Project Name: **UNIVERSITY OF CALIFORNIA, MERCED**
CLASSROOM & ACADEMIC OFFICE BUILDING
Project No.: **900290**

ADDENDUM NO. 1

to the

CONTRACT DOCUMENTS

February 21, 2014

I. Bidder acknowledges that it is the Bidder's responsibility to ascertain whether any Addenda have been issued and if so, to obtain copies of such Addenda. Bidder therefore agrees to be bound by all Addenda that have been issued for this bid.

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents. The following changes, additions, or deletions shall be made to the following documents as indicated and all other Contract Documents shall remain the same.

II. CLARIFICATIONS

A. PRE-BID QUESTIONS – Questions received from bidders and responses are as follows:

1. Q. Please clarify the gap between edge of deck and spandrel assembly. It looks like stuffed insulation. If so, what's the product shown bridging the edge and spandrel at the top of slab? Similar conditions exist for balloon frame walls. (RFI003)

   A. Floor to floor joint to receive fire resistant joint systems, per 07 84 43.

2. Q. Detail J1 calls for "spot Grout at Jambs Anchors". The frames are welded HM frames, it is not possible to apply grout per this detail. Please eliminate this note and assoicte symbol. (RFI006)

   A. Delete grout from the detail.

3. Q. Is the layout of Tectum ceiling shown on the reflecting ceiling plans the true layout? If so panels only come in 2' & 4' pieces, it shows beveled edges per Detail 1A/A7.56 and they will not be able to be cut with bevel. (RFI010)

   A. Tectum is available in 2', 2'-8" and 4' nominal widths with bevels along long edges. Layout of panels as shown on RCP reflects design intent according to available widths and where cutting is required due to fixtures, edges will be concealed per Detail 6/A7.56.

4. Q. Per mounting requirements of the specs and details shown on A7.56. Please confirm that WP-01 panels mounted on the framed ceilings system. And which bid package will provide the framing and support for the WP-01 panels? (RFI012)

   A. Panels can be mounted to approved concealed T bar system only if direct attachment or other means achieves exposed beveled edge as designed. Bid Package 9-2 to provide framing and support as required.

5. Q. General Note #2 states "120V Branch Circuit Conduits and Wiring for Division 23 Controls Provided by Division 23…" Please clarify. (RFI013)

A. Bid Package 26-1 to provide conduits and 120v power. Bid Package 23-1 will provide own conduits for low voltage control wiring. This applies to all other notes with similar wording throughout the documents.

6. Q. Spec Sec 064023 Item 1.05 D.1 indicates AWI certification. Casework Sheet Note #3 and Casework Legend references AWS Standards. Confirm that AWS Standards are the specified guidelines for the construction of casework. (RFI014)

   A. Confirmed. Specifications stipulate that AWS standards govern construction, finishes, installation, and other requirements; and also that evidence of certification shall be provided through AWI Quality Certification Program certificates.

7. Q. Spec Section 064023 2.02 H & 1, specifies door and drawer locks. Please confirm locks are to be provided only at the Demo table per 1/A2.31indicated in drawing. (RFI015)

   A. Confirmed.

8. Q. Spec Sec 064023 Item 2.09 C.3 states Exposed Edges – Grade HGS. AWS Standard allows for the 3MM PVC edge banding at exposed surfaces. Confirm that PVC edge banding is acceptable for PL cabinet edges in lieu of HGS. (RFI016)

   A. Per AWS Sect. 10, 1.2.13.1.2.2.1 and 1.2.12.2.3.2.1, provide HPDL same as exposed exterior/interior surfaces

9. Q. Spec Sec 064023 Item 2.09 D.1 states for Semi-exposed surface – thermoset decorative panels. Casework details on 1/A60 note the finish of semi-exposed surface to be Plastic Laminate. Confirm that all semi-exposed surfaces are to be finished with thermoset decorative panels (white melamine) as specified in Section 064023. (RFI017)

   A. Semi exposed surfaces are all to be finished with plastic laminate as indicated on drawings and finish schedule.

10. Q. Detail 6/A6.07 indicated SS-03 top, SS-03 is not specified in the documents. Please confirm SS-01 is to be used where SS-03 is indicated. (RFI018)

    A. Confirmed, use SS-01 where SS-03 was indicated.

11. Q. All cabinet backs appear to be ¾”per casework details on A6.40. Confirm that cabinets are to be provided with ¾” backs at exposed and semi-exposed conditions. (RFI019)

    A. Confirmed.

12. Q. 1.09.A.2 - Manufacturers will not warranty the "Removal and replacement of overburden" if the overburden is concrete. Please confirm this is acceptable. (RFI021)

    A. Confirmed.

13. Q. Please confirm the intent of the specs on 3.08C is to provide both the EFVM system and the flood testing. (RFI022)

    A. Confirmed, specifications indicate that both must be provided.

14. Q. Please confirm the black exposed screws are acceptable to the natural color finish of the Tectum panels. (RFI025)

    A. Use yellow zinc screws at exposed conditions on Tectum.

III. **BIDDING/CONTRACT DOCUMENTS AND DIVISION 1 SPECIFICATIONS – VOLUME 0**

1. Revise Table of Contents: REVISE: Volume 1 to read Volume 0, Division 1 Specifications; **ADD: 01 31 01 BIM Requirements.**
2. **REPLACE Bid Package 32-2 Landscape with revised attachment to Addendum 1.**
3. **Section 14 21 00 Electric Traction Elevator; DELETE: Section 2.09.B.3 DEDUCTIVE ALTERNATE. (RFI036)**
4. Q. Page 4 of the specifications state there is a bid security required and we must provide it on the form included herein. We can find no bid bond form to use anywhere in the bid documents. (RFI007)

   A. Follow "Sundt's Instructions to Bidders". The Instruction to Bidders/Supplemental Instructions to Bidders issued by the University shown after the Project Directory is for reference only. This referenced document was used to procure Sundt as the General Contractor.

IV. **DIVISION 2 – 33 SPECIFICATIONS – VOLUME 1 & 2**

1. Q. The new 03 32 00 1.5C.5 calls for LEED with SRI of at least 29. The specified colors have a SRI of 19 & 20. Please take out this LEED requirement or change the color to meet the SRI requirement. (RFI001)

   A. Cobblestone has SRI of 18, Silversmoke has 20 (confirmed); these colors were approved by design review. **REMOVE Section 03 32 00 1.5.5C**, LEED requirement will be removed from specifications.

2. Q. The roof hatch specified in the specification do not match the size shown on the roof plan. Please clarify. (RFI002)

   A. Specifications updated with 30x54 hatch. **REVISE Section 07 72 00 2.3 B to read 30x54 inches.**

3. Q. Specification Section 07 42 13 & 07 42 19, please define the color(s) for the wall metal panels. In addition, the specifications calls for both two-coat and three-coat Flouropolymer finish. Please clarify. (RFI005)

   A. Color is "Zinc Gray." Specifications call for two coat color system.

4. Q. The Specs calls for metal infill and A6 series calls for aluminum perforated panels for the Alternate Deduct #1. Please clarify. Also specify the gauge or thickness of the perforated panels. (RFI008)

   A. Section 05 73 00 2.01.A.2.a denotes alternate infill as perforated metal infill panel (3/8" holes, 9/16" spacing and 40% open area per spec). Infill panel shall be 3/16" aluminum. **Section 05 73 00 2.01.A 2 a: ADD 3/16" Metal Infill.**

5. Q. Spec 2.01A.2 Infill – calls for the woven wire mesh to be galvanized, factory finish. Please confirm. (RFI009)

   A. Factory finish shall include powder coat to match guardrail. **Section 05 73 00 2.01 2: ADD finished Powder Coated Woven Wire Mesh.**

6. Q. Multiple details call for "Special J-mold". Please specify this product and/or material & finish. (RFI011)

A. Section 09 77 00 2.02.D. 1: **ADD 1.a Edge trim: Provide extruded aluminum trim, 1) Basis of Design: Fry Part 1360 Special "J" Molding, 1 ½" deep by 1", or equal. 2) Finish: Clear anodized.**

7. Q. Section 09 22 16 calls for engineering for all the interior non-load bearing partitions. If so, please provide load requirements. (RFI023)

   A. **REPLACE Section 09 22 16 with revised section attached to Addendum 1.**

8. Q. Section 27 41 16 is missing the AV equipment list, please provide. (RFI035)

   A. **ADD: AV Equipment List attached to Addendum 1.**

9. Q. Section 03 32 00 2.2.B can the fly ash be reduced? (RFI036)

   A. The fly ash shall be reduced as follows; **REVISE Section 03 32 00 2.2.B 15% ~~minimum rate of 20% up to 35%~~ by weight. Revised section attached to Addendum 1.**

V. **DRAWINGS**

A0.01A	Index Sheet	Index of Drawing Revisions for Addendum 1
A4.55	Curtain Wall Details - Sections	Notes Added to Slab edge details 4 & 6. (RFI003)
A6.07	Interior Elevations	Finish note corrected detail 6. (RFI018)
A6.50	Interior Details	Keynotes added to edge trim. (RFI011) Details: 6, 7, 8, 9, 10, 11, 13, 15, 16, 17 & 18
A7.56	Ceiling and Interior Details	Fastener finish note added to Detail 1A. (RFI025)
A8.11	Typical Door Details & Floor Transitions	Grout removed from detail J1. (RFI006)
C2.01	Building Location and Site Plan	Heavy and light duty vehicular concrete delineated.
L1.04	Paving Details	Detail 2 revised to provide additional information for light duty vehicular concrete.

VI. ATTACHMENTS

1.	Table of Contents	2.	Bid Package 32-2 Landscape
3.	01 22 00 Unit Prices	4.	01 35 00 Special Requirements
5.	03 32 00 Landscape Cast In Place Concrete	6.	05 73 00 Decorative Metal Railings
7.	07 72 00 Roof Accessories	7.	09 22 16 Non Structural Framing
8.	09 77 00 Panelized Wood Wall System	9.	14 21 00 Electric Traction Elevators
10.	27 41 16 Integrated Audiovisual Equipment	11.	

UNIVERSITY OF CALIFORNIA, MERCED

By: University of California, Merced
University's Representative

Leon H. Waller

Leon Waller
Sr. *Project Director*

End of Addendum No. 1

CONSTRUCTION DOCUMENTS
TABLE OF CONTENTS

Volume ~~1~~ 0

Division 1 Specifications

List of Drawings

SECTION 01 35 00
SPECIAL REQUIREMENTS

PART 1 - GENERAL

1.1 DEFINITION OF PROJECT SITE

A. CM/Contractor's use of the Project site for the Work and storage is restricted to the areas designated on the Drawings.

B. The Project site is located at University of California, Merced Campus, 5200 N. Lake Rd. Merced CA 95344.

1.2 WORK HOURS

A. No Work shall be done outside of standard Monday through Friday 7:00 A.M. to 5:00 P.M. working hours, on holidays or weekends unless prior written approval has been obtained from the University's Representative.

1.3 SITE INGRESS AND EGRESS

A. CM/Contractor shall use the Project Access Road off of Lake Road at Ranchers Road as shown on the Site Logistics Plan.

B. CM/Contractor shall construct and maintain temporary access roads and laydown areas as shown on the Site Logistics Plan. All temporary access roads shall comply with all applicable laws, regulations & permit requirements.

1.4 SITE RESTRICTIONS

A. OUT OF BOUNDS AREAS

1. Little Lake
   a. The CM/Contractor shall not permit any personnel or construction vehicle to approach within 100 feet of Little Lake except with the prior written approval of the University's Representative.
   b. The CM/Contractor shall ensure that no personnel shall use the Lake to fish, swim or for other non-construction activities.
   c. The CM/Contractor shall ensure that no run-off shall enter the Lake except as indicated on the Drawings.
   d. The CM/Contractor shall ensure that no construction garbage, detritus, waste or debris (whether solid or liquid) of any type shall enter the Lake.

2. Merced Irrigation District
   a. The CM/Contractor shall not permit any personnel or construction vehicle to approach within 50 feet of the Fairfield Canal and the penstock between Le Grand and Fairfield Canals except with the prior written approval of the University's Representative.

b. The CM/Contractor shall ensure that no personnel shall use the Fairfield Canal or the penstock between Le Grand and Fairfield Canals to fish, swim or for other non-construction activities.

c. The CM/Contractor shall ensure that no run-off shall enter the Fairfield Canal or the penstock between Le Grand and Fairfield Canals except as indicated in the Contract documents.

d. The CM/Contractor shall ensure that no construction garbage, detritus, waste or debris (whether solid or liquid) of any type shall enter the Fairfield Canal or the penstock between Le Grand and Fairfield Canals.

1.5 ROADS

A. Existing roads and existing or planned construction roads shall be used for construction access within the limits defined herein.

B. CM/Contractor shall take all necessary precaution to insure the safety of University Students, Faculty and Visitors at all times.

C. CM/Contractor must obtain prior written approval from the University's Representative to block streets or parking areas at any time.

D. The CM/Contractor shall clear all roads (including Lake Road), parking areas and sidewalks affected by the CM/Contractor's operations. This will include the immediate removal of dust, dirt, or any other debris or detritus so that roads and sidewalks are maintained in a safe and usable condition.

1.6 PARKING

A. All parking locations and arrangements must be coordinated and approved by University's Transportation and Parking Services (TAPS) prior to the start of work.

B. A parking permit and fee to utilize the University of California, Merced (UCM) parking facilities will be required for all areas. Parking permits can be purchased on a monthly basis at a fee of ~~$30~~ **$31** per month per vehicle. Contact Transportation and Parking Services (TAPS) at (209) 228-4548 or visit the Facilities modular behind Central Plant for information on obtaining permits. A valid permit must be displayed at all times by all vehicles while parking on campus, whether in fenced construction areas or not.

C. The CM/Contractor shall not permit any personnel to park within the construction site or construction yard. Parking will be limited to a maximum of one company insured vehicle on site or within the construction yard.

D. On-street parking is not permitted in areas not designated for parking or construction.

F. Vehicles found to be on university property without a valid permit, will be cited. Fines range from $50.00 for no permit to $445.00 for parking in a handicapped stall without a valid blue tag.

1.7 TRAFFIC CONTROL

A. The CM/Contractor shall adopt all practical means to minimize interference to traffic. Access to other facilities under construction shall be maintained at all times. The CM/Contractor shall provide a schedule of any activity that will impact traffic, or any planned closing of the streets, for approval by the University's Representative and shall give a minimum of 14 working days notice before closing any street or access.

B. CM/Contractor shall furnish at CM/Contractor's expense all barricades, lights, and other devices and means necessary to control traffic and shall maintain these devices at all times to protect the public and/or Work.

C. It is the responsibility of the CM/Contractor performing Work on or adjacent to a highway to install and maintain such devices as are necessary to provide safe passage for the traveling public through the Work, as well as for the safeguard of workers. Before Work begins, traffic control plans for handling traffic through a construction or maintenance Project shall be submitted to and approved by the University's Representative and public agency or authority having jurisdiction over the highway, in accordance with Chapter 5 of the CalTrans Traffic Manual.

D. The CM/Contractor shall comply with the provisions of 01 35 40 Environmental Mitigation.

E. The CM/Contractor shall ensure that all of the General Contractor’s activities that affect traffic control, road use, materials delivery, equipment delivery, rights of way and preservation of 3rd party access rights are coordinated with those of all Separate Contractors.

1.8 SURROUNDING SITE CONDITION SURVEY

A. Prior to commencing the Work, CM/Contractor, and University's Representative shall tour the Project site together to examine and record damage to existing adjacent buildings, campus streets and city streets, bicycle paths, sidewalks, and all other improvements. This record shall serve as a basis for determination of subsequent damage due to CM/Contractor's operations and shall be signed by all parties making the tour. Any cracks, sags, or damage to the adjacent buildings and improvements not noted in the original survey, but subsequently discovered, shall be reported to the University's Representative.

1.9 INTERRUPTION OF BUILDING SERVICES

A. Planned utility service shutdowns shall be accomplished during periods of minimum usage. In some cases this will require Work activities before 8:00 A.M. and after 5:00 P.M. and weekend Work, at no additional cost to the University. At least 7 working days advance notice shall be given to the University's Representative before interruptions to utility service (refer to Exhibit 18 Utility Service Interruption/Shut Down Request) and other interferences with use of existing buildings, surrounding hardscape and roads.

B. Shutdowns critical to the completion of the project shall be listed as Milestones on the project schedule. The CM/Contractor shall program Work so that service will be restored

in the minimum possible time, and shall cooperate with the University in reducing shutdowns of utility systems.

C. The University reserves the right to deny shutdown requests based on scheduled work load, research projects, and usage of surrounding buildings or other activities planned on campus.

1.10 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. The Drawings show, if applicable, existing above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, hot water, and other utilities that are known to the University.

B. CM/Contractor shall locate all known existing installations before proceeding with construction operations that may cause damage to such installations. Existing installations shall be kept in service where possible and damage to them shall be repaired at no additional cost to the University.

C. Existing underground structures and utilities shall be kept in service unless prior approval to interrupt or shutdown service is obtained from University's Representative. If damaged, they shall be repaired by the CM/Contractor with no adjustment of Contract Sum or Contract Time.

D. The CM/Contractor shall coordinate all Work with the operations of separate Contractors as needed. This shall include, but not be limited to, the responsibility of the CM/Contractor to coordinate with University’s separate Site Infrastructure Phase 4 Contractor installing underground utilities, Ansel Adams and Ranchers Road street improvements, sidewalks and streetlights. Such coordination should take place prior to any excavation or trenching operations by the CM/Contractor.

E. If any other structures or utilities are encountered, the CM/Contractor shall request University's Representative to provide direction on how to proceed with the Work.

F. If any structure or utility is damaged by the CM/Contractor, the CM/Contractor shall take appropriate action to ensure the safety of persons and property.

G. No Work is to be performed on energized electrical equipment unless scheduled with the University’s Representative. The University reserves the right to specify specific conditions for all Work involving energized high-voltage electrical equipment.

H. General Contractor shall uncover, prior to any earthwork for new construction, all existing piping where crossings, interferences or connections are shown on the Drawings, from 1 foot below proposed construction limit to the existing ground surface. Any variation in the actual elevations and the indicated elevations shall be brought to the University's Representative's attention. If the CM/Contractor does not expose all existing utilities, General Contractor shall not be entitled to additional compensation for Work necessary to avoid interferences.

I. If interferences occur at locations other than the general locations shown on the Drawings, and such utilities are damaged before their locations have been established, or create an interference, the CM/Contractor shall notify the University’s Representative

and a method for repairing the damage or correcting the interference shall be supplied by the University's Representative. Payment for additional Work due to interferences not shown on the Drawings shall be in accordance with the General Conditions.

J. Care shall be exercised to prevent damage to adjacent facilities including walks, streets, curbs, and gutters; where equipment will pass over these obstructions suitable planking shall be placed. Damaged facilities, due to the CM/Contractor operations, shall be removed and replaced at the CM/Contractor's expense.

1.11 PROTECTION OF PERSONNEL

A. CM/Contractor shall take proper precautions to ensure the safety of all persons at all times during the construction period.

1.12 PROJECT SITE SECURITY

A. The CM/Contractor shall install and maintain 8' high chain link site security fencing and gates as shown on the Site Logistics Plan. Fencing at the building perimeter shall include black shade screen to shield construction activities from view. CM/Contractor shall be responsible for keeping areas involved in this Work locked and secure at all times when Work is not in progress.

B. All persons working on the Project site shall receive a site safety briefing and Natural Resource Awareness Training from the University prior to being allowed to start work.

1.13 CONSTRUCTION STAGING & MULTIPLE CONSTRUCTION CONTRACTS

A. The following describes the scheduling of the Work and the coordination required for the Work done by Separate Contractors:

1. The University reserves the right to let other construction contracts.

2. The following projects may be in progress at times during this project:

a. Site Infrastructure Phase 4
b. Science & Engineering Building 2
c. CPTU

3. Disagreements between the CM/Contractor and other Separate Contractors about concurrent use of Work areas or access to the Project site which are not resolved by the participants shall be referred to the University's Representative and the CM/Contractor agrees to abide by the University's Representative's determination as to concurrent use or priority of access and to perform its Work in compliance with the University's Representative's resolution at no additional cost to the University.

B. All material and equipment for construction operations shall be brought in and the Work so conducted as to avoid any interference with existing University facilities or their normal operations, and with concurrent construction Work by other Separate Contractors.

1.14 FINAL EXAM SCHEDULE

A. CM/Contractor shall be advised that academic finals week takes place on the UC Merced campus during May, August and December of each year. During these periods of time, students are involved in intensive testing relative to their academic course work. During these periods of time, noise level generated as a result of construction activity must be kept to a minimum. CM/Contractors will be expected to Work with the University's requirements to achieve a level of noise that is acceptable to the University. Actual schedule for finals weeks during each year will be coordinated with CM/Contractor following the issuance of the Notice to Proceed.

1.15 WORK SITE DECORUM

A. Extreme care to limit noise and odors shall be taken at all times. Loud or unnecessary conversation shall be avoided. The playing of radios tapes, or compact discs shall be strictly prohibited.

B. CM/Contractor shall control the conduct of its employees and those of its subcontractors and suppliers so as to prevent interaction initiated by said employees with University of California Merced students, staff, or other individuals (except those associated with the Project), on or adjacent to the Project site. Without limitation, unwanted interaction by these employees includes whistling at, motioning toward, or initiating conversations with passersby. In the event that any employee initiates such unwanted interaction, or utilizes profanity, CM/Contractor shall, either upon request of University's Representative or on its own initiative, replace said employee with another of equivalent technical skill, at no additional cost to the University.

C. **Smoking is prohibited on University property, including but not limited to; chew tobacco and e-cigarettes.** ~~**in and within 20 feet of any entrance, window, or air intake of all University buildings and in enclosed areas. Smoking will not be allowed in the construction area. Smoking will be allowed in a designated area within the construction storage yard only.**~~ **Addendum 1**

D. Firearms are prohibited on University property.

E. Alcoholic beverages are prohibited on University property unless the prior written approval of the University’s Representative is obtained.

F. Pets are prohibited on the Project site.

1.16 PUBLICITY

A. CM/Contractor shall not release any information, story, photograph, plan or drawing relating to the Project to anyone, including press or other public communications medium, except as submitted and approved for release by the University’s Representative.

1.17 PROJECT SIGN

A. No signs or advertisements will be permitted on the Project site, except with express permission of University's Representative.

1.18 JOB OFFICE

A. Space on the Project Site is limited. Trailer space must be requested and approved by the University's Representative. Storage and office trailers are to be located in the temporary laydown area as shown on the Site Logistics Plan. Space will be allocated by the University's Representative. CM/Contractor shall provide and maintain all temporary facilities as required for completion of the Project. Verify location of temporary laydown area on drawings.

1.19 SALVAGE

A. All material and equipment removed as part of this Project is the property of the CM/Contractor and shall be removed from the Campus and legally disposed of, unless otherwise stated in the CM/Contractor's "Scope of Work".

1.20 CLEANUP

A. During the progress of the Work, the CM/Contractor shall keep the Project site in a neat and clean condition that is free of debris to the satisfaction of the University's Representative. All materials and debris accumulated in conjunction with completing this Work shall be disposed of in the jobsite trash dumpsters provided by the CM/Contractor and disposed of off campus. CM/Contractor shall not use University refuse containers.

1.21 UNIVERSITY FURNISHED CONSTRUCTION DOCUMENTS

A. University will furnish to the CM/Contractor 1 set of Drawings and Specifications and 1 CD of the Drawings and Specifications upon an award of the Contract at no cost. If more than 1 set is required or if the CM/Contractor wants the Drawings in another size other than the size issued with the Bidding Documents, the CM/Contractor will pay the actual cost of reproduction for printing.

1.22 JOB CONDITIONS

A. Protection: Where roof edge does not terminate in a parapet wall and/or where Work is in progress overhead and materials or objects could potentially fall, the CM/Contractor is required to construct temporary covered pedestrian walkways over each building entrance. Walkway covers shall extend out 12 feet in length for the first floor and an additional 4 feet for each additional floor of the building. Walkway covers shall extend from face of building. CM/Contractor shall be required to place and maintain yellow safety construction flagging or ropes with signage to prevent pedestrians from coming within 25 feet of Work in progress overhead and to route pedestrians in and out of building entrances.

B. Safety Precautions: Perform Work in such a manner as to prevent damage to existing facilities to remain or to be salvaged. Hazardous Work shall not be left standing or hanging, but shall be knocked or pulled down to avoid damage or injury to employees or the public.

C. Crane Operation, Staging and Storage

1. Operator Training and Crane Certification: Prior to starting crane operations, General Contractor shall provide copies of operator's training and crane certification to the University's Representative.

2. Crane Staging Area: CM/Contractor shall be required to coordinate with the University's Representative a minimum of 5 working days in advance of loading and removal of materials from the roof. CM/Contractor is responsible for providing necessary staging area for crane.

3. Storage: CM/Contractor shall not be allowed on-site crane storage unless with the prior written approval of the University's Representative.

1.23 NOT USED

1.24 PROJECT SITE SUPERINTENDENT

A. CM/Contractor shall employ a competent Project Site Superintendent/Foreman satisfactory to the University's Representative. The Project Site Superintendent/Foreman shall be in attendance at the Project site at all times during the performance of the Work. Project Site Superintendent/Foreman shall represent the CM/Contractor and communications given to and received from the Project Site Supervisor shall be binding on CM/Contractor.

B. The CM/Contractor shall submit to the University's Representative the qualifications of the Project Site Superintendent/Foreman prior to commencement of the Work. The University's Representative shall approve the Project Site Superintendent/Foreman based on his/her experience with projects similar to type, scope, size, and complexity.

C. The Project Site Superintendent/Foreman approved for the Project by the University's Representative, must be able to proficiently read, write and verbally communicate in English. The Project Site Superintendent/Foreman may not perform the Work of any trade, pick-up materials, or perform any Work not directly related to the supervision and coordination of the Work at the Project site while Work is in progress.

D. Failure to maintain a Project Site Superintendent/Foreman on the Project site at all times Work is in progress shall be considered a material breach of this Contract, entitling University to terminate the Contract or alternatively, issue a stop Work order until the Project Site Superintendent/Foreman is on the Project site. If, by virtue of issuance of said stop Work order, General Contractor fails to complete the Contract on time, General Contractor will be assessed Liquidated Damages in accordance with the Agreement.

E. If the Project Site Superintendent/Foreman fails to perform to the satisfaction of the University's Representative, the University's Representative may, upon 15 days written notice, require the General Contractor to remove the Project Site Superintendent/Foreman from the Project and replace the Project Site Superintendent/Foreman with a replacement acceptable to the University's Representative.

F. If the CM/Contractor elects a replacement of the Project Site Superintendent/Foreman, such replacement shall be discussed with the University's Representative prior to actual replacement. The same criteria employed by the University's Representative to approve the initial Project Site Superintendent/Foreman shall also apply to the University's Representative's approval of any subsequent Project Site Superintendent/Foreman.

1.25 OTHER CM/CONTRACTOR SITE PERSONNEL

A. In addition to the Project Site Superintendent/Foreman, the CM/Contractor shall provide site personnel of quality and quantity sufficient to carry out all of the on-site CM/Contractor responsibilities described in the Contract Documents. See Instructions to Bidders for other site personnel requirements that may also be required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 35 00

SECTION 03 32 00
LANDSCAPE CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes site concrete, including but not limited to pavements, stairs, walls, footings and subslabs, complete, as shown and as specified.

B. Concrete Pavement Finishes for Slip resistance along path of travel shall conform to CBC 2010 and as follows:
   1. All concrete pavement finishes of slope under 6% shall be slip-resistant.
   2. All concrete pavement finishes of slopes over 6% shall be slip-resistant.
   3. Basis of slip resistant finish shall be as approved by the University of the approved mock up.

C. Products Installed But Not Furnished Under This Section:
   1. Division 2, Section “Irrigation System”
   2. Division 5, Section “Site Metal”, Handrails, Guardrails

1.2 REFERENCES

A. Standard Specifications - Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation, CALTRANS, latest edition.

B. ASTM - American Society for Testing and Materials

C. ACI - American Concrete Institute, Manual of Concrete Practice.

D. UBC - Uniform Building Code

E. CBC_ California building Code-2010

1.3 DEFINITIONS

A. Percent Compaction: ASTM D1557, percentage of the maximum in-place dry density of the same material as determined by Soils Engineer.

1.4 SUBMITTALS

A. Product Data: Manufacturers' current catalog cuts and specifications for the following:
   1. Expansion joint filler, sealant, backer rod and bond breaker.
   2. Integral color.
   3. Concrete Surface Retarder

4. Dampproofing material.
5. Air-entrainment.
6. Curing Compound.
7. Pre-Cast Detectable Warning Surface Tile
8. Sanded grout

B. Samples:
1. Joint Sealant: Color chart.
2. Grout color for ADA Tile Joints
3. 12” x12” Sample Detectable Warning Surface Tile

1.5 QUALITY ASSURANCE

A. Field-Constructed Mock-up Samples:

1. General: Prior to the installation of Work under this Section, Contractor shall erect Field-Constructed Mock-up Samples for each type and pattern of Decorative Concrete Paving required for review and approval by the University’s Representative, to verify selections made under the referee samples obtained by the University’s Representative.

2. Provide up to four (4) mock-ups for each type of concrete pavement or walls to attain the University’s approval.
3. Build Field-Constructed Mock-up Samples to comply with the following requirements, using materials and same base construction including special features for formwork, jointing, surface finishes, textures, color(s), and contiguous Work as indicated for the final unit of Work.

   a. Locate Field-Constructed Mock-up Samples on the Project Site in location(s) as directed by the University.
   b. Notify the University’s Representative, in writing, at least one (1) week in advance of the dates and times when Field-Constructed Mock-up Samples will be erected.
   c. Demonstrate quality and range of aesthetic effects and workmanship in the Field-Constructed Mock-up Samples that will be produced in final unit of Work.
   d. Obtain the University Representative’s acceptance of Field-Constructed Mock-up Samples, in writing, before start of installation of Work.
   e. Retain and maintain Field-Constructed Mock-up Samples during construction in an undisturbed condition as a standard for judging the completed unit of Work.
   f. When directed by the University, Contractor shall demolish and remove Field-Constructed Mock-up Samples from Project Site.

4. Size:
   a. Pavements: Each Field-Constructed Mock-up Sample shall be prepared for each paving color and finish within this Section shall measure a minimum of three-feet (3’-0”) wide x six-feet (6’-0”) long to compare the aesthetics of material colors, textures, joints and finishes.

b. Concrete seat or Retaining Wall: Each Field-Constructed Mock-up Sample shall be prepared with color and finish within this Section shall measure a minimum of four (4) feet long x 18 inches high to compare the aesthetics of material colors, textures, joints and finishes.
c. ADA Detectable Warning Tile: 3' x3' including grout joints.

5. When the University's Representative determines that a Field-Constructed Mock-up Sample does not meet acceptable requirements, retain it for reference and cast another Field-Constructed Mock-up Sample (as required) until the Sample is accepted.
6. Accepted Field-Constructed Mock-up Samples will be the standard by which Work under this Section will be evaluated for technical and aesthetic merit. Accepted Field-Constructed Mock-up Samples are the prerequisite to the commencement of Work.

B. Certificates:
1. Reinforcing Steel: Certificate of compliance
2. Concrete Mix Design: Ticket for each batch delivered showing the following:
a. Mix identification.
b. Weight of cement, aggregate, water, and admixtures, aggregate sizes/proportion, and air entrainment.

C. LEED Submittals:
1. Product Data for Credit CR 4.1, certifying percent (by weight) of total recycled content (TRC), post consumer (industrial recycled content).
2. MR Credit 5 for Regional Materials
3. Product Data for reinforcing steel
4. Product Data for credit CR 4.1 certify percent of Portland cement replaced by Flay Ash or Slag.
~~5. Product Data for credit SS 7.1, certify Paving Materials have a Solar Reflectance Index (SRI) of at least 29.~~ Adden. No. 1 _Feb 21, 2014

D. Provide up to four mock-ups for each type of concrete pavement to attain approval.

E. Lines and Levels: To be established by a licensed Surveyor or registered Civil Engineer.

F. Mix Standards: Conform to the ACI Manual and the Portland Cement Association's "Design and Control of Concrete Mixes".

G. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.

1. Manufacturer shall be certified according to the National Ready Mix Concrete Association's Plant Certification Program.

H. Design of Concrete Mix: Employ approved commercial testing laboratory to design concrete mixes as follows:
1. Minimum Compressive Strength at 28 Days:
a. Slabs On-grade: 2500 psi

b. Walls, Foundations, Subslabs and Miscellaneous Footings: 3000 psi

2. Concrete Slump:
   a. Minimum: Two [2] inches
   b. Maximum: Four [4] inches
3. Maximum Water-Cement Ratio:
   a. Slabs On-grade: 8.75 gallons per sack of cement
   b. Foundations: 6.75 gallons per sack of cement

I. Fly Ash:
1. Source Control: The following sources of ash are not to be used:
   a. Ash from a peaking plant instead of a base loaded plant.
   b. Ash from plants burning different coals or blends of coal.
   c. Ash from plants burning other fuels (wood chips, tires, trash) blended with coal.
   d. Ash from plants using oil as a supplementary fuel.
   e. Ash from plants using precipitator additives, such as ammonia.
   f. Ash from start-up or shut-down phases of operation.
   g. Ash from plants not operating at a "steady state."
   h. Ash that is handled and stored using a wet system.
      1) Fly ash used in concrete should be as consistent and uniform as possible. Fly ash to be used in concrete should be monitored by a quality assurance/quality control (QA/QC) program that complies with the recommended procedures in ASTM C311.(6) These procedures establish standards for methods of sampling and frequency of performing tests for fineness, loss on ignition (LOI), specific gravity, and pozzolanic activity such that the consistency of a fly ash source can be certified.

J. Applicable Standards of Work:

1. Specifications and recommended practices of American Concrete Institute (ACI), American Society for Testing and Materials (ASTM), The Uniform Building Code, with their individual designations, are to be considered part of this Specification.
2. *Design and Control of Concrete Mixture,* Thirteenth Edition, Portland Cement Association.
3. *Manual of Standard Practice*, latest edition, Concrete Reinforcing Steel Institute.
4. *Lithocrete®* Personnel Training Manual, Latest Revision, February 1998.

K. Colored Concrete: Achieve color by integrally mixing coloring agent with concrete. Match color of existing concrete.

L. Glare-Reduced Concrete: Add necessary proportion of accepted colorant at the mixer. Use identical proportions in batches for adjacent pours.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivered Mixes: Coordinate delivery so that mixes may be immediately poured upon arrival at site.

B. Components and Accessories:
   1. Fittings and Reinforcements: Protect from rust, soil and oil contamination at all times. Store on pallets above ground.
   2. Templates: Protect from damage. Test accuracy prior to each use.

1.7 PROJECT/SITE CONDITIONS

A. Existing Conditions: For protection of existing plants to remain, see Division 2, Section "Tree Protection and Trimming".

B. Traffic Control: Maintain access for vehicular, bicycle, and pedestrian traffic as required for other construction activities. Access to the surrounding buildings shall also be unobstructed and maintained at all times to allow for entry and exit of emergency vehicles.

C. Establish and maintain required levels and grade elevations. Review installation procedures and coordinate Work herein this Section with other Work affected.

D. Do not place concrete during rain or adverse weather conditions without means to prevent damage. Conform to requirements specified hereinafter whenever concrete placement is required during cold or hot weather.

E. Keep Work area clean, and in a safe and workmanlike condition so that rubbish, waste, and debris does not interfere with Work of other trades.

F. Water and Dust Control: Maintain control of concrete dust and water during duration of Contract. Do not permit adjacent planting areas to be contaminated. Clean up debris resulting from this work at the end of each day's work.

1.8 SEQUENCING AND SCHEDULING

A. Coordination: Coordinate all items of other trades to be furnished and set in place. Coordinate proper installation of all accessories embedded in the concrete and for the provision of holes, openings, etc., necessary to the execution of the work of the trades in ample time that progress of the work is not delayed.

B. Field Measurements: Contractor shall take field measurements as required. Report major discrepancies between the Contract Drawings and field dimensions to the University's Representative prior to commencing Work.

C. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.

D. Excavation: When conditions detrimental to adequate installation operations are encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease operations and notify University's Representative for further direction.

E. Environmental Conditions: Perform installation operations only when weather and soil conditions are suitable in accordance with locally-accepted practices.

F. Construction Site Observations: Periodic site observations shall be made by the University's Representative during the installation of Work under this Section for compliance with requirements for type, size, and quality. University's Representative retains right to observe Work for defects and to reject unsatisfactory or defective material at any time during progress of Work. Contractor shall remove rejected materials immediately from Project site. The Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the University's Representative are required.

G. Cutting/Patching: Perform as necessary to comply with above injunction.

1.9 SUBSTITUTIONS

A. Consideration: Materials to be considered equal to the Materials indicated herein this Section shall be reviewed by the University's Representative. Materials with equal performance characteristics produced by other Manufacturer's and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the University's Representative. The burden of proof on product equality is on the Contractor.

B. Specific reference to Manufacturer's names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the University's Representative for Work under this Section.

C. Materials substituted and installed by the Contractor, without prior written approval by the University's Representative may be rejected. Contractor shall not be entitled compensation by the University where the Contractor has installed rejected substitutions without receiving prior written approval.

D. Contract Price: Substituted Materials under this Section shall not increase the Contract price.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portland Cement Aggregates and Reinforcements: Except as modified herein, conform to all applicable requirements of Section 25 "Aggregate Subbases", Section 26 "Aggregate Bases", Section 52 "Reinforcement" and Section 90, "Cement Concrete" of the Standard Specification- Caltrans.

2.2 MATERIALS

A. Cement: ASTM C150, Type I or II Portland Cement. Use only one brand and type for entire job.

B. Fly Ash: Flyash: Pozzolanic admixtures, conforming to ASTM C618, Class C, with weight loss of ignition limited to not to exceed 3 percent shall be used in mix designs to replace Portland Cement at a maximum rate of 15% ~~minimum rate of 20% up to 35%~~ by weight, unless noted otherwise on drawings. Adden. No. 1 _Feb 21, 2014

C. Reference: ACI 211.4R-93.

D. Aggregate Base for On-grade Slabs:
1. Description: Class II aggregate base shall be free from vegetable matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base.
2. Grading Requirements:

Percent Passing	Sieve Size
100	1 in.
90-100	3/4 in.
0- 10	#4
0- 3	#100

3. Quality Requirements:

a.	Minimum "R" value	40
b.	Max. Expansion Pressure; Calif. Test Method No. 301	100 psf
c.	Maximum Plasticity Index	12
d.	Sand Equivalent	20 min

E. Coarse Aggregate:
1. Description: ASTM C33, hard, durable, uncoated, washed, graded, cleaned and screened crushed rock or gravel aggregate for regular weight concrete. Do not use crusher-run stone or bank-run gravel.
2. Grading: Do not use aggregate which has a maximum size exceeding 1/5 of the narrowest dimension between sides of forms of the member for which the concrete is to be used, nor larger than 3/4 of the minimum clear spacing between reinforcing bars. Do not use coarse aggregate which exceeds 3/4 in. for paving.

F. Fine Aggregate:
1. Description: ASTM C33, clean, hard and durable sand. Do not use sand coated with injurious amounts of silt, loam, clay or other deleterious matter.
2. Grading Requirements:

Percent Passing	Sieve Size
45-70	# 16
15-30	# 50
3- 8	#100

G. Water: Clean, potable concrete mixing water free from injurious amounts of salts, oils, acids, alkalis, organic materials or other deleterious matter. As available from University. Transport as required.

H. Air Entrainment: ASTM C260.

2.3 MIXTURE COMPONENTS

A. Coloring Agent:
1. Type: Commercially pure mineral pigments, concentrated pigments specially processed for mixing into concrete and complying with ASTM C979
2. Percentage: Maximum 10% of the cement content by weight.
3. Product: Iron Oxide Admixtures as produced by Davis Colors or CHROMIX Admixtures as produced by L.M. Scofield Co or approved equal.
4. Basis of Color: Davis # 860 Cobblestone or Davis 860 Silver Smoke.

2.4 CURING MATERIALS FOR WET CURE

A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.

B. Moisture-Retaining Cover: One (1) of the following, complying with ASTM C 171.
1. Polyethylene film.

2.5 ACCESSORIES

A. Reinforcements:
1. Reinforcing steel shall contain 70% minimum total recycled content.
2. Reinforcing Bars: ASTM A615 Grade 40, or 60 deformed billet-steel bars, clean and free from rust, scale, or coating that will reduce bond.
3. Smooth Dowels for Expansion Joints: ASTM A615, Grade 40 smooth, billet-steel bars, shop painted with iron-oxide zinc-chromate primer.
4. Tie Wires: 18 ga. min. black annealed.
5. Snap Ties: Snap-off metal of fixed length capable of leaving no metal within 1 1/2 in. of surface nor causing fractures, spall or other defects larger than one [1] in. diameter.

B. Expansion Joint Materials:
1. Premolded Joint Filler: ASTM D1751, non-extruding and bituminous type resilient filler, compatible with sealant, and having a "guide strip" removable depth gauge.
2. Joint Sealant: ASTM C290, non-snag sealant "Dynatred" by Pecora Corporation, [214] 278-8158 or "Sonolastic Sealant Two-Part" by Sonneborn, [415] 889-9899 Bay Area or [612] 835-3434. Sealant color shall be selected by the University.
3. Bond Breaker: Pressure-sensitive tape as recommended by sealant manufacturer to suit application.

