

# **DFCM Addendum #3**

**Reference:** Bastian Equestrian Arena

DFCM Project #25401770 U3P Event #CS25039-Stage II

**Date:** April 15, 2025

To: Shortlisted Contractors

**From:** The Division of Facilities Construction and Mangement

## **Addendum Items**

**Solicitation Schedule Changes:** No changes.

**DFCM Addendum Items:** None

A/E Addendum Items: A/E Addendum #1

Architectural Addendum Items, Bidding RFI Quest

and Answers:

Please note: Additive Alternate #03 which reads:

• Provide a detailed cost breakdown of any additional expenses required for your low bid to achieve substantial completion by Oct 31, 2025. Please ensure these costs are clearly itemized to allow the project team to evaluate whether accepting this alternate is in the best interest of the State and University. If this information is not provided, the project will still be awarded to the lowest bidder as stated. However, we want to ensure all possible avenues for meeting the substantial completion deadline have been

thoroughly explored.

**Total Attached Pages: 52** 

Page count

52

*Note:* This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Bidders are required to acknowledge receipt of this Addendum when their bid is submitted. Failure to do so may subject the Bidder to disqualification.



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ADDENDUM NO. 1 April 14, 2025

# **USU Bastian Equestrian Arena**

Project# 25401770

The original specifications dated February 20, 2025 and drawings dated January 31, 2025 for the project referenced above are amended in Addendum No. 1, dated April 3, 2025.

Receipt of this addendum shall be acknowledged by inserting its number and date in the space provided on the bid form.

This addendum consists of the following:

## ARCHITECTURAL ADDENDUM ITEMS, BIDDING RFI QUESTIONS:

## **Utah State Facilities comments:**

Question 001 - Sheet G003 - door 100P shows an existing load of 33 occupants. The number of occupants exiting this door is shown at 40.

Response: Good catch, this occupant load has been changed to 40 but should not affect any widths provided.

Question 002 - C201 - Location of gas meter is shown differently than on A101 & P201 - coordinate & revise as necessary.

Response: Please provide the gas meter in the location that A101 & P201 show it.

Question 003 - C201 – keynote 7: coordinate location of frost-free hydrants relative to adjacent bollards. Provide bollard detail

Response: Provide frost-free hydrants per locations and number shown on C201. Bollard locations and detail have been updated and added to architectural plan A101 and A511.

Question 004 - C300 – Verify grades shown on either end of the building are not too steep for truck/trailer loading and unloading at overhead doors.

Response: 8% is best practice as a maximum slope and we are under 8%

Question 005 - A101, A201 & A202 – keynote 05.08: bollards are not shown on civil drawings Response: Please provide bollard locations per A101 which align with hydrant locations per question 3 response above.

Question 006 - A201 – Do we need any guttering or rain/snow protection above door 100P? Response: The roof plan and elevation sheets have been updated to show a gutter and snow cleats above door 100P to address rain/snow protection for this door.

Question 007 - A202 - Do we need guttering or rain/snow protection above doors on the northeast elevation - doors 100F, 100G, & 100H?

Response: The roof plan and elevation sheets have been updated to show a gutter and snow cleats above doors 100F, 100G and 100 H.

Question 008 - A411 - Note: USU typically provides a sanitary napkin vending station. If it is provided, where will it be mounted in the toilet rooms?

Response: A sanitary napkin vending station has been added to the restroom elevations and the accessory schedule. See sheets A411 and A601.

Question 009 - A411 – Note: Although not planned right away, consideration should be made for locating a diaper changing station in toilet rooms.

Response: There is one blank wall in each of the restrooms along grid line 4 that could accommodate a future installation of diaper changing stations. Nothing will be shown for now in the construction documents.

Question 010 - A601 – Verify whether or not overhead doors are insulated Response: Yes they are insulated per spec section to a minimum of 8.1 r-value.

Question 011 - A601 - D1 door frame types, aluminum storefront: notes for tempered glass need to be relocated to glass.

Response: This has been corrected. Also see the modified upper portion of the storefront entry door and glass, the upper window got 12" taller. See attached A601.

Question 012 - ES101 - Coordinate route of underground electrical with civil drawings. The route is not the same.

Response: Electrical has relocated their site conduit on their site plan to better align with civil drawings.

Question 013 - FA101 – revise location of plan to avoid structural notation conflict with the plan title. Response: Electrical has adjusted the sheet view on FA101 to correct any overlapping.

# **General Contractor bidding questions:**

Question 014 - The bid docs for stage II came out late on Thursday 4/3 and shows the last day for questions on Monday 4/7. This is not nearly enough time to go through the documents. Could the Q/A period please be extended?

Response: Per addendum #2 the Q/A period was extended to Thursday, April 10.

Question 015 - There is highlighted information in the Stage II docs stating the project must be done on 10/31/25. In speaking with 3 MEB representatives today, with the recent debacle Tariffs have created, the earliest a MEB could arrive in Salt Lake is mid August.....which leaves not nearly enough time to complete the project by end of October.

Response: While we understand the concerns regarding meeting the deadline, we believe there is still a viable path to achieving completion within the requested time frame. Please refer to the inclusion of Additive Alternate #03 within this addendum for a more detailed explanation of our approach to meeting this requirement.

Question 016 - Is there a specification for the pre engineered metal building? including structure, roof and insulation?

Response: There is no PEMB specification available at this time. Structural drawings have been provided in the set from our design team's structural engineer and the selected PEMB subcontractor will need to provide their final reactions for the design team's structural engineer to confirm and finalize the footing/foundation design. Insulation for roof and walls will be provided by PEMB subcontractor but should be minimum R-19 for walls and minimum R-19 for roof areas.

Question 017 - Are the existing buildings demolition not an alternate anymore? Response: The existing buildings noted on the civil drawings and during the site walk are still to be bid as an alternate.

Question 018 - Is project going to be awarded off schedule or cost? If we receive 6 metal building bids, but the low bid cannot meet the schedule, do we need to move to the subcontractor that can potentially meet the schedule?

Response: The project will be awarded to the lowest bidder. While we acknowledge concerns regarding the schedule and potential cost implications to meet the Oct 31, 2025 substantial completion deadline, the award will still proceed to the low bidder. To better understand the financial impact of meeting this deadline, we have issued, as part of the addendum, Additive Alternate #03 which reads:

• Provide a detailed cost breakdown of any additional expenses required for your low bid to achieve substantial completion by Oct 31, 2025. Please ensure these costs are clearly itemized to allow the project team to evaluate whether accepting this alternate is in the best interest of the State and University. If this information is not provided, the project will still be awarded to the lowest bidder as stated. However, we want to ensure all possible avenues for meeting the substantial completion deadline have been thoroughly explored.

Please note, we currently have two Add Alt's and, just as a reminder, these need to be accepted in the order they are listed:

- Add Alt 01 Roof and exterior wall insulation to be spray-in-foam closed-cell.
- Add Alt 02 Demolition and removal of three concrete stable buildings.

Question 019 - The plans indicate that the metal building supplier is to provide standard batt insulation. What R value is required for the walls and roof?

Response: See response to question 16 above. R-19 minimum for both roof and walls.

Question 020 - As the pre-fab cupolas are to attach to the pre-engineered metal building, what point loads can be used for these?

Response: The challenge is that the cupolas are to be designed by the (to be) selected cupola designer. Until that point in time these loads are not known. The load will need to be provided by the cupola designer at the same time of the PEMB fabricator's design is being done. And then that cupola load should be given to the PEMB fabricator for inclusion in their final building structure design loads.

Question 021 - If we have some subcontractors that would like to walk the site who would we set that up with? Has the last day for questions been extended?

Response: As noted in Addendum 02, the deadline for submitting questions was extended to April 10, 2025. To schedule site walk-throughs, please contact either Josh Dallin at <a href="mailto:joshua.dallin@usu.edu">joshua.dallin@usu.edu</a> or 435-279-4425, or Austin Smith at <a href="mailto:Austin.smith@usu.edu">Austin.smith@usu.edu</a> or 801-864-6280.

Question 022 - Is the Aggies Branding raised lettering or painted on the announcer's booth? Please provide a specification for raised lettering/branding (interior and exterior)

Response: The design intent for the Aggies branding on the announcer's booth is to be painted.

Question 023 - 6" curb around railing – Wall type CU8 (concrete wall) shows only at booth, the intent appears to be all around for arena railing – please confirm limits of concrete wall?

Response: The CU8 wall type is shown only on the 3 sides of the audience area slab, not at the announcer's booth. The permanently installed arena railing should be installed in the CU8 wall type per detail A5/A511. Any other arena railings shown are all moveable railings depending on the event happening in the arena.

Question 024 - Tie Rail – keynote 05.09 indicates detail on elevation. Please provide detail as no detail is shown on elevation.

Response: A new detail has been added to the drawings for this tie rail ON C4/A511 and called out on the interior elevations for the arena on sheet A213. See clouded drawings.

Question 025 - Detail A5/A511 indicates the railing is permanent railing but keynote 05.06 on general floor plan indicates this railing is moveable. Please confirm and update.

Response: Keynote 05.06 is only pointing at the dirt arena railings that are moveable. Keynote 05.07 is pointing at all permanently installed railing per detail A5/A511, which is only around the three sides of the audience area.

Question 026 - Please provide the specification section detailing the door hardware requirements.

Response: The door hardware specifications are being issued with this addendum. See attached sections to be added to project bidding documents

Question 027 - Please confirm the required R-values for both wall and roof insulation. These are not indicated on the plans. If available, provide a COMcheck report.

Response: See response to questions 16 and 19 above. R-19 minimum for both walls and roof.

Question 028 - Please provide the specification sections for all doors and frames.

Response: Per question 25 above, specification for doors/frames and hardware is being issued with this addendum.

Question 029 - Please confirm the required material specification and size for the tie rods depicted in detail 020/S501. There is no schedule or detailed note identifying the size or material requirements. Response: Cross tie size and quantity is specified in key note #02 on sheet S101. Since rebar is being used and is being welded the General Structural Notes call for all weldable bar to be ASTM A706, DEFORMED, Fy = 60 KSI (420 MPa) on sheet S001 Steel Reinforcing section.

Question 030 - Please provide the material specification and attachment method for the protective metal panels shown in the referenced details.

Response: The panel product for this panel is described in specification section 074213 Metal Wall Panels. See response to question 24 above. The detail for the tie-rail also shows our intent on the installation of the protective metal panels.

Question 031 - Please provide the material specifications and connection details for the permanent arena railings shown on sheet A101.

Response: See response to question 24 above.

Question 032 - Please provide a finish schedule sheet or plan indicating the required finishes for all spaces and building elements on the project.

Response: Finish information can be found on the interior elevations for the project with basis of design paint and base colors in the keynotes. HM doors shall match the color of the adjacent gyp board wall.

Question 033 - Detail A5/A511 refers to "Arena Soil, see Civil Drawings," but no information regarding this material is found on the civil drawings. Please confirm whether this soil is to be provided by the General Contractor or by the Owner.

Response: We referred to the civil drawings in error. Additional clarification on the Arena soil has been provided by USU. See response to question 60 below.

Question 034 - Please clarify the structural and design requirements for the floor of the Announcer Booth. This is noted as "Booth Floor by Bleacher Company" on sheet A511. Also, confirm the material and design for the associated stairs and handrails.

Response: The intent for design of the bleachers and announcer's booth is that it all be provided by the selected bleacher company. Method contacted multiple bleacher companies and they confirmed that announcer's booth spaces with bleacher areas can indeed be provided by the same company. That is our intent, floor and all. The questionable scope that we could not get an answer on from these companies was providing the wall surrounding the booth and the cabinetry within the booth. If the wall cannot be provided by the bleacher company then the general contractor shall include the construction of that wall by a studwall subcontractor. The cabinets are assumed to be provided OUTSIDE of the bleacher company selected. The basis of design bleacher company chosen for the drawings (per our keynote 05.05 on sheet A101) was Great Western Recreation. Contact is Taggart Castleton, 435-245-5505 or an approved equal.

Question 035 - Please provide the material specification for the Type D1 metal soffit. Also, clarify the location of this soffit type, as it is referenced but not clearly indicated on sheet A131.

Response: This soffit product D1 shall be used at the main entry roof canopy only. All other soffit locations on upper main roof are assumed to be provided by PEMB manufacturer and color selected by Architect from their standard range of colors. Please use the following product as a basis of design for bidding, or an approved equal by the Architect: Pac-clad, flush panel soffit in 22 gauge pre-finished steel, color to be selected by Architect from manufacturer's standard colors.

