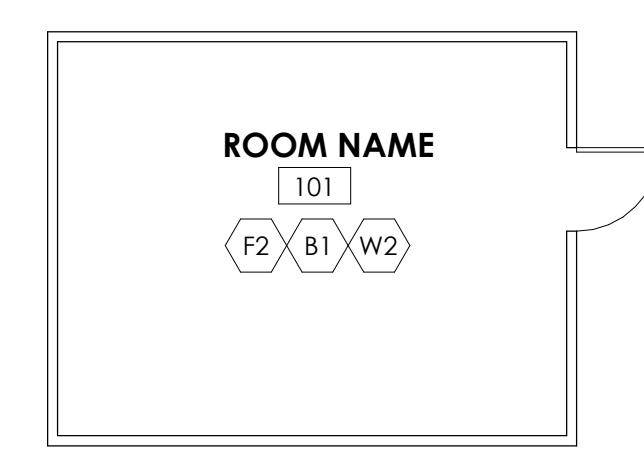
GENERAL NOTES - FINISH PLAN

- BASIS OF DESIGN FOR FINISHES: FINISHES INDICATED ON THE FINISH SCHEDULE ARE BASED ON THE NAMED MANUFACTURER AND THEIR PRODUCTS. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE NAMED PRODUCT OR A COMPARABLE PRODUCT BY ONE OF THE APPROVED MANUFACTURERS LISTED IN THE PROJECT MANUAL. SEE RELEVANT SPECIFICATION SECTION.
- SEE "SAMPLE LAYOUTS" INDICATED ON FINISH PLANS FOR CLARIFICATION ON HOW DIFFERENT TYPES OF REQUIRED FINISHES ARE INDICATED WITH FINISH TAGS FOR FLOORS, WALLS, MISCELLANEOUS SURFACE, ETC. SEE FINISH FLOOR PLANS FOR REQUIRED FINISHES (INDICATED WITH FINISH TAGS SUCH AS F1, B1, W1, ETC.).
- LINE OF TRANSITION BETWEEN DIFFERENT TYPES OF FLOOR COVERING IS INDICATED ON THE FINISH FLOOR PLANS. IN PLACES WHERE TWO DIFFERENT FLOOR COVERINGS ABUT EACH OTHER, CONTRACTOR SHALL FOLLOW THE RELEVANT APPLICABLE "FLOOR COVERING TRANSITION DETAILS" INDICATED IN THIS CONSTRUCTION DOCUMENTS, WHERE TWO ROOMS ARE REQUIRED TO HAVE DIFFERENT FLOOR COVERINGS, LINE OF TRANSITION SHALL TYPICALLY OCCUR BELOW THE CENTER OF THE DOOR (LOCATED BETWEEN THE TWO ROOMS). AS THESE TRANSITION LINES ARE NOT INDICATED BELOW THE DOOR ON THE FINISH FLOOR PLANS, CONTRACTOR SHALL PROVIDE METAL TRANSITION STRIP (MANUFACTURED BY SCHLUTER OR EQUIVALENT) AS REQUIRED. AT EXTERIOR DOORS, PROVIDE ALUMINUM THRESHOLD MATCHING THE DOORWAY. FOR REMODEL PROJECTS, COORDINATE WITH DEMOLITION FLOOR PLAN AND NEW FLOOR PLAN TO DETERMINE WHERE NEW ABUTS EXISTING FLOOR COVERING THAT IS SCHEDULED TO REMAIN.
- LINE OF TRANSITION BETWEEN DIFFERENT TYPES OF WALL FINISH IS INDICATED ON THE INTERIOR ELEVATIONS AND FINISH FLOOR PLANS. FOR REQUIRED WALL PROTECTION TYPE (INDICATED WITH TAG WP1, WP2, ETC.), ON WALLS, COORDINATE WITH FINISH FLOOR PLANS AND INTERIOR ELEVATIONS.
- THERE ARE MISCELLANEOUS SURFACES THAT ARE EXPOSED AND WILL REQUIRE A FINISH. SUCH MISCELLANEOUS SURFACES ARE INDICATED IN THE DRAWINGS WITH FINISH TAGS SUCH AS MS1, MS2, ETC.
- PAINT ALL EXPOSED VISIBLE ITEMS SUCH AS METAL DECK, STEEL ANGLES, STEEL BEAMS, STEEL TRUSSES, MISC. STEEL ITEMS, PIPES, CONDUITS, ETC. UNLESS SPECIFICALLY NOTED AS A SURFACE NOT TO BE PAINTED. OR IF NATURAL FINISH IS REQUIRED, PAINT SURFACES USING FIELD COLORS AND ACCENT COLORS SPECIFIED BY THE ARCHITECT. DO NOT PAINT CONCEALED SURFACES, FINISHED METAL SURFACES, OPERATING PARTS, AND PRE-FINISHED ITEMS. VERIFY PAINTING SURFACE (SUCH AS STEEL, CONCRETE, MASONRY, GYPSUM BOARD, WOOD, ETC.) AND USE THE APPROPRIATE PAINT AND METHOD INDICATED IN THE PROJECT MANUAL UNDER RELEVANT SPECIFICATION SECTION. ALL HOLLOW METAL DOOR AND WINDOW FRAMES SHALL BE PAINTED. USE SEMI-GLOSS FINISH ON DOOR FRAMES.
- IN ROOMS AND AREAS WHERE GYPSUM BOARD CEILING IS INDICATED, PAINT CEILING WITH THE SAME COLOR AND TYPE AS ADJACENT WALLS. IN WET ROOMS (LIKE RESTROOM, KITCHEN, ETC.) WHERE EPOXY PAINT IS INDICATED AS A REQUIREMENT ON WALLS, PAINT CEILING AND SOFFITS WITH EPOXY TYPE PAINT. ALL GYPSUM BOARD SOFFITS SHALL BE PAINTED. COORDINATE ACCENT COLOR LOCATIONS WITH ARCHITECT WHEREVER INDICATED.
- SEE INTERIOR ELEVATIONS FOR PLASTIC LAMINATE FINISHES OVER CABINETS, COUNTERTOPS, WALLS, ETC. PLASTIC LAMINATE FINISHES ARE INDICATED AS PL1, PL2, ETC. COUNTERTOPS THAT ARE MONOLITHIC MATERIAL (SUCH AS SOLID SURFACE, QUARTZ, ETC. AND NOT PLASTIC LAMINATE WRAPPED), ARE INDICATED AS MM1, MM2, ETC.
- WHERE PORCELAIN AND/OR CERAMIC TILE FINISHES ARE INDICATED, PROVIDE METAL EDGE STRIPS (MANUFACTURED BY SCHLUTER OR EQUIVALENT) AT ALL OUTSIDE VERTICAL CORNERS AND TOP OF WAINSCOT.
- IN ROOMS AND AREAS (SUCH AS TOILET ROOMS, SHOWERS, ETC.) WHERE CERAMIC OR PORCELAIN TILES ARE INDICATED FOR WALL AND FLOOR FINISH, INSTALL BOTTOM ROW OF WALL TILE FIRST PER DETAIL 1/A603B. PROVIDE QUARTZ THRESHOLD AT DOORS TO TOILET ROOMS THAT ARE USED BY MULTIPLE USERS. SEE DETAILS 3 & 4 SHEET A603B.
- WHERE GYPSUM BOARD WALL ABUTS MASONRY WALL, PROVIDE REVEAL AS PER DETAIL 2/A603B.