4. Premolded Joint Filler: "Sonoflex-F", a closed cell plastic joint filler by Sonneborn or approved equal.

C. Forms:
1. All Surfaces: Of sufficient strength to hold concrete properly in place and prevent leakage of water from forms.
2. Exposed Surfaces: A-Matte, Two-step MDO plywood made for forming by Simpson Timber Co., [206] 292-5000 or accepted equal. No wood-textured finish will be permitted on exposed concrete unless specified as such, or approved equal.
3. Use forms that are straight and free of distortions and defects.
4. Use flexible spring forms or laminated boards to form radius bends as required.

D. Form Release Agent: Colorless non-staining, free from oils. Chemical agent shall not impair bonding of paint or other proposed coatings.

E. Form-Facing Materials:
1. All Surfaces: Of sufficient strength to hold concrete properly in place and prevent leakage of water from forms.
2. Exposed Surfaces: A-Matte, Two-step MDO plywood made for forming by Simpson Timber Co., [206] 292-5000 or approved equal. No wood-textured finish will be permitted on exposed concrete unless specified as such.

F. Wood Headers:
1. Wood: Construction Heart grade rough Redwood header and stake or pressure-treated rough Douglas Fir stake.
2. Nails: Hot-dipped galvanized.

G. Dampproofing: ASTM C836-81, Fluid-V single component, bitumen-modified, moisture-curing polyurethane "Tremproof 60" by Tremco, [800] 321-7906, or approved equal.

H. Waterproofing: "Vulkem 450/320 Black. by Mameco International, Inc., [216] 752-4400 or approved equal.

I. Curing Compound: ASTM C309, Type I-D, Class A.

J. Chamfer Strips: Rigid PVC, [1/2 in. x 1/2 in.] [3/4 in. x 3/4 in.] [1 in. x 1 in.] in maximum possible lengths, by Burke Co., [415] 658-7942 or approved equal.

K. Plastic Moisture Cure Sheet: 4 mil polyethylene sheet

L. Etch-Retarder:
1. Ready-to-use, water-based solution, non-staining, non-corrosive, non-flammable, non-toxic, specifically formulated to retard the set of fresh concrete surfaces, temporarily delaying final hardening of concrete to expose the surface aggregates. Material shall be VOC-compliant for the State of California Regulation 8, Organic Compounds, Rule 3, Architectural Coatings.

2. Product: Topcast by Grace, or approved equal.
a. Etch Exposure: Light #05 or #15

b. Etch Exposure: Medium #25 or #50

2.6 SPECIAL PAVING MIX

A. Water-Reducing Agent:
1. Design Mix: Three and a half [3-1/2] ounces/100 lbs. cement.
2. Manufacturer: W.R. Grace and Co., [800] 527-1893 or approved equal.

B. Concrete Paving:
1. Design Mix: Six [6]-sack mix [564 lbs cement/cubic yard].
2. Finish: Light-washed aggregate.

2.7 PRE-CAST DETECTABLE WARNING SURFACE TILE

A. Materials:
1. Portland Cement ASTM c-50
2. Aggregates: ASTM C-33
3. Integral Coloring: Inorganic and alkaline resistant.
a. Color: Charcoal

B. Manufactured Concrete Units 12 x 12” x 2”, Mortar Set.
1. Compressive Strength: 7,000 PSI Per ASTM C-140
2. Water Absorption : Not Greater than 5% per ASTM C-140
3. Freeze/Thaw: No Greater than 1% loss dry weight, ASTM C-67
4. Center Load: Minimum of 1,750 lb applied at center of paver, supported at 4 corners by pedestal
5. Flexural Strength: No less than 600 psi per ASTM C-293

C. Manufacturer: Tile Tech Pavers, Wausau or Approved Equal.

D. Mortar Materials
1. Portland Cement: ASTM C 150, Type I or Type II, except Type III may be used for cold-weather construction.
2. Hydrated Lime: ASTM C 207.
3. Portland Cement-Lime Mix: ASTM C 150, Type I or Type III, and ASTM C 207.
4. Aggregate: ASTM C 144.
5. Latex Additive: Acrylic-resin water emulsion recommended by additive manufacturer for use with field-mixed Portland cement mortar bed

E. Multi-Purpose (Film-forming) Sealer:

1. General: Sealer shall be a clear, non-yellowing, UV-stabilized, low VOC sealer specifically formulated to protect and beautify cast *Lithocrete*™ exterior concrete finishes. Applied by spray or brush in light, even coats, Sealer shall protect concrete surfaces against organic stains, including oil, grease, and beverages.
2. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
a. Lithocrete™ Sealer, Lithocrete

b. Stain Block Elite penetrating Sealer, GST International, Inc.
Or approved equal

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify that subgrade preparation for concrete paving has been completed [including base course] prior to commencement of work.

B. Surface Drainage:
1. Report in writing conflicts discovered on the site or prior work done by others, which would prevent positive drainage.
2. Do not permit finished paving surfaces to vary more than 1/4 in. measured with a 10 ft. metal straightedge, except at grade changes. No "birdbaths" or other surface irregularities will be permitted. Properly correct irregularities.

3.2 PREPARATION

A. Templates: Use templates for all anchor plates, bolts, inserts and other items embedded in concrete. Accurately secure so that they will not be displaced during placing of concrete.

B. Piping and Conduit: Do not embed piping, other than electrical conduit, in structural concrete. Locate conduit to maintain strength of structures at maximum. Verify size, length and location of electrical conduit.

C. Aggregate Base Course: Compact base course to thicknesses shown on Drawings to 95% compaction.

3.3 INSTALLATION

A. Formwork:
1. Construct forms accurately to dimensions, plumb and true to line and grade. Brace and tie as required to maintain position and shape during placing of reinforcing and concrete.
2. Wavy surfaces and bulged walls or slab surfaces in finished work will be rejected.
3. Extend wood forms for all exposed concrete at least 6 in. below finish grade.
4. Do not disturb earth at bottoms of excavations for footings or foundations. Maintain these areas free of water, properly cleaned and leveled off.
5. Assemble forms so that all construction joints appear only as shown on Drawings and as accepted by Landscape Architect. Incorporate all formwork joints into required reveal and expansion joints. No exposed form joints will be permitted.
6. Install form facings or specialties as required for seta and retaining walls.
7. Use PVC chamfer strips to form chamfers at all exposed edges as shown on Drawings.

8. Thoroughly clean all formwork prior to pouring concrete. Where no form coating is used, wet down all wood.

B. Reinforcements:
   1. Placement: Clean, bend and place reinforcements per ACI Manual of Concrete Practice. Do not extend bars through expansion joints.
   2. Supports: Accurately and securely fasten or support reinforcements to prevent displacement before or during pouring. Hang footing bars from forms. Support wire mesh with suitable metal cradles.
   3. Reinforcement Splices: Reinforcing bars - 24 bar diameter minimum, except as otherwise noted.

C. Joints:
   1. Locations: Provide control joints at locations and intervals shown on the Drawings, and as described below. Provide expansion joints as shown and where concrete paving abuts buildings, curbs, or other structures.
   2. Placement: Place expansion joint materials in proper alignment with top edge of concrete. Securely hold in place to prevent movement.
   3. Slip Sheet: Where expansion joints in concrete paving cannot be aligned with joints in structural slab, provide a continuous slip sheet between the offset joints.

D. Placing of Concrete:
   1. Notify University 48 hours prior to pour to verify formwork location and layout.
   2. Place concrete in conformance to the ACI Manual of Concrete Practice.
   3. Walls:
      a. Install in lifts, maximum 6 inches per lift.
      b. Perform a two step Consolidation to minimize bug holes and honey comb pockets.
      c. Use big Vibrator to consolidate the concrete using a slow draw method.
      d. Follow up using small vibrator, inserting vibrator at 3’ oc to remove trapped air at surface of formwork.

E. Removal of Forms:
   1. For Walls: Remove no sooner than at seven [7] days after each pour.
   2. For Pavements: 4 Days after each pour.

F. Cleaning:
   1. Removal: Remove all projecting fins, bolts, wire, nails, etc., not necessary for the work, or cut them back 1 in. from the surface and patch in an inconspicuous manner.
   2. Snap Ties: Immediately after removal of forms, cut off snap ties extending from the face of concrete to at least 1 in. deep in the concrete. Fill or plug as detailed in Drawings.
   3. Voids: Fill holes with a 1:3 cement/sand mortar with the same color as the adjoining concrete. Mix and place the mortar as dry as possible and finish flush with the adjacent surface.

G. Patching of Walls:

1. Corrective Patching: Correct all defects in concrete work. Chip all voids to a depth of at least 1 in. with the edges perpendicular to the surface and parallel to form markings. Fill all voids, surface irregularities, or honeycombing by patching or rubbing. Insure that all concrete surfaces so repaired duplicate the appearance of the unpatched work.
2. Chips, bug hole or honeycomb conditions greater than ½" in diameter shall be patched
3. Finishing: Work finish surface texture as specified below.

H. Defective Work: Remove in its entirety and replace all defective concrete work where after corrective patching, rubbing, etc., fails to duplicate the appearance of unpatched work and/or conform to the standards set forth in these Specifications .

I. Sandblast Walls on all exposed surfaces to match approved mock up within 14 days of placement and after sacking/patching of walls.
1. Allow a minimum of 2 two days after patching before sandblasting.

3.4 FINISHES

A. Floating: Float surface once it has sufficiently stiffened. Surface shall be uniform in gradient without birdbaths or high points when with a 10 ft. straightedge in all directions. Cut down high spots and fill low points. Immediately refloat to a uniform non-directional sandy texture.
1. Use float finish for all hidden slabs or footings.

B. Etched Pavement Finish:
1. Grades: Screed and wood-float paving to a smooth even grade using overhead screeds where necessary to set flow lines and grade breaks.
2. Etch Retarder: Evenly apply etch retarded type as required for desired exposure of aggregates in accordance with the manufacturer's recommendations and to match approved mock up(s).
3. Appearance and Finish: Provide uniform color, texture, and degree of exposure of aggregates to match approved mock-up(s)

C. Sand-Blast Finish for Seat and Retaining Walls:
1. Schedule: Perform sand-blasting no sooner than 10 days after pouring each section of concrete and 2 days after sacking or patching walls.
2. Continuity: Perform in as continuous an operation as possible, utilizing the same work crew to maintain continuity of finish on all exposed surfaces.
3. Depth of Cut: Use an abrasive grit of the proper type and gradation to expose the aggregate and surrounding matrix surfaces to be approximately 1/16 in. depth.
   a. Final appearance of wall surfaces to match approved mock-up.
4. Backup Boards: Blast corners and edge of patterns carefully, using backup boards in order to maintain a uniform corner or edge line.
5. Uniformity: Use same nozzle, nozzle pressure and blasting technique as used for sample panel.
6. Control: Maintain control of abrasive grit and concrete dust in each area of blasting.

D. Broom Finish:
   1. Obtain by drawing a stiff bristled broom across a floated finish.
      a. Provide broom finish on miscellaneous exposed footings or slabs.

E. Clean Up: Remove all expended abrasive grit, concrete dust and debris at the end of each day of blasting operations

3.5 JOINTS

A. Sealing of Expansion Joints: After the curing period, strip out all depth gauge strips and carefully clean expansion joints. Fill with joint compound as shown on Drawings. Avoid spilling compound on paved surfaces or overflowing from joint.

B. Expansion Joints: Protect expansion joints from damage.

C. Control Joints:
   1. Tooled Score Joints:
      a. Form in fresh concrete using a jointer to cut the groove so that a smooth, uniform impression is obtained.
      b. Perform in a continuous operation to avoid misalignment of joints. Use snaplines and forms as required to achieve consistent lines. Reform all crooked or misaligned joints at no cost to the University.
   2. Sawcut Score Joints: 3/16 in. wide [max.] sawcut joints when concrete has cured at least seven [7] days, using accepted mechanical concrete saw. Employ only experienced personnel.
      a. Cutting: Perform all cuts cleanly and smoothly, to a constant and equal depth. Perform in as continuous an operation as possible, to avoid misalignment of joints. Use chalklines, forms or templates as required to achieve consistent lines.
      b. Edges: Avoid damage to horizontal improvements at edges of work.

3.6 PROTECTION AND CURING

A. Conform to all applicable requirements for curing and protection of concrete, Sections 90-7 and 90-8 of the Standard Specifications.

B. Protection:
   1. Protect concrete against rapid drying and damage by rain or frost.
   2. Keep concrete moist for at least 7 days. Protect with liquid curing compound, or a covering that will not stain or discolor finished concrete surfaces. Obtain acceptance of proposed method prior to use.

C. Spraying: Spray concrete during the curing period as frequently as drying conditions may require.

D. Curing: Cure concrete in accordance with the ACI Manual of Concrete Practice. During curing period, maintain concrete above 70 degrees F. for at least 3 days or above 50 degrees F. for at least 5 days.

E. Damage and Defacement: Protect all concrete work against damage and defacement during subsequent construction operations until final acceptance.

F. Curing also applies to formed walls as may be necessary to minimize cracking.

3.7 DAMPPROOFING

A. Preparation of Surfaces:
   1. Clean all surfaces to be dampproofed. Remove all dirt, grease, and other foreign matter which might interfere with adhesion and penetration. Allow surfaces to dry thoroughly.
   2. Carefully repair all cracks, holes, voids, open areas and other defects in concrete surfaces to be dampproofed. Use Portland Cement mortar; strike flush and permit to dry.
   3. Thoroughly clean all excess mortar from concrete surfaces after drying.

B. Application of Dampproofing Compound:
   1. Cover entire retaining surface of backside of walls from top of footing to finished grade with two brush coats of specified dampproofing. Apply according to manufacturer's current printed instructions.
   2. Apply first coat at minimum rate of 80 square feet per gallon of material. Brush into surface thoroughly making sure that coverage is uniform.
   3. Allow first coat to dry for 24 hours and apply second coat at minimum rate of 150 square feet per gallon of material. Brush second coat at right angles to first coat to assure thorough coverage of entire surface. Apply dampproofing in a clean line conforming to finished ground grade.
   4. Provide a completed dampproofing coating which is a continuous, uniform, unbroken, impervious film, free from pinholes and other surface breaks.

3.8 FIELD QUALITY CONTROL

A. Samples: University will select a qualified testing laboratory to take samples for testing during the course of the work as considered necessary.

B. Cost of Testing: Paid for by the University [Contractor].

C. Rejected Materials: Remove off the site all concrete below specified strength.

D. Cost of Removal and Retesting: Pay for full costs of removal of rejected concrete and its replacement with concrete of specified strength and retesting.

END OF SECTION 03 32 00

SECTION 05 73 00

DECORATIVE METAL RAILINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Steel and iron decorative railings.
2. Wall mounted railings for stairs and ramps.
3. Floor mounted handrails with wheel guides at ramps.

B. Related Sections:

1. Division 01 Section “LEED Requirements”
2. Division 01 Section “Site Waste Management”
3. Section 05 51 00 "Metal Stairs" for steel tube railings included with metal stairs.
4. Section 09 22 16 "Non-Structural Metal Framing" for metal backing for anchoring railings.

1.02 DEFINITIONS

A. Railings: Guards, handrails, and similar devices used for protection of occupants at open-sided floor areas, pedestrian guidance and support, visual separation, or wall protection.

1.03 PERFORMANCE REQUIREMENTS

A. Delegated Design: Design railings, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:

1. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum ultimate tensile strength divided by 1.95.
2. Copper Alloys: 60 percent of minimum yield strength.
3. Stainless Steel: 60 percent of minimum yield strength.
4. Steel: 72 percent of minimum yield strength.

C. Structural Performance: Railings shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:

a. Uniform load of 50 lbf/ft. (0.73 kN/m) applied in any direction.

b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.
c. Uniform and concentrated loads need not be assumed to act concurrently.

2. Infill of Guards:

a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
b. Infill load and other loads need not be assumed to act concurrently.

D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.04 ACTION SUBMITTALS

A. Product Data: For the following:

1. Manufacturer's product lines of railings assembled from standard components.
2. Grout, anchoring cement, and paint products.

B. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Certificates for Credit MR 7: Chain-of-custody certificates indicating that wood rails comply with forest certification requirements. Include documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.

C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

D. Samples for Initial Selection: For products involving selection of color, texture, or design.

E. Samples for Verification: For each type of exposed finish required.

1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters.
2. Fittings and brackets.
3. Welded connections.
4. Brazed connections.

5. Assembled Samples of railing systems, made from full-size components, including top rail, post, handrail, and infill. Show method of finishing members at intersections. Samples need not be full height.

1.05 INFORMATIONAL SUBMITTALS

A. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

B. LEED Submittals:

1. Product Data for Credit MR 4.1 and Credit 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating cost for each product having recycled content.

2. Credit MR 5.1 and Credit MR 5.2: Provide documentation for regionally extracted and manufactured. Regionally extracted are raw materials taken from within a 500 mile radius of the project site. Regionally manufactured are assembled as finish products within a 500 mile radius of the project site. Assembly does not include on site assembly, erection or installation of finished components.

3. Credit EQ 4.1 and EQ 4.2: Manufacturers' product data or printed statement of VOC content for adhesives, sealants, paints and coatings verifying compliance with required VOC content of these credits. Include statement indicating costs for each product.

4. Certificates for Credit MR 7: Chain-of-custody certificates indicating that wood rails comply with forest certification requirements. Include documentation that manufacturer is certified for chain of custody by an FSC-accredited certification body. Include statement indicating cost for each certified wood product.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, according to ASTM E 894 and ASTM E 935.

1.06 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of railing from single source from single manufacturer.

B. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including structural analysis, preconstruction testing, field testing, and in-service performance.

1. Do not modify intended aesthetic effects, as judged solely by Design Professional, except with Design Professional's and the University's Representative's approval. If

modifications are proposed, submit comprehensive explanatory data to Design Professional for review.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6, "Structural Welding Code - Stainless Steel."

D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockups as shown on Drawings.
2. Build mockups for each form and finish of railing consisting of two posts, top rail, infill area, and anchorage system components that are full height and are not less than 24 inches (600 mm) in length.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Pre-installation Conference: Conduct conference at Project site.

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.08 COORDINATION AND SCHEDULING

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

C. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not suit structural performance requirements.

PART 2 - PRODUCTS

2.01 RAILING TYPES

A. Exterior Painted Woven Wire Guardrail.

1. Guardrail, Horizontal and Vertical Rails: Painted galvanized steel.
2. Infill: Galvanized, factory finished **powder coat** woven wire mesh set in steel frame, Banker Wire M13Z-272 or equal.
   a. Alternate Infill: Perforated galvanized **3/16" thick** metal infill panel with 3/8 inch holes, 9/16 inch spacing and 40 percent open area, set in galvanized steel frame, factory finished powder coat.
3. Handrail: 1-1/2 inch outside diameter stainless steel tube.
4. Handrail Bracket: All stainless steel fittings to be 304 alloy conforming to ASTM A582.
5. Stainless Steel Finish: #4 brushed.

B. Exterior Painted Steel Solid Guardrail.
1. Guardrail, Horizontal and Vertical Rails: Painted galvanized steel.
2. Infill: Solid painted galvanized steel plate sheet, do not field weld.
3. Handrail: 1-1/2 inch outside diameter stainless steel tube.
4. Handrail Bracket: All stainless steel fittings to be 304 alloy conforming to ASTM A582.
5. Stainless Steel Finish: #4 brushed.

C. Wall Hand Rails at Stairs and Ramps.
1. Handrail: 1-1/2 inch outside diameter stainless steel tube.
2. Handrail Bracket: All stainless steel fittings to be 304 alloy conforming to ASTM A582.
3. Stainless Steel Finish: #4 brushed.

D. Floor Mounted Hand Rails at Ramps.
1. Handrail: 1-1/2 inch outside diameter stainless steel tube.
2. Handrail Bracket: All stainless steel fittings to be 304 alloy conforming to ASTM A582.
3. Stainless Steel Finish: #4 brushed.

2.02 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Same metal and finish as supported rails unless otherwise indicated.

1. Provide cast-metal brackets with flange tapped for concealed anchorage to threaded hanger bolt.
2. Provide either formed- or cast-metal brackets with predrilled hole for exposed bolt anchorage.
3. Provide formed-steel brackets with predrilled hole for bolted anchorage and with snap-on cover that matches rail finish and conceals bracket base and bolt head.
4. Provide extruded-aluminum brackets with interlocking pieces that conceal anchorage. Locate set screws on bottom of bracket.

2.03 STAINLESS STEEL

A. Tubing: ASTM A 554, Grade MT 304.

B. Sheet, Strip, Plate, and Flat Bar: ASTM A 666, Type 304.

C. Bars and Shapes: ASTM A 276, Type 304.

2.04 STEEL AND IRON

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of pre-consumer recycled content not less than 25 percent.

B. Tubing: ASTM A 500 (cold formed) or ASTM A 513.

C. Bars: Hot-rolled, carbon steel complying with ASTM A 29/A 29M, Grade 1010.

D. Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.05 FASTENERS

A. Fastener Materials: Unless otherwise indicated, provide the following:
1. Stainless-Steel Components: Type 304 stainless-steel fasteners.
2. Uncoated Steel Components: Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating where concealed; Type 304 stainless-steel fasteners where exposed.
3. Galvanized-Steel Components: Plated-steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
4. Dissimilar Metals: Type 304 stainless-steel fasteners.

B. Fasteners for Anchoring to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work unless exposed fasteners are the standard fastening method for railings indicated.

1. Provide tamper-resistant flat-head machine screws for exposed fasteners unless otherwise indicated.

D. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

E. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors.

1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.

2. Material for Exterior Locations and Where Stainless Steel Is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

2.06 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

B. Shop Primers: Provide primers that comply with Section 09 91 13 "Exterior Painting" and Section 09 91 23 "Interior Painting."

C. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

D. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.07 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Make up wire-rope assemblies in the shop to field-measured dimensions with fittings machine swaged. Minimize amount of turnbuckle take-up used for dimensional adjustment so maximum amount is available for tensioning wire ropes. Tag wire-rope assemblies and fittings to identify installation locations and orientations for coordinated installation.

D. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

E. Form work true to line and level with accurate angles and surfaces.

F. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate. Locate weep holes in inconspicuous locations.

G. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

H. Connections: Fabricate railings with welded connections unless otherwise indicated.

I. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove flux immediately.
4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 1 welds: no evidence of a welded joint.

J. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.

K. Mechanical Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.

1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.

L. Form changes in direction as follows:
1. By bending or by inserting prefabricated elbow fittings.
2. By bending to smallest radius that will not result in distortion of railing member.

M. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

N. Close exposed ends of hollow railing members with prefabricated end fittings.

O. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns, unless clearance between end of rail and wall is 1/4 inch (6 mm) or less.

P. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.

1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers, or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

Q. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.

R. For railing posts set in concrete, provide steel sleeves not less than 6 inches (150 mm) long with inside dimensions not less than 1/2 inch (13 mm) greater than outside dimensions of post, with metal plate forming bottom closure.

S. For removable railing posts, fabricate slip-fit sockets from steel tube or pipe whose ID is sized for a close fit with posts; limit movement of post without lateral load, measured at top, to not

more than one-fortieth of post height. Provide socket covers designed and fabricated to resist being dislodged.

1. Provide chain with eye, snap hook, and staple across gaps formed by removable railing sections at locations indicated. Fabricate from same metal as railings.

T. Woven-Wire Mesh Infill Panels: Fabricate infill panels from woven-wire mesh crimped into 1-1/2" by 1-1/2-by-1/8-inch) metal channel frames.

1. Make wire mesh and frames from steel unless otherwise indicated.
2. Orient wire mesh with wires horizontal and vertical.

U. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

2.08 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipment.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

D. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.09 STAINLESS-STEEL FINISHES

A. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.

B. Polished Finishes: Grind and polish surfaces to produce uniform finish, free of cross scratches.

1. Run grain of directional finishes with long dimension of each piece.

C. Directional Satin Finish: No. 4.

D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

2.10 STEEL AND IRON FINISHES

A. Galvanized Railings:

1. Hot-dip galvanize exterior steel and iron railings, including hardware, after fabrication.
2. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
3. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.
4. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
5. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

B. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

C. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.

D. For nongalvanized-steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors to be embedded in exterior concrete or masonry.

E. Preparing Nongalvanized Items for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with requirements indicated below:

1. Exterior Railings: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
2. Railings Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
3. Railings Indicated to Receive Primers Specified in Section 09 96 00 "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
4. Other Railings: SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."

F. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

1. Shop prime uncoated railings with primers specified in Section 09 91 13 "Exterior Painting" and Section 09 91 23 "Interior Painting" unless zinc-rich primer is indicated.
2. Do not apply primer to galvanized surfaces.

G. Shop-Painted Finish: Comply with Section 09 91 13 "Exterior Painting."

1. Color: As selected by Design Professional and approved by the University’s Representative from manufacturer's full range.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine plaster and gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for Installer. Locate reinforcements and mark locations if not already done.

3.02 INSTALLATION, GENERAL

A. Fit exposed connections together to form tight, hairline joints.

B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
2. Set posts plumb within a tolerance of 1/16 inch in 3 feet (2 mm in 1 m).
3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet (5 mm in 3 m).

C. Corrosion Protection: Coat concealed surfaces of aluminum and copper alloys that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

D. Adjust railings before anchoring to ensure matching alignment at abutting joints.

E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.03 RAILING CONNECTIONS

A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.

B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.

C. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2

inches (50 mm) beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches (150 mm) of post.

3.04 ANCHORING POSTS

A. Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with non-shrink, nonmetallic grout mixed and placed to comply with anchoring material manufacturer's written instructions.

B. Form or core-drill holes not less than 5 inches (125 mm) deep and 3/4 inch (20 mm) larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout mixed and placed to comply with anchoring material manufacturer's written instructions.

C. Cover anchorage joint with flange of same metal as post, attached to post with set screws.

D. Leave anchorage joint exposed with anchoring material flush with adjacent surface.

E. Anchor posts to metal surfaces with flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members as follows:

1. For aluminum railings, attach posts as indicated using fittings designed and engineered for this purpose.
2. For stainless-steel railings, weld flanges to posts and bolt to metal-supporting surfaces.
3. For steel railings, weld flanges to posts and bolt to metal-supporting surfaces.

F. Install removable railing sections, where indicated, in slip-fit metal sockets cast in concrete.

3.05 ATTACHING RAILINGS

A. Anchor railing ends to concrete and masonry with brackets on underside of rails connected to railing ends and anchored to wall construction with anchors and bolts.

B. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces and connected to railing ends using non-welded connections.

C. Attach handrails to walls with wall brackets except where end flanges are used. Provide brackets with 1-1/2-inch (38-mm) clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.

3.06 CLEANING

A. Clean aluminum and stainless steel by washing thoroughly with clean water and soap, rinsing with clean water, and wiping dry.

B. Clean and polish glass as recommended in writing by manufacturer. Wash both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion.

C. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 09 91 13 "Exterior Painting" and Section 09 91 23 "Interior Painting."

D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.07 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION

SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
1. Roof hatches.
2. Concrete Splash Blocks.

B. Related Requirements:

1. Division 01 Section “LEED Requirements”
2. Division 01 Section “Site Waste Management”
3. Division 05 Section "Metal Fabrications" for fixed ladders

1.02 ACTION SUBMITTALS

A. Product Data: For each type of roof accessory indicated.

B. Shop Drawings: For roof accessories.

C. Samples: For each exposed product and for each color and texture specified.

1.03 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items.

B. Warranty: Sample of special warranty.

C. LEED Submittals:

1. Product Data for Credit MR 4.1 and Credit 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating cost for each product having recycled content.

2. Credit MR 5.1 and Credit MR 5.2: Provide documentation for regionally extracted and manufactured. Regionally extracted are raw materials taken from within a 500 mile radius of the project site. Regionally manufactured are assembled as finish products within a 500 mile radius of the project site. Assembly does not include on site assembly, erection or installation of finished components.

1.04 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.05 WARRANTY

A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 METAL MATERIALS

A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation. Provide one of the following finishes:
   1. Exposed Coil-Coated Finish: Two-coat fluoropolymer finish; AAMA 621; system consisting of primer and fluoropolymer color topcoat containing not less than 70 percent PVDF resin by weight.
   2. Baked-Enamel or Powder-Coat Finish: Manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil (0.025 mm) for topcoat.

B. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise indicated.

2.02 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.

B. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWPA C2; not less than 1-1/2 inches (38 mm) thick.

C. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners.

D. Sealants: As recommended by roof accessory manufacturer for installation indicated.

2.03 ROOF HATCH

A. Roof Hatches: Metal roof-hatch units with lids and insulated double-walled curbs, welded or mechanically fastened and sealed corner joints, continuous lid-to-curb counterflashing and

weathertight perimeter gasketing, stepped integral metal cant raised the thickness of roof insulation, and integrally formed deck-mounting flange at perimeter bottom.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Babcock-Davis.
   b. Bilco Company (The).
   c. J. L. Industries, Inc.
   d. Milcor Inc.; Commercial Products Group of Hart & Cooley, Inc.
   e. Nystrom.
   f. Or approved equal.

B. Type and Size: Single-leaf lid, **30 by 54 inches (762 by 1372 mm).**

C. Hatch Material: Zinc-coated (galvanized) steel sheet, 0.079 inch (2.01 mm) thick.

1. Finish: Baked enamel or powder coat.
2. Color: As selected by Design Professional and approved by the University's Representative, from manufacturer's full range.

D. Construction:

1. Insulation: Cellulosic-fiber or Glass-fiber board.
2. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid. U-Factor of 0.083.
3. Curb Liner: Manufacturer's standard, of same material and finish as metal curb.
4. On ribbed or fluted metal roofs, form flange at perimeter bottom to conform to roof profile.
5. Fabricate curbs to minimum height of 8 inches (300 mm) above the roofing membrane and not less than 12 inches in overall height unless otherwise indicated. Coordinate with the insulation thickness. Curb U-Factor of 0.083.

E. Hardware: Galvanized-steel spring latch with turn handles, butt- or pintle-type hinge system, and padlock hasps inside and outside.

1. Provide two-point latch on lids larger than 84 inches (2130 mm).

F. Safety Railing System: Roof-hatch manufacturer's standard system including rails, clamps, fasteners, safety barrier at railing opening, and accessories required for a complete installation; attached to roof hatch and complying with 29 CFR 1910.23 requirements and authorities having jurisdiction.

2.04 SPLASH BLOCKS

A. Splash Blocks: Precast concrete splash blocks.

1. Basis of Design: Subject to compliance with requirements, provide products indicated below or approved equal.

B. Color: As selected by the Design Professional and approved by the University's Representative, from the manufacturer's standard colors

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

C. Verify dimensions of roof openings for roof accessories.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Verify dimensions of roof openings for roof accessories. Install roof accessories according to manufacturer's written instructions.

1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.

B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Coat concealed side of roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.

C. Roof-Hatch Installation:

1. Install roof hatch so top surface of hatch curb is level.
2. Verify that roof hatch operates properly. Clean, lubricate, and adjust operating mechanism and hardware.
3. Attach safety railing system to roof-hatch curb.
4. Attach ladder-assist post according to manufacturer's written instructions.

D. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.

E. Seal joints with sealant as required by roof accessory manufacturer.

F. Splash Blocks: install in locations noted, and as recommended by the splash block manufacturer.

3.03 REPAIR AND CLEANING

A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780.

B. Clean exposed surfaces according to manufacturer's written instructions.

C. Clean off excess sealants.

D. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 09 22 16

NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes non-load-bearing steel framing members for the following applications:

1. Interior framing systems (e.g., supports for partition walls, framed soffits, furring, etc.).
2. Interior suspension systems (e.g., supports for ceilings, suspended soffits, etc.).
3. Metal blocking.

B. Related Sections include the following:

1. Division 01 Section “LEED Requirements”
2. Division 01 Section “Site Waste Management”
3. Division 05 Section "Cold-Formed Metal Framing" for exterior and interior load-bearing and exterior non-load-bearing wall studs; floor joists; roof rafters and ceiling joists; and roof trusses.
4. Division 09 Section "Gypsum Board” for gypsum board panels attached to non-structural metal framing.
5. Division 09 Section “Gypsum Board Shaft Wall Assemblies" for non-load-bearing metal shaft-wall framing, gypsum panels, and other components of shaft-wall assemblies.

1.02 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Product Schedule: Coordinate with the gypsum board manufacturer and provide a table listing the partition type, submitted metal framing, submitted gypsum board products, UL number matching required fire rating, and limiting height of the partition with the submitted products. Include a statement indicating that the submitted products and the installation will conform to the requirements of the UL test number.

C. Shop Drawing Details: Provide details of all conditions whether shown on the Contract Documents or not. Where detailing or engineering of specific conditions in not shown in the Contract Documents, submit details of similar character of those shown using sound design and engineering practice. Details shall be reviewed by the Design Professional. Contractor to incorporate comments into the Work at no increase in Contract Time or Contract Price.

1.03 INFORMATIONAL SUBMITTALS

A. LEED Submittals:

1. Product Data for Credit MR 4.1 and Credit 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and pre-consumer recycled content. Include statement indicating cost for each product having recycled content.

2. Credit MR 5.1 and Credit MR 5.2: Provide documentation for regionally extracted and manufactured. Regionally extracted are raw materials taken from within a 500 mile radius of the project site. Regionally manufactured are assembled as finish products within a 500 mile radius of the project site. Assembly does not include on site assembly, erection or installation of finished components.

B. The Contractor shall submit a letter to the Design Professional stating that all of the materials he is providing for this work are manufactured by one of the manufacturers listed in this Section. The letter shall further state that the protection and installation of these materials will be done in strict conformance with the recommendations and requirements of the manufacturer.

C. When non-structural metal framing is used in non-standard partition designs or to frame openings over 4' in width or special partition details, submit structural calculations. This includes partitions subject to additional loads including wall hung cabinets, paneling, grab bars and handrails. Structural calculations are to be prepared, signed, and sealed by a Structural Engineer Licensed in California substantiating the Contractor's design.

1.04 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS:

A. For interior conditions not indicated on drawings, comply with the following criteria:
1. Design Pressure Loading: 5 psf
2. Fire-Test-Response Characteristics:
a. For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
3. Structural Performance Characteristics: Provide assemblies engineered to withstand the following lateral design loadings (air pressures), applied transiently and cyclically, for maximum heights of partitions required,

within the following deflection limits, verified by pretesting for deflection characteristics.

a. Gypsum Board:

1) Lateral loading of 5 psf (239 Pa).

2) Wall Deflection Limit:

a) Gypsum Board Partition Assemblies: L/240 of partition height.

b) Gypsum Board Partition Assemblies with Tile Finish: L/360 of partition height.

2.02 NON-LOAD-BEARING STEEL FRAMING, GENERAL

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise indicated.

2. Protective Coating:

a. Typical locations unless noted otherwise: ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized, unless otherwise indicated.

B. Recycled Content of Steel Products:

1. To contain no less than 30 percent of post-consumer and 10 percent pre-consumer recycled material.

2.03 SUSPENSION SYSTEM COMPONENTS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch- (1.59-mm-) diameter wire, or double strand of 0.0475-inch- (1.21-mm-) diameter wire.

B. Hanger Attachments to Concrete, provide one of the following:

1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E 488 by an independent testing agency.

2. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by an independent testing agency.

C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch (4.12-mm) diameter.

D. Uplift Resistant Hangers: Contractor shall be responsible for designing and providing a suspension/holddown system for all exterior soffit and/or ceiling areas capable of supporting the ceiling construction and resisting positive and negative wind pressures of 50 psf. Suspension

and framing members will be as required to satisfy criteria and will be their placement will be coordinated with other materials occupying the area above the soffit or ceiling.

E. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch (1.37 mm) and minimum 1/2-inch- (12.7-mm-) wide flanges.

1. Depth: 2 inches (51 mm) unless otherwise indicated on the drawings. Space and support channels as required by the loads.

F. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

1. Size of Channels: 1-5/8 by 1-5/8 inches (41 by 41 mm).
2. Material: Cold-rolled steel, ASTM A 1008/A 1008M, commercial steel, Type B or structural steel, Grade 33 (Grade 230); 0.0528-inch (1.35-mm) minimum thickness; coated with rust-inhibitive, baked-on, acrylic enamel.

G. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.0538-inch (1.37-mm) bare-steel thickness, with minimum 1/2-inch- (12.7-mm-) wide flanges, 3/4 inch (19.1 mm) deep.
2. Steel Studs: ASTM C 645.

a. Minimum Base-Metal Thickness: 0.0179 inch (0.45 mm).
b. Depth: As indicated on Drawings.

3. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22.2 mm) deep.

a. Minimum Base Metal Thickness: 0.0179 inch (0.45 mm).

4. Resilient Furring Channels: 1/2-inch- (12.7-mm-) deep members designed to reduce sound transmission.

a. Configuration: Asymmetrical.

H. Grid Suspension System for Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
1. Products: Subject to compliance with requirements, provide one of the following:

a. Armstrong World Industries, Inc.; Drywall Grid Systems.
b. Chicago Metallic Corporation; 640-C, Fire Front 650-C, 660-C, Fire and Front 670-C Drywall Furring System as required by the conditions shown.
c. USG Corporation; Drywall Suspension System.
d. Or approved equal.

2.04 STEEL FRAMING FOR FRAMED ASSEMBLIES

A. Steel Studs and Runners: ASTM C 645.
1. Steel Studs and Runners:
a. Minimum Base-Metal Thickness:

1) Typical locations: 0.0179 inch (0.45 mm).unless indicated otherwise on Drawings.
2) Framing at walls with ceramic tile finish: 0.0312 inch (0.79 mm).minimum unless thicker material is indicated on Drawings.
3) Framing at walls with wall hung cabinets: 0.0312 inch (0.79 mm).minimum unless thicker material is indicated on Drawings.
4) Framing at walls with wall hung panels: 0.0312 inch (0.79 mm).minimum unless thicker material is indicated on Drawings.
5) Framing at walls with portland cement plaster: 0.0312 inch (0.79 mm).minimum unless thicker material is indicated on Drawings.

b. Depth: As indicated on Drawings.

2. Proprietary Steel Studs and Runners:

a. Meet performance of ASTM C 645 requirements and provide equivalent performance to the standard studs and runners listed above.
b. Minimum Base-Metal Thickness:
1) Typical locations: 0.015 inch (0.38 mm).unless indicated otherwise on Drawings.
2) Framing at walls with ceramic tile finish: 0.025 inch (0.64 mm).minimum unless thicker material is indicated on Drawings.
3) Framing at walls with wall hung cabinets: 0.025 inch (0.64 mm).minimum unless thicker material is indicated on Drawings.
4) Framing at walls with wall hung panels: 0.025 inch (0.64 mm).minimum unless thicker material is indicated on Drawings.
5) Framing at walls with portland cement plaster: 0.025 inch (0.64 mm).minimum unless thicker material is indicated on Drawings.
c. Depth: As indicated on Drawings.

B. Head Joints and Runners: Provide one of the following deflection head tracks:
1. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness of 0.0329 inch but not less than required for loads and in width to accommodate depth of studs.
2. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness of 0.0329 inch but not less than required for loads and in width to accommodate depth of studs.
a. Products: Subject to compliance with requirements, provide one of the following:
1) Fire Trak Corp.; Fire Trak.
2) Cemco; FAS track.
3) ClarkDietrich Building Systems: Blazeframe
4) Marino\Ware; FAS track.
5) Or approved equal.

C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing.

1. Minimum Base-Metal Thickness: 0.0312 inch (0.79 mm) unless noted otherwise or if a thicker metal is required by load supported .

D. Cold-Rolled Channel Bridging: 0.0538-inch (1.37-mm) bare-steel thickness, with minimum 1/2-inch- (12.7-mm-) wide flanges.

1. Depth: 1-1/2 inches (38.1 mm).
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38.1 by 38.1 mm), 0.068-inch- (1.73-mm-) thick, galvanized steel.

E. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base Metal Thickness: 0.0179 inch (0.45 mm) unless noted otherwise.
2. Depth: As indicated on Drawings.

F. Resilient Furring Channels: 1/2-inch- (12.7-mm-) deep, steel sheet members designed to reduce sound transmission.

1. Configuration: Asymmetrical.

G. Sound Isolation Clips for Furring Channels:
1. Manufacturers: Provide one of the following products:
   a. Kinetics Noise Control, Inc.; IsoMAX Clip
   b. PAC International; RSIC-1.
   c. Pliteq, Inc.; Genie Clip.
   d. Or approved equal.

H. Cold-Rolled Furring Channels: 0.0538-inch (1.37-mm) bare-steel thickness, with minimum 1/2-inch- (12.7-mm-) wide flanges.

1. Minimum Depth: 3/4 inch (19.1 mm).
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum bare-steel thickness of 0.0312 inch (0.79 mm).
3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.0625-inch- (1.59-mm-) diameter wire, or double strand of 0.0475-inch- (1.21-mm-) diameter wire.

2.05 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide one of the following:

1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Coordination with Sprayed Fire-Resistive Materials:

1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches (600 mm) o.c.
2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.03 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.
1. Portland Cement Plaster Assemblies: Also comply with requirements in ASTM C 1063 that apply to framing installation.
2. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.04 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components in sizes and spacings required by referenced installation standards for assembly types and other assembly components indicated.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling cavity that are not part of supporting structural or suspension system.

    a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling cavity produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

    a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards, but with a deflection limit not exceeding ½" or L/360, whichever is less.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Sound Isolation Hangers: Install in accordance with manufacturer's recommendations for applications required.

E. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

3.05 INSTALLING FRAMED ASSEMBLIES

A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

B. Install studs so flanges within framing system point in same direction.

C. Install tracks (runners) at floors and overhead supports. Cut studs so they stop ½" below overhead structural supports or structural deck, and do not affix studs to top track, except where partitions are indicated to terminate at suspended ceilings. . Continue framing around ducts penetrating partitions above ceiling.