Question 036 - Please provide material specifications and connection details for the tie rails. No information is currently provided in the construction documents for this scope.

Response: See response to question 24 above.

Question 037 - Please provide a material specification for all FRP materials indicated or implied in the project documents.

Response: The basis of design for the FRP product referenced in the interior elevations with keynote 09.08 shall be Marlite's standard Pebbled FRP panels in Bright White (P 199) color.

Question 038 - The specifications include dampproofing requirements, but there are no indications on the drawings regarding where this is to be applied. Please clarify if this is required for the project.

Response: Dampproofing shall be applied to the entire perimeter of the building's concrete foundation wall (below-grade portions).

Question 039 - Please provide detailed information for all railings at bleachers, including handrail height, material, configuration, and finish.

Response: Per question 33 response above, the design intent is that the bleachers will be provided by a subcontracted company. Typically these companies provide all railings, handrails, configurations and finishes that are per current building codes within their submittal. However, all guardrail heights per code are 42" where the drop is more than 30" in height and handrail heights for stairs are 36" above the nosings of the stairs with 12" extensions at top and extensions at bottom matching the length of the last tread. Aluminum is the assumed material for the bleachers, handrails and all associated parts and accessories.

Question 040 - Please clarify which rails are to be painted, and provide finish requirements.

Response: All permanently mounted railings (as described in response to question 25 above) are to be painted, color TBD. All moveable arena railings (per question 25 above) are assumed to be provided by a subcontracted company and prefinished/prepainted prior to arriving on site. USU's preference list for companies to provide these panels are the following: Priefert Manufacturing (1st choice, basis of design), Hi-Hog Farm and Ranch, Powder River and Tarter Farm and Ranch.

Question 041 - Sheet A101 appears to show 6' wide benches in front of the bleachers. Please confirm if these are part of the Contractor's scope and, if so, provide material specifications.

Response: These 6' wide benches are assumed to be part of the bleacher system mentioned in previous questions.

Question 042 - Please provide a material specification for the Moveable Arena Railing Panels shown on A101. A height is provided, but no additional information or details are provided.

Response: The intent of the specification for the moveable arena railing panels is to generally match the permanently mounted railings but be provided by the basis of design company (or approved equal) mentioned in Question 39's response above. 6' high.

Question 043 - Sheet A131 notes Type E-1 as "Exposed Structure. Paint Steel Structural Member by Metal Building Supplier." Sheet A101 states, "All Exposed Interior Columns to be Painted with Intumescent Paint." Please clarify if both references are to be treated with intumescent paint and if the

intent is for all exposed structural elements to be finished with the same color/system. Also, provide the specific paint specification(s) to be used for these conditions.

Response: The general note on A101 calling for all interior columns to be painted with intumescent paint is in error. Please do NOT paint all interior columns/structure with intumescent paint, this is not required. The intent is that all exposed structural steel members within the building be painted the same color per specification section 099123. However, if the steel members come from the manufacturer primed already, only the undercoat and finish coats need to be applied. These two coats can be a matte finish instead of the semi-gloss asked for in the specification.

Question 044 - Per specifications louvers are to avoid bracing and frames. During initial massing of the building the L-1 louvers potentially will interfere with some bracing. To avoid increasing building height would it be possible to re locate the L-1 louver a single bay? Example - relocate Grid C to Grid D and Grid G to Grid H respectfully.

Response: No, it's not acceptable to move them over as described because they wouldn't look symmetrical. Yes, we want to avoid bracing and frames. We have taken into consideration the location of the bracing and frames in previous coordination meetings with the structural engineer. Yes, it's possible there may still be a conflict and if so, we advise to install the equipment higher. If that still doesn't work because of some conflict, inaccuracy, etc. since we submitted the drawings, please let us know and we can discuss other options. The rule though is to maintain symmetry as best as possible.

Question 045 - The specifications indicate four metal panel manufactures. Would it be acceptable to utilize the metal building manufacturer's metal panel line assuming gauge, finish, warranty is in line with the specifications? Profiles are similar. This will allow the color matching of the building components and metal panels.

Response: This is absolutely acceptable.

Question 046 - Specification Section 074213-2 2.02B Interior Wall Panels

Note#1 Profile: Vertical; style as indicated. There is no found note calling out the panel profile, can we use the Manufactures standard R-Panel in 22 gauge?

Response: It is unclear which "manufacturer's R-panel" you are referring to in your question. The intent of the manufacturers listed and their associated profiles is to get a panel with enough depth in the profile for sufficient stiffness for arena usage and low maintenance over time. If your "manufacturer's R-panel" matches one of the profiles in the manufacturer's list in the spec then it is acceptable.

Note #2 Side Seams: Interlocking, sealed with continuous bead of sealant. Can rolled mastic be used in lieu of continuous bead of sealant.

Response: A rolled mastic is acceptable as long as it is approved by the manufacturer of the panel and a submittal is provided to the Architect for final approval during construction.

Question 047 - Sheet A101 Note 2 - "All exposed interior columns to be painted with intumescent paint" Response: Per question 42 above, there is no requirement for intumescent paint on this project. With Alternate #1 Spray foam insulation, the Secondary steel "Roof Purlins, Wall Girts and other cold rolled structure" these will be exposed

Response: The question is more of a statement, it is unclear what is being asked. If the question is regarding the use of spray foam as an alternate and that there would be no vinyl membrane provided similar to the base bid batt insulation option, then please provide a vinyl protection membrane over the spray foam insulation similar to the base bid batt insulation product.

With Alternate #1 does all Secondary steel need to be painted? (these areas will be exposed)

Response: Per question 42 above, please paint all exposed structural members and sub members.

The note on sheet A101 calls for intumescent paint on all columns, the note on A131 calls for exposed structure to be painted white.

Per question 42 above, there is no requirement for intumescent paint on this project. All exposed structural members are to be painted per spec 099123 as noted in question 42 above. This color will not be white but will be selected from paint manufacturer's standard colors by architect during construction (submittal process).

Does the exposed structure (secondary cold rolled steel) require intumescent paint also?

Response: Per question 42 above, there is no requirement for intumescent paint on this project.

Question 048 - Please provide an interior finish schedule for bathrooms, data room, and janitor closet. Response: While no finish schedule was provided in the drawings, the intent is for all exposed gyp board to be painted per requirements in spec 099123 for gyp board (basis of design color called out in keynote) and FRP to be used (based on basis of design manufacturer listed in question 36 response above or equal) and 4" rubber base per keynotes on elevations, basis of design is listed in keynote.

Question 049 - Sheet S001 There is a 4.5lb permanent load and a 6lb collateral load (to be verified by manufacturer). In standard PEMB buildings will have a 3psf to cover MEP (Mechanical, Electrical and Plumbing)

Are both loads necessary per Sheet S001?

We have accounted for all point loads on fans, cupolas, and all other loads should be covered within the 3psf.

Response: Preliminary design loads are based on a similar USU Arena Facility in Kaysville Utah designed by Nucor. In general, both permanent load and collateral loads need to be accounted for in PEMB design. The Kaysville Facility used a primary collateral of 3 psf and a secondary collateral of 3 psf for a total of 6 psf collateral as was used in our preliminary loading.

Question 050 - Concerning Drawing ES101 Note 3. What size wire and conduit are this? Where is the starting point and where does the finish point of this conduit run end? Are we ok to put ground boxes in and splice the wire? If so do they need to be traffic rated ground boxes?

Response: Regarding the existing conduit to be reran. Exact wire and conduit size is unknown, this will need to be coordinated with USU team prior to bid. Conduit runs from existing building located south of proposed building and then travels north east to existing stand alone buildings northeast of proposed building. Using in-ground boxes and splicing is okay, boxes do not need to be traffic rated.

Question 051 - Concerning Drawing ES101 Note 2. Do you want this 4" conduit stubbed up into a ground box? If so, does this box need to be traffic rated?

Response: Yes, stub this conduit up into a ground box with pullstring for future power connection to RV hookups. Box does not need to be traffic rated. Coordinate exact location of pull box with USU prior to bid.

Question 052 - Concerning Drawing ES101 Note 4. Does this conduit need to enter the existing building or just get stubbed up next to the building? Is there an existing ground box for communications in the area of the existing building to tie into

Response: The intention is to connect the data from the new building to the existing building. Contractor to verify exact location and requirements of conduit stub with USU technology team prior to bid.

Question 053 - Concerning drawing C200. This drawing shows a COM conduit being run with the power conduit. This is not shown on the electrical drawings. Is this COM conduit needed?

Response: This conduit is not required. Refer to ES101 for approximate location and coordinate exact requirements with USU technology team prior to bid.

Question 054 - Concerning conduits being run underground in the arena area. Do these conduits need to be a certain depth below the arena dirt to make sure they do not get hit while the dirt is being replaced or moved around?

Response: There currently are no plans to run any conduit under any existing or new arenas. If there is an area of concern please reach out and we can coordinate this issue.

Question 055 - Concerning AV. Do we need to get a subcontractor for the AV or is USU taking care of this?

Response: USU will take care of this with their IT department.

Question 056 - Concerning Drawing EJ101 D1. 2B shows I need a 1 ¼" conduit form AV closet. Where is 2B located? TP shows I need a 1" conduit from AV closet to the Touch Panel, where is the touch panel located? It mentions building cable trays, I do not see any cable tray and after looking at the Farmington building it looks like all cables were ran exposed. It shows a 3/4" conduit from AV closet to the first speaker and then a ¾" between, the Farmington building all LV cables are ran exposed. Do we need to bid this as per this drawing? For the Microphone it shows a 1" conduit from the AV closet to the microphone, where is the microphone located? I would expect to see some conduit runs out to the announcer box but all I see is a couple tele/data locations. Do we need any conduits from the AV closet to the announcer box and where would these stub up at.

Response: 2B and TP are intended to go to Control Panel located in announcer's booth as well as to microphone, the note does not clearly show this. The riser is a typical riser for AV installation, so there isn't going to be a conduit stub to the cable tray. Conduits will need to be stubbed to 3' AFF above announcer booth level. Conduit sizing in EJ drawings is our typical rough-in, contractor to verify exact requirements for AV system with USU prior to bid.

Question 057 - Concerning Tele/Data. Do we need to get a subcontractor for the Tele/Data or is USU taking care of this? Do we only need stub up's to a certain height and all cables can be ran exposed? Response: USU will take care of this with their IT department.

Question 058 - Concerning mechanical controls on M101, does electrical need to put boxes and stub ups for the fan controls and thermostats?

Response: Yes, power and corresponding conduit by electrical. Any controls for equipment and corresponding equipment by controls contractor.

Question 059 - Per the Asbestos Survey and Assessment conducted by R & R Environmental dated March 13, 2025, asbestos-containing material was identified Barn Buildings 100, 200 and 300. Please confirm whether the abatement and removal of this asbestos-containing material is to be performed by the Owner or included in the Contractor's scope of work.

Response: The abatement work will be contracted through the DFCM. However, as outlined in Addendum 01 of the Phase 1 Bidding documents, your schedules must account for the following abatement requirement during demolition:

Ideally, the required abatement should be conducted concurrently with the demolition activities. This is because the concrete panels will necessitate the use of heavy equipment for deconstruction, which will then allow for the removal of the sealant located between the panels. It is estimated that, with the appropriate equipment, this abatement process will take approximately 3 to 4 weeks.

Question 060 - Detail A5 on Sheet A511 indicates the placement of "Arena Soil" from the top of footing elevation (97'-8") up to the finished floor elevation (100'-0"), resulting in a calculated depth of 2'-4". Please confirm if this is the correct and intended thickness of the Arena Soil.

This clarification is necessary to accurately define the scope of Earthwork inside the building envelope and to properly coordinate excavation requirements.

Response: Here is a clarification of what is needed in the Arena. The Arena will be required to have a "base layer" made up of 3/8" minus road base that is 12" deep. Then the top "footing" layer of soil should be 12" deep on top of the "base layer." As discussed in the site walk, there is a stockpile of "footing" soil onsite that was recovered from the old racetrack on site. This material should be utilized as much as realistically possible, however, it is not currently known if there is enough material in the stockpile to complete the entire Arena area inside the building AND it is not known if the "footing" material is engineered appropriately. All contractors need to be very aware of the stringent requirements for the engineering of this "footing" soil per USU's requirements. Below is a description from USU regarding the soil and expertise required:

The Contractor (or their qualified subcontractor) must possess a resume indicating expertise and experience in arena construction, preparation, and maintenance as well as the equipment to complete the task. This shall include appropriate blending equipment and expertise for bringing arena footing blend

components together in a reining and cow horse homogenous blend, proper equipment for handling/hauling footing blend into/onto the prepared arena subgrade without damaging the subgrade and the subsequent spreading of the footing blend. The footing shall be installed via laser-guided grading equipment capable and set for grade tolerances of (+/-) ½" and footing shall follow contour of the subgrade. The Contractor shall provide documentation of their (or sub-contractor's) expertise by providing a list of projects and the contact person for at least 6 of those projects. The Contractor shall also provide a list of all laser-guided equipment (appropriately sized) that is intended to use on the subgrade/base and footing construction process along with any tillers, compactors, drags/groomers.