KEYED NOTES

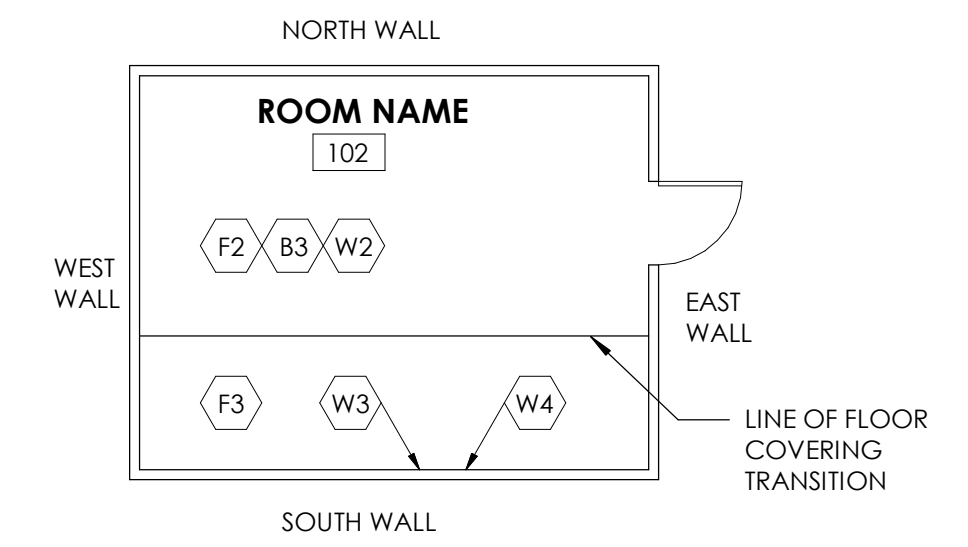
FINISH PLAN - SAMPLE LAYOUT

SAMPLE LAYOUT 1

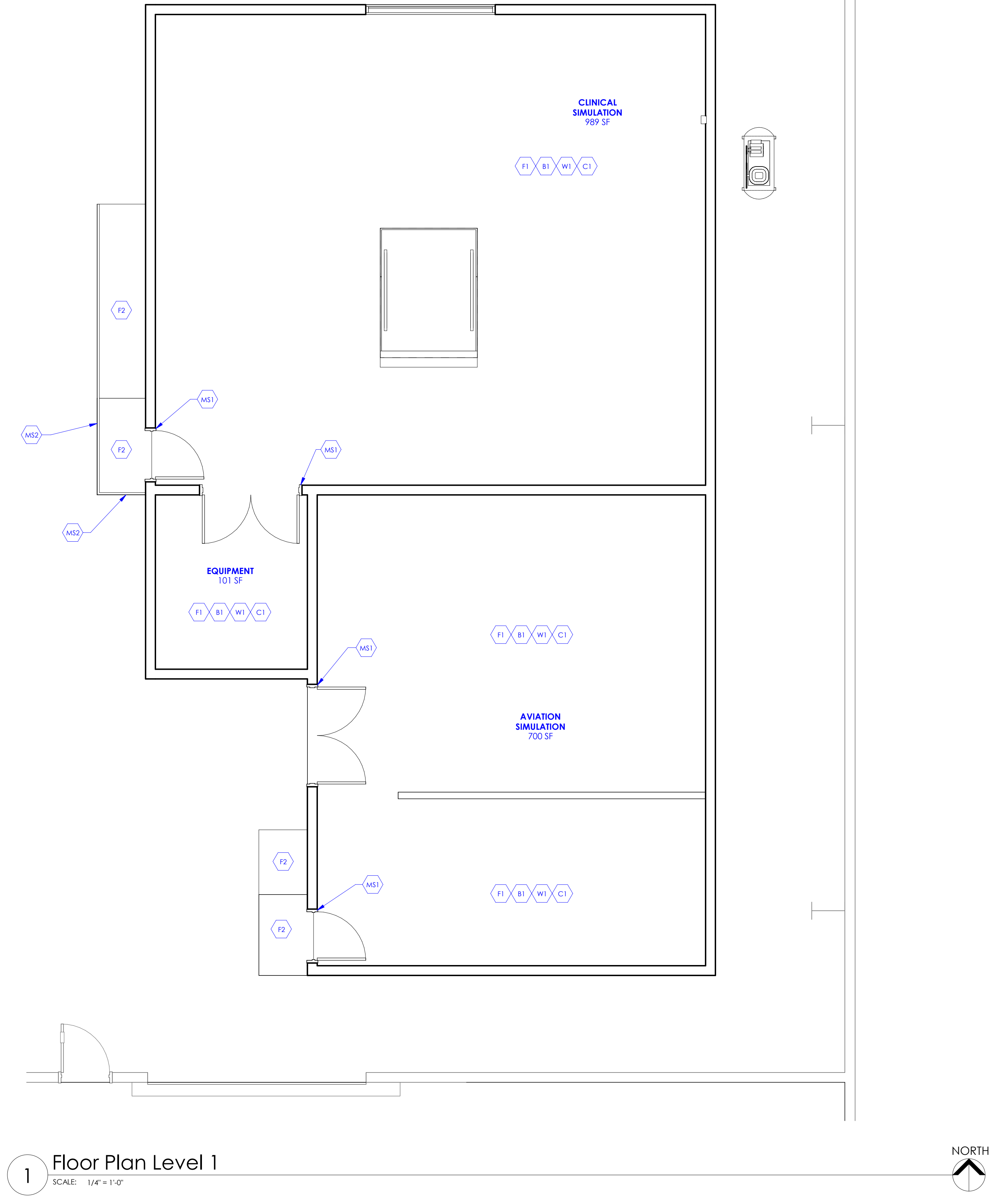


NOTE: AS INDICATED IN ROOM NUMBER 101, MAJORITY OF THE ROOMS IN THE PROJECT SHALL HAVE A SINGLE TYPE OF FLOOR FINISH, WALL BASE AND WALL FINISH. WALL FINISH INDICATED AS "W2" SHALL APPLY TO ALL FOUR WALLS FROM FLOOR TO CEILING.

SAMPLE LAYOUT 2



NOTE: AS INDICATED IN ROOM NUMBER 102, SOME ROOMS SHALL HAVE MULTIPLE FLOOR AND WALL FINISHES. SEE GENERAL NOTE "C" ON SHEET A603A FOR FLOOR COVERING TRANSITIONS. THE WALL FINISH INDICATED AS "W2" IN THE ROOM (WITHOUT AN ARROW POINTING TO ANY SPECIFIC WALL) SHALL APPLY TO THE WEST, NORTH AND EAST WALL. WHERE WALL FINISHES ARE INDICATED WITH AN ARROW POINTING TO THE SOUTH SIDE, WALL SHALL HAVE MULTIPLE FINISHES SUCH AS "W3" AND "W4". SEE INTERIOR ELEVATIONS FOR TRANSITION DETAILS BETWEEN "W3" AND "W4".



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

FINISH SCHEDULE

TAG	FINISH TYPE	SIZE	MATERIAL DESCRIPTION	MANUFACTURER	STYLE	MODEL #	COLOR	COMMENTS
F1	FLOOR FINISH	19.6" X 19.6"	LUXURY VINYL TILE	TARKETT	EVEN PLAN STONE PNS	8702	8702 CEMENT DARK GREY	1
F2	FLOOR FINISH	24" X 24"	RUBBER TILE	TARKETT, JOHNSONITE	TACTILE WARNING SURFACE - RUBBER	ATTENTION TILE, TW1	32 PEBBLE WG	2
B1	WALL BASE	4" HIGH	RUBBER BASE	TARKETT, JOHNSONITE	BASEWORKS, STANDARD TOE	-	32 PEBBLE WG	-
W1	WALL FINISH		PAINT	SHERWIN WILLIAMS	EGG SHELL FINISH	SW 7043	WORLDLY GRAY	-
C1	CEILING FINISH	2' X 4'	ACOUSTICAL CEILING TILES AND GRID	USG	RADAR FIRECODE HIGH-NRC ACOUSTICAL PANELS	22311	WHITE	3
MS1	MISC. SURFACE FINISH		PAINTED HOLLOW METAL DOOR FRAME	SHERWIN WILLIAMS	SEMI-GLOSS FINISH	SW 7043	WORLDLY GRAY	-
MS2	MISC. SURFACE FINISH		PAINTED GUARDRAIL	SHERWIN WILLIAMS	SEMI-GLOSS FINISH	-	SAFETY YELLOW	-

COMMENTS

- LUXURY VINYL TILE TO BE INSTALLED QUARTER TURNED.
- RUBBER TILE TO BE INSTALLED MONOLITHICLY.
- SEE RCP FOR CEILING TILE AND GRID LAYOUT.