1. Install bridging within 12 inches of the top of the partition, unless specifically not required by the manufacturer.
2. Slip-Type Head Joints: Where framing extends to ½" of overhead structural supports or deck, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
3. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

    a. Install two studs at each jamb, unless otherwise indicated.
    b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (12.7-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
    c. Extend jamb studs through suspended ceilings and nest in runner attached to underside of overhead structure.
    d. Install an additional row of bridging within 12 inches above the top of the door frame to distribute the forces generated by the door operation.

4. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads unless otherwise indicated.
5. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

    a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

6. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.

D. Direct Furring:

1. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.

E. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

END OF SECTION

SECTION 09 77 00

PANELIZED WOOD WALL SYSTEMS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes
1. Acoustic Panelized Linear Wood Wall System: I-WD-01
2. Panel Grille Wood Wall System: I-WD-02

1.02 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Shop drawings indicating panels, joints, openings for MEP/FP equipment, framing, and edge conditions.

C. Samples: 12 inch by 12 inch sample of each wood wall system.

1.03 INFORMATIONAL SUBMITTALS

1.04 INFORMATIONAL SUBMITTALS

A. LEED Submittals:

1. Product Data for Credit EQ 4.4: For adhesives and composite wood products, documentation indicating that products contain no urea formaldehyde.

2. Certificates for LEED Credit: Chain-of-custody certificates indicating that paneling complies with forest certification and chain-of-custody requirements. Include statement indicating cost for each certified wood product.

B. Field quality-control reports.

C. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.05 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.06 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical wall system area as indicated by the Design Professional.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Installer Qualifications: The installer must be a firm with a minimum of two (2) years of successful experience in installation of suspended wood wall systems of similar requirements to this project.

C. Environmental Standards: When required the wood wall system shall originate from well managed forests as certified by accredited and recognized industry certifying organizations.

D. Fire-Retardant-Treated Paneling: Panels shall have a flame-spread index of 75 or less and a smoke-developed index of 450 or less per ASTM E 84 and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver wood wall system system components to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they are protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Wood wall system shall be stored flat and level in a fully enclosed space per the requirements of the manufacturer. For a minimum of seventy-two (72) hours immediately prior to wall system installation, the wood wall system shall be stored in the room in which the wall system will be installed. The temperature and humidity of the room shall closely approximate those conditions that will exist when the building is occupied. The wood wall system must be stored off the floor.

C. Handle suspended wood wall system systems and accessories carefully to avoid damaging units and finishes in any way.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Design support and attachment system and devices.

2.02 ACOUSTIC PANELIZED LINEAR WOOD WALL SYSTEM: I-WD-01

A. Basis of Design: Subject to compliance with the requirements, provide Rulon Panelized Linear Wood Wall System or approved equal.

B. Wood panels with wood strips made from prime grade, all natural douglas fir.
   1. Finish: To be selected by the Design Professional and approved by the University's Representative, from the manufacturer's full range of options.

C. Panelized linear wood panels assembled from boards using the linear open style. Provide space between panels with a fiberfelt spacer, factory installed.
   1. Fiberfelt spacer color: Black.

D. Accessories:
   1. Provide edges, borders and perimeter trims as indicated in the drawings.
      a. Edge trim: Provide extruded aluminum trim
         1) Basis of Design: Fry Part 1360 Special "J" Molding, 1 ½" deep by 1", or equal.
         2) Finish: Clear anodized
   2. Provide mounting clips where indicated and where required for attachment.

2.03 PANEL GRILLE WOOD WALL SYSTEM: I-WD-02

A. Basis of Design: Subject to compliance with the requirements, provide Rulon Panel Grille Wood Wall System or approved equal.

B. Wood strips shall be made from prime grade, all natural solid red oak with a clear finish.

C. Standard panel grilles shall be assembled 1 foot wide and in nominal lengths of 2 feet to 10 feet. Wood strips shall be manufactured without finger-joints, and fastened together with black dowels and wood backers. The dowels and wood backers shall be positioned 5-1/2 inch from the ends and 12 inches on center, with interconnecting mail-to-female dowel attachment for the support of the system.

D. Accessories:
   1. Provide edges, borders and perimeter trims as indicated in the drawings.
   2. Provide mounting clips where indicated and where required for attachment.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing and substrates to which wood wall system systems attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect wall system installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of wood wall system systems.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Coordinate installation of blocking at fastening locations.

B. Install wall systems per the manufacturer's requirements.

3.03 ADJUSTMENT, CLEANING, AND REPAIR

A. Adjust installed panels to provide level and plumb installation.

B. Upon completion of installation, clean all exposed paneling to be free of dirt, dust, grease, oils and fingerprints.

C. All work which cannot be successfully cleaned or repaired, shall be removed and replaced.

END OF SECTION

SECTION 14 21 00

ELECTRIC TRACTION ELEVATORS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes machine-room-less (MRL) electric traction passenger elevators.

1.02 DEFINITIONS

A. Definitions in ASME A17.1/CSA B44 apply to work of this Section.

1.03 ACTION SUBMITTALS

A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for car enclosures, hoistway entrances, and operation, control, and signal systems.

B. Shop Drawings:

1. Include plans, elevations, sections, and large-scale details indicating service at each landing, coordination with building structure, relationships with other construction, and locations of equipment.
2. Include large-scale layout of car-control station and standby power operation control panel.
3. Indicate maximum dynamic and static loads imposed on building structure at points of support, and maximum and average power demands.

C. Samples for Verification: For exposed car, hoistway door and frame, and signal equipment finishes; Samples of sheet materials; and trim members.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Seismic Qualification Certificates: For elevator equipment, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

C. Manufacturer Certificates: Signed by elevator manufacturer certifying that hoistway, pit, and control closet layout and dimensions, as shown on Drawings, and electrical service, as shown and specified, are adequate for elevator system being provided.

1.05 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For elevators to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 01 78 23 "Operation and Maintenance Data," include diagnostic and repair information available to manufacturer's and Installer's maintenance personnel.

B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

C. Continuing Maintenance Proposal: Submit a continuing maintenance proposal from Installer to University's Representative, in the form of a standard one-year maintenance agreement, starting on date initial maintenance service is concluded. State services, obligations, conditions, and terms for agreement period and for future renewal options.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Elevator manufacturer or an authorized representative who is trained and approved by manufacturer.

1.07 DOCUMENT VERIFICATION

A. In order to discover and resolve conflicts or lack of definition which might create issues, provider must review Contract Documents and campus elevator monitoring system for compatibility with its product prior to submittal of quotation. University will not pay for changes to structural, mechanical, electrical or other systems required to accommodate Provider's equipment.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle materials, components, and equipment in manufacturer's protective packaging. Store materials, components, and equipment off of ground, under cover, and in a dry location.

1.09 COORDINATION

A. Coordinate installation of sleeves, block outs, elevator equipment with integral anchors, and other items that are embedded in concrete or masonry for elevator equipment. Furnish templates, sleeves, elevator equipment with integral anchors, and installation instructions and deliver to Project site in time for installation.

B. Coordinate locations and dimensions of other work relating to electric traction elevators including pit ladders; sumps and floor drains in pits; entrance subsills; electrical service; and electrical outlets, lights, and switches in hoistways, pits, and machine rooms.

1.10 WARRANTY

A. Manufacturer's Special Warranty: Manufacturer agrees to repair, restore, or replace elevator work that fails in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.
2. Warranty Period: One year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Eco Space Low Rise (MRL) passenger Elevator,by KONE inc. or equal:

B. Source Limitations: Obtain elevators from single manufacturer.

1. Major elevator components, including driving machines, controllers, signal fixtures, door operators, car frames, cars, and entrances, shall be manufactured or approved by the elevator manufacturer.

2.02 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with ASME A17.1/CSA B44, California Building Code and California Fire Code.

B. Accessibility Requirements: Comply with Section 407 in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines, California Building Code, and with ICC A117.1.

C. Seismic Performance: Elevator system shall withstand the effects of earthquake motions determined according to California Building Code, ASCE/SEI 7 and in Division 014340

"Exterior Enclosure Performance Requirements", and shall comply with elevator safety requirements for seismic risk Zone 2 or greater in ASME A17.1/CSA B44.

1. The term "withstand" means "the system will remain in place without separation of any parts when subjected to the seismic forces specified."
2. Provide earthquake equipment required by ASME A17.1/CSA B44.
3. Provide seismic switch if required by ASCE/SEI 7.

2.03 ELEVATORS

A. Elevator System, General: Manufacturer's standard elevator systems. Unless otherwise indicated, manufacturer's standard components shall be used, as included in standard elevator systems and as required for complete system.
   1. Elevators are open to the exterior. Provide NEMA 5 rated equipment, minimum, when exposed to exterior.

B. Elevator Description:
   1. Elevator Number(s):
      a. Elevator #1: Four stops.
         1) Front and rear opening doors on floors G & 2.
         2) Front opening door on floor 3 & Roof.
      b. Elevator #2: Three stops.
         1) Front and rear opening doors on floors G & 2.
         2) Front opening door on floor 3.
   2. Machine Location: Hoistway; no machine room is provided.
   3. Rated Load: 4000 lb.
   4. Rated Speed: 150 fpm.
   5. Operation System: Group automatic operation.
   6. Electrical requirements: 480v, 3 PH, 60 Hz
   7. Auxiliary Operations:
      a. Battery-powered lowering.
      b. Earthquake Emergency Operation: Comply with requirements in ASME A17.1/CSA B44.
      c. Automatic dispatching of loaded car.
      d. Nuisance call cancel.
      e. Independent service for all cars in group.
      f. Loaded-car bypass.
      g. Distributed parking.
   8. Security Features: Card-reader operation, Keyswitch operation, and Car-to-lobby feature.
   9. Car Enclosures:
      a. Front Walls (Return Panels): Satin stainless steel, No. 4 finish.
      b. Car Fixtures: Polished stainless steel, No. 8 finish.
      c. Side and Rear Wall Panels: Textured stainless steel.
      d. Door Faces (Interior): Satin stainless steel, No. 4 finish.
      e. Door Sills: Aluminum, mill finish.
      f. Ceiling: Satin stainless steel, No. 4 finish

g. Handrails: 1-1/2 inches round satin stainless steel, No. 4 finish, at sides and rear of car.
h. Floor recessed and prepared to receive tile (specified in Section 09 30 13 "Tiling").
1) Tile to match tile in the lobby.

10. Hoistway Entrances:

a. Width: 48 inches.
b. Height: 84 inches.
c. Type: Center Opening.
d. Frames: Satin stainless steel, No. 4 finish.
e. Doors: Satin stainless steel, No. 4 finish.
f. Sills: Aluminum, mill finish.

11. Hall Fixtures at First Floor: Satin stainless steel, No. 4 finish.
12. Hall Fixtures at Other Floors: Satin stainless steel, No. 4 finish.
13. Additional Requirements:

a. Provide inspection certificate in each car, mounted under acrylic cover with frame made from polished stainless steel, No. 8 finish.
b. Provide hooks for protective pads in all cars and one complete set(s) of full-height protective pads per car.
c. Comply with medical transport requirements.

2.04 TRACTION SYSTEMS

A. Elevator Machines: Variable-voltage, variable-frequency, hoisting machines and solid-state power converters.

1. Provide regenerative system.
2. Limit total harmonic distortion of regenerated power to 5 percent per IEEE 519.
3. Provide means for absorbing regenerated power when elevator system is operating on standby power.
4. Provide line filters or chokes to prevent electrical peaks or spikes from feeding back into building power system.

B. Fluid for Hydraulic Buffers: If using hydraulic buffers, use only fire-resistant fluid.

C. Inserts: Furnish required concrete and masonry inserts and similar anchorage devices for installing guide rails, machinery, and other components of elevator work. Device installation is specified in another Section.

D. Machine Beams: Provide framing to support elevator hoisting machine and deflector sheaves from the building structure. Comply with Section 05 50 00 "Metal Fabrications" for materials and fabrication.

E. Car Frame and Platform: Bolted- or welded-steel units.

F. Guides: Roller guides. Provide guides at top and bottom of car and counterweight frames.

2.05 OPERATION SYSTEMS

A. General: Provide manufacturer's standard microprocessor operation systems as required to provide type of operation indicated.

B. Auxiliary Operations: In addition to primary operation system features, provide the following operational features for elevators where indicated:
   1. Group Battery-Powered Lowering: If power fails, cars that are at a floor remain at that floor, open their doors, and shut down. Cars that are between floors are lowered one at a time to the next floor below, open their doors, and shut down. System includes rechargeable battery and automatic recharging system.
   2. Automatic Dispatching of Loaded Car: When car load exceeds 80 percent of rated capacity, doors begin closing.
   3. Nuisance Call Cancel: When car calls exceed a preset number while car load is less than a predetermined weight, all car calls are canceled. Preset number of calls and predetermined weight can be adjusted.
   4. Loaded-Car Bypass: When car load exceeds 80 percent of rated capacity, car responds only to car calls, not to hall calls.
   5. Distributed Parking: When cars are not required for response to calls, they are parked with doors closed and distributed in predetermined zones throughout the building. One zone shall include the main floor and adjacent floors; remaining floors shall be divided into approximately equal zones.
   6. Independent Service: Keyswitch in car-control station removes car from group operation and allows it to respond only to car calls. Key cannot be removed from keyswitch when car is in independent service. When in independent service, doors close only in response to door close button.
   7. Priority Service: Service is initiated by a keyswitch and card reader at designated floors. One elevator is removed from group operation and directed to the floor where service was initiated. On arriving at the floor, elevator opens its doors and parks. Car is placed in operation by selecting a floor and pressing door close button or by operating keyswitch to put car in independent service. After responding to floor selected or being removed from independent service, car is returned to group operation. If car is not placed in operation within a preset time after being called, it is returned to group operation.

C. Security Features: Provide the following security features, where indicated. Security features shall not affect emergency firefighters' service.

   1. Card-Reader Operation: System uses card readers at car-control stations and hall push-button stations to authorize calls. Security system determines which landings and at what times calls require authorization by card reader. Provide required conductors in traveling cable and panel in machine room for interconnecting card readers, other security access system equipment, and elevator controllers. Allow space as indicated for card reader in car.

      a. Security access system equipment is specified in Section 28 13 00 "Access Control."

   2. Keyswitch Operation: Push buttons are activated and deactivated by security keyswitches at car-control stations and hall push-button stations. Key is removable in either position.

3. Keypad Operation: Allows each landing to be restricted or unrestricted. When a restricted landing button is pressed, a "Restricted Floor" lamp lights and remains lit until landing access code has been entered into a keypad or predetermined time period has elapsed. Car calls for restricted landings do not register until landing access code is entered into keypad within predetermined time period after landing button is pressed.

    a. Access codes are programmed at each car operating panel using a security keyswitch. Keypad operation can be activated and deactivated by security keyswitch at main landing.

4. Car-to-Lobby Feature: Feature, activated by keyswitch at main lobby, that causes car to return immediately to lobby and open doors for inspection. On deactivation by keyswitch, calls registered before keyswitch activation are completed and normal operation is resumed.

D. Elevator Monitoring System: Provide Computerized Elevator Control Corp.; Campus View Elevator Monitoring System for the elevators in the project, and tie into the University's campus elevator monitoring system.
   1. General: University maintains an existing interactive system to monitor and manage the elevator equipment ("units"), hereinafter called "system". Provide conduit and wiring for power and data connections between machine room junction box and elevator control. Provide any necessary control interface necessary for compatibility with University's system. University system is "Campus View".
   2. Interactive Features: The control system shall be capable where desired of operating interactive control features provided in the elevator control system. These features may be revised as the requirements of the building change. Some of these interactive controls may include but are not limited to: security floor lockouts, entering car and hall calls, Firefighters' return service, lobby recall, VIP service, UP/Down peak or hospital Code Blue service. Local codes may affect the availability or operation of these features.
      a. Security Access Features: The monitoring system shall be capable of providing security enable/disable of all hall and car calls through on-screen menus at a minimum. The monitoring system shall also be capable of interfacing directly with card readers and security keypads in stand-alone mode, and indirectly through a serial interface with a third party security system. When in stand-alone mode, the monitoring system shall maintain a database of elevator users and security pass codes. When on secure mode the use of each elevator will be recorded in a file together with the time, authorized pass code and destination for each call.
      b. Elevator Control Features:
         1) Elevator shall be capable of being controlled through the monitoring system. All control points shall be capable of seven-day twenty-four hour time clock automatic operation or manual operation from the mouse and keyboard. The control points shall include, but not be limited to, the following (where allowed by local codes)
            a) Lobby recall
            b) Car call security lockout
            c) Hall call security lockout
            d) Firefighters' service
            e) Independent service
            f) VIP Service

g) Hospital Code Blue service
h) Standby power to selected car

c. Paging Feature: The monitoring system shall be capable of paging a service technician or other personnel based on pre-defined parameters of elevator faults or conditions. The paging system shall provide the ability to page multiple numbers determined by the type of event triggering the notification and shall be able to page different numbers based on preset times of day (i.e. different shifts). The system shall be capable of sending text messages to full text pagers in addition to supporting standard DTMF pagers.

d. Remote Access Feature: The monitoring system shall be capable of allowing approved individuals under multi-level password control, to access all system features via the local area network, internet, or via modem over the public telephone network to review the performance of the equipment or to evaluate a fault condition. The remote access feature shall be integrated into the monitoring system and shall not use third party “remote control” software products.

e. Data Transmission to Central Support Location: The system shall be capable where desired of transmitting fault, car usage and other data to a remote service desk or other office location for further processing, technician dispatch or other purposes. The data may be transmitted via the local area network, internet, or via modem over the public telephone network.

3. Remote Monitoring and Diagnostics: Equip each controller with standard ports, interface boards, and drivers to accept maintenance, data logging, fault finding diagnostic and monitoring computers, keyboards, modems, and programming tools. The system shall be capable of driving remote color monitors that continually scan and display the status of each car and call. The interface shall be capable of providing all data Campus View is capable of processing.

2.06 DOOR REOPENING DEVICES

A. Infrared Array: Provide door reopening device with uniform array of 36 or more microprocessor-controlled, infrared light beams projecting across car entrance. Interruption of one or more light beams shall cause doors to stop and reopen.

2.07 CAR ENCLOSURES

A. General: Provide steel-framed car enclosures with nonremovable wall panels, with car roof, access doors, power door operators, and ventilation.

1. Provide standard railings complying with ASME A17.1/CSA B44 on car tops where required by ASME A17.1/CSA B44.

B. Materials and Finishes: Manufacturer's standards, but not less than the following:
1. Subfloor: Exterior, C-C Plugged grade plywood, not less than 7/8-inch nominal thickness.
2. Floor Finish: Porcelain tile matching the lobby tile.
3. Stainless-Steel Wall Panels: Flush, hollow-metal construction; fabricated from textured stainless-steel sheet.
4. Fabricate car with recesses and cutouts for signal equipment.

5. Fabricate car door frame integrally with front wall of car.
6. Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from satin stainless-steel sheet.
7. Sight Guards: Provide sight guards on car doors.
8. Sills: Extruded metal, with grooved surface, 1/4 inch thick.
9. Metal Ceiling: Flush panels, satin stainless steel, with four LED downlights in each panel.
10. Handrails: Handrails, of shape, metal, and finish indicated.

2.08 HOISTWAY ENTRANCES

A. Hoistway Entrance Assemblies: Manufacturer's standard horizontal-sliding, door-and-frame hoistway entrances complete with track systems, hardware, sills, and accessories. Frame size and profile shall accommodate hoistway wall construction.

1. Where gypsum board wall construction is indicated, frames shall be self-supporting with reinforced head sections.

B. Fire-Rated Hoistway Entrance Assemblies: Door and frame assemblies shall comply with NFPA 80 and be listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction based on testing at as close-to-neutral pressure as possible according to NFPA 252 or UL 10B.

1. Fire-Protection Rating: As indicated on the drawings.

C. Materials and Fabrication: Manufacturer's standards, but not less than the following:
1. Stainless-Steel Frames: Formed from satin stainless-steel sheet.
2. Star of Life Symbol: Identify emergency elevators with star of life symbol, not less than 3 inches high, on both inside surfaces of hoistway door frames.
3. Stainless-Steel Doors: Flush, hollow-metal construction; fabricated from satin stainless-steel sheet.
4. Sight Guards: Provide sight guards on doors matching door edges.
5. Sills: Extruded metal, with grooved surface, 1/4 inch thick.

2.09 SIGNAL EQUIPMENT

A. General: Provide hall-call and car-call buttons that light when activated and remain lit until call has been fulfilled. Fabricate lighted elements with LEDs.

1. Mark buttons and switches for required use or function. Use both tactile symbols and Braille.
2. Provide "No Smoking" sign matching car-control station, either integral with car-control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.

B. Swing-Return Car-Control Stations: Provide car-control stations mounted on rear of hinged return panel adjacent to car door and with buttons, switches, controls, and indicator lights projecting through return panel but substantially flush with face of return panel.

1. Mark buttons and switches for function. Use both tactile symbols and Braille.
2. Provide "No Smoking" sign matching car-control station, either integral with car-control station or mounted adjacent to it, with text and graphics as required by authorities having jurisdiction.
3. ~~DEDUCTIVE ALTERNATE: Car-Control Stations: Provide manufacturer's standard recessed car-control stations. Mount in return panel adjacent to car door unless otherwise indicated.~~

C. Emergency Communication System: Two-way voice communication system, with visible signal, which dials preprogrammed number of monitoring station and does not require handset use. System is contained in flush-mounted cabinet, with identification, instructions for use, and battery backup power supply.
   1. System must communicate with the Campus public safety dispatch system.

D. Car Position Indicator: Provide digital-type car position indicator, located above car door or above car-control station designed for exterior exposure. Also, provide audible signal to indicate to passengers that car is either stopping at or passing each of the floors served. Include travel direction arrows if not provided in car-control station.

E. Hall Push-Button Stations: Provide one hall push-button station at each landing

   1. Provide manufacturer's standard wall-mounted units designed for exterior exposure at exterior locations.
   2. Equip units with buttons for calling elevator and for indicating desired direction of travel.

F. Hall Lanterns: Units with illuminated arrows; but provide single arrow at terminal landings. Provide the following:

   1. Manufacturer's standard wall-mounted units, for mounting above entrance frames and designed for exterior exposure at exterior locations.

G. Hall Annunciator: With each hall lantern, provide audible signals indicating car arrival and direction of travel. Signals sound once for up and twice for down.

   1. At manufacturer's option, audible signals may be placed on cars.

H. Hall Position Indicators: Provide illuminated, digital-display-type position indicators, located above each hoistway entrance at ground floor and designed for exterior exposure. Provide units with flat faceplate for mounting and with body of unit recessed in wall.

   1. Integrate ground-floor hall lanterns with hall position indicators.

I. Emergency Pictorial Signs: Fabricate from materials matching hall push-button stations, with text and graphics as required by authorities having jurisdiction, indicating that in case of fire, elevators are out of service and exits should be used instead. Provide one sign at each hall push-button station unless otherwise indicated.

2.10 FINISH MATERIALS

A. General: Provide the following materials for exposed parts of elevator car enclosures, car doors, hoistway entrance doors and frames, and signal equipment as indicated.
   1. Sheet sheet to be galvanized at exterior locations, and locations in the shaft.

B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, commercial steel, Type B, exposed, matte finish.

C. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, commercial steel, Type B, pickled.

D. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 316.
   1. Satin Finish: Directional polish finish. Graining directions as shown, if not shown, in the longest dimension.
   2. Mirror: Reflective polished finish. Graining directions as shown, if not shown, in the longest dimension.
   3. Textured: 5WL or 4LB as manufactured by Rigidized Metals or Windsor pattern 5-SM as manufactured by Rimex Metals or approved equal with 0.050 inches mean pattern depth with bright directional polish (satin finish).
   4. Burnished: Non-directional, random abrasion pattern.

E. Stainless-Steel Bars: ASTM A 276, Type 316.

F. Stainless-Steel Tubing: ASTM A 554, Grade MT 316.

G. Aluminum Extrusions: ASTM B 221, Alloy 6063.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine elevator areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Examine hoistways, hoistway openings, pits, and machine rooms as constructed; verify critical dimensions; and examine supporting structure and other conditions under which elevator work is to be installed.

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Comply with manufacturer's written instructions.

B. Welded Construction: Provide welded connections for installing elevator work where bolted connections are not required for subsequent removal or for normal operation, adjustment, inspection, maintenance, and replacement of worn parts. Comply with AWS standards for workmanship and for qualifications of welding operators.

C. Sound Isolation: Mount rotating and vibrating equipment on vibration-isolating mounts to minimize vibration transmission to structure and structure-borne noise due to elevator system.

D. Lubricate operating parts of systems, including ropes, as recommended by manufacturers.

E. Alignment: Coordinate installation of hoistway entrances with installation of elevator guide rails for accurate alignment of entrances with car. Where possible, delay final adjustment of sills and doors until car is operable in shaft. Reduce clearances to minimum, safe, workable dimension at each landing.

F. Leveling Tolerance: 1/8 inch, up or down, regardless of load and travel direction.

G. Set sills flush with finished floor surface at landing. Fill space under sill solidly with nonshrink, nonmetallic grout.

H. Locate hall signal equipment for elevators as follows unless otherwise indicated:

1. For groups of elevators, locate hall push-button stations between two elevators at center of group or at location most convenient for approaching passengers.
2. Mount hall lanterns at a minimum of 72 inches above finished floor.

I. Seal electronic components in the elevator shaft for protection from the exterior environment.

3.03 FIELD QUALITY CONTROL

A. Acceptance Testing: On completion of elevator installation and before permitting elevator use (either temporary or permanent), perform acceptance tests as required and recommended by ASME A17.1/CSA B44 and by governing regulations and agencies.

B. Advise University's Representative, Design Professional, and authorities having jurisdiction in advance of dates and times that tests are to be performed on elevators.

3.04 PROTECTION

A. When elevator is near completion and ready for service, the General Contractor may permit elevator for interim use and place in service prior to substantial completion of project when approved and per conditions established by the University Representative.

B. During this period General Contractor may pay a mutually agreed upon monthly amount per elevator for preventive maintenance. Amount per unit per month shall be included and identified with bid.

C. Temporary acceptance form must be acceptable to General Contractor and signed prior to use.

D. General Contractor or their designee must provide or pay for temporary hoistway and car enclosures; protect installed equipment and finishes; pay for and return elevator to elevator sub-contractor for all cleaning, repairs, and replacement of materials necessary to restore elevator to “as-new” condition prior to final acceptance.

E. Temporary Use: Comply with the following requirements for each elevator used for construction purposes:

1. Provide car with temporary enclosure, either within finished car or in place of finished car, to protect finishes from damage.
2. Provide strippable protective film on entrance and car doors and frames.
3. Provide padded wood bumpers on entrance door frames covering jambs and frame faces.
4. Provide other protective coverings, barriers, devices, signs, and procedures as needed to protect elevator and elevator equipment.
5. Do not load elevators beyond their rated weight capacity.
6. Engage elevator Installer to provide full maintenance service. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleanup, and adjustment as necessary for proper elevator operation at rated speed and capacity. Provide parts and supplies same as those used in the manufacture and installation of original equipment.
7. Engage elevator Installer to restore damaged work, if any, so no evidence remains of correction. Return items that cannot be refinished in the field to the shop, make required repairs and refinish entire unit, or provide new units as required.

3.05 DEMONSTRATION

A. Engage a factory-authorized service representative to train University Representative's maintenance personnel to operate, adjust, and maintain elevator(s).
1. Provide 12 hours of onsite elevator maintenance training.

B. Check operation of each elevator with University Representative's personnel present before date of Substantial Completion and again not more than one month before end of warranty period. Determine that operation systems and devices are functioning properly.

3.06 MAINTENANCE

A. Interim:
1. When elevator is near completion and ready for service, the General Contractor may permit elevator for interim use and place in service prior to substantial completion of project when approved and per conditions established by the University Representative.
2. During this period, General Contractor may pay a mutually agreed upon monthly amount per elevator for preventive maintenance. Amount per unit per month shall be included and identified with bid.

3. Temporary acceptance form must be acceptable to General Contractor and signed prior to use.
4. General Contractor or their designee must provide or pay for temporary hoistway and car enclosures; protect installed equipment and finishes; pay for and return elevator to elevator subcontractor for all cleaning, repairs, and replacement of material necessary to restore elevator to “As-new” condition prior to final acceptance.

B. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of elevator Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper elevator operation at rated speed and capacity. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

1. Perform maintenance during normal working hours.
2. Examinations: Monthly, including adjustments, cleaning and lubrication of equipment.
3. Replacement: Replace components when required, using parts produced by original manufacturer.
4. Spare Parts: Provide necessary spare parts; maintain locally an inventory of all wearing parts of the elevator system.
5. Extension of Maintenance Period: Where shutdowns exceed an average value of 0.2 per elevator per month, extend maintenance period one month for each month in which shutdowns exceed specified average value at no additional cost to University. Shutdowns outside the control of the Elevator Contractor are not to be counted.
6. Records: Maintain complete maintenance records including check charts, lubrication logs and activity logs; provide check charts and lubrication logs for each elevator. Provide a single activity log for the entire building.
7. Testing: Provide necessary personnel to perform all code required test including but not limited to yearly safety tests, fire recall tests, or third party inspections.
8. Response Time: In the event of an entrapment, respond to call within ninety minutes.
9. Include 24-hour-per-day, 7-day-per-week emergency callback service with response time of two hours or less.

C. No proprietary equipment, software, parts, service tools, devices, or systems shall be added to or installed in any University of California, Merced elevator system that would hinder, restrict or prevent subsequent competing elevator company or contractor from performing timely and cost effective maintenance and service on the items of equipment included in the contract. All control equipment installed shall interface with University’s “Campus View” monitoring system.

D. The elevator control system shall be serviceable and maintainable by a trained, certified/qualified elevator mechanic of the University’s choice. A complete set of as-built, adjustor’s-level wiring diagrams and all service tools and software necessary to perform safety tests, diagnose problems, view or reset Codes and/or change operational parameters of the elevator controlsystem shall be provided to the University as part of the contract and shall be retained by the University and shall function for the life of the equipment. Hardware and software needed for diagnosis and operating parameter modification shall be products offered as standard by the manufacturer of the control system. No substitutions of proprietary circuit boards, EPROMS, hardware locks, software passwords or Coding shall be allowed.

E. As a condition of the installation, the original equipment manufacturer shall guarantee to sell and deliver, on a timely basis, proprietary component repair services, replacement and stock

parts, and software updates to the University to a third party elevator maintenance company of the University's choice at a fair market price and provide to the OEM organization in order to keep the equipment current. Technical and engineering support and assistance for control adjustment, maintenance or troubleshooting shall be provided by the original equipment manufacturer to any maintaining contractor designated by the University.

F. Elevator manuals, drawings, diagrams and prints shall be provided with the equipment at time of delivery. All documentation shall be available for replacement purchase, at reasonable cost, by any maintaining elevator contractor designated by the University.

END OF SECTION

Lecture Halls 110, 130, 140, 170

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
Room, 110, 120, 140 Only			
8,500 Lumen, WUXGA DLP	Christie	DWU951	HD-1-DLP
Lens	Christie		Field Verify prior to order
Projector Mount	Chief	VCMU	Provide all lift accessories
Room 170 Only:			
5,000 Lumen, WUXGA	Christie	LWU505	
Projector lens	Christie	103-125109	1.25-1.70:1 Zoom Lens
Projector Mount	Chief	RPA-U	
Vibration Damper	Chief	CMA-347	
Extension Column	Chief	CMA-100	
All Spaces			
Document Camera	Elmo	P100N	Room 110, 140, 170 only
Ceiling Camera	Sony	EVI-H100S	HD-SDI Rm 130 only
Wall mounted PTZ Camera	Sony	BRCH700	HD-SDI
AUDIO / VIDEO COMPONENTS			
Video Equipment			
16x16 Matrix Switcher, Enova	AMX	FG1058-16	
DGX HDMI Input Board	AMX	FG1058540	
DGX Twisted Pair Input Board	AMX	FG1058570	
DXLink™ Multi-Format Decor Style	AMX	FG1058580	
DGX Audio Insert / Extract Board	AMX	FG1058700	
DXLink™ Multi-Format Decor Style	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Lecture capture Recorder	MediaSite	RL	Room 130 only
Blu-Ray/VHS	Panasonic	DMP-BD70V	Or Equal
Audio Equipment			
15" Cardioid Gooseneck	Shure	MX515C	Coordinate length with Client
Wireless Microphone System			Provide antenna extension as required for space.
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
Audio Processor	Biamp	Audia Flex	
Amplifier, 4 CH	QSC	CX204v	
Amplifier, 2 CH	QSC	CX302	
8" Ceiling Loudspeaker	SoundTube	CM500i	Confirm finish with Architect
Inwall Loudspeaker	JBL	128W	Confirm finish with Architect
Microphone Input, Floor plate	Extron	70-103-11	
Assistive Listening			
IR Transmitter	Listen	LT-82-01	
Emitter Panel	Listen	LA-140	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with architect
Rack Mount Kit	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	4 required
Ear Speaker	Listen	LA-164	4 required
Neck Loop	Listen	LA-166	2 required
CONTROL COMPONENTS			
MXD-1001 Wall Mount Touch Panel	AMX	FG5968-48	
Wall Flush Mount Kit	AMX	FG5968-70	Install by EC
MXT-1001	AMX	FG5968-47	

Secure Table mount	AMX	FG5968-66	Instructor Location
PSN6.5 Power Supply		FG423-41	
PS-POE-AF PoE Injector		FG423-80	
AC-RK Rack Mount		FG515	
Control System Accessories		lot	
RACKS & ACCESSORIES			
Table Top Connection Box	Extron	Cable Cubby 300S	Room 130 Only
Rack Mount DBP-S590	Middle Atlantic	RSH-4S	.
Console	Middle Atlantic	SC-1427-1217BK	
Side Panels	Middle Atlantic	SPN-1427-1217BK	
Foot Rest	Middle Atlantic	SC-TK	
Work Surface	Middle Atlantic	WS2-S18-GBF	
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
LAN Switched Power Strip, 1 RU	APC	AP7901	

Tutorial / VC Conference

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
50" LCD Panel	Sharp	PN-E521	
Document Camera	Elmo	P100N	
Video Conferencing Codec	Polycom	HDX9000	w/ 1080p CCPP
PTZ Camera	Sony	SRG120DH	
Fixed Lens Camera	Panasonic	AW-HE2	
Blu-Ray/VHS	Panasonic	DMP-BD70V	Or Equal
AUDIO / VIDEO COMPONENTS			
Video Equipment			
8x8 Matrix Switcher, Enova	AMX	FG1058-08	
DGX HDMI Input Board	AMX	FG1058540	
DGX Twisted Pair Input Board	AMX	FG1058570	
Twisted Pair Output Board	AMX	FG1058580	
DGX Audio Insert / Extract Board	AMX	FG1058700	
DXLink™ Multi-Format Decor	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Audio Equipment			
15" Cardioid Gooseneck	Shure	MX515C	Coordinate length with Client
Wireless Microphone System			
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
DXLink™ Multi-Format Decor	Shure	UR1	
Audio Processor	Biamp	Nexia CS	
Amplifier	Extron	XPA-2001	Not required RM 233
8" Ceiling Loudspeaker	SoundTube	CM500i	Confirm finish with Architect Not required RM 233
Microphone Input, Floor plate	Extron	70-103-11	
Sound bar	Innovox	SF-FLEX-H2	Only room 233, with grill
Assistive Listening			
IR Transmitter	Listen	LT-82-01	
Emitter Panel	Listen	LA-140	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with architect
Rack Mount Kit	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	2 required
Ear Speaker	Listen	LA-164	2 required
Neck Loop	Listen	LA-166	1 required
CONTROL COMPONENTS			
MXD-1001 Wall Mount Touch	AMX	FG5968-48	
Wall Mount back box	AMX	FG039-17	Install by EC
MXT-1001	AMX	FG5968-47	
Secure Table mount	AMX	FG5968-66	Instructor Location
PSN6.5 Power Supply	AMX	FG423-41	
PS-POE-AF PoE Injector	AMX	FG423-80	
Control System Accessories	AMX	Iot	
RACKS & ACCESSORIES			
Accessories			
Table Top Connection Box	Extron	Cable Cubby 300S	
Rack Accessories			

21 RU Equipment Rack	Middle Atlantic	PTRK-21MDK	
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	.
LAN Switched Power Strip, 1 RU	APC	AP7901	
HDMI over Fiber Cable	FSR	DR-PCB-HxxM	Order to suit length req'd

24 Person Tutorial

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
60" LCD Panel	Sharp	PN-E602	
4,200 Lumen, WUXGA	Christie	LWU421	3-LCD 33w Lamp
Lens	Christie	121-112105	1.5-2.2/1.2-1.8
Projector Mount	Chief	RPAU	Provide all accessories
Vibration Damper	Chief	CMA-347	
Extension Column	Chief	CMA-100	
Trim Ring	Chief	CMA-643	
Extension Column	Chief	CMS-012	
Stabilization Kit	Chief	CMA-340	
Document Camera	Elmo	P100N	
Blu-Ray/VHS	Panasonic	DMP-BD70V	Or Equal
AUDIO / VIDEO COMPONENTS			
Video Equipment			
Switcher/Processor/Controller	AMX	FG1905-14	
DXLink™ Multi-Format Decor	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Audio Equipment			
15" Cardioid Gooseneck	Shure	MX515C	Coordinate length with Client
DXLink™ Multi-Format Decor			
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
8" Ceiling Loudspeaker	SoundTube	CM500i	Confirm finish with Architect
Microphone Input, Floor plate	Extron	70-103-11	
Sound bar	Innovox	SF-FLEX-H2	With Grill
Assistive Listening			
IR Transmitter	Listen	LT-82-01	
Emitter Panel	Listen	LA-140	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with architect
Rack Mount Kit	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	2 required
Ear Speaker	Listen	LA-164	2 required
Neck Loop	Listen	LA-166	1 required
CONTROL COMPONENTS			
MXD-1001 Wall Mount Touch Panel	AMX	FG5968-48	
Wall Mount back box	AMX	FG039-17	Install by EC
MXT-1001	AMX	FG5968-47	
Secure Table mount	AMX	FG5968-66	Instructor Location
PSN6.5 Power Supply	AMX	FG423-41	
PS-POE-AF PoE Injector	AMX	FG423-80	
Control System Accessories	AMX	Iot	
RACKS & ACCESSORIES			
Accessories			
Table Top Connection Box	Extron	Cable Cubby 300S	
Table Top Connection Box	Extron	tbd	
Rack Accessories			
21 RU Equipment Rack	Middle Atlantic	PTRK-21MDK	.

Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	
LAN Switched Power Strip, 1 RU	APC	AP7901	
HDMI over Fiber Cable	FSR	DR-PCB-HxxM	Order to suit length req'd

Scholarly Activity

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
70" LCD Panel	Sharp	PN-E702	
AUDIO / VIDEO COMPONENTS			
Video Equipment			
Switcher/Processor/Controller	AMX	FG1905-12	
DXLink™ Multi-Format Decor	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Audio Equipment			
Wireless Microphone System			
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
Sound bar	Innovox	SF-FLEX-H2	With Grill
Assistive Listening			
IR Transmitter	Listen	LT-82-01	
Emitter Panel	Listen	LA-140	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with architect
DXLink™ Multi-Format Decor	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	2 required
Ear Speaker	Listen	LA-164	2 required
Neck Loop	Listen	LA-166	1 required
CONTROL COMPONENTS			
MXD-1001 Wall Mount Touch Panel	AMX	FG5968-48	
Wall Mount back box	AMX	FG039-17	Install by EC
PSN6.5 Power Supply	AMX	FG423-41	
PS-POE-AF PoE Injector	AMX	FG423-80	
Control System Accessories	AMX	lot	
RACKS & ACCESSORIES			
Accessories			
Table Top Connection Box	Extron	Cable Cubby 300S	
Rack Accessories			
21 RU Equipment Rack	Middle Atlantic	PTRK-21MDK	
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	
LAN Switched Power Strip, 1 RU	APC	AP7901	

Large Conference Room

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
60" LCD Panel	Sharp	PN-E602	
AUDIO / VIDEO COMPONENTS			
Video Equipment			
Switcher/Processor/Controller	AMX	FG1905-14	
DXLink™ Multi-Format Decor	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Audio Equipment			
Amplifier	Extron	XPA-1002	
Wireless Microphone System			
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
Sound bar	Innovox	SF-FLEX-H2	With Grill
Assistive Listening			
IR Transmitter	Listen	LT-82-01	
Emitter Panel	Listen	LA-140	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with architect
DXLink™ Multi-Format Decor	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	2 required
Ear Speaker	Listen	LA-164	2 required
Neck Loop	Listen	LA-166	1 required
CONTROL COMPONENTS			
MXD-1001 Wall Mount Touch	AMX	FG5968-48	
Wall Mount back box	AMX	FG039-17	Install by EC
PSN6.5 Power Supply	AMX	FG423-41	
PS-POE-AF PoE Injector	AMX	FG423-80	
Control System Accessories	AMX	lot	
RACKS & ACCESSORIES			
Accessories			
Table Top Connection Box	Extron	Cable Cubby 300S	
Rack Accessories			
21 RU Equipment Rack	Middle Atlantic	PTRK-21MDK	
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	
LAN Switched Power Strip, 1 RU	APC	AP7901	

Large Conference Room

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
5,000 Lumen, WUXGA	Christie	LWU505	
Projector lens	Christie	103-124108	.08:1 Short Throw
Projector Mount	Chief	RPA-U	
Vibration Damper	Chief	CMA-347	
Extension Column	Chief	CMA-100	
Trim Ring	Chief	CMA-643	
Extension Column	Chief	CMS-012	
Stabilization Kit	Chief	CMA-340	
60" LCD Panel	Sharp	PN-E602	Articulating mount
Video Conferencing Codec	Polycom	HDX9000	w/ 1080p CCPP
PTZ Camera	Sony	SRG120DH	
Fixed Lens Camera	Panasonic	AW-HE2	
AUDIO / VIDEO COMPONENTS			
Video Equipment			
8X8 Matrix Switcher, Enova	AMX	FG1058-08	
DGX HDMI Input Board	AMX	FG1058540	
DGX Twisted Pair Input Board	AMX	FG1058570	
Twisted Pair Output Board	AMX	FG1058580	
DGX Audio Insert / Extract Board	AMX	FG1058700	
DXLink™ Multi-Format Decor	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
DXLink™ Multi-Format Decor Style			
Wireless Microphone System			
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
Ceiling Microphone	Clockaudio	C-004EW-RF	
Display Speakers	Innovox	FS-V2	
Amplifier	Extron	XPA-2001	
CONTROL COMPONENTS			
MXD-1001 Wall Mount Touch Panel	AMX	FG5968-48	
Wall Flush Mount Kit	AMX	FG5968-70	Install by EC
PS-POE-AF PoE Injector	AMX	FG423-83	
Control System Accessories	AMX	lot	
RACKS & ACCESSORIES			
Accessories			
Table Top Connection Box	Extron	Cable Cubby 300S	
Rack Accessories			
21 RU Equipment Rack	Middle Atlantic	PTRK-21MDK	Confirm with millwork
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	
LAN Switched Power Strip, 1 RU	APC	AP7901	

DH Media Wall / Collaboration

Device/Item	Manufacturer	Model	Comments
DISPLAYS / SOURCES			
Zero Bezel Tile Wall	NEC	X551UN	
Blu-Ray/VHS	Panasonic	DMP-BD70V	Or Equal
Television Tuner	Contemporary Research	232-ATSC+1	Provide Rack Mounts or Shelf
IP Camera (Ceiling)	Sony	EVIH100V/W	At CAVE
5,000 Lumen, WUXGA	Christie	LWU505	
Projector lens	Christie	103-124108	.08:1 Short Throw
Projector Mount	Chief	RPA-U	
Vibration Damper	Chief	CMA-347	
Extension Column	Chief	CMA-100	
Trim Ring	Chief	CMA-643	
Extension Column	Chief	CMS-012	
Stabilization Kit	Chief	CMA-340	
AUDIO / VIDEO COMPONENTS			
Video Equipment			
32x32 Matrix Switcher, Enova	AMX	FG1058-08	
DGX HDMI Input Board	AMX	FG1058540	
DGX Twisted Pair Input Board	AMX	FG1058570	
Twisted Pair Output Board	AMX	FG1058580	
DGX Audio Insert / Extract Board	AMX	FG1058700	
DXLink™ Multi-Format Decor Style	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Multi-Format Decor Style Wall plate Transmitter	AMX	FG1010325-BL	
Windowing processor	RGB Spectrum	MW42 2-6/8	HDCP8 Option
Wireless Microphone System			
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
Ceiling Microphone	Clockaudio	C-004EW-RF	
5" Ceiling Loudspeaker	SoundTube	CM500i-WH	Tap at 7.5w
Audio Processor	Biamp	Audia	
Amplifier	QSC	CX168	4ch-bridged outputs
Inwall Loudspeaker	JBL	128W	Confirm finish with Arch
Assistive Listening			
IR Transmitter	Listen	LT-82-01	
Emitter Panel	Listen	LA-140	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with
Rack Mount Kit	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	2 required
Ear Speaker	Listen	LA-164	2 required
Neck Loop	Listen	LA-166	1 required
CONTROL COMPONENTS			
Control Processor	AMX	NI-3100	
MXD-1001 Wall Mount Touch Panel	AMX	FG5968-48	
Wall Flush Mount Kit	AMX	FG5968-70	Install by EC
PS-POE-AF PoE Injector	AMX	FG423-83	
USB Extender Decora	C2G	53878	
Control System Accessories	AMX	lot	
RACKS & ACCESSORIES			
Accessories			

Table Top Connection Box	Extron	Cable Cubby 300S	
Rack Accessories			
21 RU Equipment Rack	Middle Atlantic	PTRK-21MDK	
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	
LAN Switched Power Strip, 1 RU	APC	AP7901	

TEAL Room

Device/Item	Manufacturer	Model	Comments
DISPLAYS			
50" LCD Panel	Sharp	PN-E521	
5,000 Lumen, WUXGA	Christie	LWU505	
Projector lens	Christie	103-125109	1.25-1.70:1 Zoom Lens
Projector Mount	Chief	RPA-U	
Vibration Damper	Chief	CMA-347	
Extension Column	Chief	CMA-100	
Document Camera	Elmo	P100N	
AUDIO / VIDEO COMPONENTS			
Video Equipment			
32x32 Matrix Switcher, Enova	AMX	FG1059-33	
DGX HDMI Input Board	AMX	FG1058540	
DGX Twisted Pair Input Board	AMX	FG1058570	
Twisted Pair Output Board	AMX	FG1058580	
DGX Audio Insert / Extract	AMX	FG1058700	
DXLink™ Multi-Format Decor	AMX	FG1010325-BL	
DXLink™ HDMI Receiver Module	AMX	FG1010500	
Blu-Ray/VHS	Panasonic	DMP-BD70V	Or Equal
Sound bar	Innovox	SF-FLEX-H2	With Grill
Collaboration			
DXLink™ Multi-Format Decor Style	tvONE	CORIOmaster Mini	10x2 DVI card configuration
Table interface	FSR	T3	Custom
Audio Equipment			
15" Cardioid Gooseneck Microphone	Shure	MX515C	Coordinate length with Client
Wireless Microphone System			Provide antenna extension as required for space.
Microphone Receiver	Shure	UR4D+	
Over Ear Microphone	Countryman	WCE6B	
Microphone Transmitter	Shure	UR1	
Audio Processor	Biamp	Nexia CS	
Amplifier	QSC	CX168	4ch-bridged outputs
5" Ceiling Loudspeaker	SoundTube	CM500i-WH	
Microphone Input, Floor plate	Extron	70-103-11	
Assistive Listening			
IR Transmitter	Listen	T-16	
Emitter Panel	Listen	RAD25	Confirm color with architect
Rechargeable Batteries Pack	Listen	LR-364	2 Required
Charging Dock	Listen	LAS-350-01	
ADA Compliance Plaque	Listen	LA-304	Coordinate quantity with
Rack Mount Kit	Listen	LA-326	
Lanyard Receiver	Listen	LA-44	10 Required
Ear Speaker	Listen	LA-164	10 Required
Neck Loop	Listen	LA-166	2 Required
CONTROL COMPONENTS			
MXD-2001 Wall Mount Touch	AMX	FG5968-48	
Wall Flush Mount Kit	AMX	FG5968-68	Install by EC

MXT-2001	AMX	FG5968-35	Instructor Location
Secure Table mount	AMX	FG5968-64	Instructor Location
MXT-1001	AMX	FG5968-47	Pod Locations
Secure Table mount	AMX	FG5968-66	
PSN6.5 Power Supply	AMX	FG423-41	
PS-POE-AF PoE Injector	AMX	FG423-83	If POE not available
Control System Accessories	AMX	lot	
RACKS & ACCESSORIES			
Table Top Connection Box	Extron	Cable Cubby 300S	Instructor Location
Rack Accessories			
44 RU Equipment Rack	Middle Atlantic	WR-44-42	
Fans	Middle Atlantic	KO-AWFP2	
Thermostatic Fan Controller	Middle Atlantic	FC-2-215-1C	
Rack Accessories	Middle Atlantic	Lot	
Power Strip	Middle Atlantic	PDT-1615C-NS	
LAN Switched Power Strip, 1 RU	APC	AP7901	
HDMI over Fiber Cable	FSR	DR-PCB-HxxM	Order to suit length req'd

UC Merced-Classroom and Academic Office Building
Scope Directive
Bid Package 32-2 Landscape & Irrigation

Revised February 21, 2014
ADDENDUM 1

Scope of work shall include the cost of all labor, material, equipment, hoisting, tools, engineering and supervision required to furnish and install complete the work in accordance with the Bid Documents including but not limited to the following referenced specification sections and Division 1 specifications as they relate to this bid item.

SPECIFICATION SECTIONS

01 43 39 Mock-ups (as it relates to this scope of work)
10 56 00 Storage Assemblies
12 57 40 Site Furnishings
31 22 19 Finish Grading
32 14 13 Precast Concrete Paving
32 15 00 Aggregate Surfacing
32 50 00 Restoration of Surfaces (as it relates to this scope of work)
32 84 00 Irrigation System
32 91 13 Soil Preparation
32 93 00 Planting
32 98 13 Landscape Establishment

Plans for Classroom and Academic Office Building "Issued for 100% Construction Documents, Volume 1" dated 12-20-2013.
Plans for Classroom and Academic Office Building "Issued for 100% Construction Documents, Volume 2" dated 12-20-2013.
Specifications for Classroom and Academic Office Building "Issued for 100% Construction Documents, Volume 1" dated 12-20-2013.
Specifications for Classroom and Academic Office Building "Issued for 100% Construction Documents, Volume 2" dated 12-20-2013.

The items listed below are for clarification only and shall not be construed as a complete list of work. Unless specifically noted otherwise, all items are to include supply and installation.

INCLUSIONS

The scope of work for Bid Item 32-2 Landscape shall include, but not be limited, to the following:

a) Fine grade for landscape areas.
b) All landscape headers, including steel headers.
c) All sleeves for own work.
d) Irrigation systems including controllers and low voltage wiring.
e) Modifications to existing irrigation systems as required.
f) Amend, mulch and planting as required. Hydro-seed for erosion control at the end of project.
g) Hydro-seed north of New Rancher's Road (staging area) after trailers/storage containers are demobilize.
h) Aggregate Surfacing.
i) All precast concrete pavers.
j) All site furnishings.
k) All site bicycle storage assemblies
a) All tree grates and frame.
l) Clean up and power wash as required for concrete flatwork/asphalt concrete.
m) See Bid Form for all Alternates.

SUNDT

EXCLUSIONS

a) Rough Grading to +/- .2'.
b) Concrete support for bicycle assemblies.
c) Structural soil
~~*d) Tree grate and frame*~~
e) Fixed and removable bollards.

SUNDT

UCMERCED | SCB SOLOMON **CORDWELL** BUENZ

CLASSROOM AND ACADEMIC OFFICE BUILDING

Merced, California

University of California - Merced
UC PROJECT # 900290

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+1 415.332.5100

02.21.2014

ADDENDUM NO. 1

VOLUME 1

DRAWING INDEX

ISSUED FOR BID: 12/20/2013 — ADDENDUM NO. 1: 02/21/2014

GENERAL

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
A0.00	COVER SHEET	X	
A0.01	INDEX SHEET	X	
A0.01A	INDEX SHEET		
A0.10	ARCHITECTURAL SYMBOLS LEGEND	X	
A0.20	PROJECT ISOMETRICS	X	
A0.21	PROJECT ISOMETRICS	X	
A0.22	GENERAL NOTES & DEMOLITION PLAN	X	
A0.30	SITE FIRE ACCESS PLAN	X	
A0.31	CODE ANALYSIS	X	
A0.32	CODE ANALYSIS	X	
A0.35	SITE ACCESSIBLE ROUTE PLAN	X	
A0.61	FIRST FLOOR SLAB EDGE PLAN	X	
A0.62	SECOND FLOOR SLAB EDGE PLAN	X	
A0.63	THIRD FLOOR SLAB EDGE PLAN	X	
A0.64	ROOF SLAB EDGE PLAN	X	
A0.65	LANTERN DECK EDGE PLAN	X	

CIVIL

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
C0.01	NOTES, LEGEND, ABBREVIATIONS	X	
C1.01	DEMOLITION PLAN	X	
C2.01	BUILDING LOCATION AND SITE PLAN	X	X
C2.02	HORIZONTAL CONTROL PLAN	X	
C3.01	OVER-EXCAVATION PLAN	X	
C3.02	GRADING AND DRAINAGE PLAN	X	
C4.01	UTILITY PLAN	X	
C4.02	UTILITY SECTIONS	X	
C4.11	HOT WATER PROFILES	X	
C4.12	SANITARY SEWER AND STORM DRAIN PROFILES	X	
C4.13	CHILLED WATER PROFILE	X	
C5.01	CONSTRUCTION DETAILS	X	
C5.02	CONSTRUCTION DETAILS	X	
C6.01	WATER POLLUTION CONTROL DRAWING	X	
C6.02	WATER POLLUTION CONTROL DRAWING	X	

LANDSCAPE

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
L1.00	LAYOUT PLAN	X	
L1.00A	LAYOUT DIMENSIONING	X	
L1.01	STRUCTURAL SOIL LAYOUT PLAN	X	
L1.02	GROVE ENLARGEMENT	X	
L1.03	GROVE SECTIONS	X	
L1.04	PAVING DETAILS	X	X
L1.05	PAVING DETAILS	X	
L1.06	WALL DETAILS	X	
L1.07	SITE FURNISHING DETAILS	X	
L2.00	IRRIGATION PLAN	X	
L2.01	IRRIGATION NOTES & LEGEND	X	
L2.02	IRRIGATION DETAILS	X	
L3.00	PLANTING PLAN	X	

ARCHITECTURE

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
A2.11	FIRST FLOOR PLAN	X	
A2.12	SECOND FLOOR PLAN	X	
A2.13	THIRD FLOOR PLAN	X	
A2.20	ROOF PLAN	X	
A2.21	LANTERN PLAN	X	
A2.30	ENLARGED 120 SEAT LECTURE HALL PLAN & RCP	X	
A2.31	ENLARGED 150 SEAT LECTURE HALL PLAN & RCP	X	
A2.32	ENLARGED 210 SEAT LECTURE HALL PLAN & RCP	X	
A2.33	ENLARGED 90 SEAT LECTURE HALL PLAN & RCP	X	
A2.40	TUTORIAL CLASSROOM, LAB, SEMINAR PLAN AND RCP	X	
A2.41	SCHOLARLY ACTIVITY, SMALL CONF. RM. PLAN AND RCP	X	
A2.42	DIG. HUMANITIES, FACULTY & ACADEMIC OFFICE PLAN AND RCP	X	
A2.43	ENLARGED CORE PLANS	X	
A3.10	OVERALL BUILDING ELEVATIONS	X	
A3.15	PARTIAL ELEVATIONS	X	
A3.20	OVERALL BUILDING SECTIONS	X	
A3.21	OVERALL BUILDING SECTIONS	X	
A4.10	ENLARGED EXTERIOR SECTIONS	X	
A4.11	ENLARGED EXTERIOR SECTIONS	X	
A4.12	ENLARGED EXTERIOR SECTIONS	X	
A4.20	EXTERIOR WINDOW SCHEDULE	X	
A4.21	EXTERIOR WINDOW SCHEDULE	X	
A4.45	ENLARGED CURTAIN WALL - NORTH / SOUTH	X	
A4.46	ENLARGED CURTAIN WALL - EAST	X	
A4.47	ENLARGED CURTAIN WALL - WEST	X	
A4.50	CURTAIN WALL DETAILS - PLAN	X	
A4.55	CURTAIN WALL DETAILS - SECTION	X	X
A4.56	CURTAIN WALL DETAILS - SECTION	X	
A4.60	EXTERIOR PLAN DETAILS	X	
A4.61	EXTERIOR PLAN DETAILS	X	
A4.62	EXTERIOR PLAN DETAILS	X	
A4.63	EXTERIOR PLAN DETAILS	X	
A4.65	EXTERIOR SECTION DETAILS	X	
A4.66	EXTERIOR SECTION DETAILS	X	
A4.67	EXTERIOR SECTION DETAILS	X	
A4.68	EXTERIOR SECTION DETAILS	X	
A4.69	GUARD RAIL DETAILS	X	
A4.70	ROOF SECTION & PLAN DETAILS	X	
A4.80	WATERPROOFING DETAILS	X	

DRAWING INDEX

ISSUED FOR BID: 12/20/2013 — ADDENDUM NO. 1: 02/21/2014

ARCHITECTURE

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
A5.01	ENLARGED STAIR PLANS AND SECTIONS	X	
A5.02	ENLARGED STAIR PLANS AND SECTIONS	X	
A5.03	ELEVATOR HOISTWAY SECTIONS AND DETAILS	X	
A5.50	STAIR DETAILS	X	
A6.01	INTERIOR ELEVATIONS	X	
A6.02	INTERIOR ELEVATIONS	X	
A6.03	INTERIOR ELEVATIONS	X	
A6.04	INTERIOR ELEVATIONS	X	
A6.05	INTERIOR ELEVATIONS	X	
A6.06	INTERIOR ELEVATIONS	X	
A6.07	INTERIOR ELEVATIONS	X	X
A6.08	INTERIOR ELEVATIONS	X	
A6.09	INTERIOR ELEVATIONS	X	
A6.10	INTERIOR ELEVATIONS	X	
A6.40	CASEWORK DETAILS	X	
A6.50	INTERIOR DETAILS	X	X
A6.56	CATWALK/ RAISED ACCESS FLOOR DETAILS	X	
A7.01	FIRST FLOOR REFLECTED CEILING PLAN	X	
A7.02	SECOND FLOOR REFLECTED CEILING PLAN	X	
A7.03	THIRD FLOOR REFLECTED CEILING PLAN	X	
A7.04	ROOF REFLECTED CEILING PLAN	X	
A7.56	CEILING AND INTERIOR DETAILS	X	X
A8.01	PARTITION TYPES	X	
A8.02	UL CODES	X	
A8.03	UL CODES	X	
A8.10	DOOR SCHEDULE	X	
A8.11	TYPICAL DOOR DETAILS & FLOOR TRANSITIONS	X	X
A8.30	FIRST FLOOR FINISH PLAN & SCHEDULE	X	
A8.31	SECOND FLOOR FINISH PLAN & SCHEDULE	X	
A8.32	THIRD FLOOR FINISH PLAN & SCHEDULE	X	
A8.40	SIGN LOCATION PLANS	X	
A8.41	SIGN LOCATION PLANS	X	
A8.42	SIGN TYPES (REFERENCE ONLY)	X	
A8.43	SIGN TYPES (REFERENCE ONLY)	X	
A8.44	SIGN TYPES (REFERENCE ONLY)	X	

STRUCTURAL

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
S0.01	GENERAL NOTES	X	
S0.02	GENERAL NOTES	X	
S0.03	SECOND FLOOR LOADING CRITERIA	X	
S0.04	THIRD FLOOR LOADING CRITERIA	X	
S0.05	ROOF LOADING CRITERIA	X	
S0.06	LANTERN ROOF LOADING CRITERIA	X	
S0.07	PV SUPPORT LOADING CRITERIA		
S2.01	FOUNDATION & FIRST FLOOR FRAMING PLAN	X	
S2.02	SECOND FLOOR FRAMING PLAN	X	
S2.03	THIRD FLOOR FRAMING PLAN	X	
S2.04	ROOF FRAMING PLAN	X	
S2.05	LANTERN ROOF FRAMING PLAN	X	
S2.06	MECHANICAL SCREEN FRAMING PLAN	X	
S2.07	PV SUPPORT FRAMING PLAN		
S3.01	TYPICAL CONCRETE DETAILS	X	
S3.02	TYPICAL CONCRETE DETAILS	X	
S3.03	TYPICAL FOUNDATION DETAILS	X	
S3.04	CONCRETE DETAILS	X	
S3.05	CONCRETE DETAILS	X	
S4.01	BRACED FRAME ELEVATIONS	X	
S4.02	MOMENT FRAME ELEVATION	X	
S4.03	BRACED FRAME DETAILS	X	
S4.04	BRACED FRAME DETAILS	X	
S4.05	TYPICAL MOMENT FRAME DETAILS	X	
S4.06	COLLECTOR DETAILS	X	
S4.07	L.F.R.S. DETAILS	X	
S5.01	TYPICAL STEEL DETAILS	X	
S5.02	TYPICAL STEEL DETAILS	X	
S5.03	TYPICAL STEEL DECK DETAILS	X	
S5.04	TYPICAL STEEL DECK DETAILS	X	
S5.05	TYPICAL STEEL DECK DETAILS	X	
S5.06	NON-FRAME STEEL COLUMN SCHEDULE & DETAILS	X	
S5.07	NON-FRAME STEEL COLUMN DETAILS	X	
S5.08	TRANSFER GIRDER DETAILS	X	
S5.09	LANTERN ROOF DETAILS	X	
S5.11	STEEL DETAILS	X	
S5.12	STEEL DETAILS	X	
S5.13	STEEL DETAILS	X	
S5.14	STEEL DETAILS	X	
S5.15	STEEL DETAILS	X	
S5.16	ELEVATOR PENTHOUSE DETAILS	X	
S5.21	SERVICE YARD FOUNDATION PLAN, SECTIONS, AND DETAILS	X	
S5.31	PARAPET & SCREEN ELEVATIONS	X	
S5.32	MECHANICAL SCREEN DETAILS	X	
S5.41	PV SUPPORT FRAMING ELEVATIONS		
S5.42	PV SUPPORT FRAMING DETAILS		
S6.01	STAIR 1 FRAMING PLANS AND ELEVATIONS	X	
S6.02	STAIR 1 DETAILS	X	
S6.03	STAIR 2 PLANS AND ELEVATIONS	X	
S6.04	STAIR 2 DETAILS	X	
S6.05	STAIR 3 PLANS AND ELEVATIONS	X	
S6.06	TYPICAL STAIR DETAILS	X	
S6.07	GUARD RAIL DETAILS	X	
S6.11	ELEVATOR FRAMING PLANS	X	
S6.12	ELEVATOR FRAMING DETAILS	X	
S7.01	BUILDING ENCLOSURE SUPPORT ELEVATIONS	X	
S7.02	BUILDING ENCLOSURE SUPPORT DETAILS	X	
S7.03	BUILDING ENCLOSURE SUPPORT DETAILS	X	
S7.04	BUILDING ENCLOSURE SUPPORT DETAILS	X	

VOLUME 2

DRAWING INDEX

ISSUED FOR BID: 12/20/2013 — ADDENDUM NO. 1: 02/21/2014

MECHANICAL

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
M0.11	LEGEND, ABBREVIATIONS & SCHEDULES	X	
M0.12	SCHEDULES	X	
M0.13	SCHEDULES	X	
M0.14	SCHEDULES	X	
M0.15	SCHEDULES	X	
M1.01	SITE PLAN	X	
M2.11	OVERALL FIRST FLOOR PLAN	X	
M2.11A	ENLARGED FIRST FLOOR PLAN	X	
M2.11B	ENLARGED FIRST FLOOR PLAN	X	
M2.11C	ENLARGED FIRST FLOOR PLAN	X	
M2.12	OVERALL SECOND FLOOR PLAN	X	
M2.12A	ENLARGED SECOND FLOOR PLAN	X	
M2.12B	ENLARGED SECOND FLOOR PLAN	X	
M2.12C	ENLARGED SECOND FLOOR PLAN	X	
M2.13	OVERALL THIRD FLOOR PLAN	X	
M2.13A	ENLARGED THIRD FLOOR PLAN	X	
M2.13B	ENLARGED THIRD FLOOR PLAN	X	
M2.13C	ENLARGED THIRD FLOOR PLAN	X	
M2.14	OVERALL ROOF PLAN	X	
M2.14A	ENLARGED ROOF PLAN	X	
M2.14B	ENLARGED ROOF PLAN	X	
M2.14C	ENLARGED ROOF PLAN	X	
M4.01	AIR FLOW DIAGRAM	X	
M5.01	CHILLED WATER PIPING DIAGRAM	X	
M5.02	HEATING HOT WATER PIPING DIAGRAM	X	
M6.01	AHU DETAILS	X	
M6.02	DETAILS	X	
M6.03	DETAILS	X	
M6.04	DETAILS	X	
M7.01	CONTROL DIAGRAMS	X	
M7.02	CONTROL DIAGRAMS	X	
M7.03	CONTROL DIAGRAMS	X	
M7.04	CONTROL DIAGRAMS	X	

PLUMBING

11/21/2013	SHEET DESCRIPTION	12/20/2013	02/21/2014
P0.11	LEGEND, ABBREVIATIONS & SCHEDULES	X	
P1.01	SITE PLAN	X	
P2.10	OVERALL UNDERGOUND PLAN	X	
P2.10A	ENLARGED UNDERGROUND PLAN	X	
P2.10B	ENLARGED UNDERGROUND PLAN	X	
P2.10C	ENLARGED UNDERGROUND PLAN	X	
P2.11	OVERALL FIRST FLOOR PLAN	X	
P2.11A	ENLARGED FIRST FLOOR PLAN	X	
P2.11B	ENLARGED FIRST FLOOR PLAN	X	
P2.11C	ENLARGED FIRST FLOOR PLAN	X	
P2.12	OVERALL SECOND FLOOR PLAN	X	
P2.12A	ENLARGED SECOND FLOOR PLAN	X	
P2.12B	ENALRGED SECOND FLOOR PLAN	X	
P2.12C	ENLARGED SECOND FLOOR PLAN	X	
P2.13	OVERALL THIRD FLOOR PLAN	X	
P2.13A	ENLARGED THIRD FLOOR PLAN	X	
P2.13B	ENLARGED THIRD FLOOR PLAN	X	
P2.13C	ENLARGED THIRD FLOOR PLAN	X	
P2.14	OVERALL ROOF PLAN	X	
P2.14A	ENLARGED ROOF PLAN	X	
P2.14B	ENLARGED ROOF PLAN	X	
P2.14C	ENLARGED ROOF PLAN	X	
P3.1	RAINWATER & OVERFLOR RISER DIAGRAM	X	
P3.2	SANITARY WASTE RISER DIAGRAM	X	
P3.3	WATER RISER DIAGRAM	X	
P6.1	PLUMBING CHASE DETAILS	X	
P6.2	PLUMBING DETAILS	X	
F2.11	FIRST FLOOR FIRE SPRINKLER PLANS	X	
F2.12	SECOND FLOOR FIRE SPRINKLER PLANS	X	
F2.13	THIRD FLOOR FIRE SPRINKLER PLANS	X	
F2.14	OVERALL ROOF FIRE SPRINKLER PLANS	X	
F3.1	FIRE RISER DIAGRAM	X	

ELECTRICAL

11/21/2013	SHEET DESCRIPTION	12/20/2013	02/21/2014
E0.11	LEGEND, ABBREVIATIONS, GENERAL NOTES, & DRAWING LIST	X	
E0.12	SINGLE LINE DIAGRAM - 12KV DISTRIBUTION	X	
E0.12A	SINGLE LINE DIAGRAM - 12KV DISTRIBUTION ADD ALTERNATIVES 3A & 4A	X	
E0.13	SINGLE LINE/RISER DIAGRAM	X	
E0.14	FIRE ALARM SYSTEM RISER DIAGRAM	X	
E0.15	LIGHTING CONTROL RISER DIAGRAM AND FIXTURE SCHEDULE	X	
E1.01	SITE PLAN	X	
E1.01A	SITE PLAN ADD ALTERNATES 3A & 4A	X	
E1.02	SITE PLAN	X	
E2.11	OVERALL FIRST FLOOR PLAN - POWER	X	
E2.11A	ENLARGED FIRST FLOOR PLAN - POWER - AREA A	X	
E2.11B	ENLARGED FIRST FLOOR PLAN - POWER - AREA B	X	
E2.11C	ENLARGED FIRST FLOOR PLAN - POWER - AREA C	X	
E2.12	OVERALL SECOND FLOOR PLAN - POWER	X	
E2.12A	ENLARGED SECOND FLOOR PLAN - POWER - AREA A	X	
E2.12B	ENLARGED SECOND FLOOR PLAN - POWER - AREA B	X	
E2.12C	ENLARGED SECOND FLOOR PLAN - POWER - AREA C	X	
E2.13	OVERALL THIRD FLOOR PLAN - POWER	X	
E2.13A	ENLARGED THIRD FLOOR PLAN - POWER - AREA A	X	
E2.13B	ENLARGED THIRD FLOOR PLAN - POWER - AREA B	X	
E2.13C	ENLARGED THIRD FLOOR PLAN - POWER - AREA C	X	
E2.14	ROOF PLAN - POWER	X	

DRAWING INDEX

ISSUED FOR BID: 12/20/2013 — ADDENDUM NO. 1: 02/21/2014

ELECTRICAL

11/21/2013	SHEET DESCRIPTION	12/20/2013	02/21/2014
E3.11	OVERALL FIRST FLOOR PLAN - LIGHTING	X	
E3.11A	ENLARGED FIRST FLOOR PLAN - LIGHTING - AREA A	X	
E3.11B	ENLARGED FIRST FLOOR PLAN - LIGHTING - AREA B	X	
E3.11C	ENLARGED FIRST FLOOR PLAN - LIGHTING - AREA C	X	
E3.12	OVERALL SECOND FLOOR PLAN - LIGHTING	X	
E3.12A	ENLARGED SECOND FLOOR PLAN - LIGHTING - AREA A	X	
E3.12B	ENLARGED SECOND FLOOR PLAN - LIGHTING - AREA B	X	
E3.12C	ENLARGED SECOND FLOOR PLAN - LIGHTING - AREA C	X	
E3.13	OVERALL THIRD FLOOR PLAN - LIGHTING	X	
E3.13A	ENLARGED THIRD FLOOR PLAN - LIGHTING - AREA A	X	
E3.13B	ENLARGED THIRD FLOOR PLAN - LIGHTING - AREA B	X	
E3.13C	ENLARGED THIRD FLOOR PLAN - LIGHTING - AREA C	X	
E3.14	ROOF PLAN - LIGHTING	X	
E4.11	FIRST FLOOR PLAN - FIRE SPRINKLER	X	
E4.12	SECOND FLOOR PLAN - FIRE ALARM	X	
E4.13	THIRD FLOOR PLAN - FIRE ALARM	X	
E4.14	ROOF PLAN - FIRE ALARM	X	
E5.11	ENLARGED PLANS AND ELEVATIONS	X	
E6.01	DIAGRAMS	X	
E6.02	DIAGRAMS	X	
E6.03	DETAILS & DIAGRAMS	X	
E6.04	DETAILS & DIAGRAMS	X	
E6.05	DIAGRAMS	X	
E6.06	DIAGRAMS	X	
E6.07	DIAGRAMS	X	
E6.08	DIAGRAMS	X	
E6.09	DIAGRAMS	X	
E6.10	DIAGRAMS	X	
E7.01	PANEL SCHEDULES	X	
E7.02	PANEL SCHEDULES	X	
E7.03	PANEL SCHEDULES	X	

TECHNOLOGY

SHEET #	SHEET DESCRIPTION	12/20/2013	02/21/2014
T0.01	TECHNOLOGY TITLE SHEET	X	
T0.02	SCHEDULES - CABLING AND BACKBOX	X	
T0.03	SCHEDULES- DOOR	X	
T0.10	RISER DIAGRAM - PATHWAYS	X	
T0.11	RISER DIAGRAM - GROUNDING AND BONDING	X	
T0.12	RISER DIAGRAM - CABLING	X	
T0.13	HORIZONTAL ROUTING DIAGRAMS	X	
T0.20	RISER DIAGRAM- SECURITY	X	
T0.21	BLOCK DIAGRAM- ACAMS	X	
T0.22	BLOCK DIAGRAM- VSS	X	
T0.31	BLOCK DIAGRAM - AUDIOVISUAL	X	
T0.32	BLOCK DIAGRAM - AUDIOVISUAL	X	
T0.33	BLOCK DIAGRAM - AUDIOVISUAL TEAL/TILE ROOM	X	
T0.34	BLOCK DIAGRAM - AUDIOVISUAL	X	
T1.01	SITE PLAN - COMMUNICATIONS	X	
T2.11	FIRST FLOOR PLAN	X	
T2.12	SECOND FLOOR PLAN	X	
T2.13	THIRD FLOOR PLAN	X	
T3.11	FIRST FLOOR REFLECTED CEILING PLAN	X	
T3.12	SECOND FLOOR REFLECTED CEILING PLAN	X	
T3.13	THIRD FLOOR REFLECTED CEILING PLAN	X	
T4.11	ROOM DETAILS - BDF-1U1	X	
T4.12	ROOM DETAILS - IDF-2U1	X	
T4.13	ROOM DETAILS - IDF-3U1	X	
T4.21	ENLARGED PLANS - ROOM 140	X	
T4.22	ENLARGED PLANS - ROOM 110	X	
T4.23	ENLARGED PLANS - ROOM 170	X	
T4.24	ENLARGED PLANS - ROOM 175	X	
T4.25	ENLARGED PLANS - TUTORIAL	X	
T4.26	ENLARGED PLANS - SMALL CONF. AND SEMINAR ROOM	X	
T4.27	ENLARGED PLANS - CAVE AND MEDIA WALL	X	
T4.28	ENLARGED PLANS - LARGE CONF. AND LAB SPACE	X	
T4.29	ENLARGED PLANS - ROOM 130	X	
T4.30	ENLARGED PLANS - SCHOLARLY ACTIVITY	X	
T5.01	DETAILS - TELECOM ROOM	X	
T5.02	DETAILS - USER SPACE	X	
T5.03	DETAILS - INSTALLATION	X	
T5.04	DETAILS - LABELING	X	
T5.10	DETAILS - SECURITY	X	
T5.11	DETAILS - SECURITY	X	
T5.12	DETAILS - SECURITY	X	

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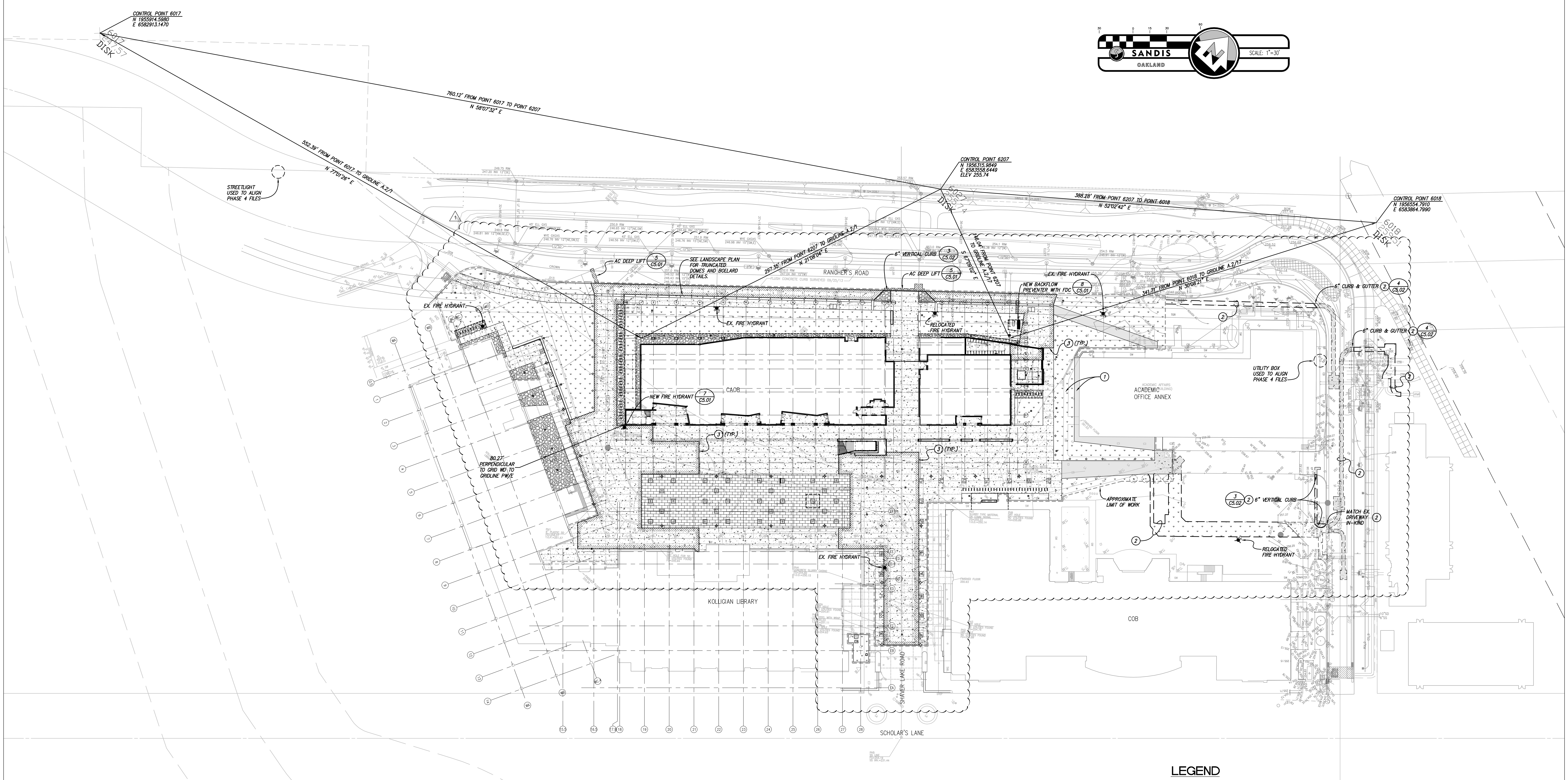
NO.	DATE	DESCRIPTION
1	02.21.2014	ADDENDUM NO. 1
	12.20.2013	100% CONSTRUCTION DOCUMENTS
	10.21.2013	90% CONSTRUCTION DOCUMENTS
	07.26.2013	50% CONSTRUCTION DOCUMENTS
	04.15.2013	100% DESIGN DEVELOPMENT
	01.28.2013	100% SCHEMATIC DESIGN

CLASSROOM AND ACADEMIC OFFICE BUILDING
UCMERCED

INDEX SHEET

Scale:
Drawn By: Author
Project Number: 2012040
Sheet Number: A0.01A



LEGEND

- PROPERTY LINE
- SAWCUT LINE
- APPROXIMATE LIMIT OF WORK
- VEHICULAR AC PAVEMENT (1 / C5.02)
- AC DEEP LIFT (5 / C5.01)
- PEDESTRIAN AC PAVEMENT, SEE LANDSCAPE PLANS
- PAVERS, SEE LANDSCAPE PLANS
- COBBLES, SEE LANDSCAPE PLANS
- LIGHT DUTY CONCRETE PAVEMENT, SEE LANDSCAPE PLANS
- 1 HEAVY DUTY CONCRETE PAVEMENT, SEE LANDSCAPE PLANS
- PLANTING, SEE LANDSCAPE PLANS

SHEET NOTES

1. CONTRACTOR TO MAINTAIN AN ACCESSIBLE PATH OF TRAVEL FROM THE EXIT AT THE NORTH SIDE OF THE AOA TO THE DRIVEWAY TO THE PUBLIC WAY AT THE SOUTH SIDE OF AOA AT ALL TIMES WHEN THE AOA BUILDING IS OCCUPIED.
2. UTILITY TRENCHING AND SURFACE REPLACEMENT PER ADD ALTERNATIVES. SEE UTILITY PLAN FOR ADDITIONAL INFORMATION.
3. (1) TRANSITION FROM LIGHT TO HEAVY DUTY SECTIONS AT CONTROL OR EXPANSION JOINTS (TYP.)

PROJECT CONTROL

THE THREE CAMPUS CONTROL POINTS 6017, 6207, & 6018 WILL BE USED AS THE BASIS OF LOCATING PROPOSED IMPROVEMENTS.

CONTROL POINT DESCRIPTIONS

6017 – FOUND 3-1/4" BRASS DISK STAMPED "UNIVERSITY OF CALIFORNIA 2011 SURVEY CONTROL LS 8225" AS PER RECORD OF SURVEY, VOLUME 49, PAGE 30.

6207, 6018 – FOUND 3-1/4" BRASS DISK STAMPED "UNIVERSITY OF CALIFORNIA 2011 SURVEY CONTROL LS 8225" IN CONCRETE MONUMENT AS PER RECORD OF SURVEY VOLUME 49, PAGE 30.

PHASE 4 INFRASTRUCTURE

THE PHASE 4 INFRASTRUCTURE IMPROVEMENTS HAVE BEEN APPROXIMATELY LOCATED BASED UPON COMMON ELEMENTS IN THE SURVEY BACKGROUNDS. SPECIFIC DIMENSIONS FROM THE PROJECT CONTROL MONUMENTS WILL BE REQUESTED TO CONFIRM THEIR LOCATION.