Question 061 - Please confirm the required gauge for the following panel types specified for the project: Corrugated Wall Panels, and Standing Seam Roof Panels.

This clarification is necessary to ensure accurate procurement and installation of the pre-engineered metal building components.

Response: The corrugated wall panels (if you are referencing the panels called out on the interior elevations of the building) are called to be 22 gauge per spec section 074213. The standing seam roof panels are typically provided by the PEMB manufacturer at their standard gauge.

Question 062 - Sheet C-201 notes a 6" Compacted Road Base, but the plans do not clearly indicate its full extent. Please confirm all areas where the Compacted Road Base is required, including limits of installation

Response: Please see Revised sheet C-201 where the area for 6" road base has been outlined. Also, see sheets C-100, C-200, C-300 which also have been revised. Changes were made to each sheet to show new LOD line, demolition changes, fire hydrant information, notes and callouts. They have Revision #2, Final Bid Addendum dated 2025/04/15.

Question 063 - Please confirm the pricing method requested for the Roof and Wall Insulation Alternate. Specifically, is the intent to provide the net price difference between the Base Bid (as a deduct) and the Add Alternate (as an add)?

Response: Yes, please provide the premium (as an add) for the spray in insulation above and beyond the base price of batt insulation.

## SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

## 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. Standard and custom hollow metal doors and frames.
- 2. Steel sidelight, borrowed lite and transom frames.
- 3. Louvers installed in hollow metal doors.
- 4. Light frames and glazing installed in hollow metal doors.

## B. Related Sections:

- 1. Division 01 Section "General Conditions".
- 2. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
- 3. Division 08 Section "Glazing" for glass view panels in hollow metal doors.
- 4. Division 08 Section "Door Hardware".
- 5. Division 08 Section "Access Control Hardware".
- 6. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.
- C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
  - 1. ANSI/SDI A250.8 Recommended Specifications for Standard Steel Doors and Frames.
  - 2. ANSI/SDI A250.4 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frames Anchors and Hardware Reinforcing.
  - 3. ANSI/SDI A250.6 Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames.
  - 4. ANSI/SDI A250.10 Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
  - 5. ANSI/SDI A250.11 Recommended Erection Instructions for Steel Frames.
  - 6. ASTM A1008 Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
  - 7. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 8. ASTM A924 Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

- 9. 10. SDI-113 Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door & Frame Assemblies.
- 10. ASTM C 1363 Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus.
- 11. ASTM C1199 Standard Test Method for Measuring the Steady-State Thermal Transmittance of Fenestration Systems Using Hot Box Methods
- 12. ASTM E1423 Practice for Determining Steady State Thermal Transmittance of Fenestration Systems.
- 13. ANSI/BHMA A156.115 Hardware Preparation in Steel Doors and Frames.
- 14. ANSI/SDI 122 Installation and Troubleshooting Guide for Standard Steel Doors and Frames.
- 15. ANSI/NFPA 80 Standard for Fire Doors and Fire Windows; National Fire Protection Association.
- 16. ANSI/NFPA 105: Standard for the Installation of Smoke Door Assemblies.
- 17. NFPA 252 Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.
- 18. UL 10C Positive Pressure Fire Tests of Door Assemblies.
- 19. UL 1784 Standard for Air Leakage Tests of Door Assemblies.

## 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, hardware reinforcements, profiles, anchors, fire-resistance rating, and finishes.
- B. Door hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Shop Drawings: Include the following:
  - 1. Elevations of each door design.
  - 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
  - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
  - 4. Locations of reinforcement and preparations for hardware.
  - 5. Details of anchorages, joints, field splices, and connections.
  - 6. Details of accessories.
  - 7. Details of moldings, removable stops, and glazing.
  - 8. Details of conduit and preparations for power, signal, and control systems.

# D. Samples for Verification:

1. Samples are only required by request of the architect and for manufacturers that are not current members of the Steel Door Institute.

# 1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal doors and frames through one source from a single manufacturer wherever possible.

- B. Quality Standard: In addition to requirements specified, furnish SDI-Certified manufacturer products that comply with ANSI/SDI A250.8, latest edition, "Recommended Specifications for Standard Steel Doors and Frames".
- C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL10C (neutral pressure at 40" above sill) or UL 10C.
  - 1. Oversize Fire-Rated Door Assemblies Construction: For units exceeding sizes of tested assemblies, attach construction label certifying doors are built to standard construction requirements for tested and labeled fire rated door assemblies except for size.
  - 2. Temperature-Rise Limit: Where indicated and at vertical exit enclosures (stairwell openings) and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
  - 3. Smoke Control Door Assemblies: Comply with NFPA 105.
    - a. Smoke "S" Label: Doors to bear "S" label, and include smoke and draft control gasketing applied to frame and on meeting stiles of pair doors.
- D. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257. Provide labeled glazing material.
- E. Energy Efficient Exterior Openings: Comply with minimum thermal ratings, based on SDI-113, ASTM C1363, ASTM C1199 and ASTM E1423. Openings to be fabricated and tested as fully operable, thermal insulating door and frame assemblies.
  - 1. Thermal Performance (Exterior Openings): Independent testing laboratory certification for exterior door assemblies being tested in accordance with SDI-113, ASTM C1363, ASTM C1199 and ASTM E143 and meet or exceed the following requirements:
    - a. Door Assembly Operable U-Factor and R-Value Ratings: U-Factor 0.34, R-Value 2.92, including insulated door, thermal-break frame and threshold.
  - 2. Air Infiltration (Exterior Openings): Independent testing laboratory certification for exterior door assemblies being tested in accordance with ASTM E283 to meet or exceed the following requirements:
    - a. Rate of leakage of the door assembly shall not exceed 0.25 cfm per square foot of static differential air pressure of 1.567 psf (equivalent to 25 mph wind velocity).
- F. Pre-Submittal Conference: Conduct conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier, Installer, and Contractor to review proper methods and procedures for installing hollow metal doors and frames and to verify installation of electrical knockout boxes and conduit at frames with electrified or access control hardware.

# 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project site storage. Do not use non-vented plastic.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch high wood blocking. Do not store in a manner that traps excess humidity.
  - 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation. Door and frames to be stacked in a vertical upright position.

## 1.6 PROJECT CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

## 1.7 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Building Information Modeling (BIM) Support: Utilize designated BIM software tools and obtain training needed to successfully participate in the Project BIM processes. All technical disciplines are responsible for the product data integration and data reliability of their Work into the coordinated BIM applications.

## 1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
- B. Warranty includes installation and finishing that may be required due to repair or replacement of defective doors.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide steel doors and frames from a SDI Certified manufacturer:
  - 1. CECO Door Products (C).
  - 2. Curries Company (CU).

## 2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.
- C. Frame Anchors: ASTM A 653/A 653M, Commercial Steel (CS), Commercial Steel (CS), Type B; with minimum G60 (Z180) or A60 (ZF180) metallic coating.

## 2.3 HOLLOW METAL DOORS

- A. General: Provide 1-3/4 inch doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8 and ANSI/NAAMM HMMA 867.
- B. Exterior Doors (Energy Efficient): Face sheets fabricated of commercial quality hot-dipped zinc coated steel that complies with ASTM A924 A60. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model, ANSI/SDI A250.4 for physical performance level, and HMMA 867 for door construction.
  - 1. Design: Flush panel.
  - 2. Core Construction: Foamed in place polyurethane and steel stiffened laminated core with no stiffener face welds or thermally enhanced stiffened laminated core with no stiffener face welds, in compliance with HMMA 867 "Laminated Core".
    - a. Provide 22-gauge steel stiffeners at 6 inches on-center internally welded at 5" on-center to integral core assembly, foamed in place polyurethane core chemically bonded to all interior surfaces. No stiffener face welding is permitted.
    - b. Thermal properties to rate at a fully operable minimum U-Factor 0.34 and R-Value 2.92, including insulated door, thermal-break frame and threshold.
    - c. Kerf Type Frames: Thermal properties to rate at a fully operable minimum U-Factor 0.38 and R-Value 2.6, including insulated door, kerf type frame, and threshold.
  - 3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053 inch 1.3-mm) thick steel, Model 2.
  - 4. Vertical Edges: Vertical edges to be mechanically interlocked with hairline seam. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
  - 5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
  - 6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9".
  - 7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- C. Interior Doors (Energy Efficient): Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A366 or 620. Provide doors complying with requirements indicated

below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:

- 1. Design: Flush panel.
- 2. Core Construction: Steel stiffened laminated core with fiberglass filler with no stiffener face welds, in compliance with HMMA 867 "Laminated Core".
  - a. Provide 22-gauge steel-stiffeners at 6 inches on-center internally welded at 5" on-center to integral core assembly, no stiffener face welding is permitted.
  - b. Acoustical sound transmission rating shall be no less than STC 38 complying with ASTM E 90 and must be visible on factory applied labels.
- 3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053-inch 1.3-mm) thick steel, Model 2.
- 4. Vertical Edges: Vertical edges—to be mechanically interlocked with hairline seam. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
- 5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to include a steel closure channel, screw attached, with the web of the channel flush with the face sheets of the door. Plastic or composite channel fillers are not acceptable.
- 6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9".
- 7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- D. Interior Doors: Face sheets fabricated of commercial quality cold rolled steel that complies with ASTM A 1008/A 1008M. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
  - 1. Design: Flush panel.
  - 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, or one-piece polystyrene core, securely bonded to both faces.
    - a. Fire Door Core: As required to provide fire-protection and temperature-rise ratings indicated.
  - 3. Level/Model: Level 3 and Physical Performance Level A (Extra Heavy Duty), Minimum 16 gauge (0.053-inch 1.3-mm) thick steel, Model 2.
  - 4. Vertical Edges: Vertical edges to have the face sheets joined by a continuous weld extending the full height of the door. Welds are to be ground, filled and dressed smooth. Beveled Lock Edge, 1/8 inch in 2 inches (3 mm in 50 mm).
  - 5. Top and Bottom Edges: Reinforce tops and bottoms of doors with a continuous steel channel not less than 16 gauge, extending the full width of the door and welded to the face sheet.
  - 6. Hinge Reinforcement: Minimum 7 gauge (3/16") plate 1-1/4" x 9" or minimum 14 gauge continuous channel with pierced holes, drilled and tapped.
  - 7. Hardware Reinforcements: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- E. Manufacturers Basis of Design:

- 1. Curries Company (CU) QMax Core 707 Series.
- 2. Curries Company (CU) Energy Efficient 777 Trio-E Series.

# 2.4 HOLLOW METAL FRAMES

- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Thermal Break Frames: Subject to the same compliance standards and requirements as standard hollow metal frames. Tested for thermal performance in accordance with NFRC 102, and resistance to air infiltration in accordance with NFRC 400. Where indicated provide thermally broken frame profiles available for use in both masonry and drywall construction. Fabricate with 1/16" positive thermal break and integral vinyl weatherstripping.
- C. Exterior Frames: Fabricated of hot-dipped zinc coated steel that complies with ASTM A 653/A 653M, Coating Designation A60.
  - 1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
  - 2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
  - 3. Manufacturers Basis of Design:
    - a. Curries Company (CU) M CM Series.
    - b. Curries Company (CU) Mercury 3 Thermal Break TQ Series.
- D. Interior Frames: Fabricated from cold-rolled steel sheet that complies with ASTM A 1008/A 1008M.
  - 1. Fabricate frames with mitered or coped corners. Profile as indicated on drawings.
  - 2. Frames: Minimum 16 gauge (0.053-inch -1.3-mm) thick steel sheet.
  - 3. Manufacturers Basis of Design:
    - a. Curries Company (CU) C CM Series.
    - b. Curries Company (CU) M Series.
- E. Fire rated frames: Fabricate frames in accordance with NFPA 80, listed and labeled by a qualified testing agency, for fire-protection ratings indicated.
- F. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 Table 4 with reinforcement plates from same material as frames.