GENERAL NOTES

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

Intermountain Health
 Intermountain Life Flight
 Life Flight Simulator

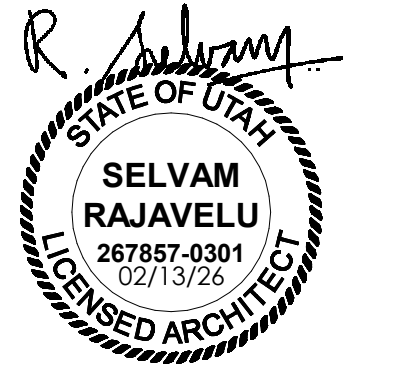
2284 1 60 N
 Salt Lake City, UT 84116

NJRA Project # 25252.00
 Bid Set Feb 13, 2025
 1 Addendum #1 Mar 23, 2025

Enlarged
Finish Plan &
Schedule

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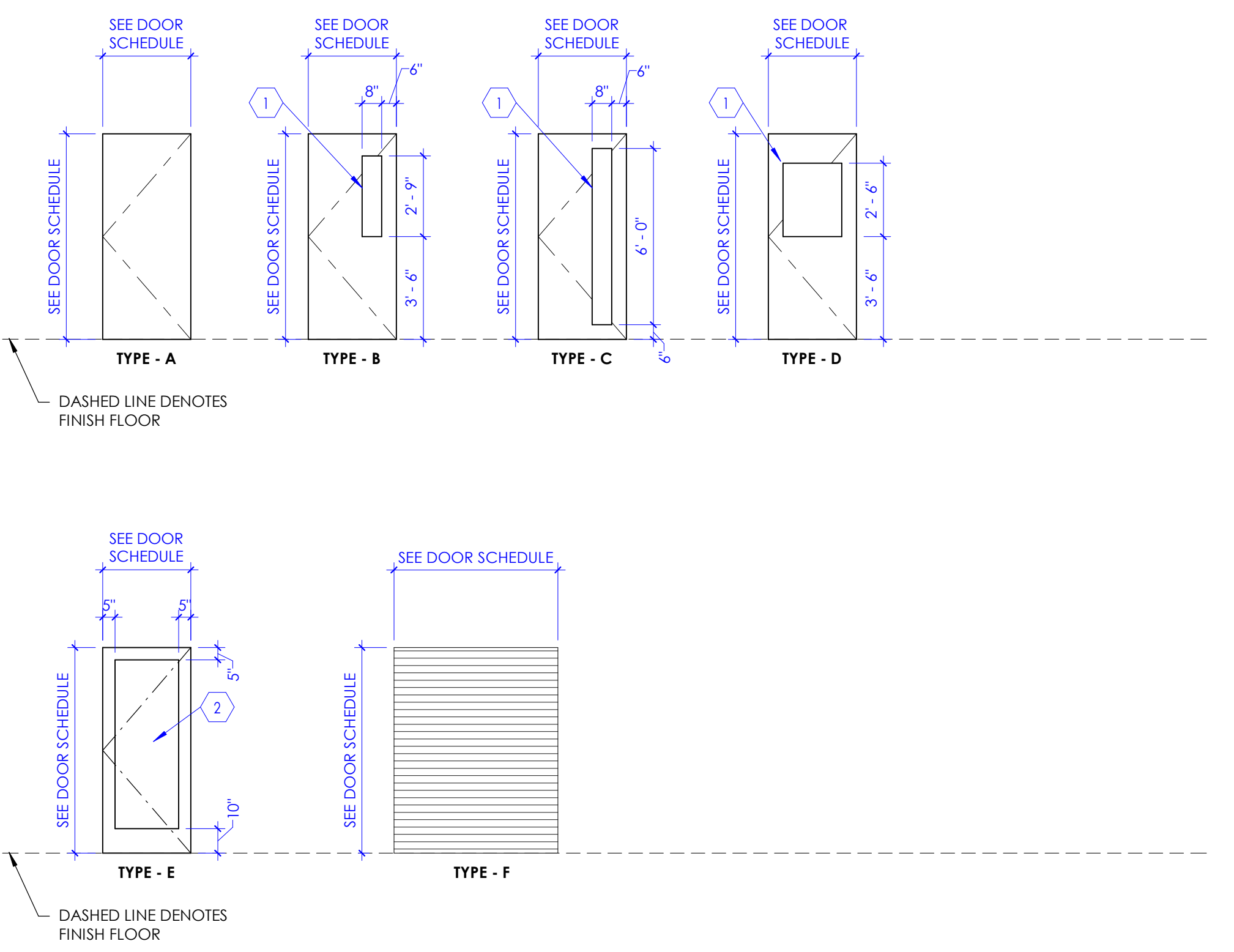


DOOR SCHEDULE

DOOR #	# OF PANELS	DOOR						FRAME		DETAILS				DOOR #	FIRE RATING (MINUTES)	HARDWARE GROUP	COMMENTS
		W1	W2	HEIGHT	THICKNESS	MATERIAL	TYPE (1/A601A)	TYPE (2/A601A)	DEPTH	MATERIAL	JAMB	HEAD	THRESHOLD				
A101A	1	3'-0"		7'-0"	1 3/4"	WD	A	1	8 1/4"	HM				A101A		1	
A102A	2	3'-0"		7'-0"	1 3/4"	WD	A	1	8 1/4"	HM				A102A		2	
A102B	1	3'-0"		7'-0"	1 3/4"	WD	A	1	8 1/4"	HM				A102B		1	
A102D	2	3'-0"		7'-0"	1 3/4"	WD	A	1	8 1/4"	HM				A102D		3	

KEYED NOTES

- VISION PANEL, GLAZING IN VISION PANEL SHALL BE 1/4" THICK, CLEAR, TEMPERED, GLAZING. FOR WOOD DOOR, PROVIDE WOOD TRIM FRAME FLUSH WITH THE FACE OF THE DOOR, AROUND THE VISION PANEL OPENING. STAIN AND SPECIES OF WOOD TRIM SHALL MATCH WOOD DOOR. FOR HOLLOW METAL DOOR, PROVIDE METAL TRIM AROUND VISION PANEL. GLAZING SHALL BE FIRE RATED IF DOORS ARE REQUIRED TO BE FIRE RATED.
- FOR EXTERIOR DOORS OF THIS TYPE, GLAZING SHALL BE TINTED, INSULATED, TEMPERED, LOW E, AND 1" THICK. FOR INTERIOR DOORS OF THIS TYPE, GLAZING SHALL BE CLEAR, TEMPERED AND 1/4" THICK. STAINLESS STEEL WELDED WIRE MESH (15 GAUGE) ATTACHED TO DOOR, PROVIDE FRAME AROUND THE OPENING IN DOOR TO SECURE THE MESH IN PLACE.
- METAL LOUVER IN DOOR FOR VENTILATION.



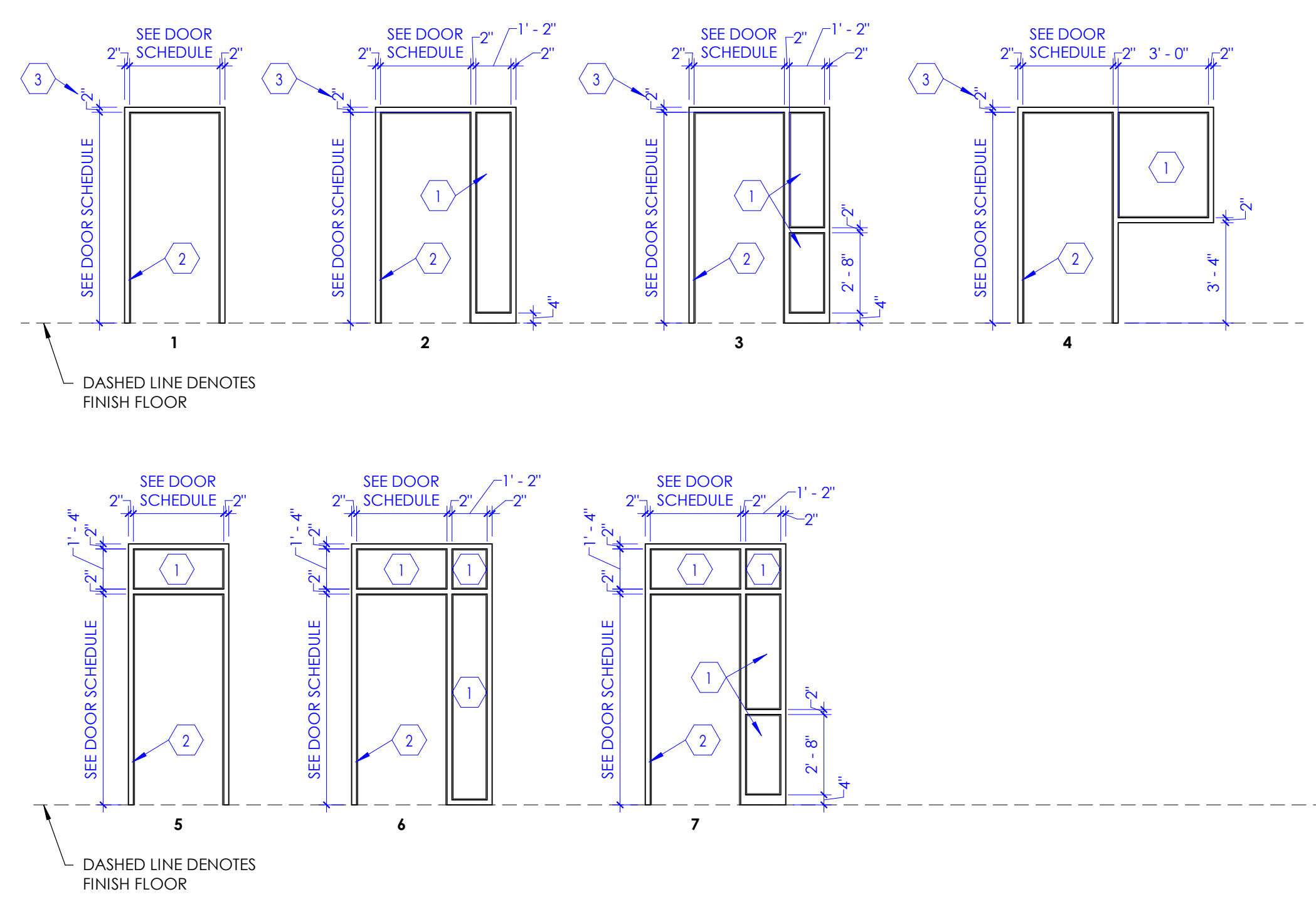
1 Door Types
SCALE: 1/4" = 1'-0"