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SUNNYVALE ROSEVILLE OAKLAND

REGISTERED PROFESSIONAL ENGINEER JEFFREY MICHAEL SETERA NO. 62793 Exp. 6/30/14 CIVIL STATE OF CALIFORNIA

UNIVERSITY OF CALIFORNIA MERCED FIRE MARSHAL ... UCM Project #: 900290

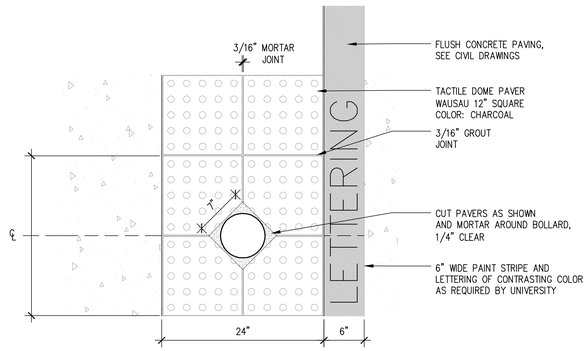
NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
1	02.21.2014	ADDENDUM #1			
	12.20.2013	100% CONSTRUCTION DOCUMENTS			
	10.21.2013	90% CONSTRUCTION DOCUMENTS			
	04.15.2013	100% DESIGN DEVELOPMENT			
	01.28.2013	100% SCHEMATIC DESIGN			

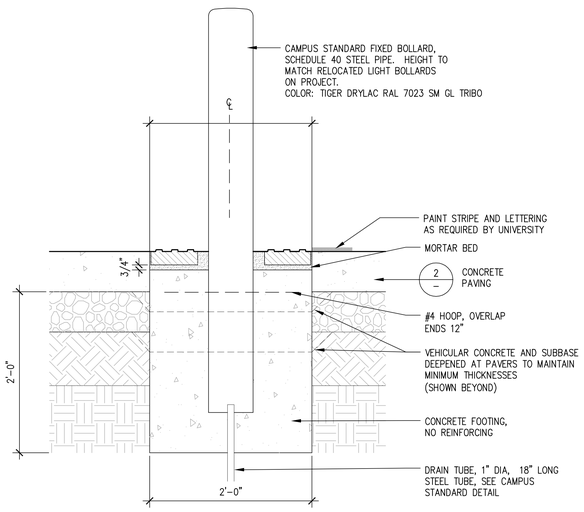
CLASSROOM AND ACADEMIC OFFICE BUILDING
Merced, California
UCMERCED

BUILDING LOCATION AND SITE PLAN

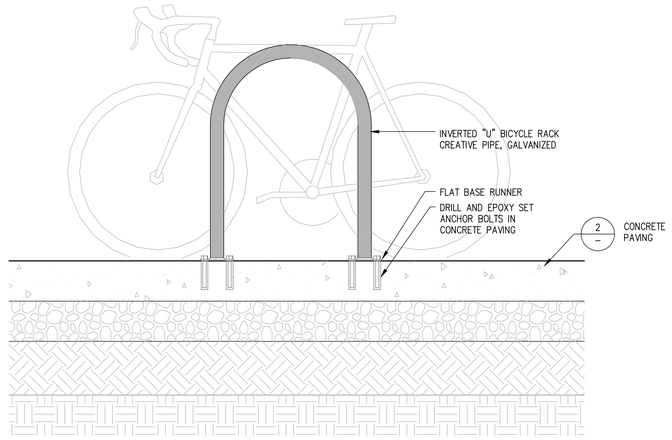
Scale: 1"=30'
Drawn By: RAB/SEC
Project Number: 2012040
Sheet Number: C2.01

File: X:\P\612049\PLAN SETS\C2.01.dwg Date:Feb 21, 2014

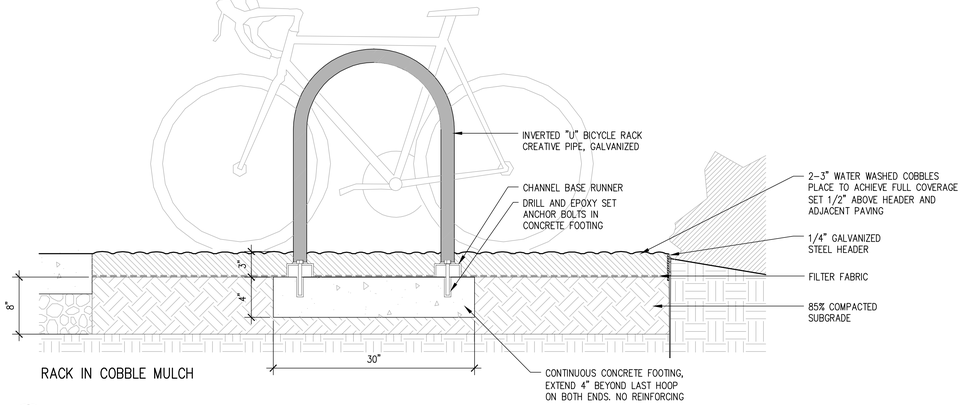




8 BOLLARD AND PAVERS AT DROP-OFF
1 1/2" = 1'-0"

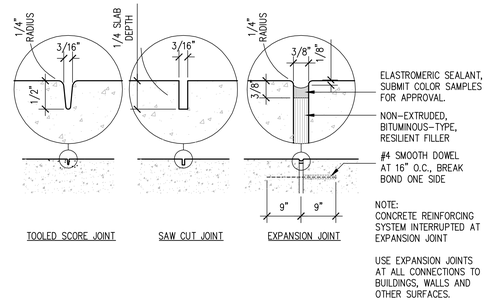


RACK ON CONCRETE PAVING

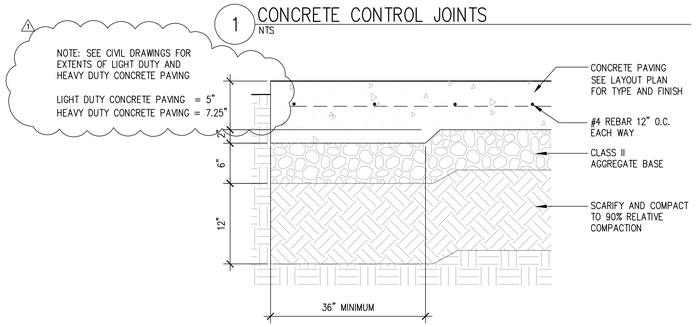


RACK IN COBBLE MULCH

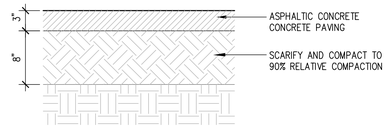
6 BIKE RACK
1 1/2" = 1'-0"



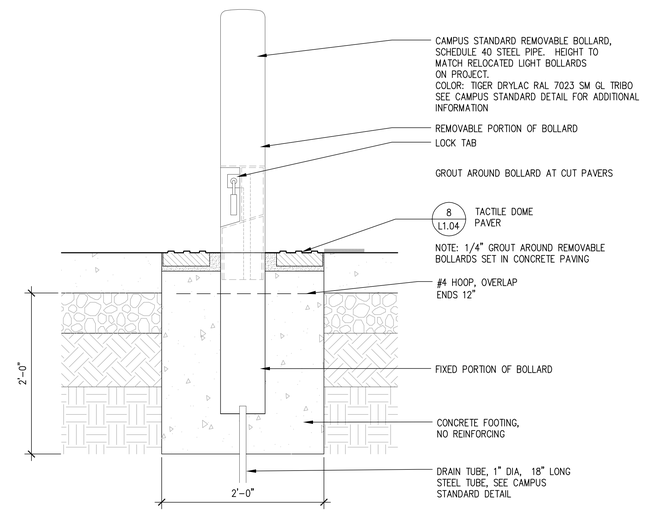
1 CONCRETE CONTROL JOINTS
NTS



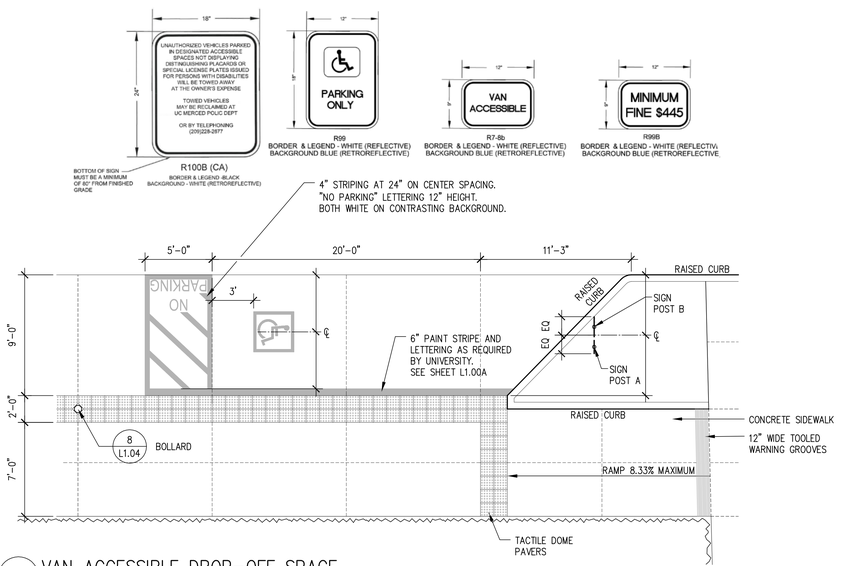
2 CONCRETE PAVING - VEHICULAR
1 1/2"=1'-0"



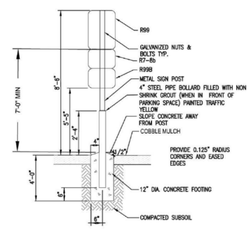
3 PEDESTRIAN ASPHALTIC CONCRETE PAVING
1 1/2"=1'-0"



9 REMOVABLE BOLLARD
1 1/2" = 1'-0"

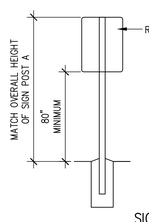


7 VAN ACCESSIBLE DROP-OFF SPACE
1/4" = 1'-0"

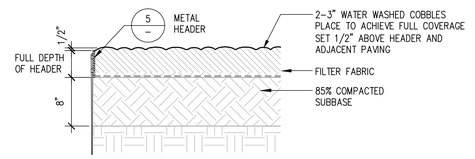


SIGN POST A

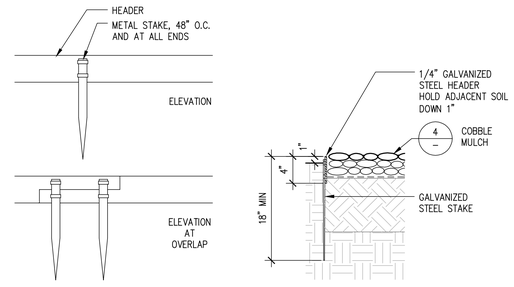
NOTE: ADJUST SIGNAGE HEIGHTS ACCORDING TO MINIMUMS SO THE TOP SIGN ON EACH POLE IS AT THE SAME OVERALL HEIGHT.



SIGN POST B



4 COBBLE MULCH
1 1/2"=1'-0"



5 GALVANIZED METAL HEADER
1 1/2" = 1'-0"

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LICENSED LANDSCAPE ARCHITECT
No. 2008
Signature
11.30.2015
Renewal Date
12.17.2015
Date
STATE OF CALIFORNIA

UNIVERSITY OF CALIFORNIA
MERCED
FIRE MARSHAL
Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection One set of approved plans shall be available on the Project site at all times.
Reviewed by:
Date:
UCM Project #: 360280

NO.	DATE	DESCRIPTION
1	02.21.2014	ADDENDUM NO. 1
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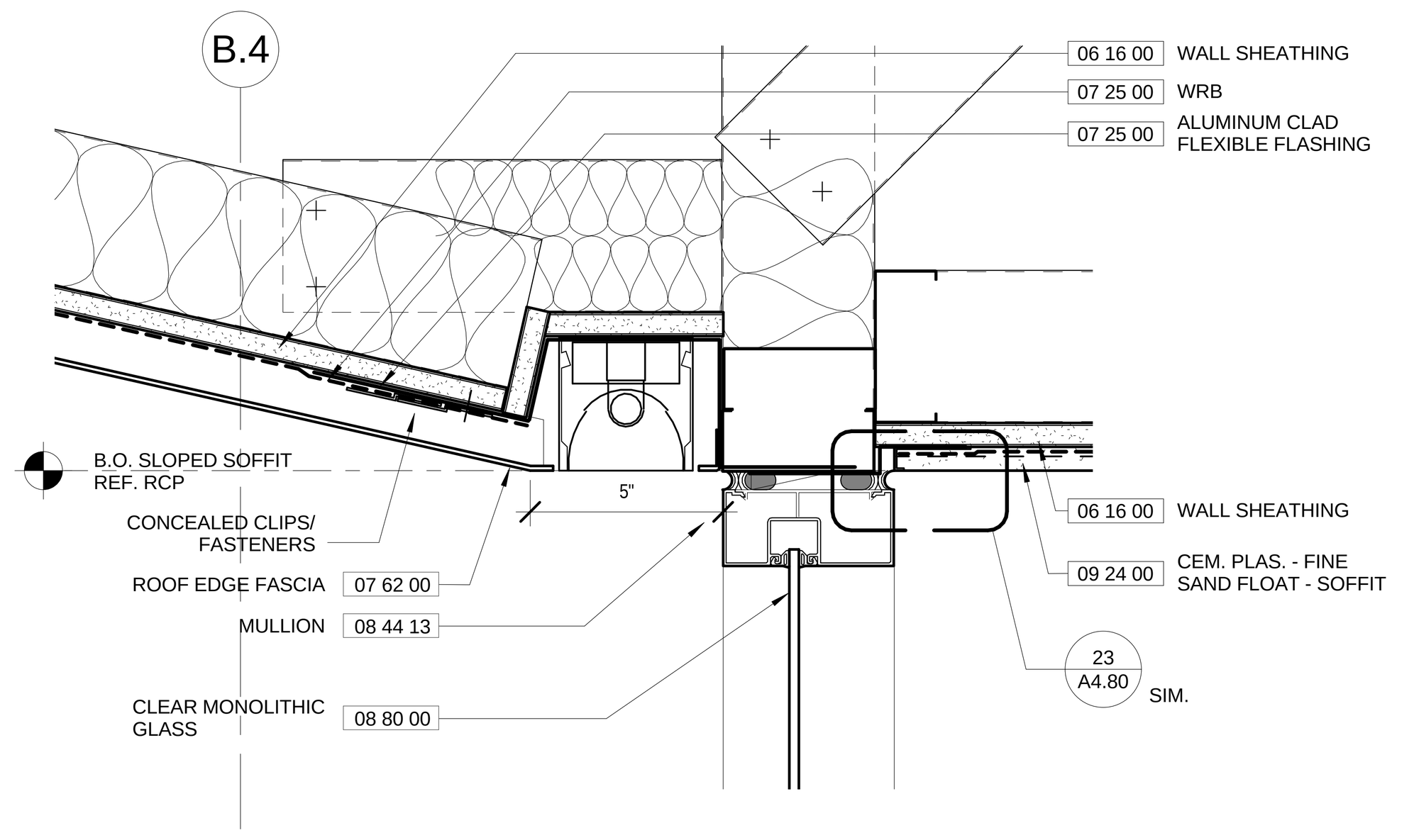
	01.28.2013	100% SCHEMATIC DESIGN

CLASSROOM AND ACADEMIC OFFICE BUILDING
UCMERCED

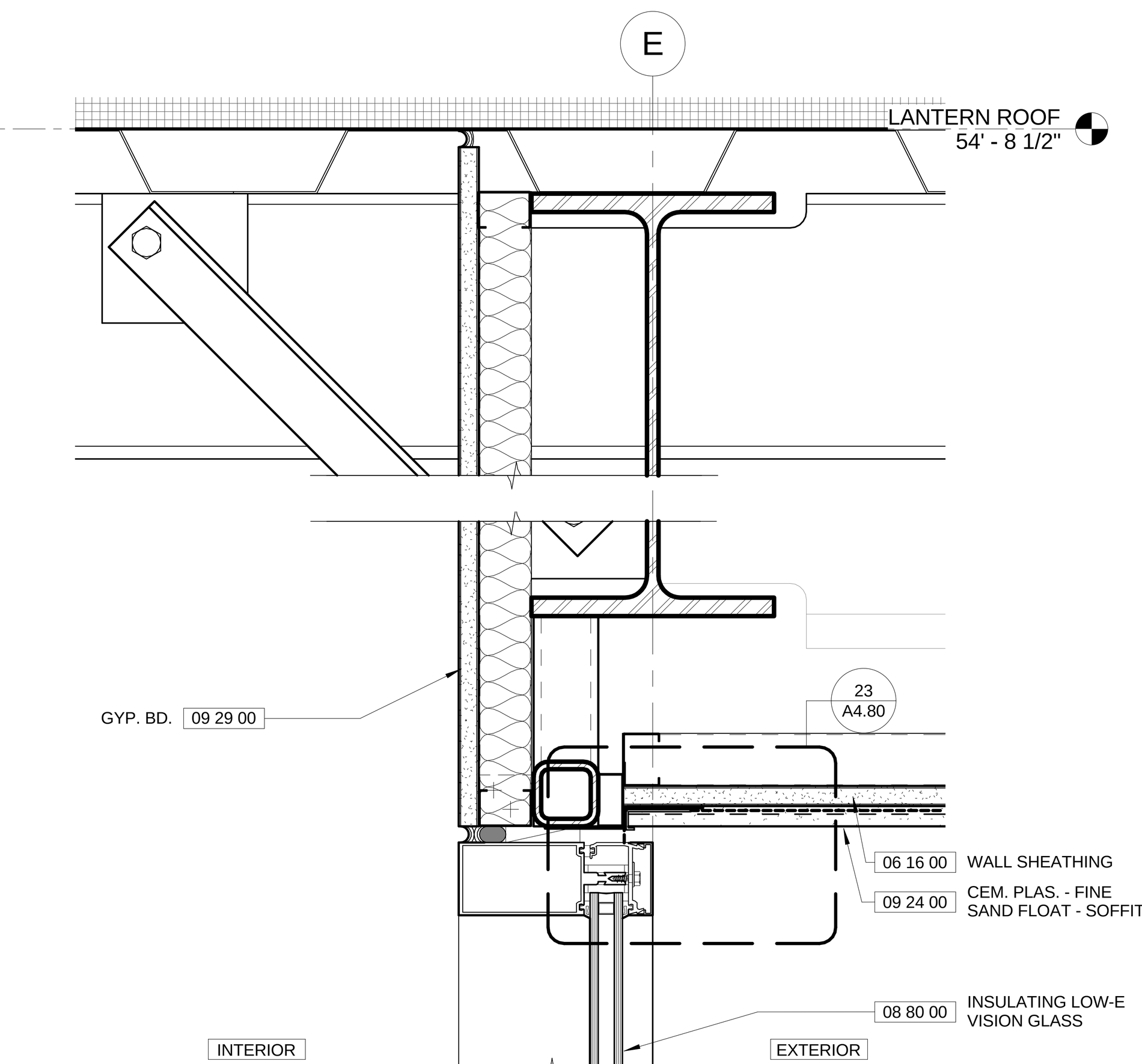
PAVING DETAILS

Scale: AS NOTED
Drawn By: ZRD
Project Number: SCBS203
Sheet Number: L1.04



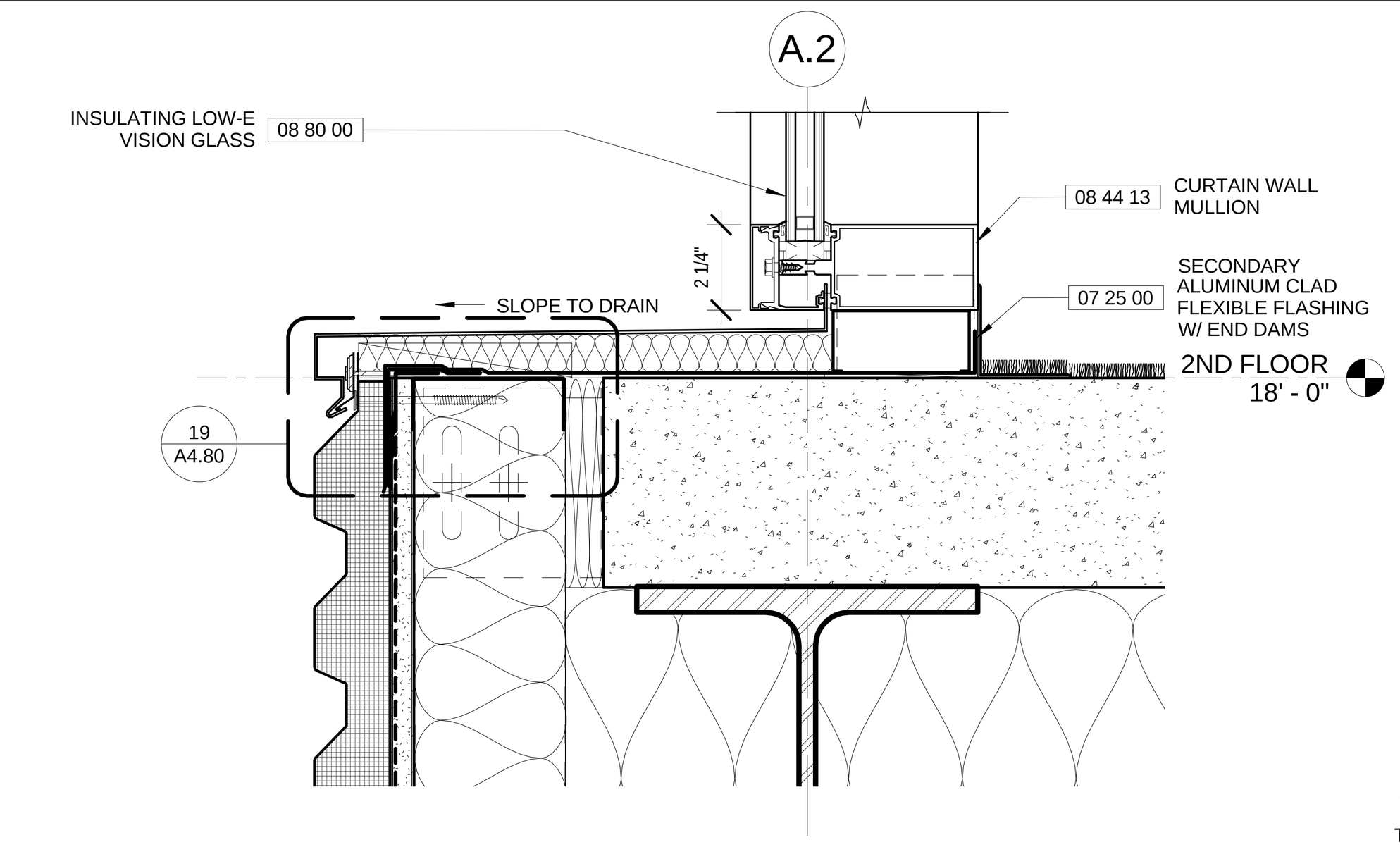
15 HEAD AT NORTH STOREFRONT

SCALE: 3" = 1'-0"



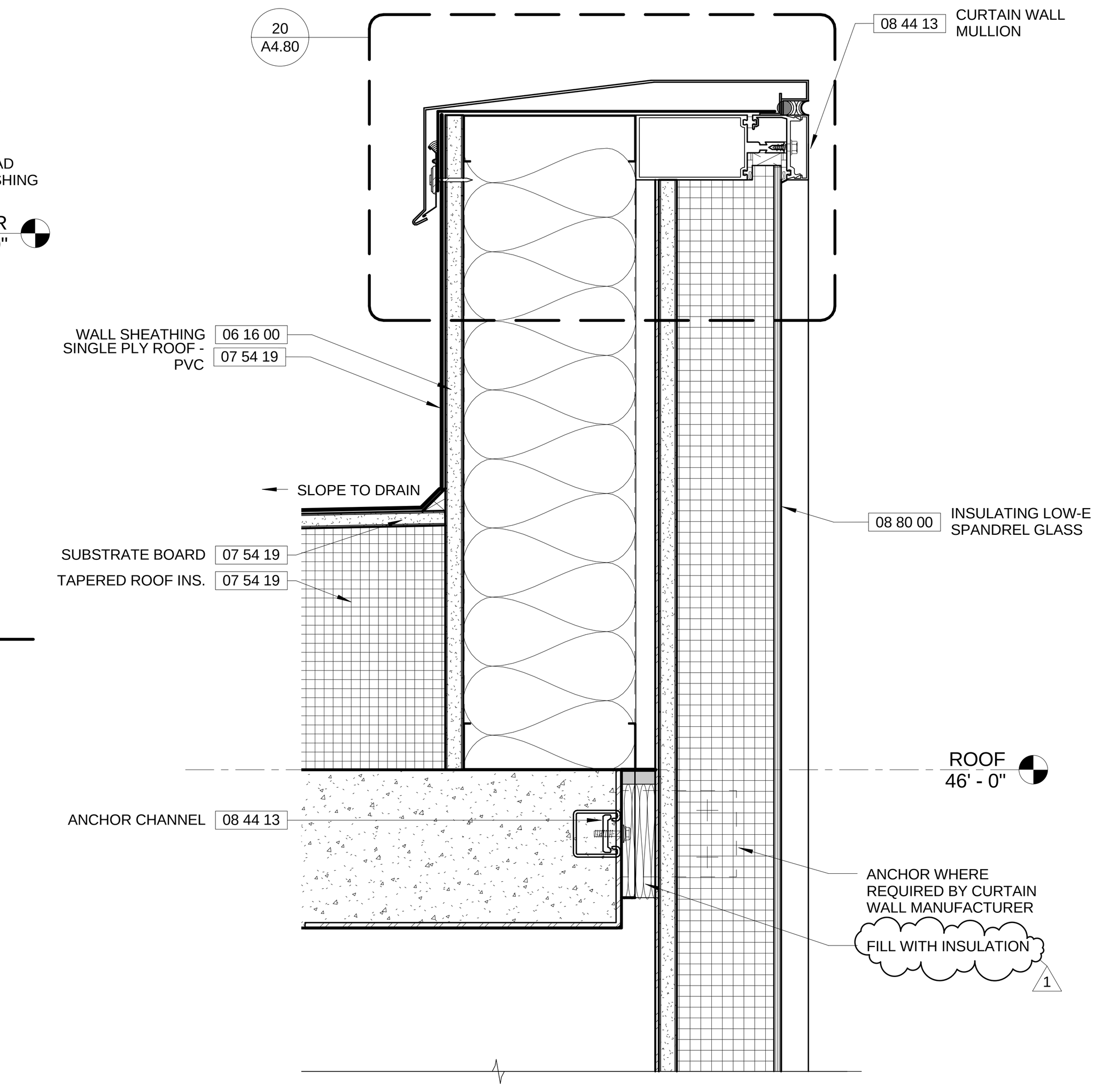
11 SOUTH CURTAIN WALL HEAD AT LANDING

SCALE: 3" = 1'-0"



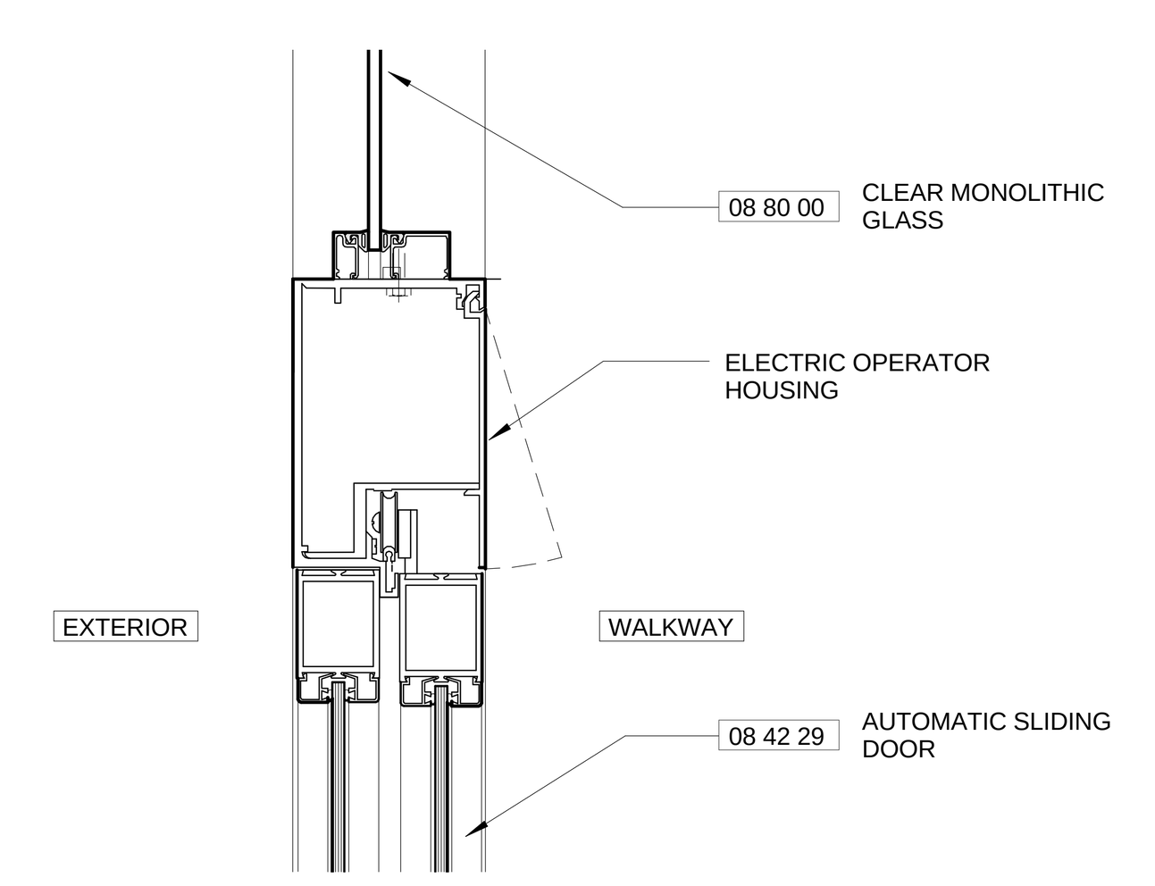
8 SILL AT SECOND FLOOR

SCALE: 3" = 1'-0"



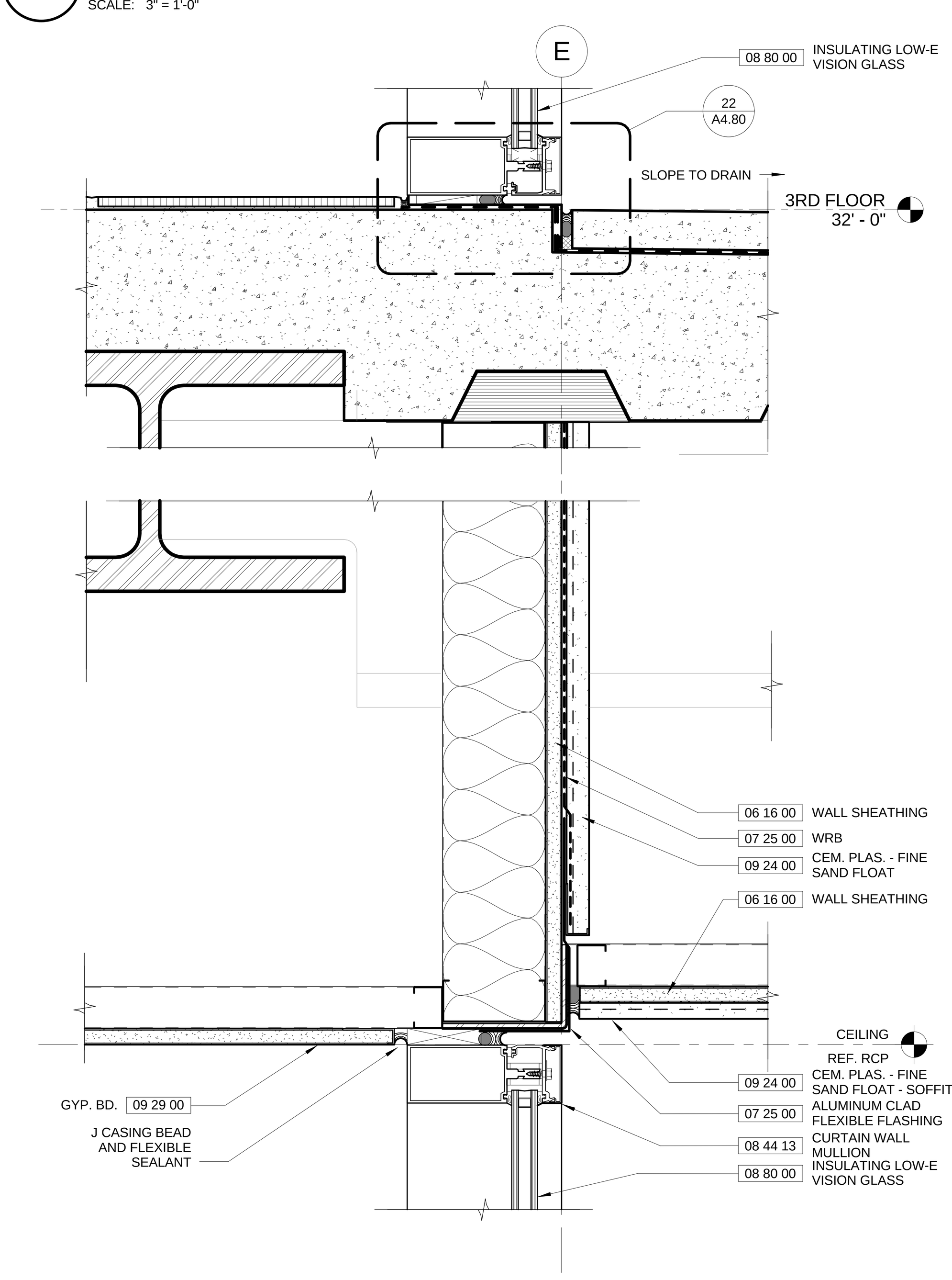
4 PARAPET AT CURTAIN WALL

SCALE: 3" = 1'-0"



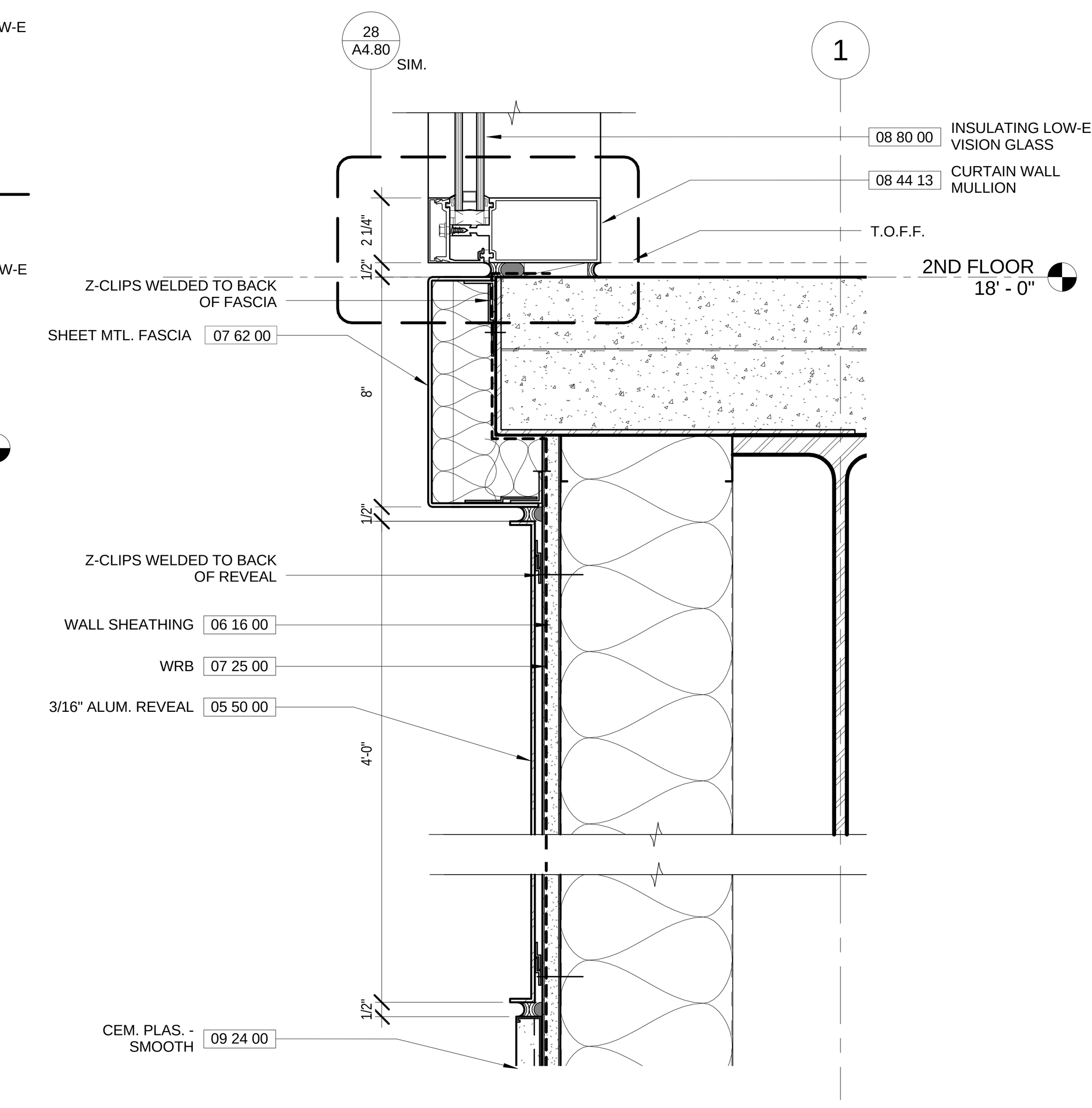
14 HEAD AT AUTOMATIC SLIDING DOOR

SCALE: 3" = 1'-0"



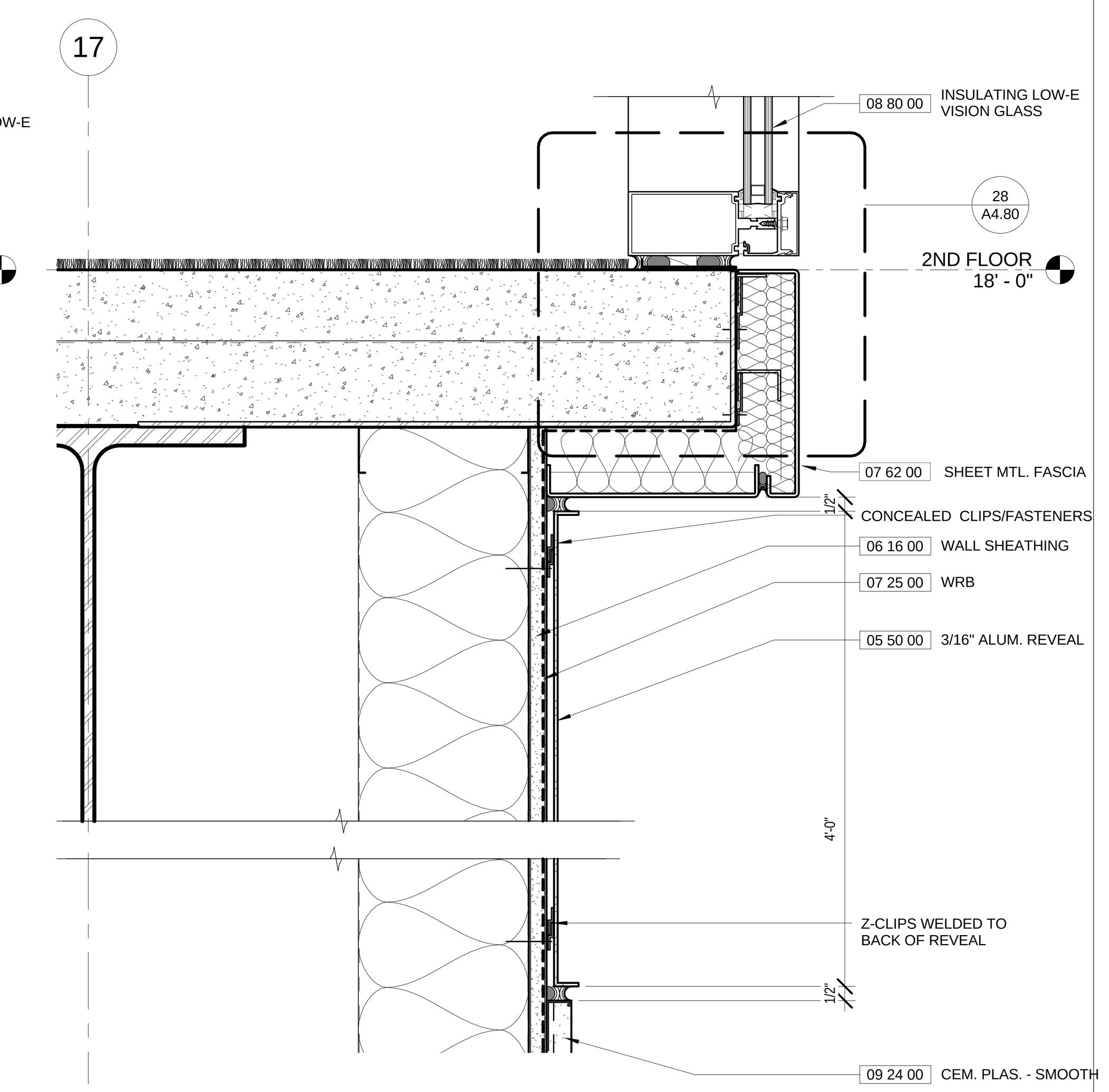
10 SOFFIT AT SOUTH CURTAIN WALL - 2ND FLOOR

SCALE: 3" = 1'-0"