#### 2.5 FRAME ANCHORS

#### A. Jamb Anchors:

- 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, formed from A60 metallic coated material, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
- 2. Stud Wall Type: Designed to engage stud and not less than 0.042 inch thick.
- 3. Compression Type for Drywall Slip-on (Knock-Down) Frames: Adjustable compression anchors.

- B. Floor Anchors: Floor anchors to be provided at each jamb, formed from A60 metallic coated material, not less than 0.042 inches thick.
- C. Mortar Guards: Formed from same material as frames, not less than 0.016 inches thick.

#### 2.6 LOUVERS

- A. Metal Louvers: Unless otherwise indicated provide louvers to meet the following requirements.
  - 1. Blade Type: Vision proof inverted V or inverted Y.
  - 2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.
- B. Louvers for Fire Rated Doors: Metal louvers with fusible link and closing device, listed and labeled for use in doors with fire protection rating of 1-1/2 hours and less.
  - 1. Manufacturers: Subject to compliance with requirements, provide louvers to meet rating indicated.
  - 2. Metal and Finish: Galvanized steel, 0.040 inch thick, factory primed for paint finish with baked enamel or powder coated finish. Match pre-finished door paint color where applicable.

# 2.7 LIGHT OPENINGS AND GLAZING

- A. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints at fabricator's shop. Fixed and removable stops to allow multiple glazed lites each to be removed independently. Coordinate frame rabbet widths between fixed and removable stops with the type of glazing and installation indicated.
- B. Moldings for Glazed Lites in Doors and Loose Stops for Glazed Lites in Frames: Minimum 20 gauge thick, fabricated from same material as door face sheet in which they are installed.
- C. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch (16 mm) high unless otherwise indicated. Provide fixed frame moldings and stops on outside of exterior and on secure side of interior doors and frames.
- D. Preformed Metal Frames for Light Openings: Manufacturer's standard frame formed of 0.048-inch-thick, cold rolled steel sheet; with baked enamel or powder coated finish; and approved for use in doors of fire protection rating indicated. Match pre-finished door paint color where applicable.

## 2.8 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Grout Guards: Formed from same material as frames, not less than 0.016 inches thick.

## 2.9 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in ANSI/SDI A250.8.

## C. Hollow Metal Doors:

- 1. Exterior Doors: Provide optional weep-hole openings in bottom of exterior doors to permit moisture to escape where specified.
- 2. Glazed Lites: Factory cut openings in doors with applied trim or kits to fit. Factory install glazing where indicated.
- 3. Astragals: Provide overlapping astragals as noted in door hardware sets in Division 08 Section "Door Hardware" on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
- 4. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge strap for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
- 5. Electrical Raceways: Provide hollow metal doors to receive electrified hardware with concealed wiring harness and standardized Molex<sup>TM</sup> plug connectors on both ends to accommodate up to twelve wires. Coordinate connectors on end of the wiring harness to plug directly into the electrified hardware and the through-wire transfer hardware or wiring harness specified in hardware sets in Division 08 Sections "Door Hardware" and "Access Control Hardware". Wire nut connections are not acceptable.

## D. Hollow Metal Frames:

- 1. Shipping Limitations: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
- 2. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
  - a. Welded frames are to be provided with two steel spreaders temporarily attached to the bottom of both jambs to serve as a brace during shipping and handling. Spreader bars are for bracing only and are not to be used to size the frame opening.
- 3. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
- 4. High Frequency Hinge Reinforcement: Provide high frequency hinge reinforcements at door openings 48-inches and wider with mortise butt type hinges at top hinge locations.
- 5. Continuous Hinge Reinforcement: Provide welded continuous 12 gauge straps for continuous hinges specified in hardware sets in Division 08 Section "Door Hardware".
- 6. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated for removable stops, provide security screws at exterior locations.

- 7. Mortar Guards: Provide guard boxes at back of hardware mortises in frames at all hinges and strike preps regardless of grouting requirements.
- 8. Electrical Thru-Wiring: Provide hollow metal frames receiving electrified hardware with loose wiring harness (not attached to open throat components or installed in closed mullion tubes) and standardized Molex<sup>TM</sup> plug connectors on one end to accommodate up to twelve wires. Coordinate connectors on end of the wiring harness to plug directly into the electric through-wire transfer hardware or wiring harness specified in hardware sets in Division 08 Sections "Door Hardware" and "Access Control Hardware".
- 9. Electrical Knock Out Boxes: Factory weld 18 gauge electrical knock out boxes to frame for electrical hardware preps; including but not limited to, electric through wire transfer hardware, electrical raceways and wiring harnesses, door position switches, electric strikes, magnetic locks, and jamb mounted card readers as specified in hardware sets in Division 08 Sections "Door Hardware" and "Access Control Hardware".
  - a. Provide electrical knock out boxes with a dual 1/2-inch and 3/4-inch knockouts.
  - b. Conduit to be coordinated and installed in the field (Division 26) from middle hinge box and strike box to door position box.
  - c. Electrical knock out boxes to comply with NFPA requirements and fit electrical door hardware as specified in hardware sets in Division 08 Section "Door Hardware".
  - d. Electrical knock out boxes for continuous hinges should be located in the center of the vertical dimension on the hinge jamb.
- 10. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
- 11. Jamb Anchors: Provide number and spacing of anchors as follows:
  - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches on-center and as follows:
    - 1) Two anchors per jamb up to 60 inches high.
    - 2) Three anchors per jamb from 60 to 90 inches high.
    - 3) Four anchors per jamb from 90 to 120 inches high.
    - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
  - b. Stud Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
    - 1) Three anchors per jamb up to 60 inches high.
    - 2) Four anchors per jamb from 60 to 90 inches high.
    - 3) Five anchors per jamb from 90 to 96 inches high.
    - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
    - 5) Two anchors per head for frames above 42 inches wide and mounted in metal stud partitions.
- 12. Door Silencers: Except on weatherstripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer regardless if specified in Division 08 Section "Door Hardware".
- 13. Bituminous Coating: Where frames are fully grouted with an approved Portland Cement based grout or mortar, coat inside of frame throat with a water based bituminous or

asphaltic emulsion coating to a minimum thickness of 3 mils DFT, tested in accordance with UL 10C and applied to the frame under a 3rd party independent follow-up service procedure.

- E. Hardware Preparation: Factory prepare hollow metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
  - 1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
  - 2. Reinforce doors and frames to receive non-template, mortised and surface mounted door hardware.
  - 3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
  - 4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

## 2.10 STEEL FINISHES

- A. Prime Finishes: Doors and frames to be cleaned, and chemically treated to insure maximum finish paint adhesion. Surfaces of the door and frame exposed to view to receive a factory applied coat of rust inhibiting shop primer.
  - 1. Shop Primer: Manufacturer's standard, fast-curing, lead and chromate free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; and compatible with substrate and field-applied coatings.

## **PART 3 - EXECUTION**

## 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. General Contractor to verify the accuracy of dimensions given to the steel door and frame manufacturer for existing openings or existing frames (strike height, hinge spacing, hinge back set, etc.).
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Remove welded in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for square, level, twist, and plumb condition.

- C. Tolerances shall comply with SDI-117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- D. Drill and tap doors and frames to receive non-template, mortised, and surface-mounted door hardware.
- E. Verify tolerances against manufacturers installations instructions for tornado and hurricane storm shelter openings.

## 3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11 and NFPA 80 at fire rated openings.
  - 1. Set frames accurately in position, plumbed, leveled, aligned, and braced securely until permanent anchors are set. After wall construction is complete and frames properly set and secured, remove temporary braces, leaving surfaces smooth and undamaged. Shim as necessary to comply with installation tolerances.
  - 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with post-installed expansion anchors.
  - 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar.
  - 4. Grout Requirements: Do not grout head of frames unless reinforcing has been installed in head of frame. Do not grout vertical or horizontal closed mullion members.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
  - 1. Non-Fire-Rated Standard Steel Doors:
    - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
    - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
    - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
    - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.
  - 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Field Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

## 3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

- B. Remove grout and other bonding material from hollow metal work immediately after installation.
- C. Prime-Coat and Painted Finish Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat, or painted finishes, and apply touchup of compatible air drying, rust-inhibitive primer, zinc rich primer (exterior and galvanized openings) or finish paint.

## 3.5 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
  - 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
- B. Fire Door Assembly Inspection: Reference Division 01 Sections "Closeout Procedures". Conduct an initial fire door assembly inspection, including documentation reporting, upon completion of door hardware installation according to NFPA 80 Standard for Fire Doors and Other Opening Protectives, paragraph 5.2.4, requirements.

END OF SECTION 081113

## SECTION 087100 - DOOR HARDWARE

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
  - 1. Swinging doors.
  - 2. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
  - 1. Mechanical door hardware.
  - 2. Electromechanical door hardware.
  - 3. Cylinders specified for doors in other sections.

## C. Related Sections:

- 1. Division 08 Section "Hollow Metal Doors and Frames".
- 2. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
  - 1. ANSI A117.1 Accessible and Usable Buildings and Facilities.
  - 2. ICC/IBC International Building Code.
  - 3. NFPA 70 National Electrical Code.
  - 4. NFPA 80 Fire Doors and Windows.
  - 5. NFPA 101 Life Safety Code.
  - 6. NFPA 105 Installation of Smoke Door Assemblies.
  - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
  - 1. ANSI/BHMA Certified Product Standards A156 Series.
  - 2. UL10C Positive Pressure Fire Tests of Door Assemblies.
  - 3. ANSI/UL 294 Access Control System Units.
  - 4. UL 305 Panic Hardware.

5. ANSI/UL 437- Key Locks.

## 1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
  - 3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.
    - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
    - h. Warranty information for each product.
  - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the 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 Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
  - 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
    - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    - b. Complete (risers, point-to-point) access control system block wiring diagrams.

- c. Wiring instructions for each electronic component scheduled herein.
- 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

## E. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

## 1.4 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

# 1.5 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
  - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
  - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
  - 1. Function of building, purpose of each area and degree of security required.
  - 2. Plans for existing and future key system expansion.
  - 3. Requirements for key control storage and software.
  - 4. Installation of permanent keys, cylinder cores and software.
  - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
  - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
  - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
  - 3. Review sequence of operation narratives for each unique access controlled opening.
  - 4. Review and finalize construction schedule and verify availability of materials.
  - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

## 1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

## 1.7 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

# 1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of the hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 BUTT HINGES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
  - 1. Quantity: Provide the following hinge quantity:
    - a. Two Hinges: For doors with heights up to 60 inches.
    - b. Three Hinges: For doors with heights 61 to 90 inches.
    - c. Four Hinges: For doors with heights 91 to 120 inches.
    - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
  - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
    - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
    - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
  - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
    - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
  - 4. Hinge Options: Comply with the following:
    - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.
  - 5. Manufacturers:
    - a. McKinney (MK) TA/T4A Series, 5-knuckle.

# 2.2 CONTINUOUS HINGES

- A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
  - 1. Where specified, provide modular continuous geared hinges that ship in two or three pieces and form a single continuous hinge upon installation.
  - 2. Manufacturers:.

a. Pemko (PE).

## 2.3 POWER TRANSFER DEVICES

- A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex<sup>TM</sup> standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
  - 1. Manufacturers:
    - a. Pemko (PE) EL-CEPT Series.
    - b. Securitron (SU) EL-CEPT Series.
- B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.
  - 1. Provide one each of the following tools as part of the base bid contract:
    - a. McKinney (MK) Electrical Connecting Kit: QC-R001.
    - b. McKinney (MK) Connector Hand Tool: QC-R003.
  - 2. Manufacturers:
    - a. McKinney (MK) QC-C Series.

## 2.4 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
  - 1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
  - 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
  - 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
  - 4. Pulls, where applicable, shall be provided with a 10" clearance from the finished floor on the push side to accommodate wheelchair accessibility.

- 5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- 6. Manufacturers:
  - a. Rockwood (RO).

## 2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Permanent Cylinder: Owner furnished; owner installed.
- C. Temporary Cylinder: General Contractor furnished; General Contractor installed.
- D. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
  - 1. Threaded mortise cylinders with rings and cams to suit hardware application.
  - 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
  - 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
  - 4. Tubular deadlocks and other auxiliary locks.
  - 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
  - 6. Keyway: Match Facility Standard.
- E. Keying System: Each type of lock and cylinders to be factory keyed.
  - 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
  - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
  - 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- F. Key Quantity: Provide the following minimum number of keys:
  - 1. Change Keys per Cylinder: Two (2)
  - 2. Master Keys (per Master Key Level/Group): Five (5).
  - 3. Construction Keys (where required): Ten (10).
- G. Construction Keying: Provide construction master keyed cylinders.
- H. Key Registration List (Bitting List):
  - 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
  - 2. Provide transcript list in writing or electronic file as directed by the Owner.