NOTE: REFER TO "DOOR SCHEDULE" TABLE FOR DOOR TYPES REQUIRED FOR THIS PROJECT. SOME DOOR TYPE ELEVATIONS INDICATED ABOVE, MAY NOT BE APPLICABLE TO THIS PROJECT.

COMMENTS

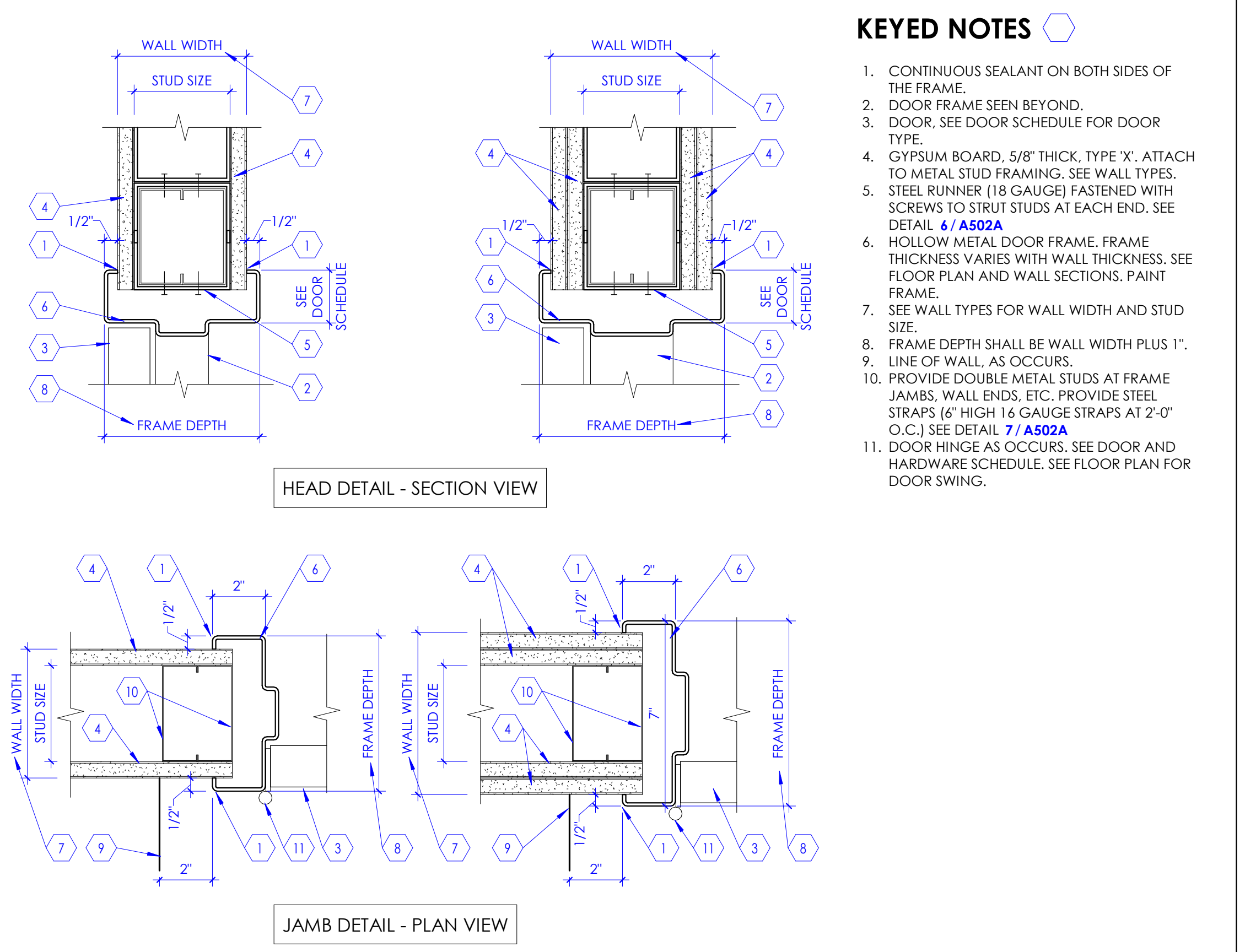
KEYED NOTES

- GLAZING SHALL BE CLEAR, TEMPERED, AND 1/4" THICK.
- DOOR FRAME, SEE DOOR SCHEDULE.
- WHERE DOOR OCCURS AT MASONRY WALL (8" HIGH, C.M.U., BLOCKS), AND WITH A TYPICAL DOOR HEIGHT OF 7'-0", USE 4" FRAME AS FRAME HEAD INSTEAD OF THE STANDARD 2" FRAME.



2 Frame Types
SCALE: 1/4" = 1'-0"

NOTE: REFER TO "DOOR SCHEDULE" FOR FRAME TYPES REQUIRED FOR THIS PROJECT. SOME FRAME TYPE ELEVATIONS INDICATED ABOVE MAY NOT BE APPLICABLE TO THIS PROJECT.



KEYED NOTES

- CONTINUOUS SEALANT ON BOTH SIDES OF THE FRAME.
- DOOR FRAME SEEN BEYOND.
- DOOR, SEE DOOR SCHEDULE FOR DOOR TYPE.
- GYPSUM BOARD, 5/8" THICK, TYPE 'X', ATTACH TO METAL STUD FRAMING. SEE WALL TYPES, STEEL RUNNER (18 GAUGE) FASTENED WITH SCREWS TO STUD STUDS AT EACH END. SEE DETAIL 6 / A502A.
- HOLLOW METAL DOOR FRAME, FRAME THICKNESS VARIES WITH WALL THICKNESS. SEE FLOOR PLAN AND WALL SECTIONS, PAINT FRAME.
- SEE WALL TYPES FOR WALL WIDTH AND STUD SIZE.
- FRAME DEPTH SHALL BE WALL WIDTH PLUS 1".
- LINE OF WALL, AS OCCURS.
- PROVIDE DOUBLE METAL STUDS AT FRAME JAMBS, WALL ENDS, ETC. PROVIDE STEEL STRAPS (6" HIGH 1/2" GAUGE STRAPS AT 2'-0" O.C.) SEE DETAIL 7 / A502A.
- DOOR HINGE AS OCCURS. SEE DOOR AND HARDWARE SCHEDULE. SEE FLOOR PLAN FOR DOOR SWING.

3 Door Frame in Stud Wall
SCALE: 3" = 1'-0"

Intermountain Health
Intermountain Life Flight
Life Flight Simulator

2284 1.60 N
Salt Lake City, UT 84116

NJRA Project # 25252.00
Bid Set Feb 13, 2025
1 Addendum #1 Mar 23, 2026

Door
Schedule

A601A

SECTION 06 16 00 - SHEATHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wall sheathing.
 - 2. Roof sheathing.

1.2 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and testing and inspecting agency.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PANEL PRODUCTS

- A. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- B. Factory mark panels to indicate compliance with applicable standard.