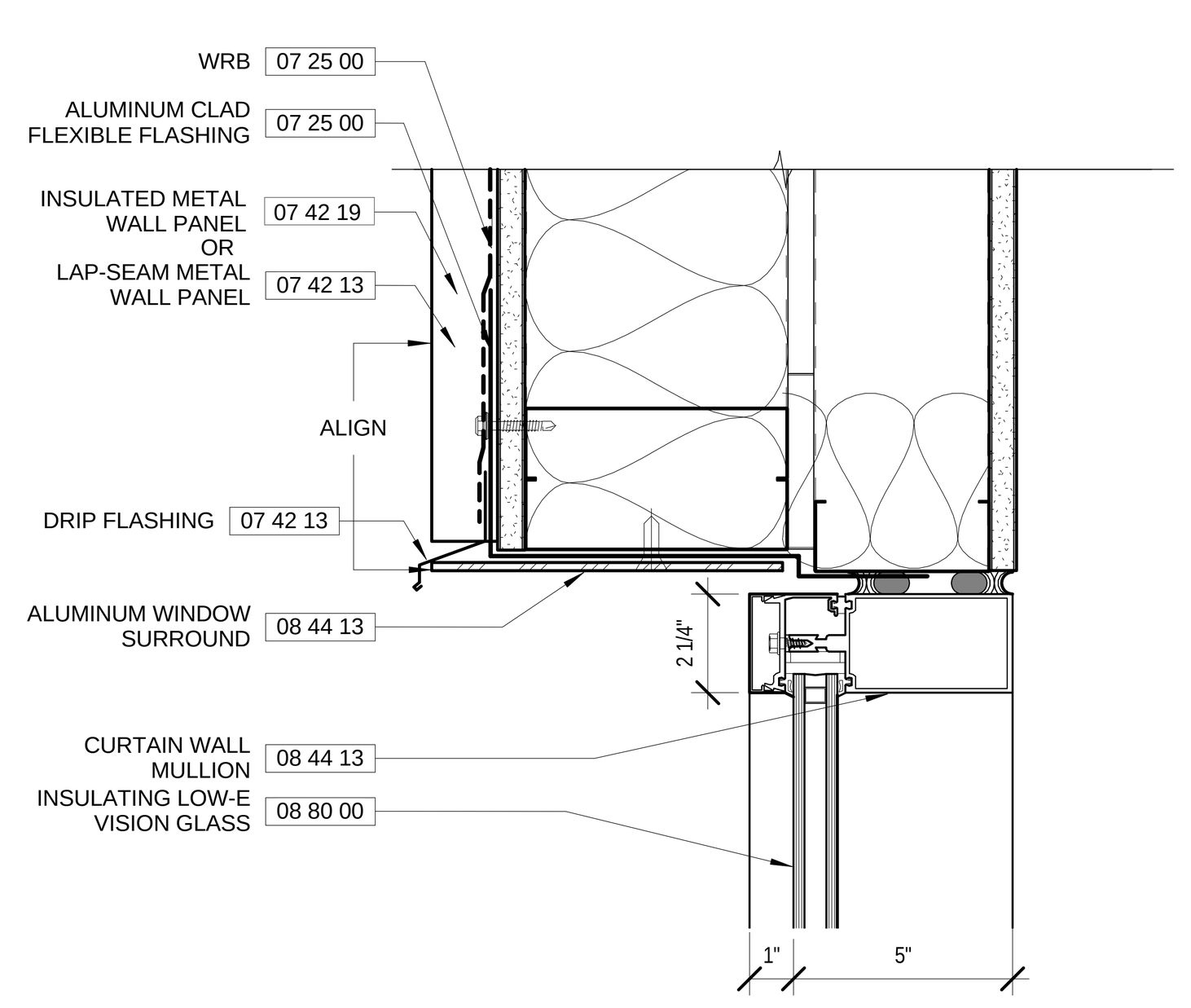
7 SILL AT WEST CURTAIN WALL

SCALE: 3" = 1'-0"



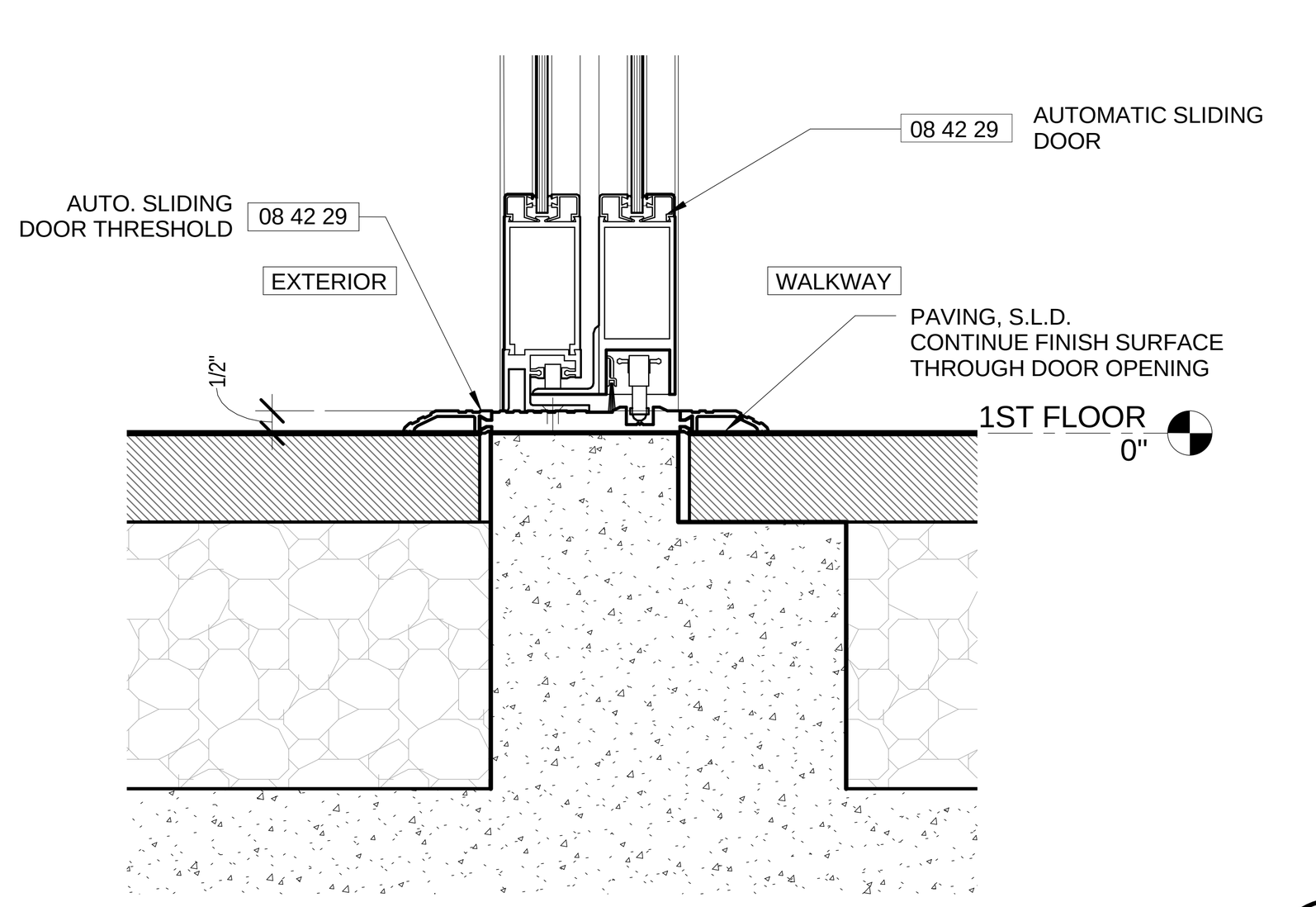
3 SILL AT EAST CURTAIN WALL

SCALE: 3" = 1'-0"



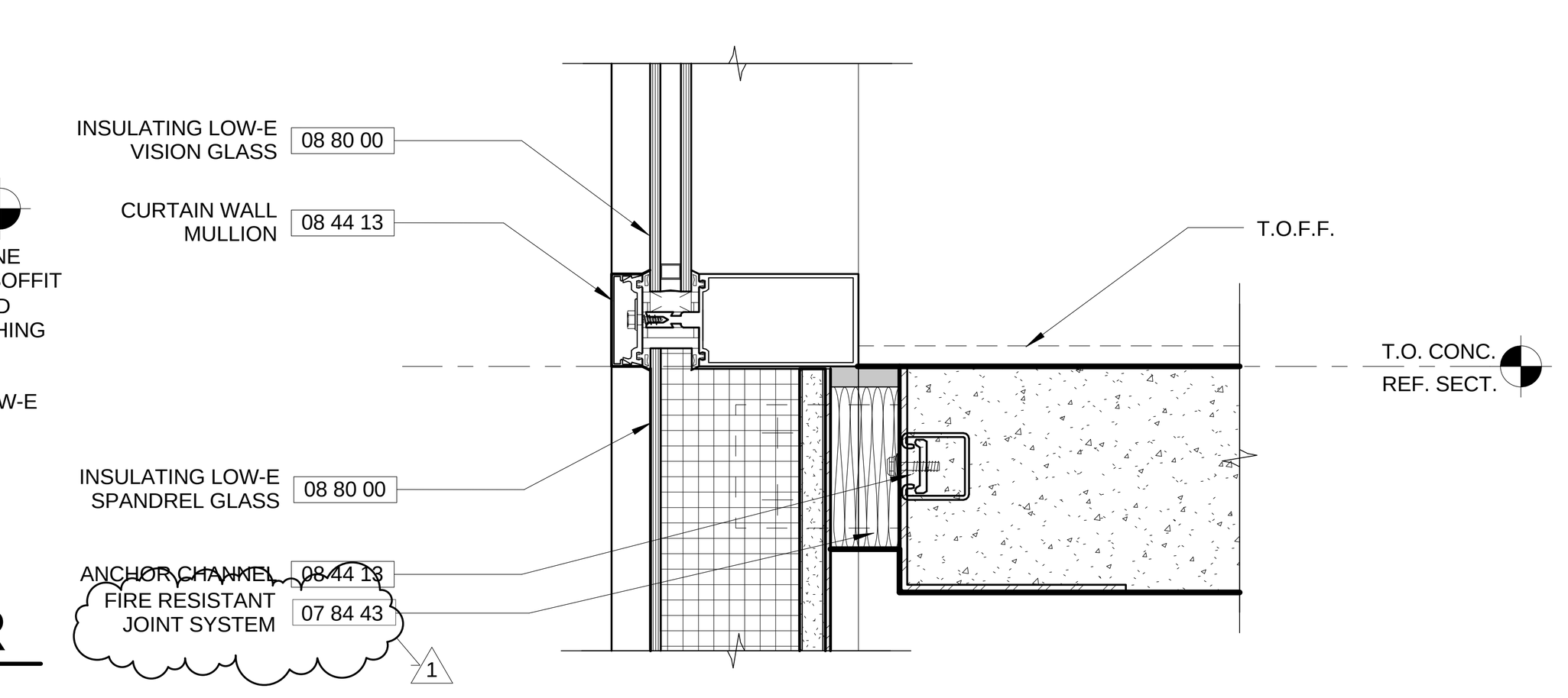
17 HEAD AT CURTAIN WALL - METAL PANEL

SCALE: 3" = 1'-0"



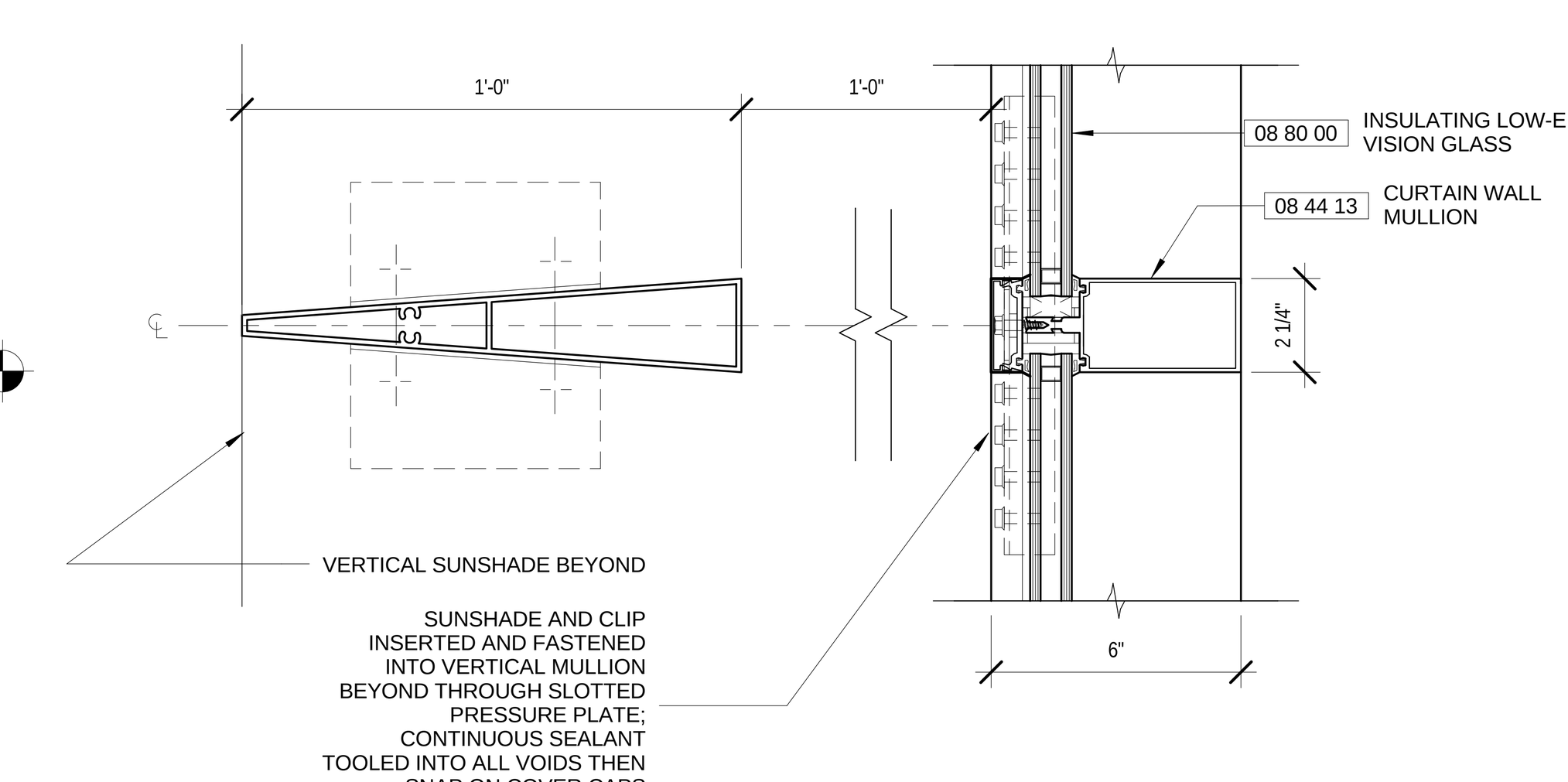
13 THRESHOLD AT AUTOMATIC SLIDING DOOR

SCALE: 3" = 1'-0"



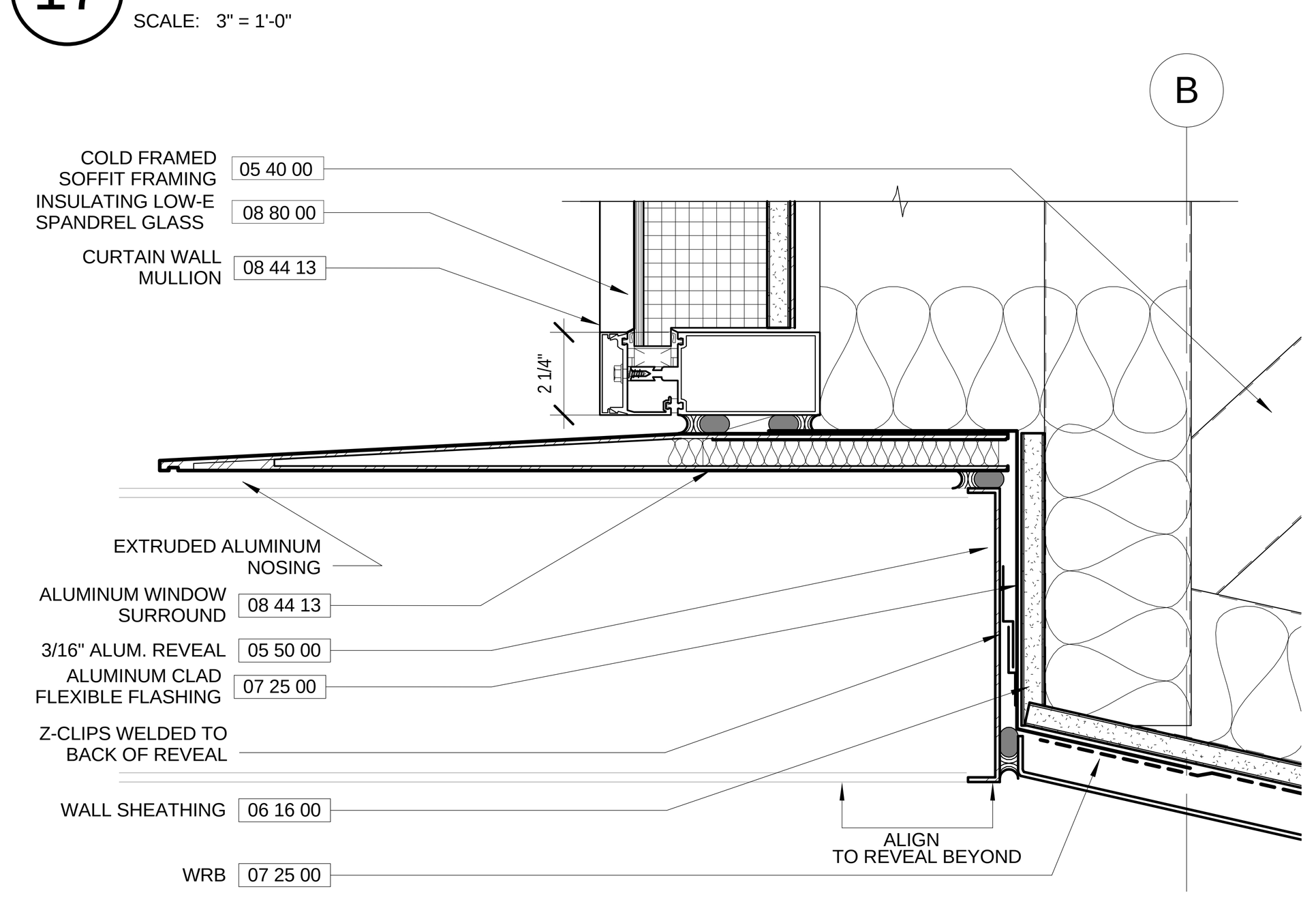
6 TYP. HORIZONTAL AT SLAB

SCALE: 3" = 1'-0"



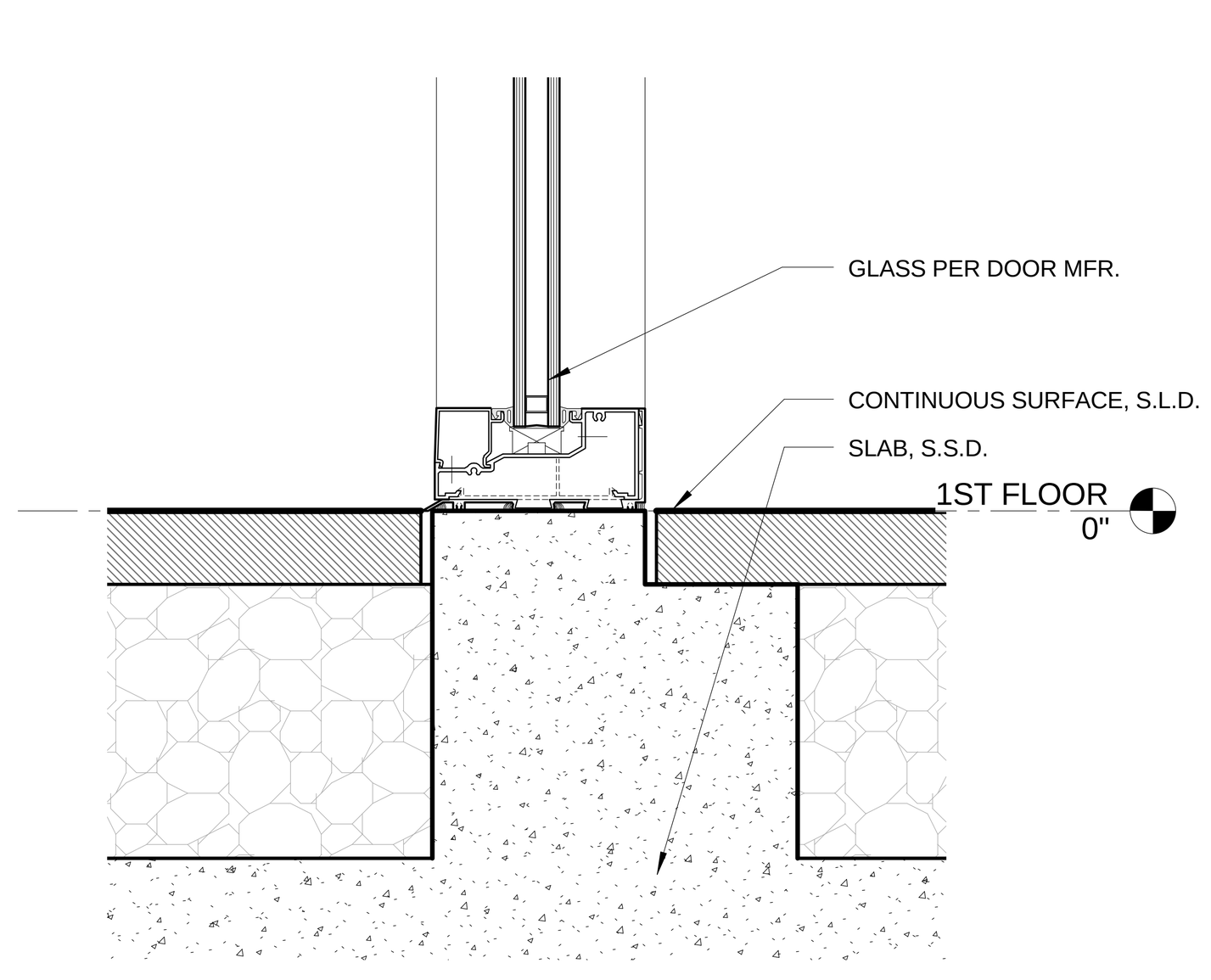
2 TYP. HORIZONTAL AT SUNSHADE

SCALE: 3" = 1'-0"



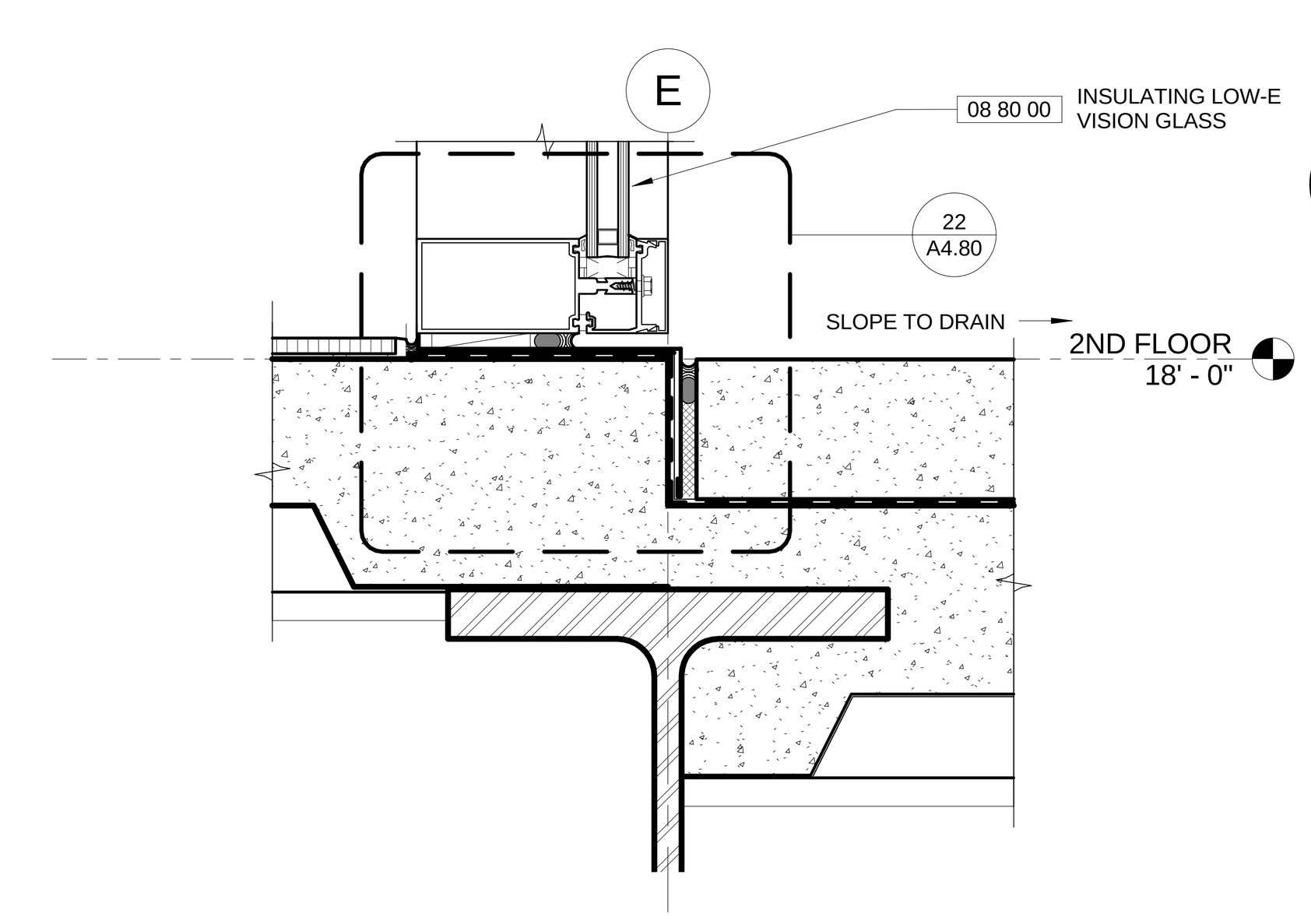
16 SILL AT NORTH CURTAIN WALL

SCALE: 3" = 1'-0"



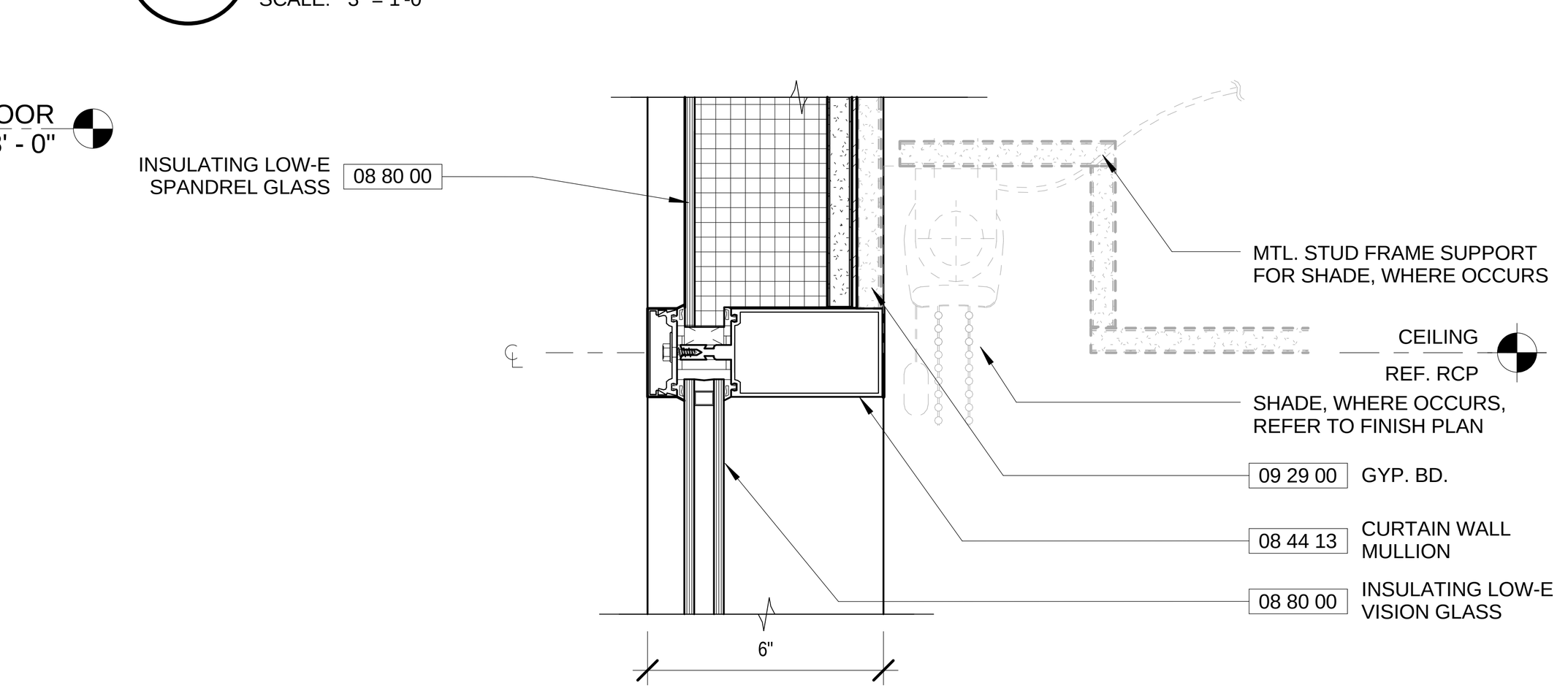
12 SILL AT NORTH WALKWAY WALL

SCALE: 3" = 1'-0"



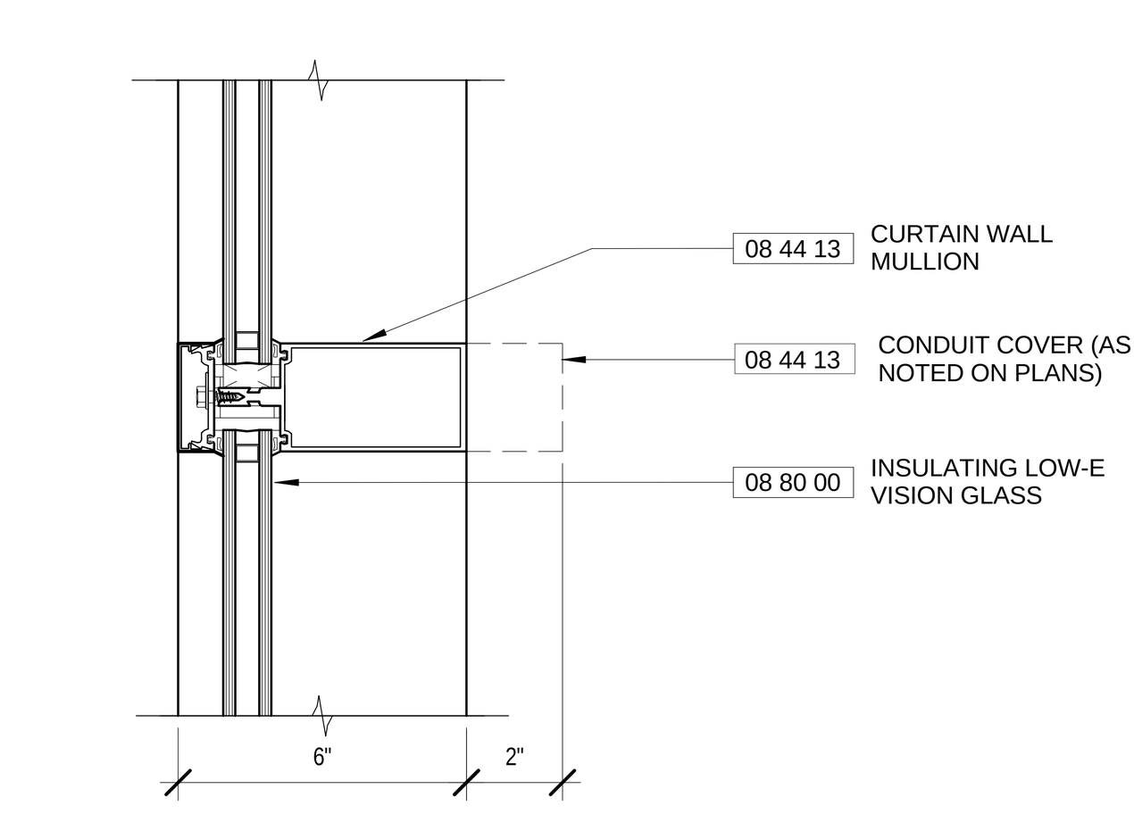
9 CURTAIN WALL AT EXTERIOR WALKWAY

SCALE: 3" = 1'-0"



5 TYP. HORIZONTAL AT SPANDREL

SCALE: 3" = 1'-0"



1 TYP. HORIZONTAL

SCALE: 3" = 1'-0"

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Architecture Planning Interior Design

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	01.28.2013	100% SCHEMATIC DESIGN

CLASSROOM AND ACADEMIC OFFICE BUILDING

UCMERCED

CURTAIN WALL DETAILS - SECTION

Scale: 3" = 1'-0"

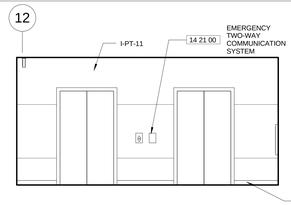
Drawn By: JY

Project Number: 2012040

Sheet Number: A4.55

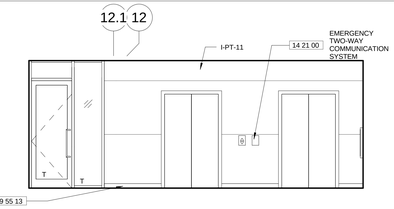
15 KEY ELEVATION - PANEL WOOD WALL

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



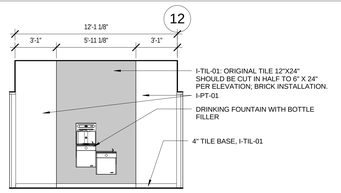
18 ELEVATOR 3RD FLOOR ELEV.

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



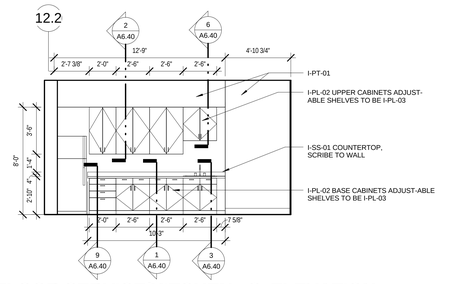
17 ELEVATOR 2ND FLOOR ELEV.

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



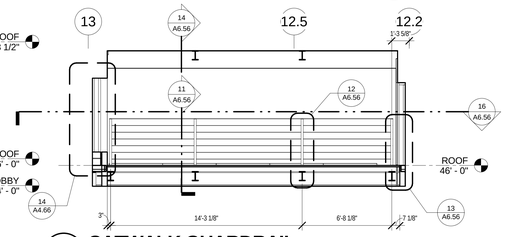
11 2ND FLOOR DRINKING FOUNTAIN

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



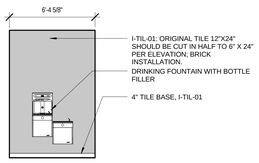
8 3RD FLOOR SERVICE/KITCHEN - S. ELEVATION

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



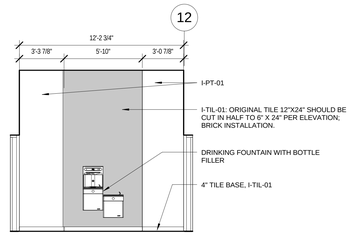
14 CATWALK GUARDRAIL

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



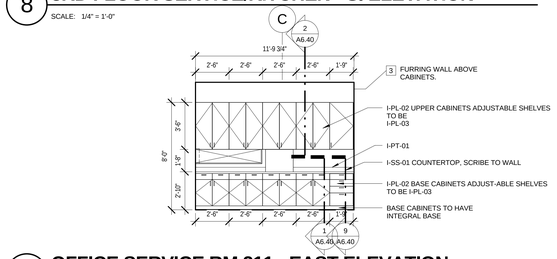
12 3RD FLOOR DRINKING FOUNTAIN

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



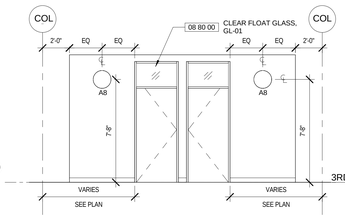
10 1ST FLOOR DRINKING FOUNTAIN

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



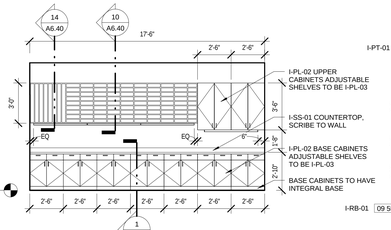
7 OFFICE SERVICE RM 211 - EAST ELEVATION

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



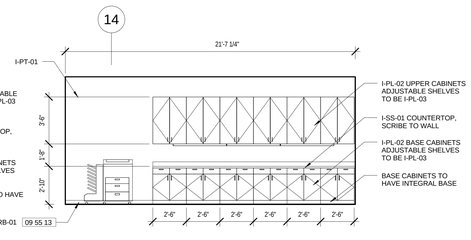
13 TYP. INT. OFFICE ENTRY ELEVATION

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



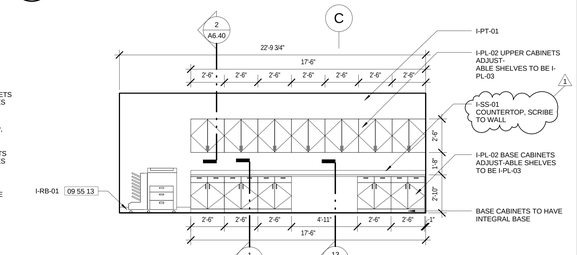
19 3RD FLOOR COPY ROOM

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



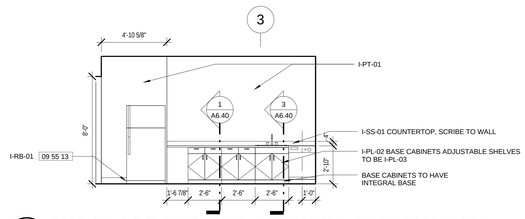
9 3RD FLOOR OFFICE SERVICE COPY ROOM

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



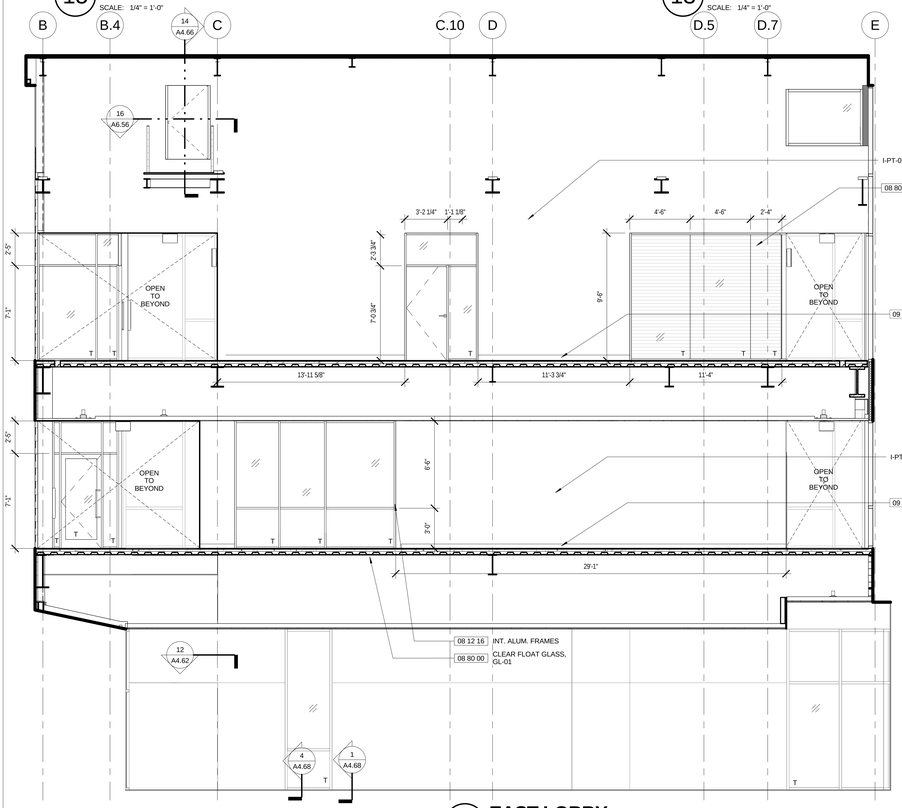
6 2ND FLOOR OFFICE SERVICE/COPY ROOM CASEWORK

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



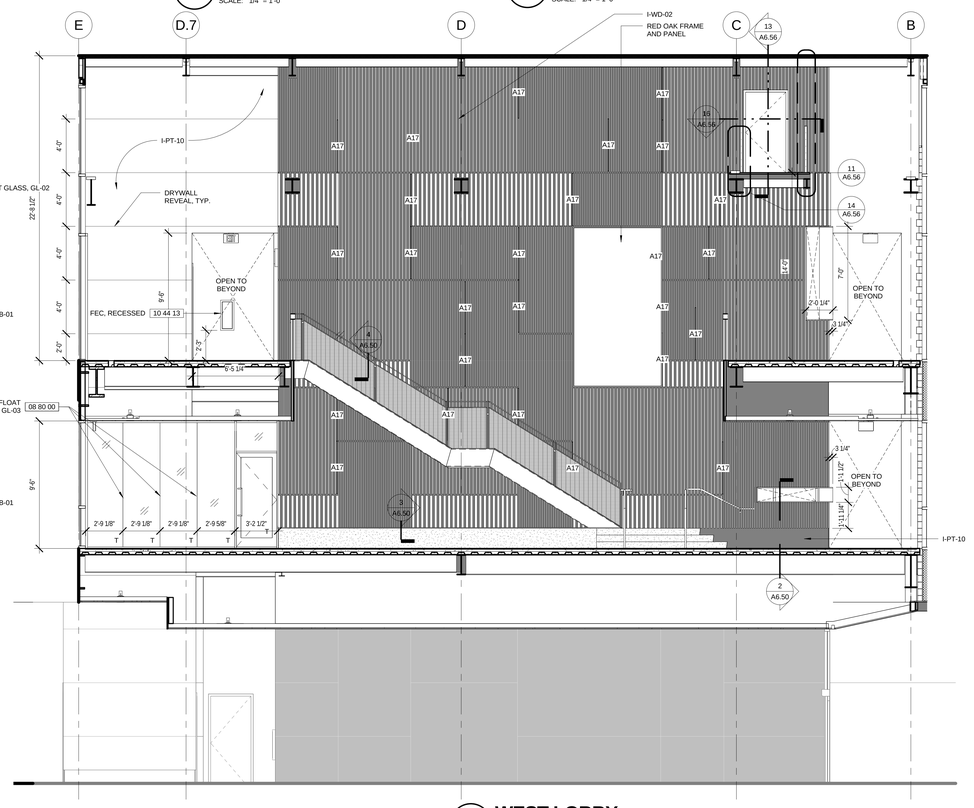
5 2ND FLOOR SERVICE / KITCHEN - N. ELEVATION

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



3 EAST LOBBY

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



2 WEST LOBBY

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

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Architecture Planning Interior Design

GENERAL SHEET NOTES:

1. REFER TO SHEET A0.10 FOR TYPICAL MOUNTING HEIGHTS NOT SHOWN ON THESE DRAWINGS, INCLUDING CODE-REQUIRED ACCESSIBILITY MOUNTING REQUIREMENTS & MIN. CLEARANCES.
2. REFER TO FLOOR PLANS (A2 SERIES), DOOR AND PARITION SCHEDULES (A8 SERIES) FOR WALL AND DOOR LOCATIONS, MATERIAL DESIGNATIONS, AND DIMENSIONS. DIMENSIONS, INCLUDING LENGTH, WIDTH, HEIGHT AND THICKNESS, WHERE SHOWN ON THESE ELEVATIONS, ARE PROVIDED FOR CONVENIENCE ONLY. IN THE EVENT ON DISCREPANCIES, THE DIMENSIONS ON PLANS AND SCEHEDULES SHALL GOVERN.
3. REFER TO RCP'S (A7 SERIES) FOR CEILING MATERIALS AND HEIGHTS NOT SHOWN ON THESE DRAWINGS.
4. REFER TO FINISH DRAWINGS, SHEETS A8.30 THROUGH A8.32 FOR INTERIOR MATERIAL SCHEDULES AND SPECIFICATON SECTION REFERENCES.
5. GWB PARTITIONS TO RECEIVE PAINT FINISH I-PT-01 U.N.O.
6. CASEWORK, MILLWORK, RUNNING TRIM, TOILET ACCESSORIES, HANDRAILS AND OTHER ACCESSORIES ARE TO BE SECURED TO STUDS OR BACKING SHEET METAL/PLATES, TYP. REFER TO BACKING PLATE CRITERIA ON SHEET A0.10.