3. Furnish a list of opening numbers with locking devices, showing cylinder types and quantities required when cylinders or cores are to be owner furnished.

#### 2.6 KEY CONTROL

- A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.
  - 1. Manufacturers:
    - a. Lund Equipment (LU).
    - b. MMF Industries (MM).
    - c. Telkee (TK).
- P. Electronic Key Management System: Provide an electronic key control system with Stand-alone Plug and Play features including advanced RFID technology. Touchscreen interface with PIN access for keys individually locked in place. Minimum 1,000 system users and 21 iFobs for locking receptors. System shall have a minimum 250,000 audit events screen displayed or ability to be exported via USB port.
  - 1. Manufacturers:
    - a. Medeco (MC).

## 2.7 MORTISE LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.
  - 1. Manufacturers:
    - a. Sargent Manufacturing (SA) 8200 Series.
    - b. Schlage (SC) L9000 Series.
    - c. No Substitution.

## 2.8 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
  - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
  - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
  - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

- 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
  - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
  - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
  - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
  - 4. Dustproof Strikes: BHMA A156.16.

# 2.9 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
  - 1. Exit devices shall have a five-year warranty.
  - 2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
  - 3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
  - 4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
  - 5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
  - 6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
    - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
  - 7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
  - 8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
  - 9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
  - 10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
  - 11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.
  - 1. Electromechanical exit devices shall have the following functions and features:
    - a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
    - b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
    - c. Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
    - d. Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC
    - e. Five-year limited warranty for electromechanical features.

## 2. Manufacturers:

- a. Sargent Manufacturing (SA) 80 Series.
- b. Von Duprin (VD) 35A/98 XP Series.
- c. No Substitution.

## 2.10 SURFACE DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
  - 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
  - 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
  - 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
  - 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
  - 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
  - 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece

cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

- 1. Large body cast iron surface mounted door closers shall have a 30-year warranty.
- 2. Manufacturers:
  - a. LCN Closers (LC) 4040XP Series.
  - b. Sargent Manufacturing (SA) 281 Series.
  - c. No Substitution.

# 2.11 ARCHITECTURAL TRIM

## A. Door Protective Trim

- 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
- 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
- 3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
- 4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
  - a. Stainless Steel: 300 grade, 050-inch thick.
- 5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
- 6. Manufacturers:
  - a. Rockwood (RO).

## 2.12 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
  - 1. Manufacturers:
    - a. Rockwood (RO).

## 2.13 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
  - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
  - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
  - 1. Pemko (PE).

## 2.14 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

# 2.15 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- 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. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

#### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine scheduled openings, 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. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

#### 3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

#### 3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
  - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically 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. DHI TDH-007-20: Installation Guide for Doors and Hardware.
  - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
  - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and 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 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

#### 3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
  - 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.
- B. Fire Door Assembly Inspection: Reference Division 01 Sections "Closeout Procedures". Conduct an initial fire door assembly inspection, including documentation reporting, upon completion of door hardware installation according to NFPA 80 Standard for Fire Doors and Other Opening Protectives, paragraph 5.2.4, requirements.

#### 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.

#### 3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

#### 3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

#### 3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
  - 1. Quantities listed are for each pair of doors, or for each single door.
  - 2. The supplier is responsible for handing and sizing all products.
  - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
  - 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

#### B. Manufacturer's Abbreviations:

- 1. MK McKinney
- 2. PE Pemko
- 3. SU Securitron
- 4. SA SARGENT
- 5. AA ASSA High Security Locks
- 6. RO Rockwood
- 7. OT Other

#### **Hardware Sets**

#### <u>Set: 1.0</u> Doors: 100R

2	Continuous Hinge	CFM SLF-HD1-M PT	PE	
2	Electric Power Transfer	EL-CEPT 630	SU	4
1	Concealed Vert Rod Exit, Nightlatch	55 56 AD8410 106 Less Pull US32D	SA	4
1	Concealed Vert Rod Exit	55 56 AD8410 Less Pull US32D	SA	4
1	Temporary Cylinder	general contractor furnished and installed	AA	
1	Permanent Cylinder	owner furnished and installed		
2	Door Pull	RM3311-60 US32D	RO	
2	Surface Closer	281 CPS EN	SA	
2	Drop Plate and Brackets/Spacers	as required 689		
1	Gasketing	by door manufacturer		
2	Sweep	315CN	PE	
1	Threshold	252x2AFG	PE	
2	Frame Harness	QC-C1500P (as required)	MK	4
2	Door Harness	QC-C_P (as required)	MK	4
1	Power Supply	AQL Series (as required) provided by division 28	SU	4

2	Door Position Switch	provided by division 28	OT
1	Card Reader	provided by division 28	

Notes: Door normally closed and locked.

Entrance by presenting a valid credential to card reader.

Egress allowed at all times.

Loss of power maintains security from lock side, entrance by mechanical key only.

Door monitored for door ajar and forced open.

## <u>Set: 2.0</u> Doors: 100P

CFM SLF-HD1-M		PE
16 AD8504 Less Pull	US32D	SA
general contractor furnished and insta	lled	AA
owner furnished and installed		
RM3311-60	US32D	RO
281 CPS	EN	SA
as required	689	
by door manufacturer		
315CN		PE
252x2AFG		PE
provided by division 28		OT
	16 AD8504 Less Pull general contractor furnished and insta owner furnished and installed RM3311-60 281 CPS as required by door manufacturer 315CN 252x2AFG	16 AD8504 Less Pull US32D general contractor furnished and installed owner furnished and installed RM3311-60 US32D 281 CPS EN as required 689 by door manufacturer 315CN 252x2AFG

#### Set: 3.0

Doors: 100A, 100E, 100F, 100HH, 100II, 100J, 100M

3	Hinge	T4A3386 x NRP	US32D	MK
1	Rim Exit Device, Classroom	8813 ETL	US32D	SA
1	Temporary Cylinder	general contractor furnished and installed		AA
1	Permanent Cylinder	owner furnished and installed		
1	Surface Closer	281 CPS	EN	SA
1	Kick Plate	K1050 10" CSK BEV	US32D	RO
1	Gasketing	2891AS		PE
2	Gasketing	290AS		PE
1	Door Bottom	216AFG		PE
1	Threshold	273x3AFG		PE
1	Latch Protector	325	US26D	RO
1	Door Position Switch	provided by division 28		OT

## **Set: 4.0**

Doors: 107, 110

3	Hinge	T4A3786	US26D	MK
1	Storeroom/Closet Lock	8204 LNL	US32D	SA
1	Temporary Cylinder	general contractor furnished and instal	lled	AA
1	Permanent Cylinder	owner furnished and installed		
1	Surface Closer	281 O/P9 (as required)	EN	SA
1	Kick Plate	K1050 10" CSK BEV	US32D	RO

1 Door Stop	406/409/441H (type as required)	US32D	RO
1 Gasketing	S44BL		PE

# **Set: 5.0**

Doors: 108, 109

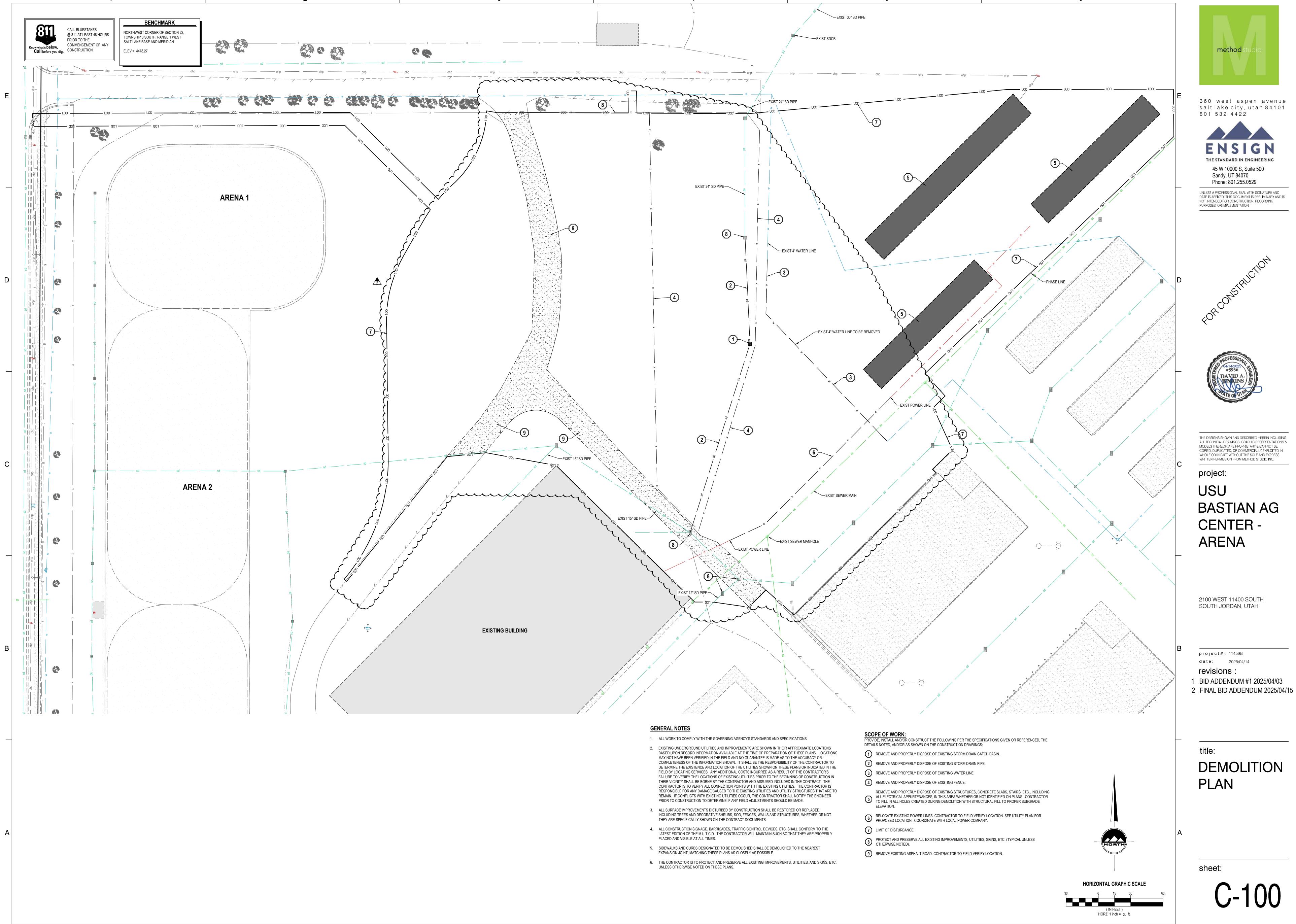
3	Hinge	T4A3786	US26D	MK
1	Privacy Lock	LB V21 8266 LNL	US32D	SA
1	Surface Closer	281 O/P9 (as required)	EN	SA
1	Kick Plate	K1050 10" CSK BEV	US32D	RO
1	Mop Plate	K1050 4" CSK BEV	US32D	RO
1	Door Stop	406/409/441H (type as required)	US32D	RO
1	Gasketing	S44BL		PE