2.2 WALL SHEATHING

- A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2 exterior sheathing.
 - 1. Span Rating: As indicated on drawings.
 - 2. Nominal Thickness: As indicated on drawings.
 - 3. All wood structural panels used for wall sheathing shall be fire-retardant-treated wood (FRTW) in accordance with IBC Section 2303.2 or fire-retardant-rated sheathing with a valid ICC-ES evaluation report. Fire-retardant-rated sheathing shall be LP FlameBlock (ESR-1365) or approved equivalent.

2.3 ROOF SHEATHING

- A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2 exterior sheathing.

1. Span Rating: As indicated on the drawings.
2. Nominal Thickness: As indicated on the drawings.
3. All wood structural panels used for roof shall be fire-retardant-treated wood (FRTW) in accordance with IBC Section 2303.2 or fire-retardant-rated sheathing with a valid ICC-ES evaluation report. Fire-retardant-rated sheathing shall be LP FlameBlock (ESR-1365) or approved equivalent.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 1. For roof, parapet, and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A153 or Type 304 stainless steel.
- B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- C. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- D. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached.
 1. For steel framing from 0.033 to 0.112 inch thick, use screws that comply with ASTM C954.

2.5 MISCELLANEOUS MATERIALS

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 1. Table 2304.10.1, "Fastening Schedule," in the ICC's International Building Code.
 2. ICC-ES evaluation report for fastener.
- D. Coordinate wall, parapet, and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

- E. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 INSTALLATION OF WOOD STRUCTURAL PANEL

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Wall and Roof Sheathing:
 - a. Screw to cold-formed metal framing.
 - b. Space panels 1/8 inch apart at edges and ends.

END OF SECTION

SECTION 07 2100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Extruded polystyrene foam-plastic board insulation (at perimeter foundation wall below grade and at other places indicated on drawings).
2. Polyisocyanurate foam-plastic board insulation (in cavity walls, furred CMU walls, above grade locations that are not scheduled for spray applied foam type insulation).
3. Glass-fiber blanket insulation.
4. Glass-fiber board insulation.
5. Mineral-wool blanket insulation.
6. Mineral-wool board insulation.
7. Loose-fill insulation.
8. Spray-applied cellulosic insulation.

B. Related Requirements:

1. Section 04 2000 "Unit Masonry" for insulation installed in masonry cells.
2. Section 06 1600 "Sheathing" for foam-plastic board sheathing installed directly over wood or steel framing.
3. Section 07 1326 "Self-Adhering Sheet Waterproofing"
4. Section 07 2119 "Foamed-in-Place Insulation" for spray-applied polyurethane foam insulation.
5. Section 07 5419 "Polyvinyl-Chloride (PVC) Roofing" for insulation specified as part of roofing construction.
6. Section 09 2900 "Gypsum Board" for sound attenuation blanket used as acoustic insulation.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Extruded polystyrene foam-plastic board insulation.
2. Polyisocyanurate foam-plastic board insulation.
3. Glass-fiber blanket insulation.
4. Glass-fiber board insulation.
5. Mineral-wool blanket insulation.
6. Mineral-wool board insulation.

7. Loose-fill insulation.

1.4 INFORMATIONAL SUBMITTALS

- A. Installer's Certification: Listing type, manufacturer, and R-value of insulation installed in each element of the building thermal envelope.
 1. For blown-in or sprayed fiberglass and cellulosic-fiber loose-fill insulation, indicate initial installed thickness, settled thickness, settled R-value, installed density, coverage area, and number of bags installed.
 2. Sign, date, and post the certification in a conspicuous location on Project site.
- B. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- C. Research Reports: For foam-plastic insulation, from ICC-ES.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
 2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

PART 2 - PRODUCTS

2.1 EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD INSULATION

- A. Extruded Polystyrene Board Insulation, Type IV: ASTM C578, Type IV, 25-psi minimum compressive strength; unfaced.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. DiversiFoam Products.
 - b. Dow Chemical Company (The).
 - c. Kingspan Insulation Limited.
 - d. Owens Corning.
 2. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.

3. Smoke-Developed Index: Not more than 450 when tested in accordance with ASTM E84.
4. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.

2.2 POLYISOCYANURATE FOAM-PLASTIC BOARD INSULATION

- A. Polyisocyanurate Board Insulation, Foil Faced: ASTM C1289, foil faced, Type I, Class 1 or 2.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Atlas EPS; a Division of Atlas Roofing Corporation.
 - b. Atlas Roofing Corporation.
 - c. Carlisle Coatings & Waterproofing Inc.
 - d. Dow Chemical Company (The).
 - e. Firestone Building Products.
 - f. Hunter Panels.
 - g. Johns Manville; a Berkshire Hathaway company.
 - h. Rmax, Inc.
 2. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
 3. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.
- B. Glass-Fiber Blanket Insulation, Unfaced: ASTM C665, Type I; passing ASTM E136 for combustion characteristics.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. CertainTeed Corporation.
 - b. Johns Manville; a Berkshire Hathaway company.
 - c. Knauf Insulation.
 - d. Owens Corning.
 2. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
 3. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.
 4. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.

2.3 MINERAL-WOOL BLANKET INSULATION

- A. Mineral-Wool Blanket Insulation, Unfaced: ASTM C665, Type IA (blankets without membrane facing); consisting of fibers; passing ASTM E136 for combustion characteristics.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Johns Manville; a Berkshire Hathaway company.
 - b. Rockwool International.
 - c. Thermafiber, Inc.; an Owens Corning company.
 2. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
 3. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.
 4. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.
- B. Mineral-Wool Blanket Insulation, Reinforced-Foil Faced: ASTM C665, Type III (reflective faced); Category 1 (membrane is a vapor barrier), faced with foil scrim, foil-scrim kraft, or foil-scrim polyethylene.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Thermafiber, Inc.; an Owens Corning company.
 2. Flame-Spread Index: Not more than 25 when tested in accordance with ASTM E84.
 3. Smoke-Developed Index: Not more than 50 when tested in accordance with ASTM E84.
 4. Labeling: Provide identification of mark indicating R-value of each piece of insulation 12 inches and wider in width.
- 2.4 LOOSE-FILL INSULATION
- A. Cellulosic-Fiber Loose-Fill Insulation: ASTM C739, chemically treated for flame-resistance, processing, and handling characteristics.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. GreenFiber.
 - b. Hamilton Manufacturing Inc.
 - c. Nu-Wool Co., Inc.
- 2.5 INSULATION FASTENERS
- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AGM Industries, Inc.
 - b. Gemco.
 2. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch thick by 2 inches square.
 3. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- B. Adhesively Attached, Angle-Shaped, Spindle-Type Anchors: Angle welded to projecting spindle; capable of holding insulation of specified thickness securely in position with self-locking washer in place.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Gemco.
 2. Angle: Formed from 0.030-inch-thick, perforated, galvanized carbon-steel sheet with each leg 2 inches square.
 3. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch in diameter; length to suit depth of insulation.
- C. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch-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 inches square or in diameter.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AGM Industries, Inc.
 - b. Gemco.
 2. Protect ends with capped self-locking washers incorporating a spring steel insert to ensure permanent retention of cap in the following locations:
 - a. Crawl spaces.
 - b. Ceiling plenums.
 - c. Attic spaces.
 - d. <Insert location>.
- D. Insulation Standoff: Spacer fabricated from galvanized mild-steel sheet for fitting over spindle of insulation anchor to maintain air space of 1 inch between face of insulation and substrate to which anchor is attached.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Gemco.

- E. Anchor Adhesive: Product with demonstrated capability to bond insulation anchors securely to substrates without damaging insulation, fasteners, or substrates.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. AGM Industries, Inc.
 - b. Gemco.

2.6 ACCESSORIES

- A. Insulation for Miscellaneous Voids:
 - 1. Glass-Fiber Insulation: ASTM C764, Type II, loose fill; with maximum flame-spread and smoke-developed indexes of 5, per ASTM E84.
 - 2. Spray Polyurethane Foam Insulation: ASTM C1029, Type II, closed cell, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E84.
- B. Adhesive for Bonding Insulation: Product compatible with insulation and air and water barrier materials, and with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.
- C. Asphalt Coating for Cellular-Glass Block Insulation: Cutback asphalt or asphalt emulsion of type recommended by manufacturer of cellular-glass block insulation.
- D. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Install insulation with manufacturer's R-value label exposed after insulation is installed.

- D. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- E. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units unless multiple layers are otherwise shown or required to make up total thickness or to achieve R-value.