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FIRE MARSHAL
Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection. Plans of approved parts shall be available on the Project site at all times.
Reviewed By: _____
Date: _____
UCM Project #: 900290

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CLASSROOM AND ACADEMIC OFFICE BUILDING

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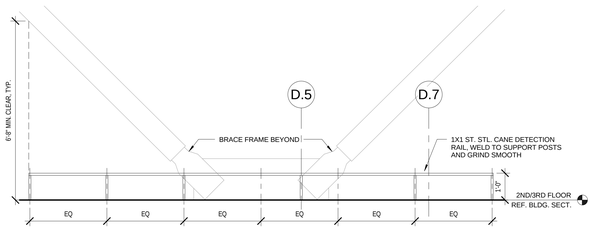
LICENSED ARCHITECT — RENEWAL 05-30-2015 — STATE OF CALIFORNIA

INTERIOR ELEVATIONS

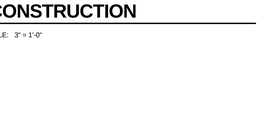
Scale: As indicated
Drawn By: RW
Project Number: 2012040

Sheet Number: A6.07



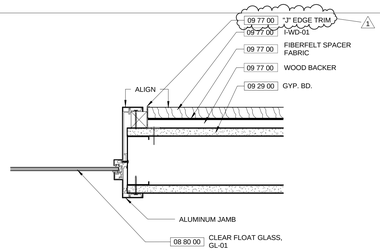
22 TYP. CANE DETECTION RAIL AT BRBF - ELEVATION

SCALE: 1/2" = 1'-0"



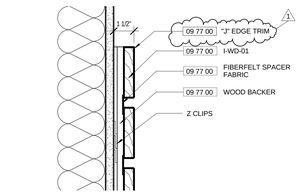
21 TYP. CANE DETECTION RAIL - PLAN

SCALE: 3" = 1'-0"



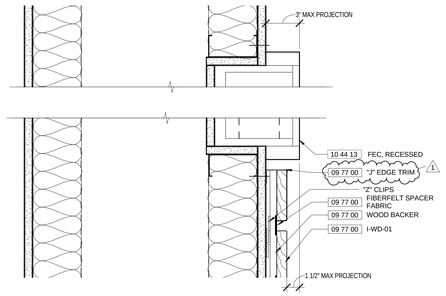
17 TYP. JAMB AT I-WD-01 AT PREP IT/AV STORAGE

SCALE: 3" = 1'-0"



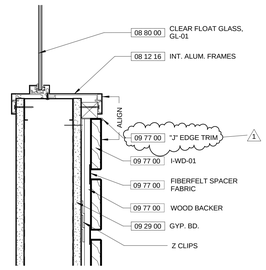
8 TYP I-WD-01 TO GYP. BD. TRANSITION

SCALE: 3" = 1'-0"



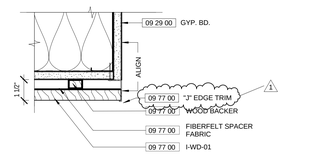
18 FIRE EXTINGUISHER CABINET AT GYP WALL & I-WD-01

SCALE: 3" = 1'-0"



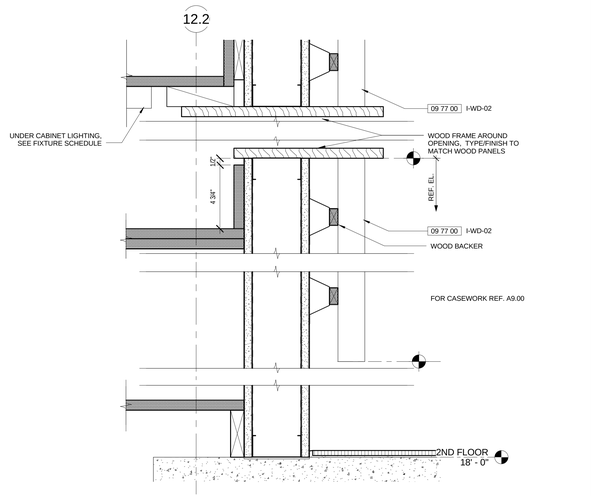
16 TYP. INTERIOR WINDOW SILL AT I-WD-01

SCALE: 3" = 1'-0"



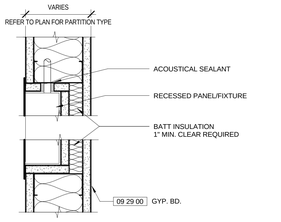
6 PLAN AT I-WD-01 JAMB, TYP.

SCALE: 3" = 1'-0"



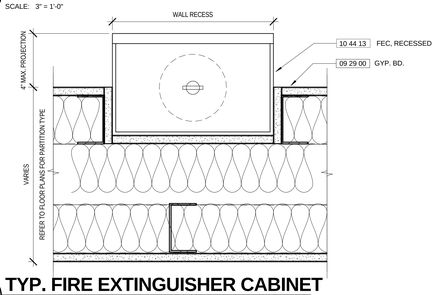
2 SLAT WALL - 2ND & 3RD FL. OPENING

SCALE: 3" = 1'-0"



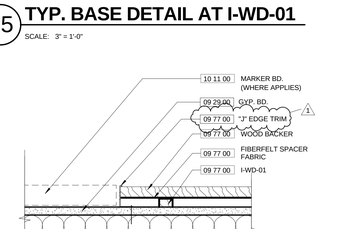
19 TYP. RECESSED PANELS & FIXTURES IN SOUND-RATED CONSTRUCTION

SCALE: 3" = 1'-0"



13 FIRE EXTINGUISHER CABINET AT I-WD-01

SCALE: 3" = 1'-0"

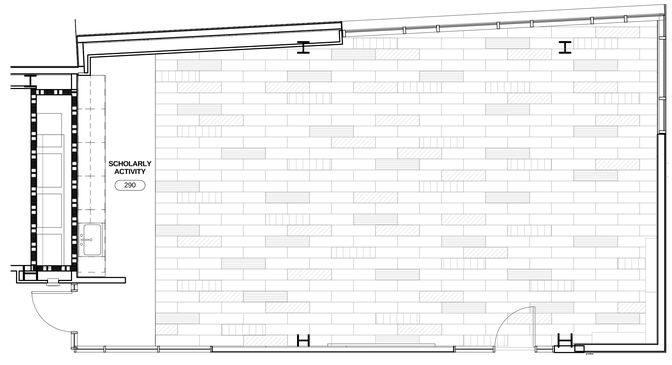


5 TYP. PLAN I-WD-02 AT LIGHT

SCALE: 3" = 1'-0"

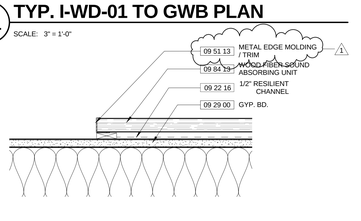
15 TYP. BASE DETAIL AT I-WD-01

SCALE: 3" = 1'-0"



14 SCHOLARLY ACTIVITY PLAN ENLARGEMENT CARPET LAYOUT

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

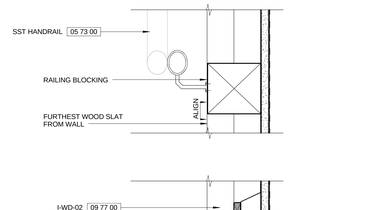


11 TYP. I-WD-01 TO GWB PLAN

SCALE: 3" = 1'-0"

10 TYP. WOOD FIBER UNIT TO GWB

SCALE: 3" = 1'-0"

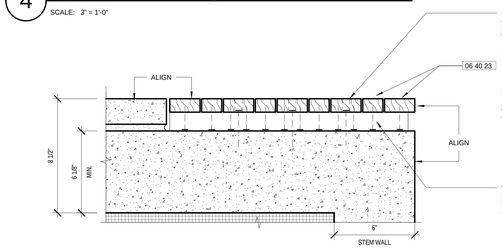


4 STAIR 3 RAILING @ WOOD SLAT WALL

SCALE: 3" = 1'-0"

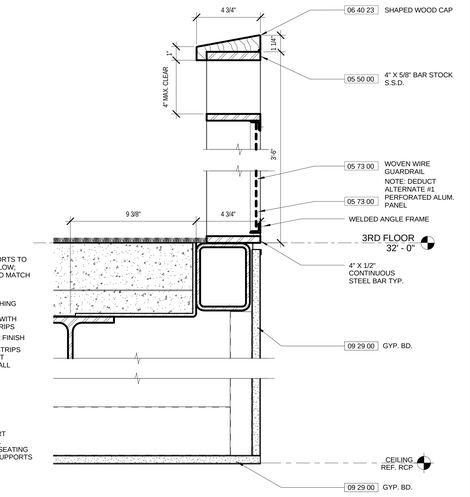
9 TYP. WOOD FIBER UNIT TO I-WD-01 PLAN

SCALE: 3" = 1'-0"



3 STAIR 3 BENCH 2ND FLOOR

SCALE: 3" = 1'-0"



1 SECTION AT INTERIOR GUARD RAIL

SCALE: 3" = 1'-0"

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NO.	DATE	DESCRIPTION
1	02.21.2014	ADDENDUM NO. 1
	12.20.2013	100% CONSTRUCTION DOCUMENTS
	10.21.2013	90% CONSTRUCTION DOCUMENTS
	07.26.2013	50% CONSTRUCTION DOCUMENTS
	04.15.2013	100% DESIGN DEVELOPMENT
	01.28.2013	100% SCHEMATIC DESIGN

CLASSROOM AND ACADEMIC OFFICE BUILDING

UCMERCED

LICENSED ARCHITECT — Timothy Stevens — 06-30-2015 — STATE OF CALIFORNIA

INTERIOR DETAILS

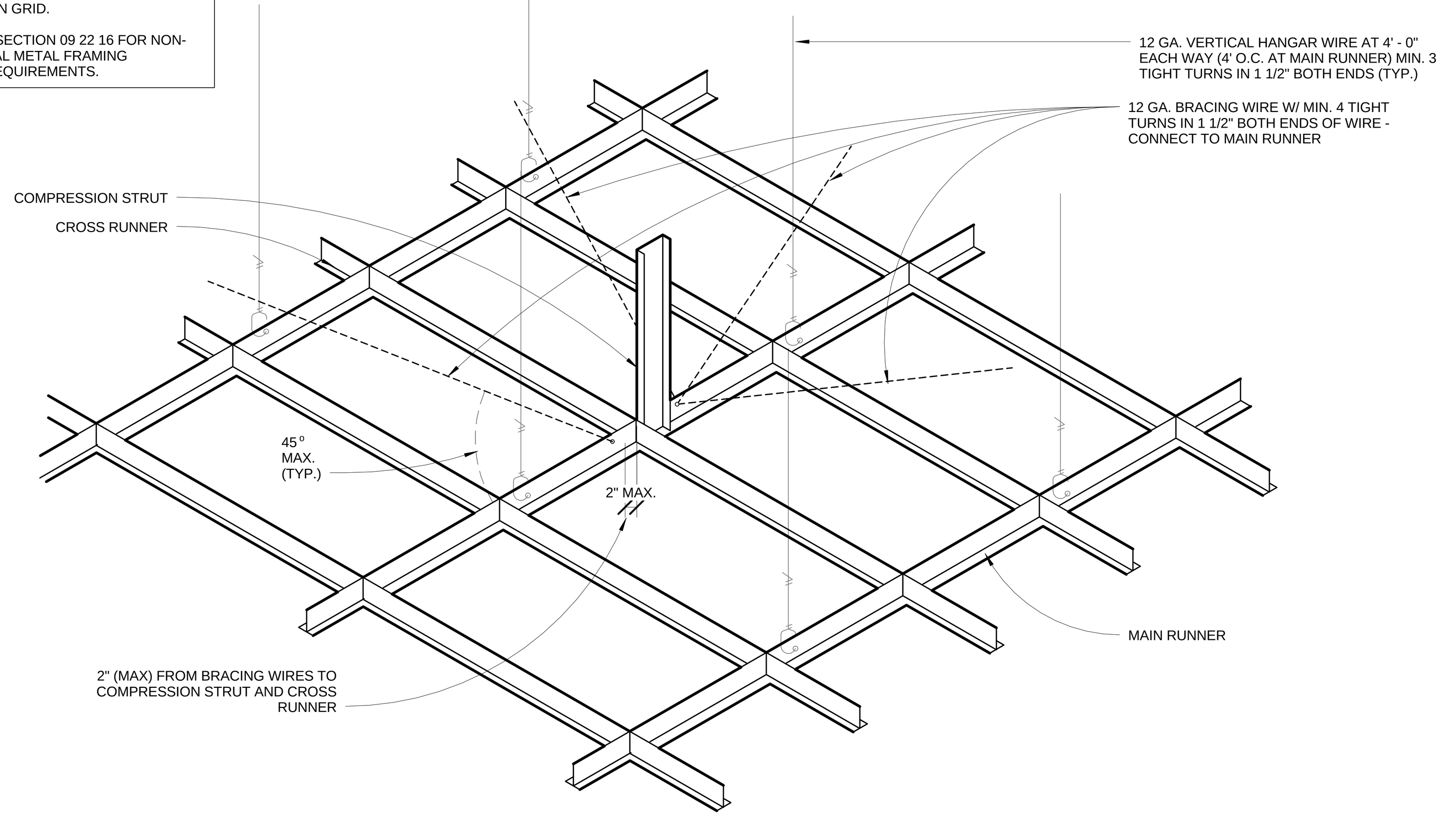
Scale: As indicated

Drawn By: Author

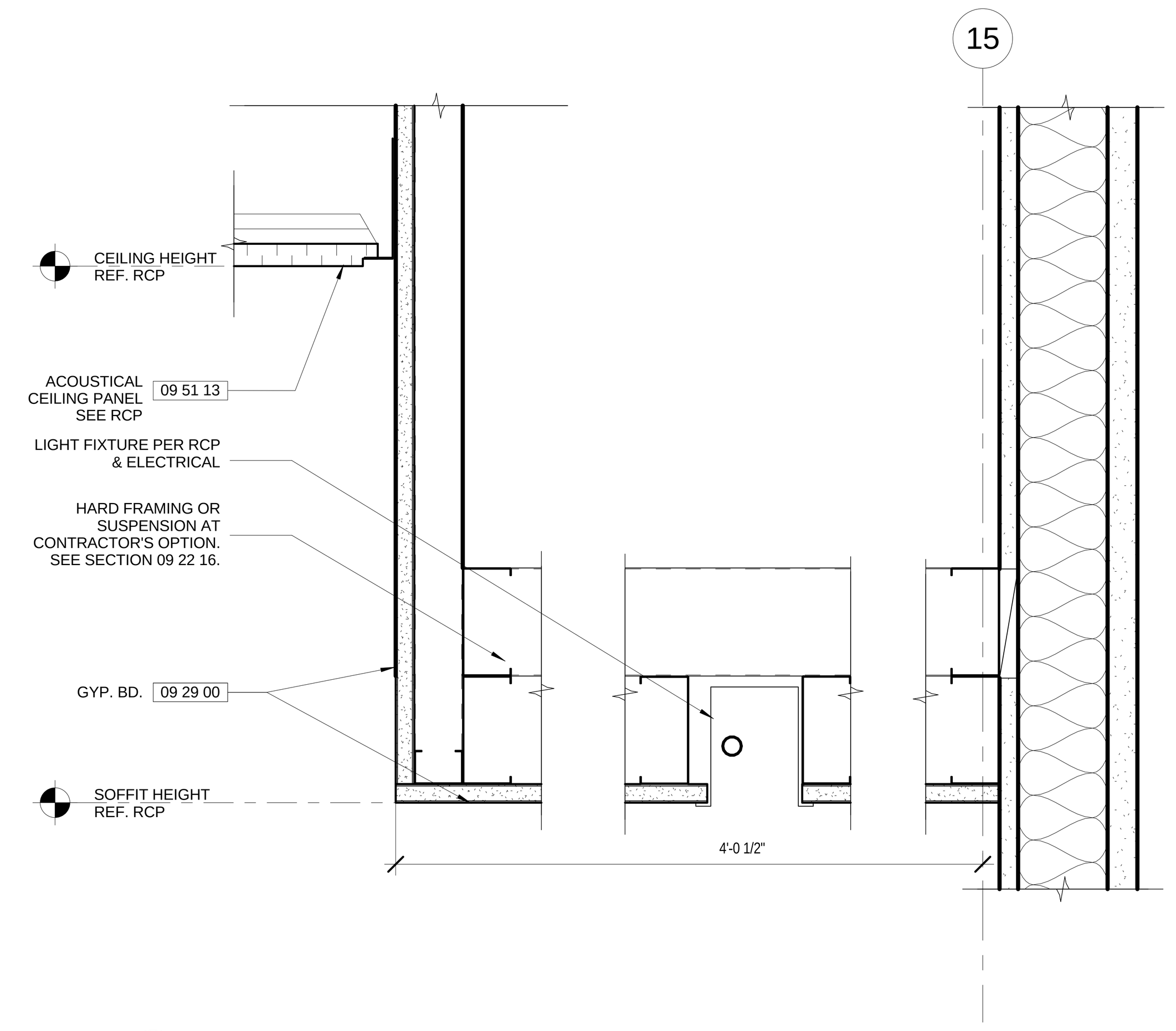
Project Number: 2012040

Sheet Number: A6.50

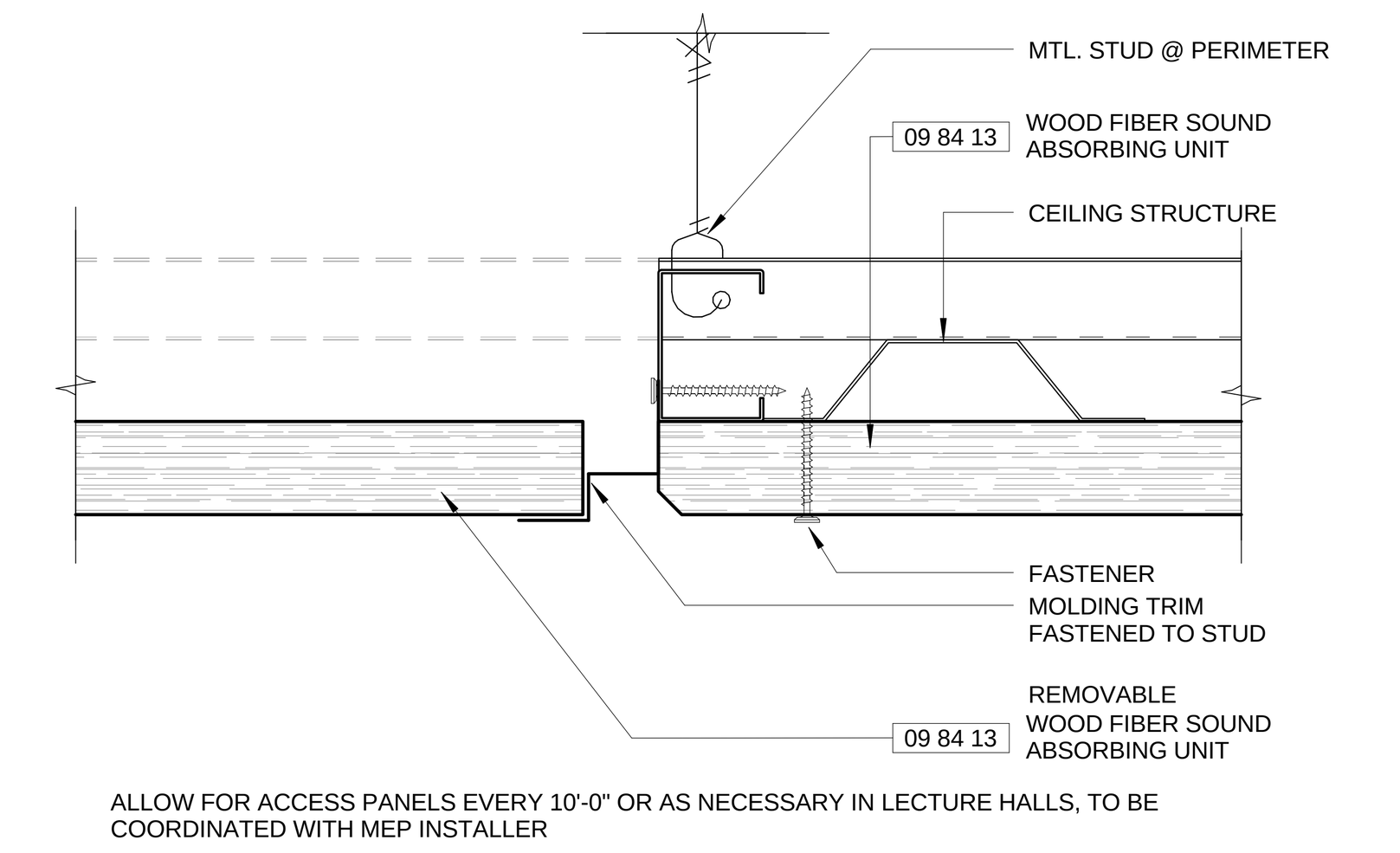
NOTE:
REFER TO SECTION 09 51 13 FOR ADDITIONAL REQUIREMENTS AT ACOUSTICAL CEILING PANEL SUSPENSION GRID.
REFER TO SECTION 09 22 16 FOR NON-STRUCTURAL METAL FRAMING BRACING REQUIREMENTS.



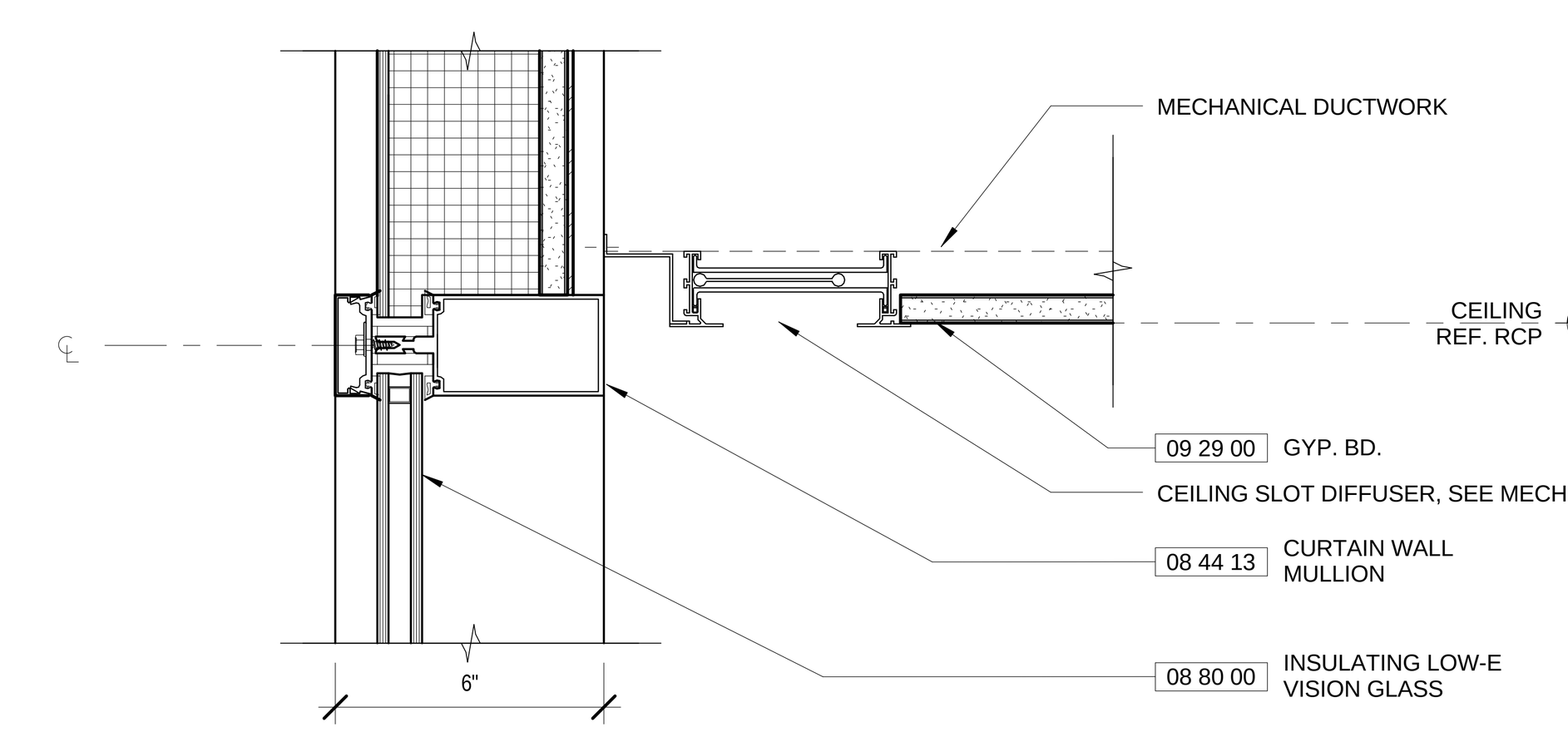
16 TYP. SEISMIC CEILING BRACING
SCALE: 3" = 1'-0"



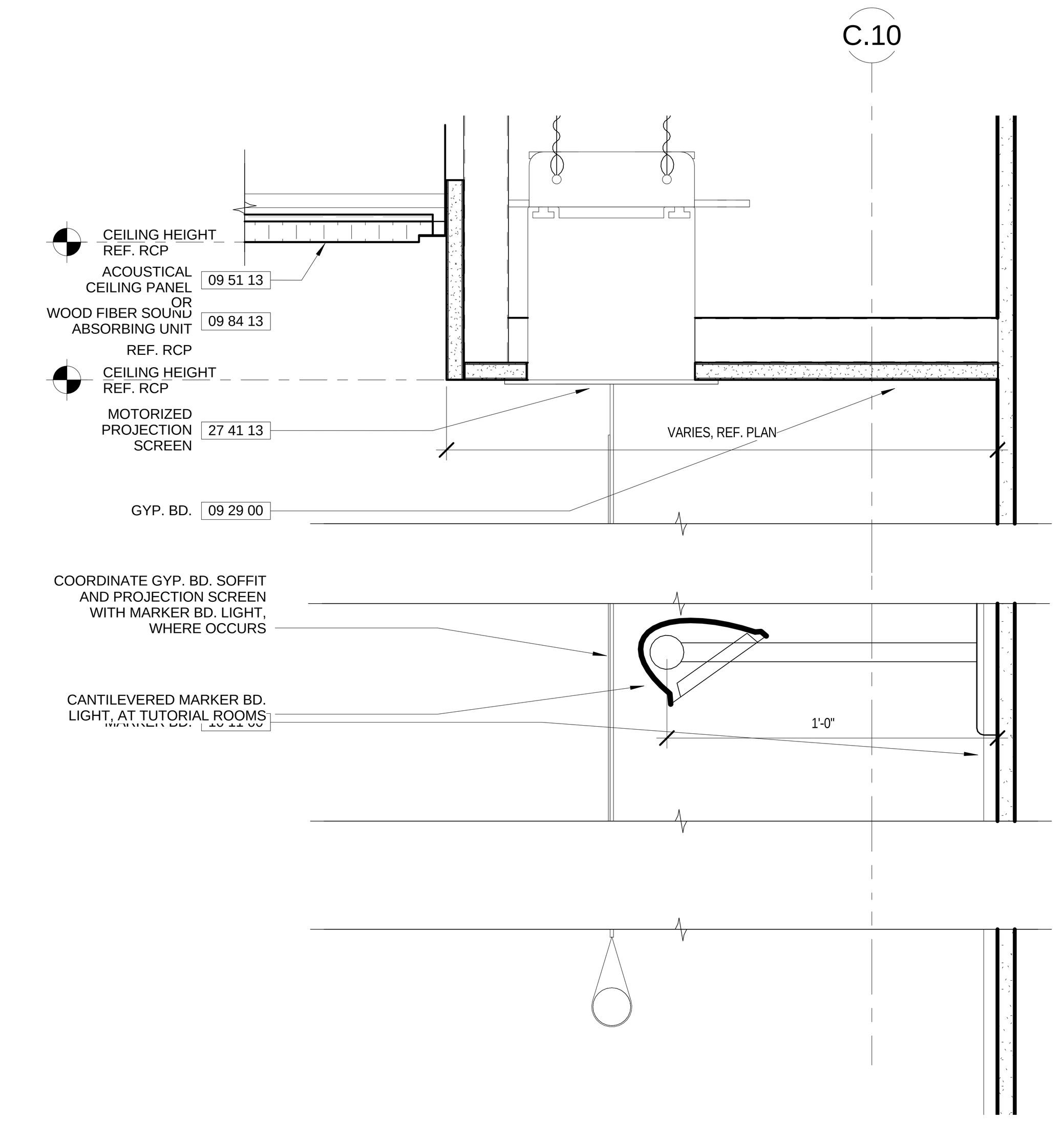
12 CEILING @ LRG. CONF. RM. SOFFIT
SCALE: 3" = 1'-0"



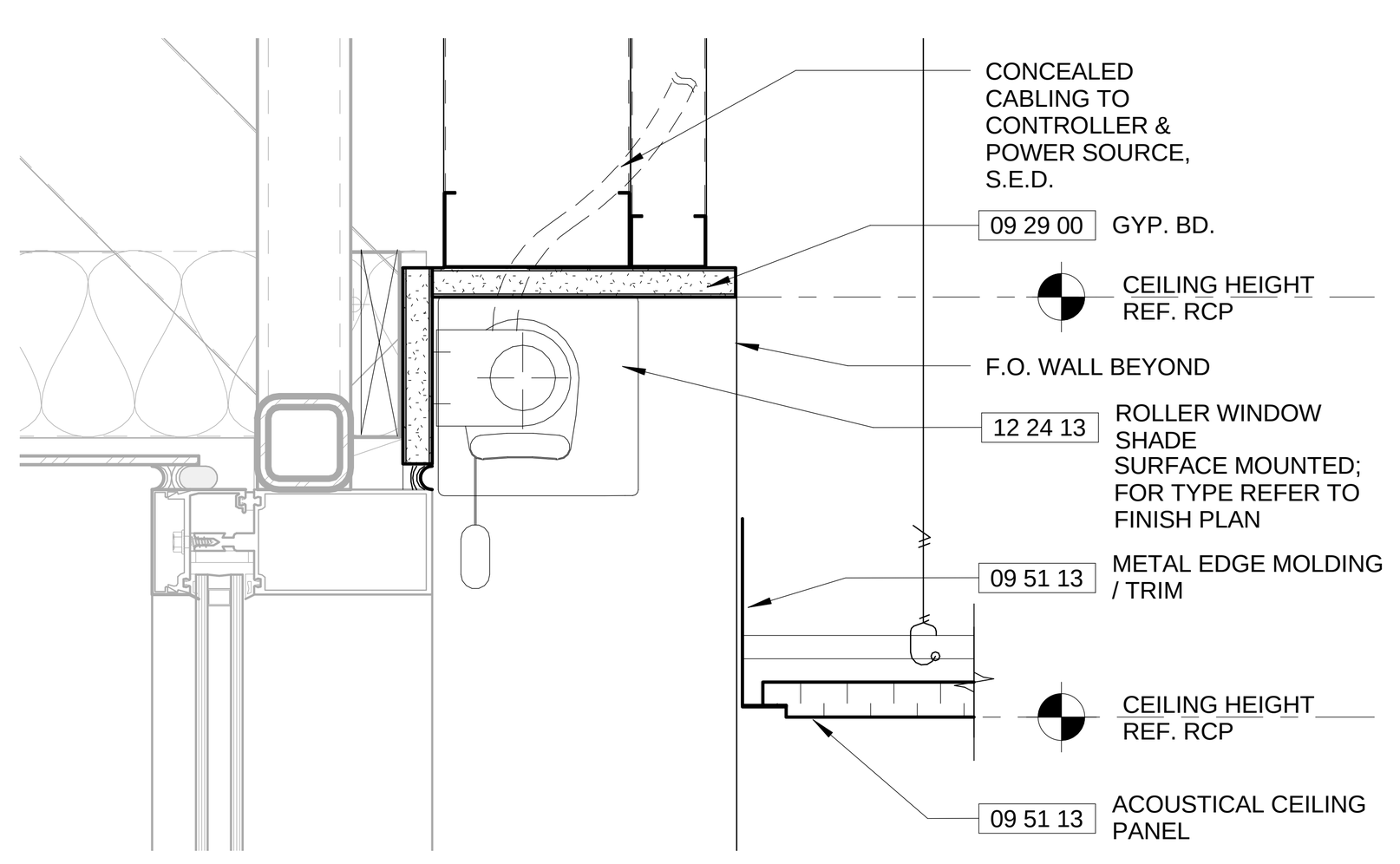
18 TYP. WOOD FIBER UNIT AT ACCESS PANEL
SCALE: 6" = 1'-0"



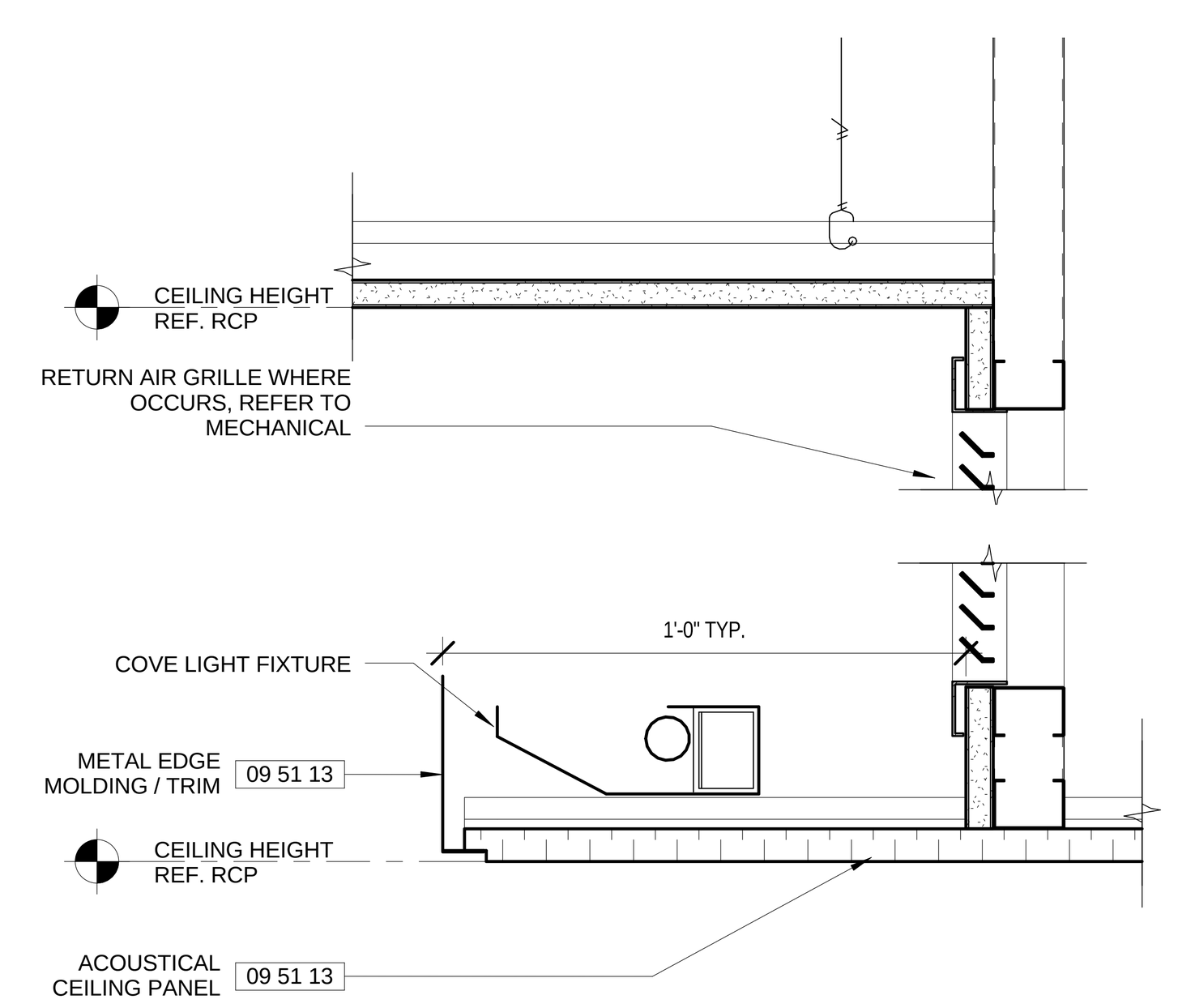
7 TYP. CEILING DIFFUSER AT CURTAIN WALL
SCALE: 3" = 1'-0"



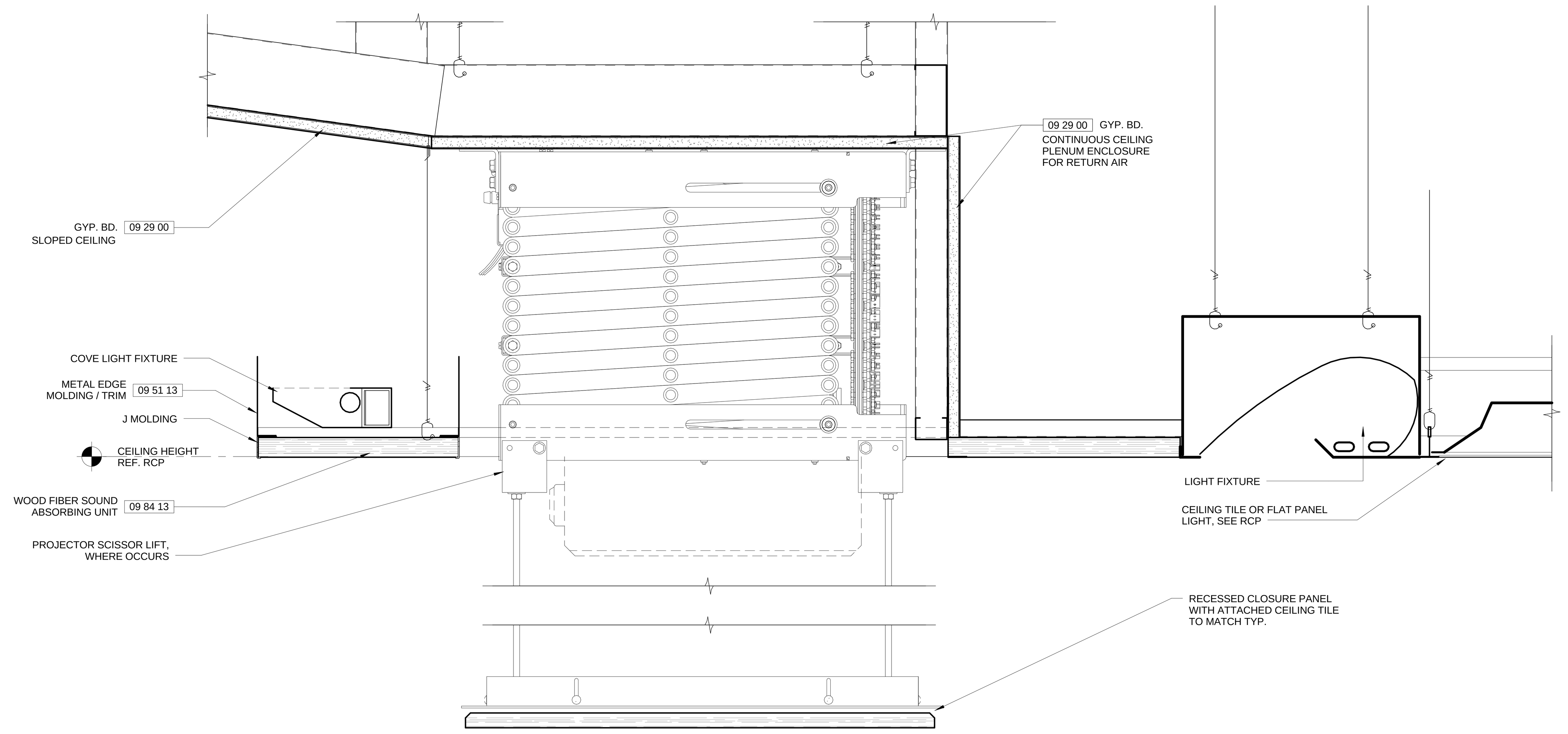
3 PROJECTION SCREEN @ GYP. BD. SOFFIT
SCALE: 3" = 1'-0"