#### Set: 6.0

Doors: 100B, 100C, 100D, 100G, 100H, 100K, 100L, 100N

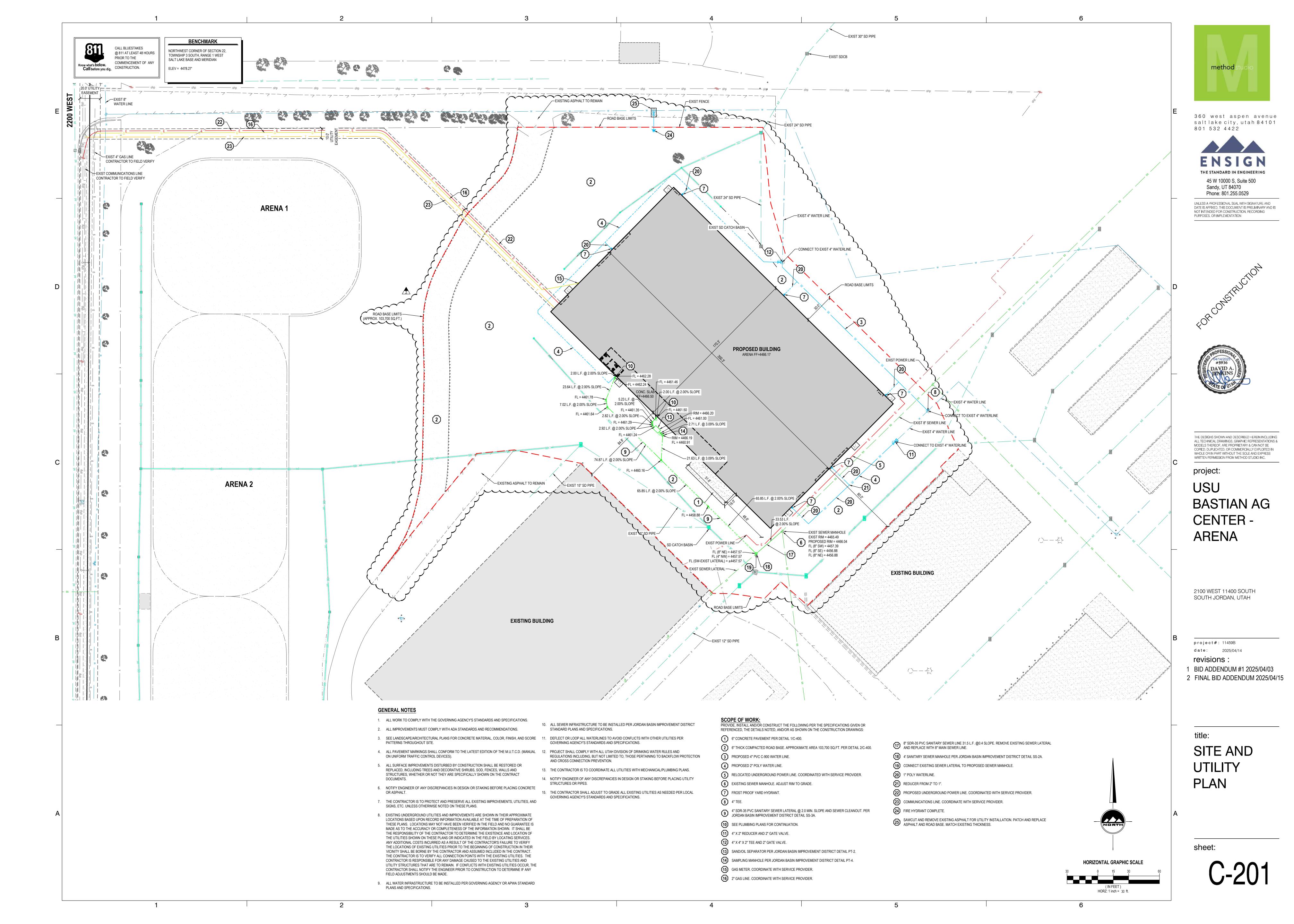
1 Hardware by door manufacturer

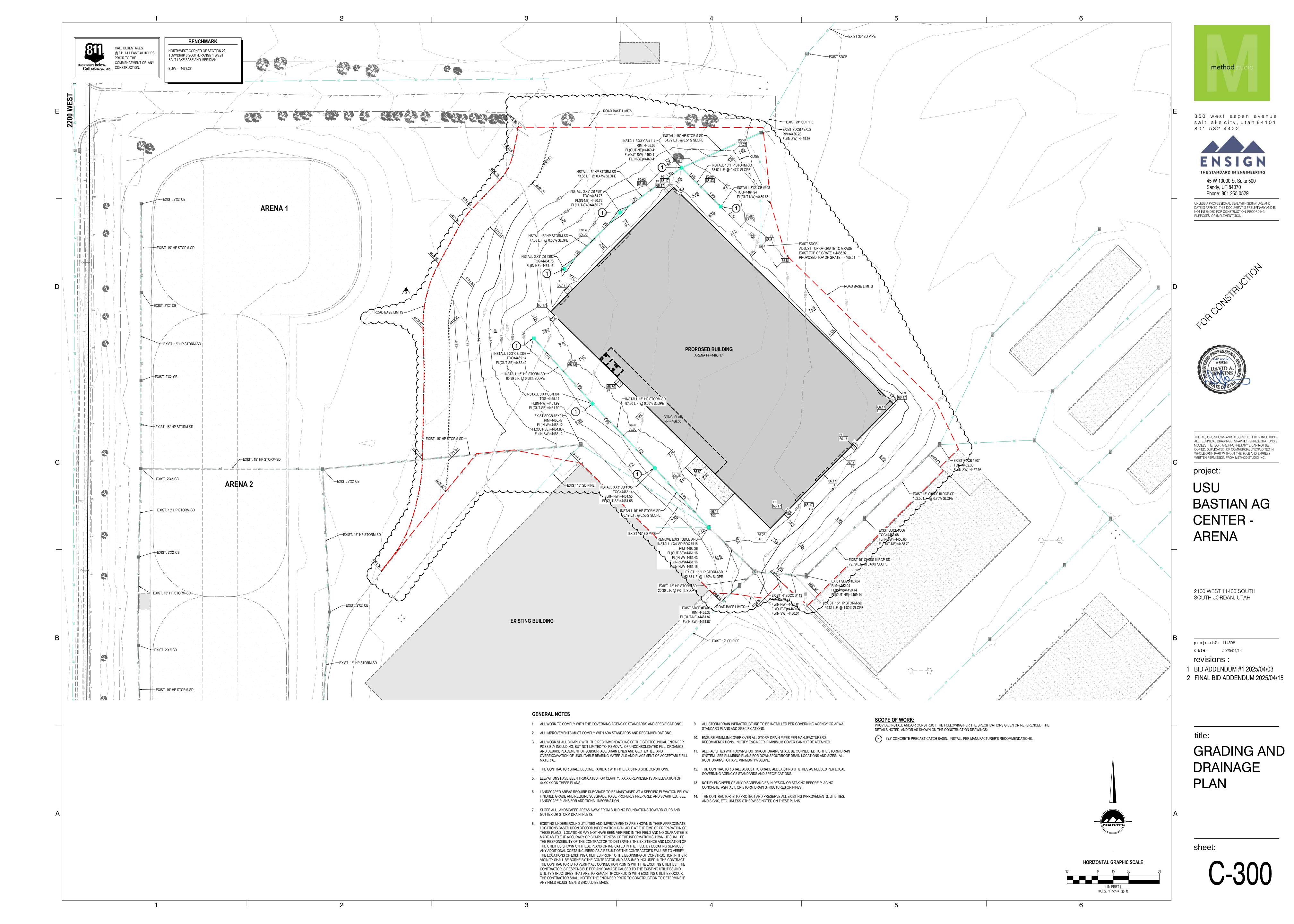
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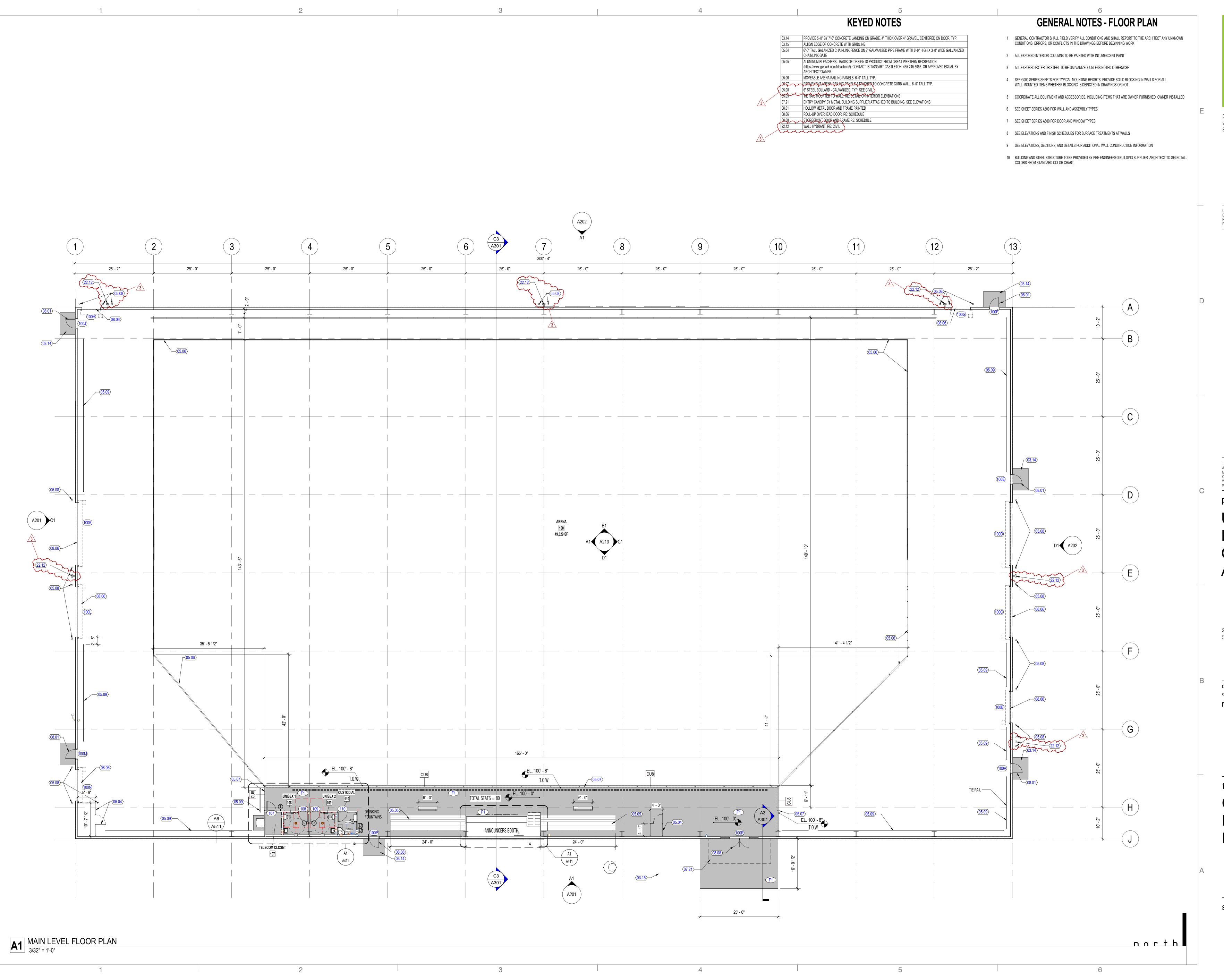


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project:

# USU BASTIAN AG CENTER -ARENA

2100 W. 11400 S. South Jordan, Utah 84095

project#: 24.0170 date: JANUARY 31, 2025

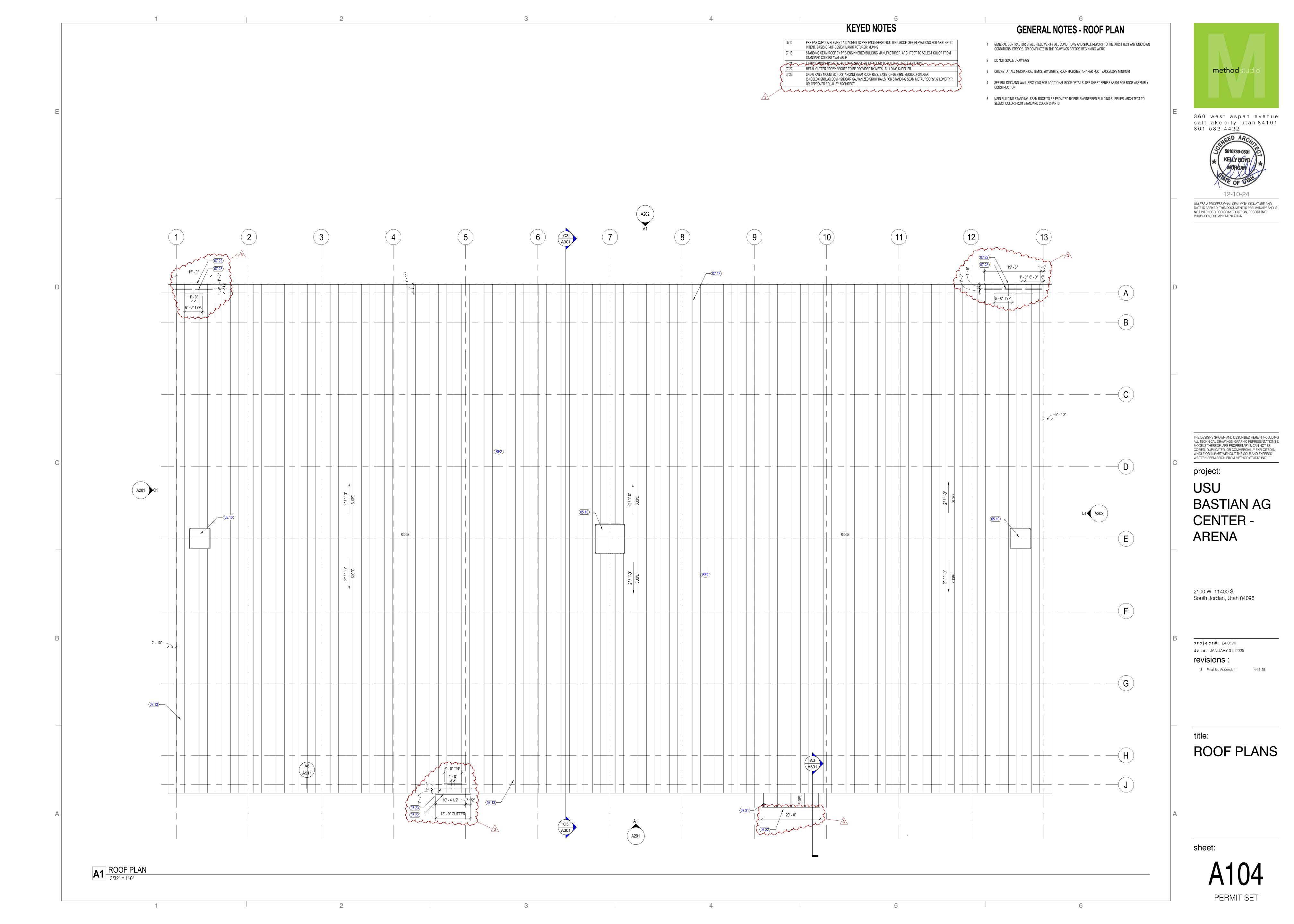
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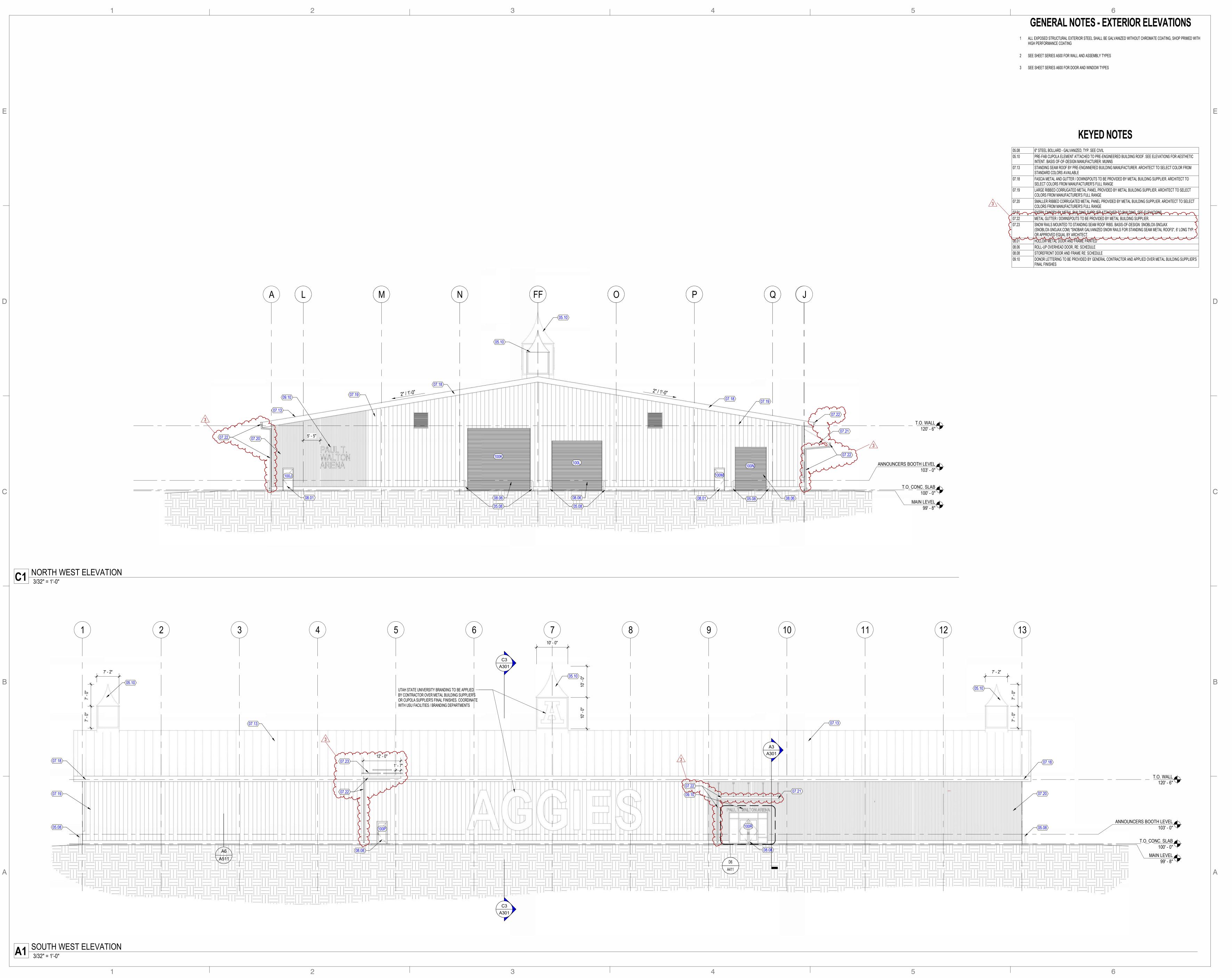
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OVERALL
MAIN LEVEL
PLAN

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project#: 24.0170 date: JANUARY 31, 2025

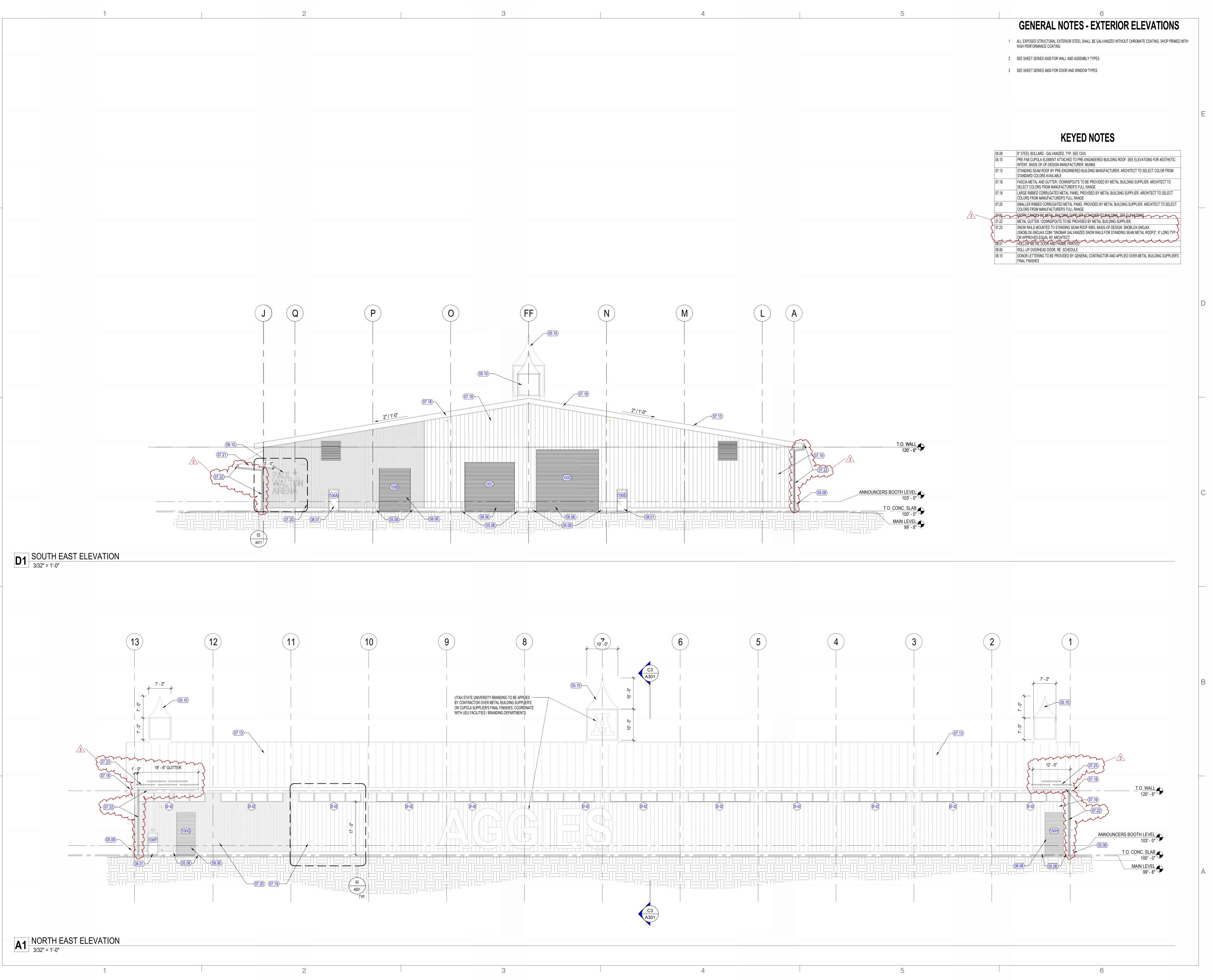
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project#: 24.0170 date: JANUARY 31, 2025

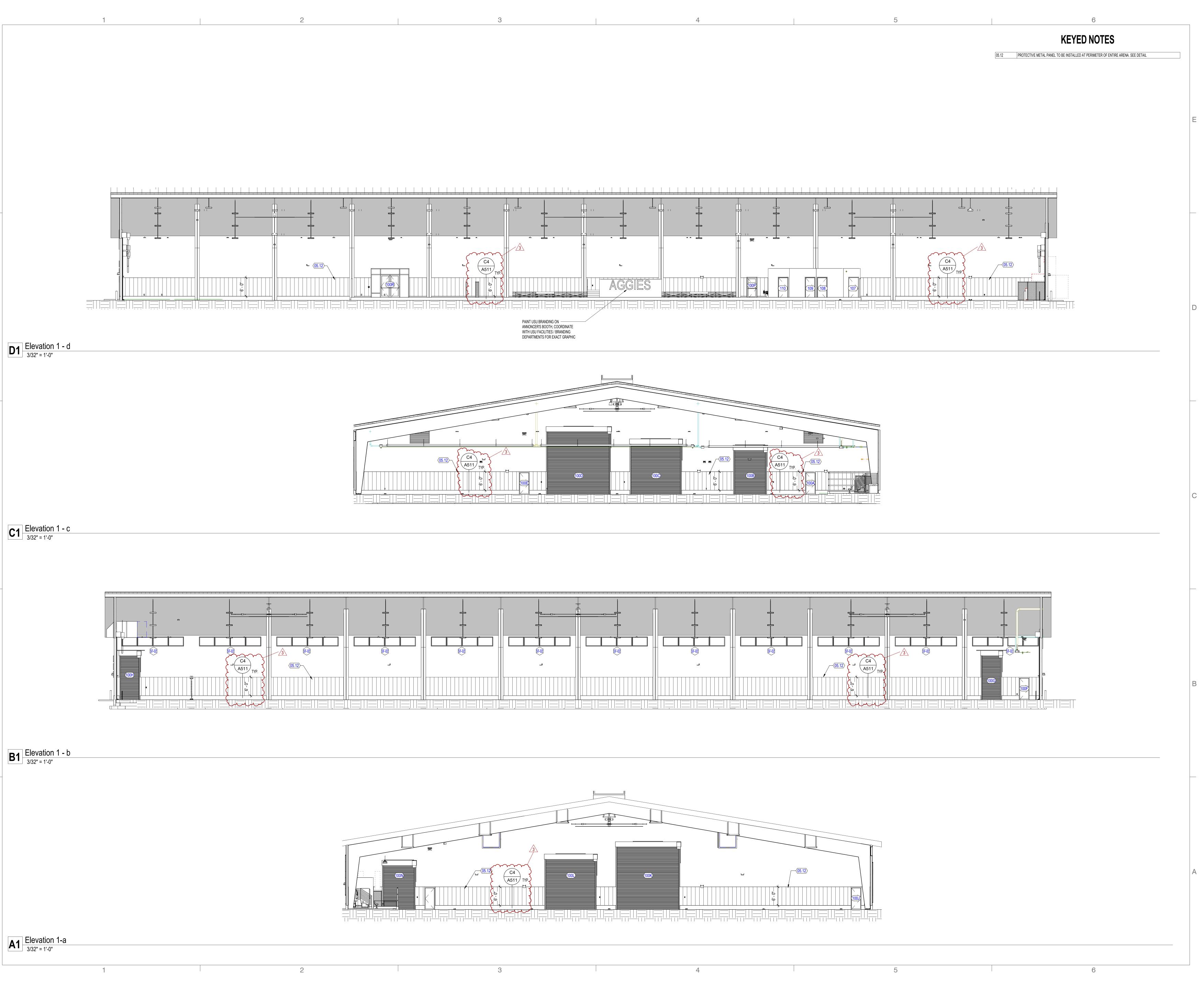
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method studio