3.3 INSTALLATION OF SLAB INSULATION

- A. On vertical slab edge and foundation surfaces, set insulation units using manufacturer's recommended adhesive according to manufacturer's written instructions.
 - 1. If not otherwise indicated, extend insulation a minimum of 36 inches below exterior grade line.
- B. On horizontal surfaces, loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.
 - 1. If not otherwise indicated, extend insulation a minimum of 24 inches in from exterior walls.

3.4 INSTALLATION OF FOUNDATION WALL INSULATION

- A. Butt panels together for tight fit.
- B. Anchor Installation: Install board insulation on concrete substrates by adhesively attached, spindle-type insulation anchors as follows:
 - 1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions.
 - 2. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application.
 - 3. Apply insulation standoffs to each spindle to create cavity width indicated on Drawings between concrete substrate and insulation.
 - 4. After adhesive has dried, install board insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation.
 - 5. Where insulation will not be covered by other building materials, apply capped washers to tips of spindles.
- C. Adhesive Installation: Install with adhesive or press into tacky waterproofing or dampproofing according to manufacturer's written instructions.

3.5 INSTALLATION OF CAVITY-WALL INSULATION

- A. Foam-Plastic Board Insulation: Install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face and as recommended by manufacturer.
 - 1. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions, and with faces flush.

2. Press units firmly against inside substrates.
3. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Section 04 2000 "Unit Masonry."

3.6 INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION

- A. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
 2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
 3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
 4. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
- B. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
1. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft..
 2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.
- C. Loose-Fill Insulation: Apply according to ASTM C1015 and manufacturer's written instructions.
1. Level horizontal applications to uniform thickness as indicated, lightly settle to uniform density, but do not compact excessively.
 2. For cellulosic-fiber loose-fill insulation, comply with CIMA's Bulletin #2, "Standard Practice for Installing Cellulose Insulation."

3.7 INSTALLATION OF CURTAIN-WALL INSULATION

- A. Install board insulation in curtain-wall construction according to curtain-wall manufacturer's written instructions.
1. Hold insulation in place by securing metal clips and straps or integral pockets within window frames, spaced at intervals recommended in writing by insulation manufacturer to hold insulation securely in place without touching spandrel glass.
 2. Maintain cavity width of dimension indicated on Drawings between insulation and glass.
 3. Install insulation to fit snugly without bowing.

3.8 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
- B. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 2100

SECTION 072600 - VAPOR RETARDERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Polyethylene vapor retarders.

B. Related Requirements:

1. Section 072100 "Thermal Insulation" for vapor retarders integral with insulation products.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.

PART 2 - PRODUCTS

2.1 POLYETHYLENE VAPOR RETARDERS

- A. Polyethylene Vapor Retarders: ASTM D4397, **10-mil- (0.25-mm-)** thick sheet, with maximum permeance rating of 0.1 perm (5.7 ng/Pa x s x sq. m).

2.2 NOT USED

PART 3 - EXECUTION

3.1 INSTALLATION OF VAPOR RETARDERS ON FRAMING

- A. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives, vapor retarder fasteners, or other anchorage system as recommended by manufacturer.

Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

- B. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs and sealing with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Locate all joints over framing members or other solid substrates.
- C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.
- D. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

3.2 NOT USED

END OF SECTION 072600

SECTION 08 7100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Commercial door hardware for the following:
 - a. Swinging doors.
 - b. Other doors to the extent indicated.
 - 2. Cylinders for doors specified in other Sections.
 - 3. Electrified door hardware.
- B. Related Sections include the following:
 - 1. Division 08 Section "Hollow Metal Doors and Frames"
 - 2. Division 08 Section "Aluminum-Framed Entrances and Storefronts"
 - 3. Division 08 Section "Flush Wood Doors"
 - 4. Division 26 Sections for connections to electrical power system and for low-voltage wiring work.
 - 5. Division 28 Section "Access Control" for access control devices installed at door openings and provided as part of a security access system.
 - 6. Division 28 Section "Intrusion Detection" for detection devices installed at door openings and provided as part of an intrusion detection system.
- C. Products furnished, but not installed, under this Section include the following. Coordinating, purchasing, delivering, and scheduling remain requirements of this Section.
 - 1. Thresholds, weather stripping, and cylinders for locks specified in other Sections.

1.3 REFERENCED STANDARDS

- A. Provide hardware in accordance with the following standards in addition to those specified in Division 01 Section "References".
 - 1. American National Standards Institute (ANSI), A117.1: Accessible and Usable Buildings and Facilities, edition as adopted by local Authority Having Jurisdiction (AHJ).
 - 2. Builders Hardware Manufacturer's Association (BHMA)

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- a. ANSI/BHMA A156.2: Bored and Preassembled Locks and Latches, 2011 edition
 - b. ANSI/BHMA A156.4: Door Controls - Closers, 2008 edition
 - c. ANSI/BHMA A156.18: Materials and Finishes, 2006 edition
3. Door and Hardware Institute (DHI)
 - a. Recommended Locations for Architectural Hardware for Flush Wood Doors, 1993 edition
 - b. Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames, 2004 edition
 - c. Installation Guide for Doors and Hardware, 1994 edition
 - d. Keying Systems and Nomenclature, 2003 edition
 - e. Sequence and Format for the Hardware Schedule, 2001 edition
 4. National Fire Protection Association (NFPA)
 - a. NFPA 70: National Electrical Code, edition as adopted by local AHJ.

1.4 SUBMITTALS

- A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Details of electrified door hardware, indicating the following:
 1. Wiring Diagrams: Power, signal, and control wiring. Include the following:
 - a. System schematic.
 - b. Point-to-point wiring diagram.
 - c. Riser diagram.
 - d. Elevation of each door.
 2. Detail interface between electrified door hardware and fire alarm, access control, security, building control system.
 3. Operation Narrative: Describe the operation of doors controlled by electrified door hardware.
- C. Samples for Verification: For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Samples before, or concurrent with, submission of the final door hardware sets, if requested.
 1. Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
- D. Qualification Data: For Installer
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for locks, latches, and closers as requested.

- F. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.
- G. Warranty: Special warranty specified in this Section.
- H. Door Hardware Sets: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
 - 2. Content: Include the following information:
 - a. Identification number, location, hand, fire rating, and material of each door and frame.
 - b. Type, style, function, size, quantity, and finish of each door hardware item.
 - c. Complete designations of every item required for each door or opening including name and manufacturer.
 - d. Fastenings and other pertinent information.
 - e. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - f. Explanation of abbreviations, symbols, and codes contained in schedule.
 - g. Mounting locations for door hardware.
 - h. Door and frame sizes and materials.
 - i. Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.
 - j. Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit.
 - k. List of related door devices specified in other Sections for each door and frame.
 - 3. Submittal Sequence: Submit the final door hardware sets at earliest possible date, particularly where approval of the door hardware sets must precede fabrication of other work that is critical in Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the door hardware sets.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.
 - 1. Installer's responsibilities include supplying and installing door hardware and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 - 2. Installer shall have warehousing facilities in Project's vicinity.
 - 3. Scheduling Responsibility: Preparation of door hardware and keying schedules.

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4. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
- C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
 1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- D. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.

1.7 COORDINATION

- A. Coordinate layout and installation of recessed hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.
- B. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Coordinate with aluminum entrance door supplier for door hardware installation.
- D. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control system, security system, and building control system.

1.8 WARRANTY

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- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Three (3) years from date of Substantial Completion, except as follows:
 - a. Continuous Hinges: Lifetime of Building
 - b. Grade 1 Cylindrical Locks: Ten (10) years.
 - c. Manual Closers: Ten (10) years.
 - d. Exit Devices: Ten (10) years.
 - e. Electrified Hardware Items: One (1) year from date of Substantial Completion.

1.9 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, provide six (6) months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Hinges: Ives, Hager, Stanley, McKinney,
 - 2. Locks and Latches: Schlage (No Substitute)
 - 3. Cylinders and Cores: Match Owner's Keyway
 - 4. Electric Strikes: Von Duprin, HES
 - 5. Mechanical Door Closers: LCN (No Substitute)
 - 6. Exit Devices: Von Duprin (No Substitute)
 - 7. Accessories and Trim: Ives, Rockwood, Hager, Trimco
 - 8. Overhead Stops and Holders: Glynn Johnson, Rixson, ABH, Sargent
 - 9. Miscellaneous Hardware: Ives, Rockwood, Hager, Trimco

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- B. Substitutions submitted in compliance with Division 01 Section "Substitutions" requirements will be reviewed for conformance to basis of design.