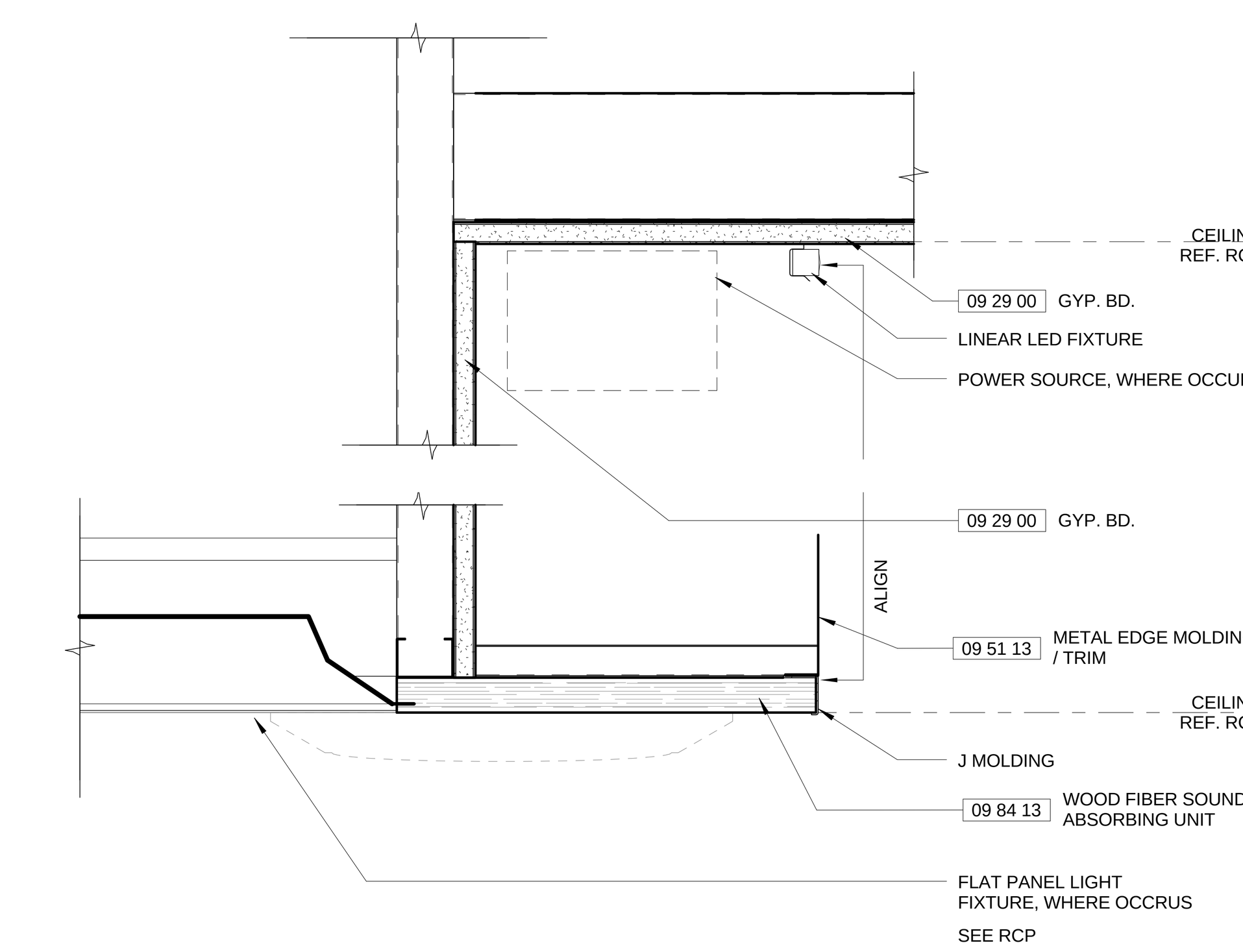
15 WINDOW SHADE AT RM. 392
SCALE: 3" = 1'-0"



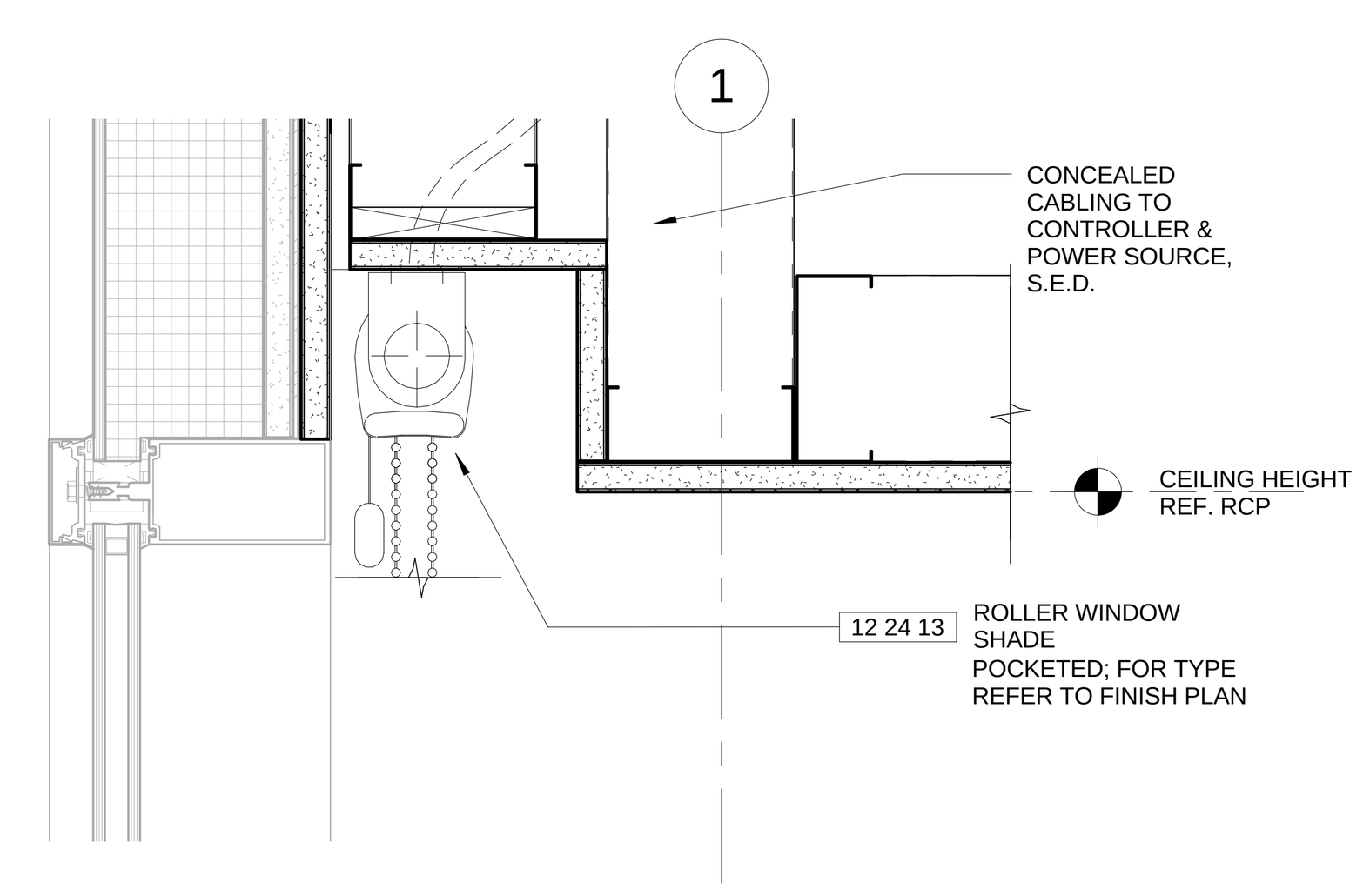
11 COVE LIGHT AT CEILING EDGE
SCALE: 3" = 1'-0"



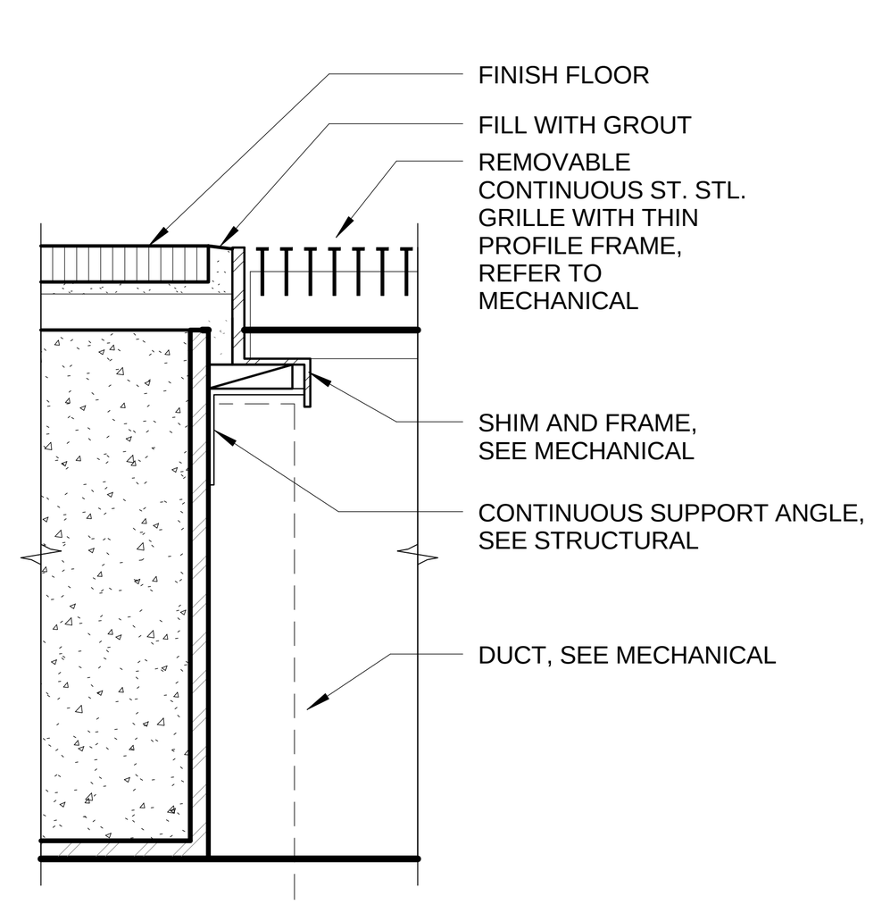
6 TYP. SECTION @ LECTURE HALL - FRONT
SCALE: 3" = 1'-0"



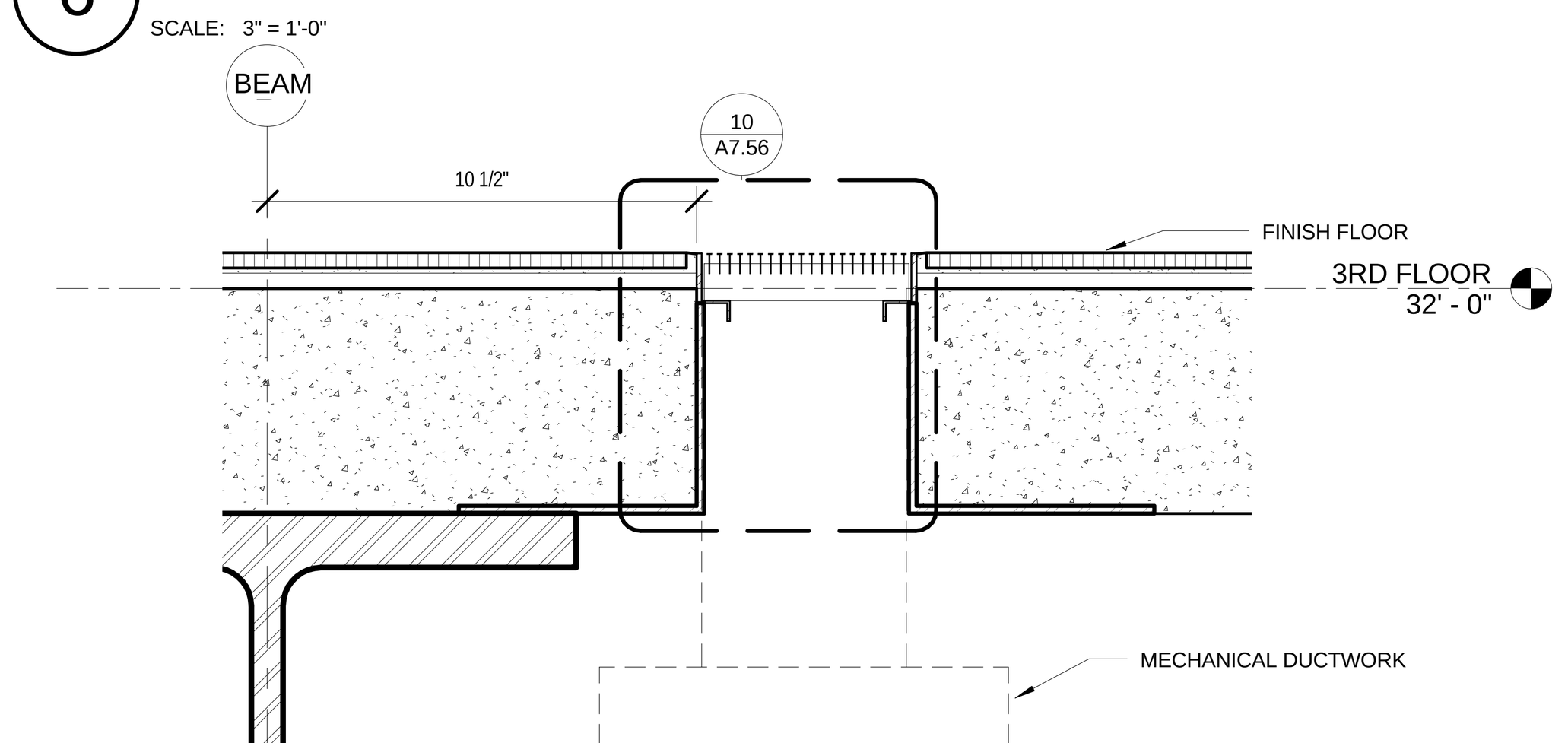
2 TYP. SECTION @ LECTURE HALL - REAR
SCALE: 3" = 1'-0"



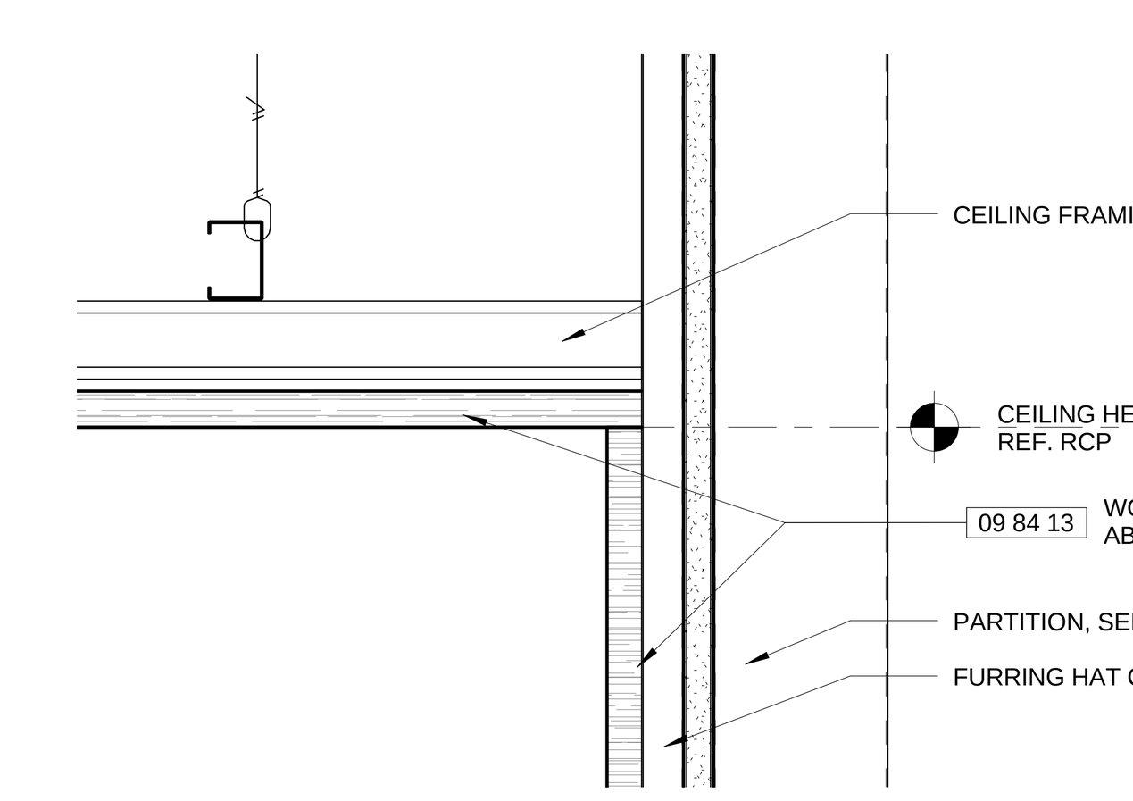
14 WINDOW SHADE AT CONF. RM.
SCALE: 3" = 1'-0"



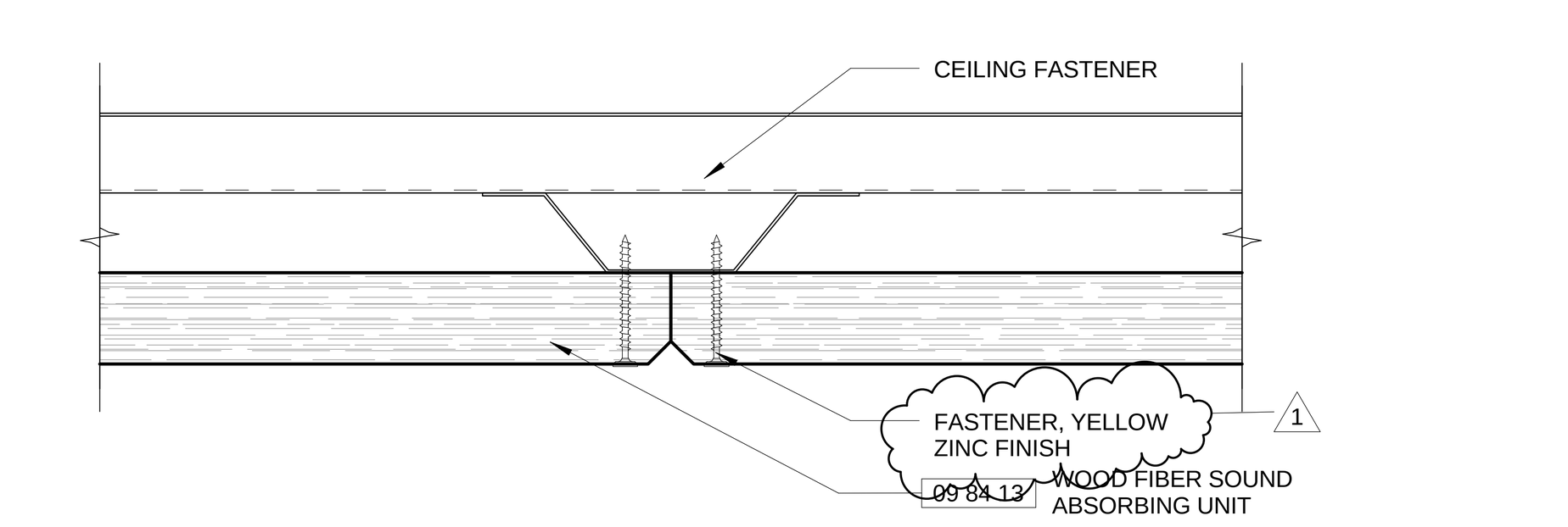
10 FLOOR DIFFUSER DETAIL
SCALE: 6" = 1'-0"



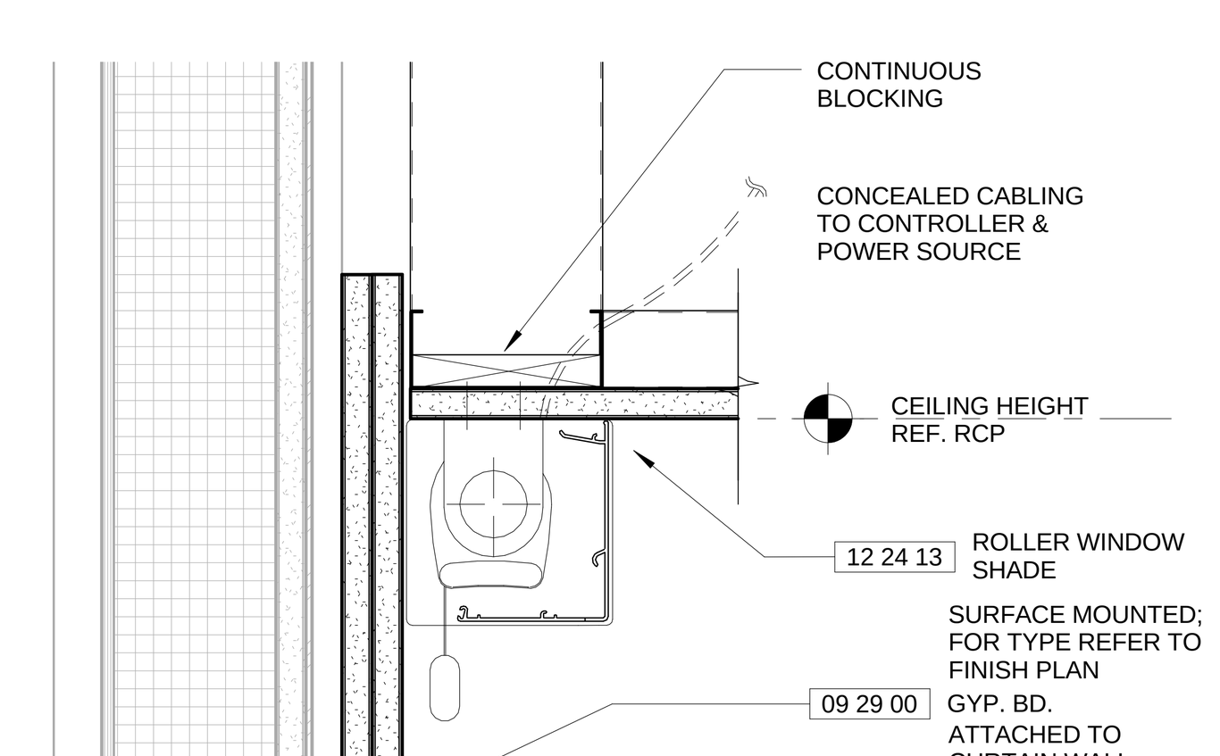
8 TYP. FLOOR DIFFUSER AT CURTAIN WALL
SCALE: 3" = 1'-0"



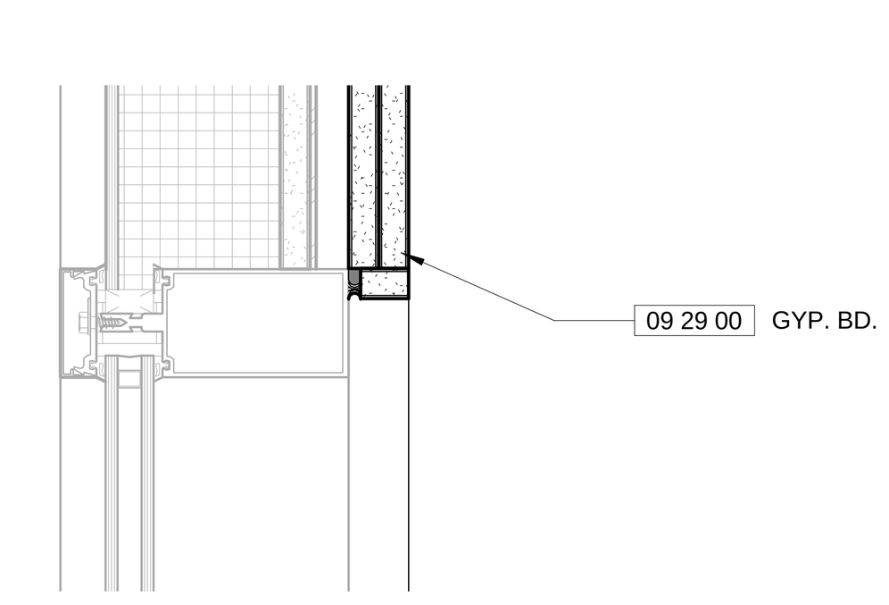
4 WOOD FIBER WALL TO CEILING TRANSITION
SCALE: 3" = 1'-0"



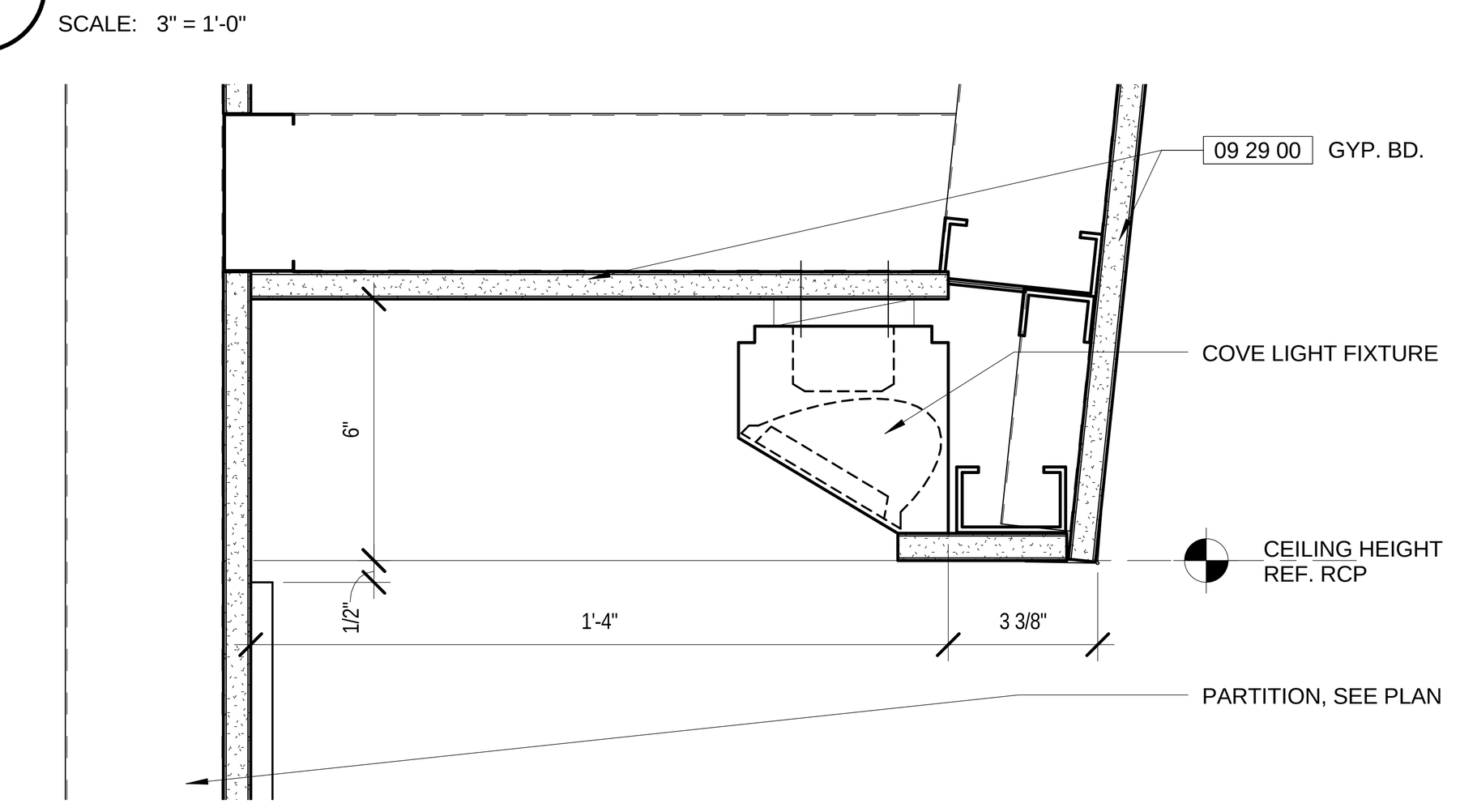
1A TYP. WOOD FIBER UNIT CEILING JOINT
SCALE: 6" = 1'-0"



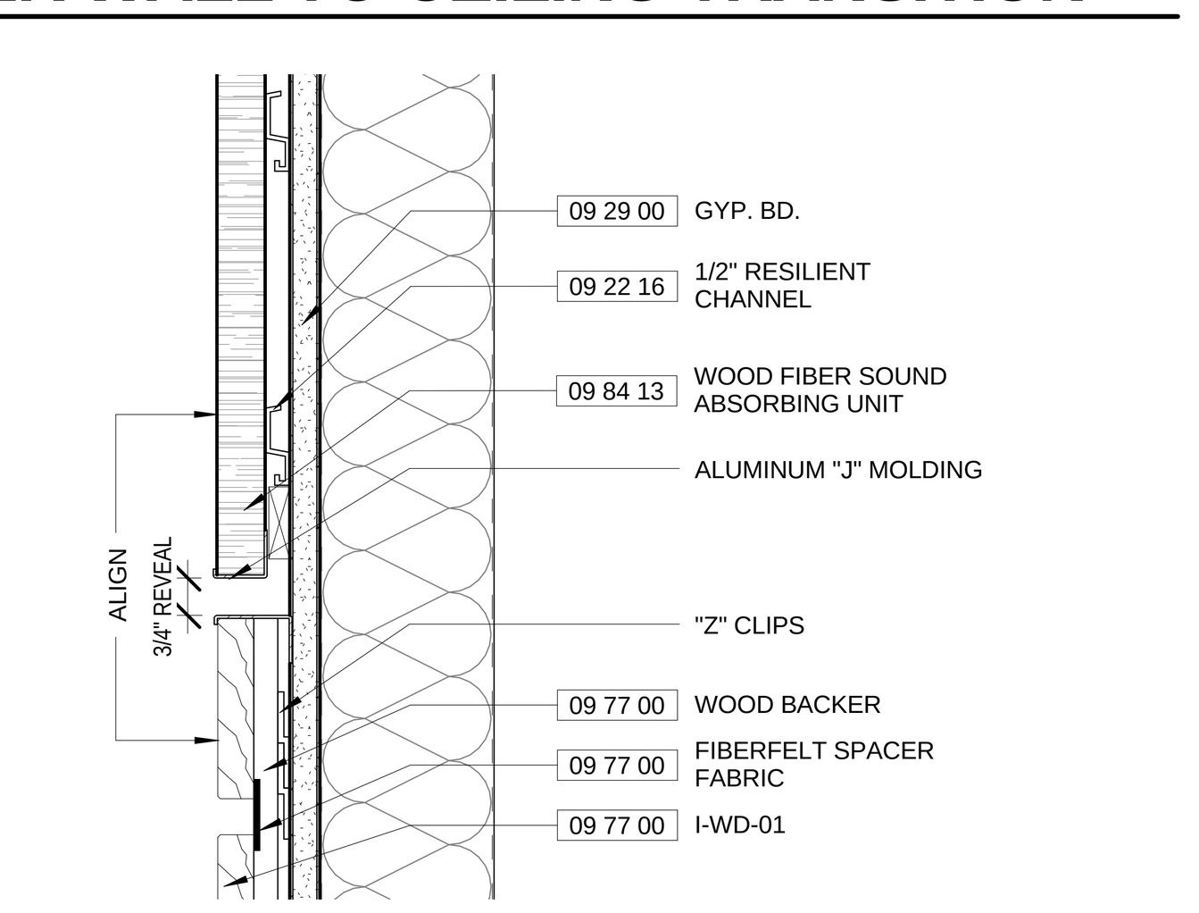
13 WINDOW SHADE AT CONF. RM./SCHOL. ACTIVITY
SCALE: 3" = 1'-0"



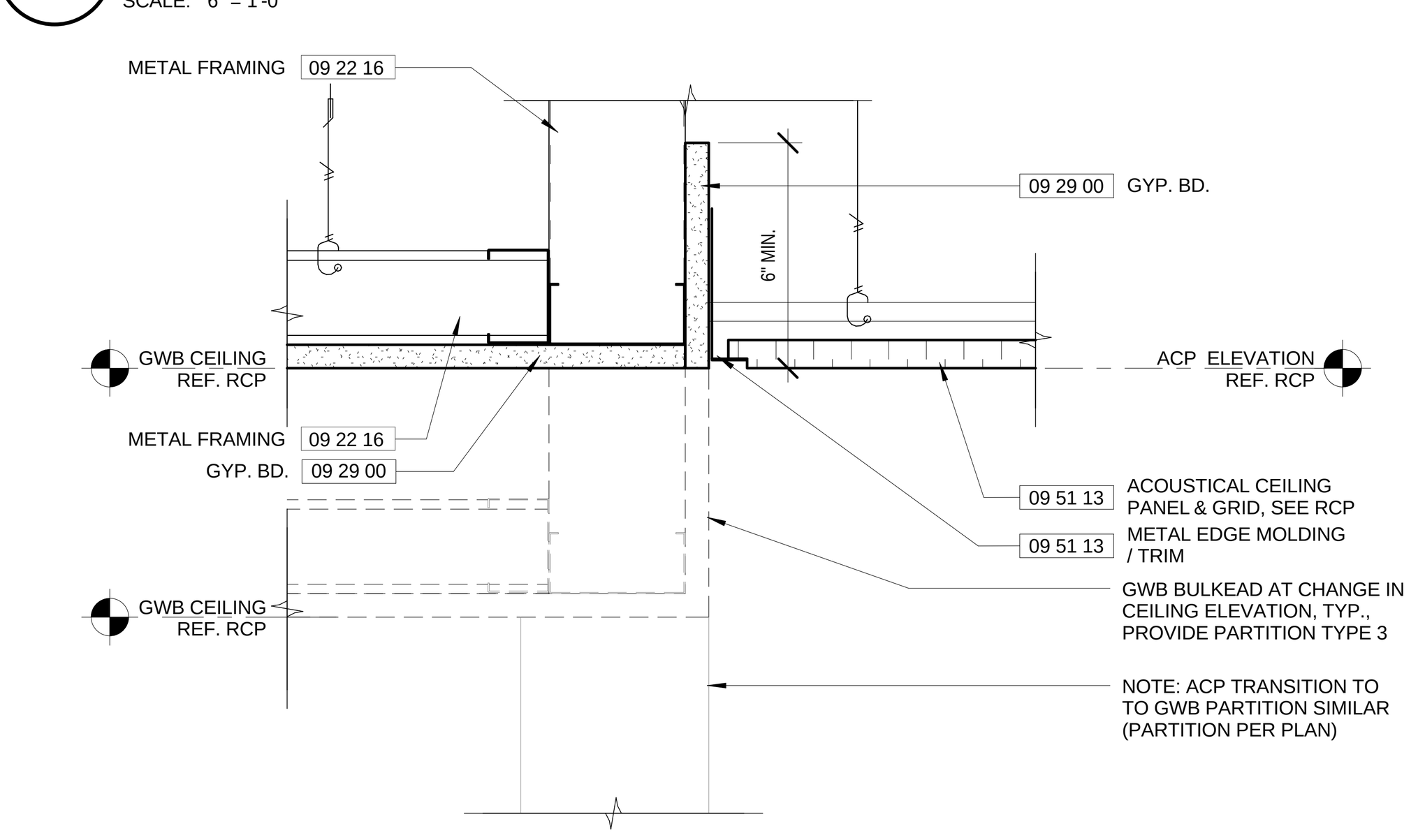
9 FINISH AT CURTAIN WALL - SECOND FLOOR
SCALE: 3" = 1'-0"



5 DETAIL AT MARKER BOARD LIGHT
SCALE: 3" = 1'-0"



17 WOOD FIBER WALL TO I-WD-01 WALL TRANSITION
SCALE: 3" = 1'-0"



1 TYP. ACP TO GYP TRANSITION
SCALE: 3" = 1'-0"

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NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
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	12.20.2013	100% CONSTRUCTION DOCUMENTS			
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	01.28.2013	100% SCHEMATIC DESIGN			

CLASSROOM AND ACADEMIC OFFICE BUILDING
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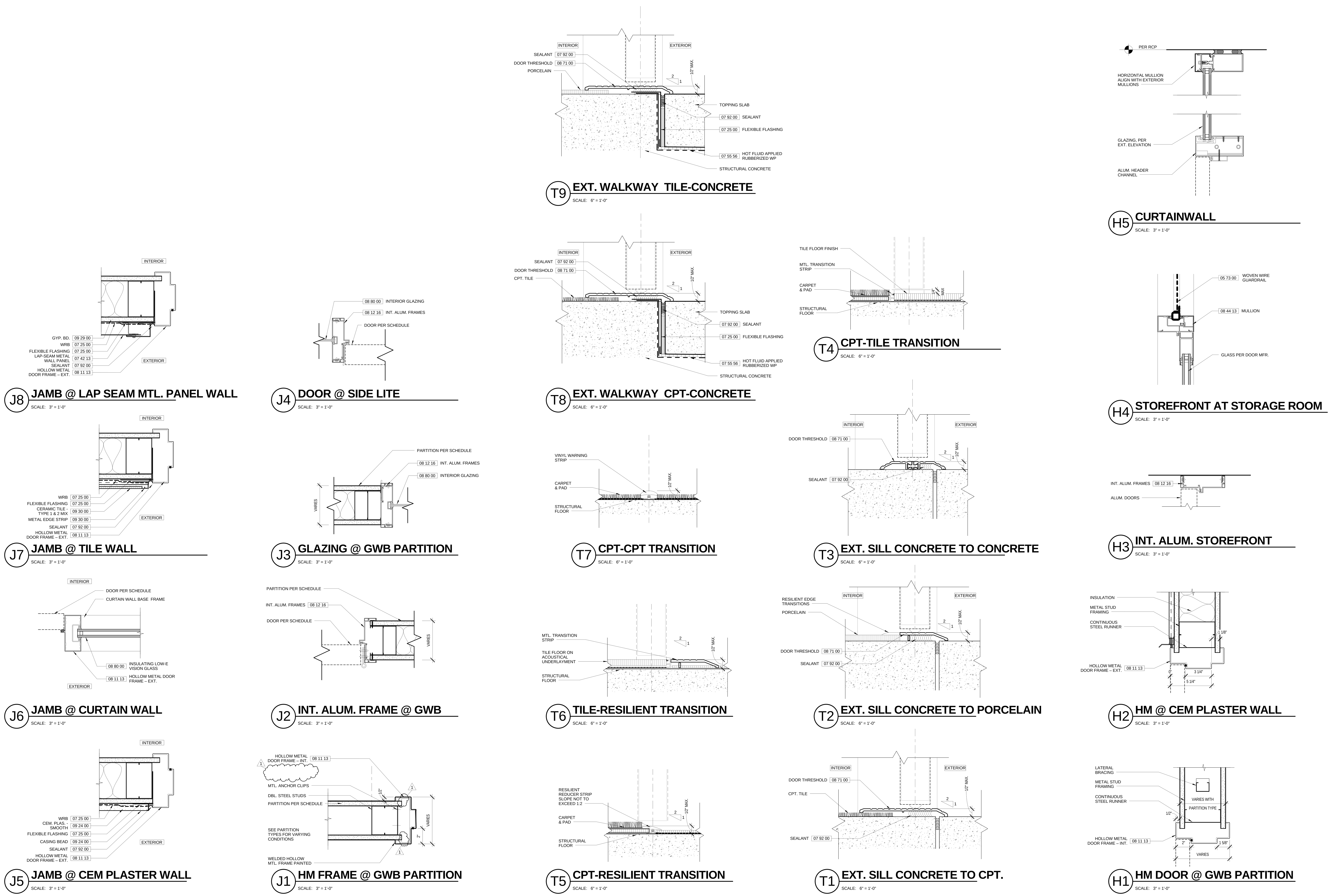
CEILING AND INTERIOR DETAILS

Scale: As indicated
Drawn By: JY
Project Number: 2012040
Sheet Number: A7.56



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Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection One set of approved plans shall be available on the Project site at all times.

Reviewed by: ____
Date: ____
UCM Project #: 900290

NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
	12.20.2013	100% CONSTRUCTION DOCUMENTS			
	10.21.2013	90% CONSTRUCTION DOCUMENTS			
	07.26.2013	50% CONSTRUCTION DOCUMENTS			
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	01.28.2013	100% SCHEMATIC DESIGN			

CLASSROOM AND ACADEMIC OFFICE BUILDING

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TYPICAL DOOR DETAILS & FLOOR TRANSITIONS

Scale: As indicated
Drawn By: RW
Project Number: 2012040
Sheet Number: A8.11