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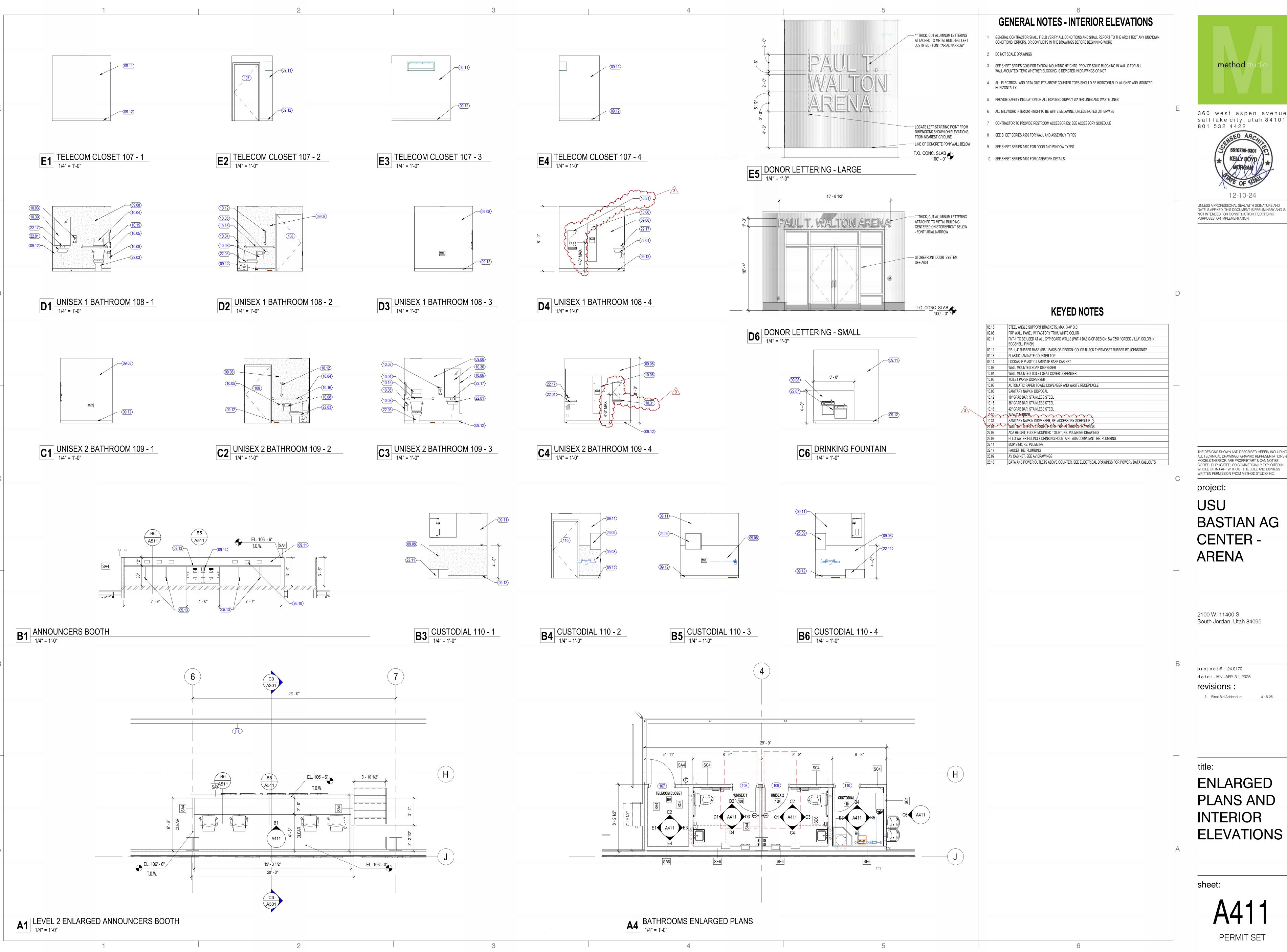
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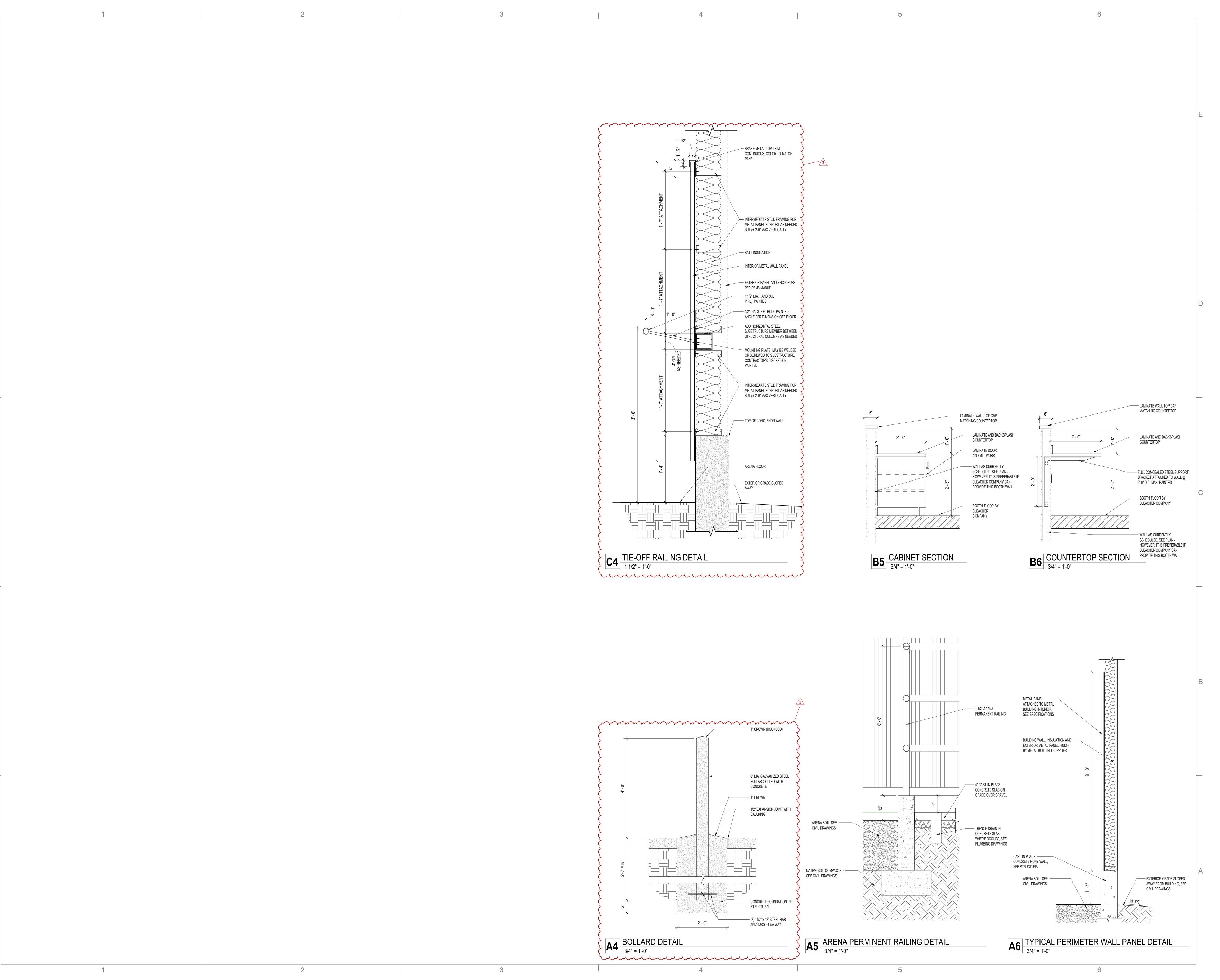
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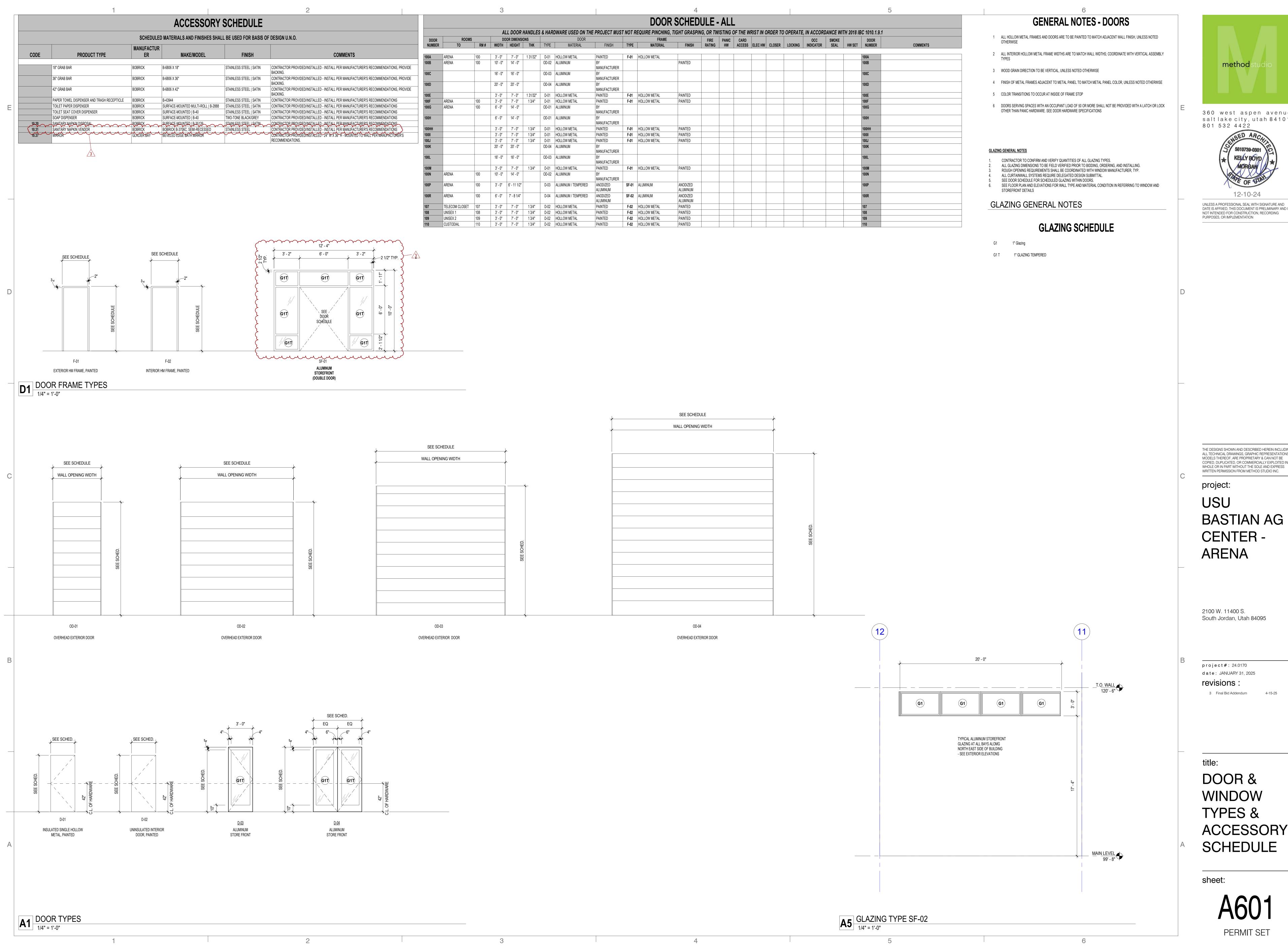
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