2.2 SCHEDULED HARDWARE

- A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the "Hardware Schedule" at the end of this Section. Products are identified by using hardware designation numbers of the following:
 - 1. **Manufacturer's Product Designations:** The product designation and name of one manufacturer are listed for each hardware type required for the purpose of establishing minimum requirements. Provide either the product designated or, where more than one manufacturer is specified under the Article "Manufacturers" in Part 2 for each hardware type, the comparable product of one of the other manufacturers that complies with requirements.

2.3 MATERIALS AND FABRICATION

- A. **General**
 - 1. **Manufacturer's Name Plate:** Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.
 - a. Manufacturer's identification will be permitted on rim of lock cylinders only.
 - 2. **Base Metals:** Produce hardware units of basic metal and forming method indicated using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units for finish designations indicated.
 - 3. Provide hardware manufactured to conform to published templates generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
- B. **Fasteners**
 - 1. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Furnish stainless steel (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
 - 2. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Use through bolts only as indicated in this section unless their use is the only means of reinforcing the work adequately to fasten the hardware securely. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.4 HINGES

- A. **Acceptable Products:**

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- | | | | |
|----|-----------|--------|---------|
| 1. | Ives: | 5BB1 | 5BB1HW |
| 2. | Hager: | BB1279 | BB1168 |
| 3. | Stanley: | FBB179 | FBB168 |
| 4. | McKinney: | TB2714 | T4B3386 |

B. Requirements:

- Quantity: Provide the following, unless otherwise indicated:
 - Two Hinges: For doors with heights up to 60 inches.
 - Three Hinges: For doors with heights 61 to 90 inches.
- Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- Hinge Weight: As indicated in hardware sets.
- Hinge Base Metal: Unless otherwise indicated, provide the following:
 - Exterior Hinges: Stainless steel with stainless-steel pin.
 - Interior Hinges: Steel with steel pin.
 - Hinges for Fire-Rated Assemblies: Steel with steel pin.
- Hinge Options: Where indicated in door hardware sets or on Drawings:
 - Safety Stud: Designed for stud in one leaf to engage hole in opposing leaf.
 - Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for out-swinging doors.
 - Corners: $\frac{1}{4}$ Radius where scheduled.
- Fasteners: Comply with the following:
 - Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
 - Wood Screws: For wood doors and frames.
 - Threaded-to-the-Head Wood Screws: For fire-rated wood doors.

2.5 CONTINUOUS HINGES

A. Acceptable Products:

- | | | |
|----|---------|-----------|
| 1. | Ives: | 112HD |
| 2. | Hager: | 780-112HD |
| 3. | Select: | SL11HD |
| 4. | Pemko: | FMSLFHD |

2.6 OPERATING DOOR TRIM

A. Push Plates, Pull Plates, and Pulls

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1. Acceptable Products:

- | | | | |
|----|-----------|------|---------|
| a. | Ives: | 8200 | 8305 |
| b. | Rockwood: | 70C | 111x70C |
| c. | Hager: | 30S | 31J |
| d. | Trimco: | 1001 | 1018 |

2. Requirements:

- a. Push Plate: Provide 6 inch by 16 inch by .050 inch push plate constructed of stainless steel. Bevel all four edges.
- b. Pull Plate: Provide 4 inch by 16 inch by .050 inch push plate constructed of stainless steel, bevel all four edges. Provide 10 inch center to center (CTC) pull constructed of stainless steel with a diameter of 1 inch.

2.7 ELECTRIC STRIKES

A. Acceptable Products:

1. Von Duprin: 6200 Series
2. HES: 1600 Series

B. Requirements:

1. Provide electric strikes that are continuous duty rated without the use of external rectifiers.
2. Provide electric strikes with function (fail safe, fail secure) and power requirements as scheduled.

2.8 LOCKS AND LATCHES

A. General:

1. Lock Chassis: Shall be made from steel, with locking spindles of stainless steel.
2. Latch Bolt: Shall be constructed of stainless steel with 3/4 inch throw on mortise locks and 1/2 inch throw otherwise. Latch to be deadlocking on keyed functions.
3. Lever Trim: Shall be pressure cast brass, bronze, zinc, or steel with wrought rose design. Levers are to be solid with no voids or plastic inserts.
4. Fire Rating: Lock shall be listed for up to 3 hours.
5. Strike Plates: Provide ANSI 4-7/8 inch strike plates. At pairs of doors, provide strike with 7/8 inch flat lip. At single doors, provide round-lipped strike with lip length as required to minimally clear jamb and trim. Provide dust box at each strike location.

B. Grade 1 Bored Locks

1. Acceptable Products:

- a. Schlage: ND Series

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2. Requirements:

- a. ANSI Grade: BHMA/ANSI A156.2, Series 4000, Grade 1.
- b. Door Prep: Provide lockset to install using a standard ANSI 161 door preparation.
- c. Anti-Rotation Plate: Provide lockset with a mechanically interlocked anti-rotation plate. Anti-Rotation teeth or “bite tabs” are not acceptable. Locks without any rotation prevention devices are not acceptable.
- d. Lever Return Springs: Provide each lever with two compression type return springs that are easily accessible without dismantling the lock chassis. Locks utilizing tension or torsion lever return springs are unacceptable. Locks with internal springs that require dismantling the lock chassis are unacceptable.
- e. Lever Spindles: Provide lock with either milled or 1-piece deep drawn spindles. 2-piece interlocking stamped spindles are not acceptable.
- f. Multi-Functionality: Provide modular lockset with capability to convert to a new lock function by changing key cams.

2.9 CYLINDERS AND CORES

A. Acceptable Products:

1. Must match owner’s key system

B. Requirements:

1. Small Format Interchangeable Cylinders: Provide cylinders of quantity and type and with the appropriate cam/tailpiece to be compatible with the locking hardware provided. Provide cylinder housings ready to accept 7-pin, Small Format Interchangeable Cores (SFIC).
 - a. Disposable Temporary Cores: Provide each cylinder housing and/or lock lever with disposable construction cores during the construction period.
 - b. Keyed Temporary Cores: Provide each cylinder housing and/or lock lever with keyed construction core during the construction period. Cores will remain property of the contractor and will be returned upon installation of owner’s permanent key system.
 - c. Permanent Cores: Keyed by owner
2. Keys: Provide cylinder manufacturer’s standard keys. Keys shall be shipped separate from cores directly to owner’s representative. For estimating purposes, provide keys in the following quantities:
 - a. Construction Control Keys: 2 each
 - b. Construction Change Keys: 12 each
 - c. Permanent Control Keys: 2 each
 - d. Split Key Voiding Keys: 2 each
 - e. Permanent Change Key Blanks: 4 per core

2.10 MECHANICAL DOOR CLOSERS

A. General:

1. Valves: Closers shall have separate valves for latch speed, main speed, and back check. Valves shall be staked to prevent accidental removal.
2. Provide the appropriate closer body, handing, and brackets to mount closer inside the building on the least-public side of the door.
 - a. Where closers are to be mounted parallel arm, provide with heavy duty, fully forged arms.
 - b. Where closers are to be mounted regular arm and the opening can otherwise be opened to 180 degrees, provide closer with the appropriate special templating to allow 180 degree door swing. Where a special template is not available for 180 degree swing, provide closer arm with integrated stop.
3. Integrated Stop Closer Arms: Where a closer with integrated stop is required, provide the appropriate closer and arm as follows:
 - a. Parallel arm with spring-cushioned stop arm: Provide where door is otherwise able to open to 95 degrees and requires a parallel arm mount closer.
 - b. Parallel arm with dead stop arm: Provide where door is obstructed from opening to 95 degrees and requires a parallel arm mount closer.
 - c. Regular arm with push side surface-mounted overhead stop: Provide where door closer should mount on pull side of door.
4. Hold Open Arms: Provide closer arms with mechanical hold-opens as scheduled.
5. Provide closers with any special templates, brackets, plates, or other accessories required for interface with header, door, wall, and other hardware. Provide closers with screw packs containing thru-bolts, machine screws, and wood screws.
6. Closers shall be provided with all-weather fluid and shall not require readjustment from 120 degrees F to -30 degrees F. Fluid shall be non-flaming and shall not fuel door or floor covering fires. Upon request, provide data indicating thermal properties of fluid.
7. Closers shall close and latch door when adjusted to meet accessibility requirements for door opening force: 8.5 lbs at exterior doors, 5 lbs at interior doors, and 15 lbs at labeled fire doors.

B. Heavy Duty Door Closers:

1. Acceptable Products:
 - a. LCN: 4040XP
2. Requirements:
 - a. ANSI Grade: BHMA/ANSI A156.4, Grade 1.
 - b. Closer Construction: Closer shall have cast iron or aluminum alloy body with 1-1/2 inch steel piston, heat treated pinion, 5/8 inch bearing journals, and full

complement needle or caged ball bearings. Closer shall be adjustable from sizes 1 through 6.

2.11 EXIT DEVICES

A. Acceptable Products:

1. Von Duprin: 35/A 98 Series

B. Requirements:

1. ANSI Grade: BHMA/ANSI A156.3, Grade 1.
2. Device Construction:
 - a. Exit device(s) shall have a mechanism case constructed of extruded aluminum or wrought stainless steel, base plates constructed of cold rolled or cast steel, push pad of extruded aluminum with stainless steel covering or wrought stainless steel, and end caps with flush mounted, sloped design. At full-glass doors, provide exit devices with no exposed fasteners or rivets visible through glass. Where required by stile width, provide narrow-stile type device.
 - b. Latchbolt: Provide Pullman-type deadlocking latch bolts constructed of stainless steel. Where specified provide high security Pullman-type latchbolt that collapses to be square faced under high pull forces. Latch return springs shall be compression type. Tension and Torsion latch return springs are not acceptable.
 - c. Dogging Mechanism: where dogging or latch-retraction options are not specifically scheduled for non-fire rated doors, provide device with a hex-key activated hook-type dogging mechanism constructed of steel.
 - d. Plastic or nylon used for the push pad, or parts in the dogging mechanism or latchbolt mechanism are unacceptable.
 - e. Sound Dampening: Device shall be provided with factory-installed sound dampening materials.
 - f. Provide device type, function, and trim style as indicated in hardware schedules.
3. Where exit device(s) are provided for fire rated door, provide with fire listing and label indicating "Fire Exit Hardware". If device is mounted on wood doors, provide sex nuts and bolts.
4. Provide shim kits, filler plates, and other accessories as required for each opening.
5. Unless otherwise indicated in the sets, provide device with roller-type strike.
6. Where scheduled, provide removable mullions by same manufacturer as provided exit devices. Provide mullion stabilizers, key removable option, strike preps, and fire rating as indicated in sets.

2.12 ARCHITECTURAL DOOR TRIM

A. Door Stops and Holders

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1. Acceptable Products:
 - a. Ives: WS406/407
 - b. Rockwood: 405/406
 - c. Hager: 236W
 - d. Trimco: 1270
2. Requirements:
 - a. Provide stops and holders as indicated in the HW sets.

2.13 OVERHEAD STOPS AND HOLDERS

- A. Acceptable Products:
 1. Glynn Johnson:
 2. Rixson-Firemark:
 3. ABH:
 4. Sargent:
- B. Requirements:
 1. Provide overhead stops and holders as scheduled, sized per manufacturer's recommendations based on door width.
 2. Provide concealed overhead stops with adjustable jamb bracket.
 3. Where possible without conflicting with other hardware, mount surface overhead stops on least public side of door.
 4. Provide stops with any special templates, brackets, plates, or other accessories required for interface with header, door, wall, and other hardware.

2.14 SADDLE AND PANIC THRESHOLDS

- A. Acceptable Products:
 1. Zero International:
 2. National Guard:
 3. Pemko:
- B. Requirements:
 1. Saddle thresholds: Provide with length equal to the width of the opening.
 2. Panic thresholds: Provide with length equal to the overall frame width. Provide with mitered and welded ends.
 3. Provide stainless steel machine screws and lead anchors for each threshold.

2.15 WEATHERSTRIP AND GASKET

- A. General:

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1. Provide weather strip and gasketing as scheduled.
2. Size weather strip and gasket to provide a continuous seal around opening and at meeting stiles.

B. Perimeter Seals

1. Acceptable Products:
 - a. Zero:
 - b. National Guard:
 - c. Pemko:

C. Door Bottoms

1. Acceptable Products:
 - a. Zero:
 - b. National Guard:
 - c. Pemko:

2.16 MISCELLANEOUS HARDWARE

A. Silencers

1. Acceptable Products:
 - a. Ives:
 - b. Rockwood:
 - c. Hager:
 - d. Trimco:
2. Requirements:
 - a. Where indicated on single openings, provide 3 each rubber silencers on lock jamb.
 - b. Where indicated on paired openings, provide 2 each rubber silencers on header.

B. Door Contacts

1. Acceptable Products:
 - a. Schlage Electronics:
 - b. Securitron:
2. Requirements:
 - a. Provide concealed, edge-mounted door contacts as appropriate for door/frame material.
 - b. Provide 7764 door contacts where scheduled on fire rated openings, otherwise provide 679-05 switches.

2.17 FINISHES

- A. Match items to the manufacturer's standard color and texture finish for the latch and locksets (or push-pull units if no latch or locksets).
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
- D. The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.
 - 1. Brushed Chrome and/or Stainless Steel Appearance
 - a. Brushed Stainless Steel, no coating: ANSI 630.
 - b. Satin Chrome, Clear Coated: ANSI 626, ANSI 652.
 - c. Powder Coated Aluminum finish: ANSI 689.
 - d. Saddle and Panic Thresholds: Mill Aluminum finish.
 - e. Weatherstrip and Gasket: Clear Anodized Aluminum finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: Comply with DHI A115 Series.
 - 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to ANSI A250.6.
- B. Wood Doors: Comply with DHI A115-W Series.

3.3 INSTALLATION

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- A. Hardware Installers must have a minimum of five (5) years' experience in installation of hardware. Provide verification of installer's qualification to Consultant for approval. All installers to attend review meetings with the hardware distributor.
- B. Install hardware using only manufacturer supplied and approved fasteners in strict adherence with manufacturers published installation instructions.
- C. Install head seal prior to installation of "PA"-parallel arm mounted door closers and push side mounted door stops/holders. Trim, cut and notch thresholds and saddles neatly to minimally fit the profile of the door frame. Install thresholds and saddles in a bed of caulking completely sealing the underside from water and air penetration.
- D. Counter sink through bolt of door pull under push plate during installation.
- E. Mounting Heights: Mount door hardware units at heights indicated, as follows, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
 - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- F. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 09 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- G. Furnish wiring diagrams to electrical contractor for use in installing electrical hardware products.
 - 1. Electrical contractor to run all wiring and make all final connections for electrified hardware. Hardware supplier shall be responsible to furnish all wiring diagrams to operate electrified hardware. Access control material and electrified hardware to interface at junction boxes.

3.4 FIELD QUALITY CONTROL

- A. Architectural Hardware Consultant: Architect shall engage a qualified Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
- B. Architectural Hardware Consultant shall inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Unless otherwise required by authorities having jurisdiction, adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.
- B. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DOOR HARDWARE SETS

- A. The following schedule of hardware sets shall be considered a guide and the supplier is cautioned to refer to general conditions, special conditions, and the full requirements of this section. It shall be the hardware supplier's responsibility to furnish all required hardware.
- B. Where items of hardware are not definitely or correctly specified and are required for completion of the Work, a written statement of such omission, error, conflict, or other discrepancy shall be sent to the Architect, prior to date specified for receipt of bids, for clarification by addendum.
- C. Adjustments to the Contract Sum will not be allowed for omissions or items of hardware not clarified prior to bid opening.

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HARDWARE GROUP NO. 01

For use on Door #(s):

A101A A102B

Provide each SGL door(s) with the following:

3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	ND70 RHO (MATCH EXISTING KEY SYSTEM)	626	SCH
1	EA	SURFACE CLOSER	4040 XP	689	LCN
1	EA	KICK PLATE	8400 10" x 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	S88	D	PEM

HARDWARE GROUP NO. 02

For use on Door #(s):

A102A

Provide each PR door(s) with the following:

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	ND70 RHO (MATCH EXISTING KEY SYSTEM)	626	SCH
2	EA	SURFACE CLOSER	4040 XP	689	LCN
2	EA	FLUSH BOLT	FB458	626	IVE
1	EA	GASKETING	S88	D	PEM

HARDWARE GROUP NO. 03

For use on Door #(s):

A102D

Provide each PR door(s) with the following:

6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	ND70 RHO (MATCH EXISTING KEY SYSTEM)	626	SCH
2	EA	FLUSH BOLT	FB458	626	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE

END OF SECTION 087100