

# **BIDDING AND CONTRACT DOCUMENTS**

**FOR**

**PHYSICS 2000 RENEWAL - REBID**

**PROJECT NO. 957443**

**CONTRACT NO. 957443-LF-2021-26**



**City of Riverside, County of Riverside  
California**

**September 8, 2020**

## TABLE OF CONTENTS

Cover Page

Table of Contents

Certification

Advertisement for Bids

Project Directory

Instructions to Bidders

Supplementary Instructions to Bidders

Information Available to Bidders

Bid Form

Bid Bond

Agreement

General Conditions

Supplementary Conditions

Exhibits

List of Drawings

Specifications



**CERTIFICATION**

**Physics 2000 Renewal**

Bidding Documents Prepared By:

Company  
Name:

IDAS Inc.

3903 10<sup>th</sup> Street

(Street Address)

Riverside, CA 92501

(City, State & Zip Code)

Signed:



(Signature of an Officer of the Firm Named Above)

Date: 08/28/2020

Shawn Chinudomsub, Principal Architect

(Print Name & Title)

Certification:



(Affix professional registration stamp of the person named above with signature and expiration date.)

## ADVERTISEMENT FOR BIDS

Subject to conditions prescribed by the University of California, Riverside, sealed bids for a lump sum contract are invited for the following Project:

**PHYSICS 2000 RENEWAL - REBID**  
PROJECT NO. 957443  
CONTRACT NO. 957443-LF-2021-26  
UNIVERSITY OF CALIFORNIA, RIVERSIDE  
RIVERSIDE, CALIFORNIA

Project Description: Largely an interior building renewal that includes abatement, demolition of existing seating and deskwork by the Contractor with installation of new seating by University's Vendor to be incorporated into the project schedule. Refurbishment of finishes and treatments including flooring, walls, and ceilings. Accessibility improvements including exterior approaches with path of travel and new automated doors. Electrical and fire alarm improvements with minor Lutron lighting rewiring and reprogramming.

**Bidding and Contract Documents** will be available on **Tuesday, September 8th, 2020**, upon request by sending an email to [kara.longtin@ucr.edu](mailto:kara.longtin@ucr.edu). Interested parties must use the following in the subject header:

***957443 Physics 2000 Renewal REBID – Request for Bid Documents***

### PRE-BID CONFERENCE & SITE VISIT

A mandatory Pre-Bid Zoom conference call will take place on **September 9th, 2020** beginning promptly at **2:00 PM**. Only bidders who participate in the Pre-Bid conference will be allowed to bid on the Project as prime contractors. For further information, including the Zoom Meeting ID, interested bidders must contact the Project's Contract Administrator, **Kara Longtin** via email, at [kara.longtin@ucr.edu](mailto:kara.longtin@ucr.edu). And must use the project's number and name in the subject header to request the Zoom information.

At this time, there are no plans for a site visit, if a bidder would like access to the site, this will be done by appointment only and through the coordination of the Contract Administrator noted above. Do not contact the project manager directly.

### BID DEADLINE

Bids must be received at or before **2:00 PM, Thursday, September 24th, 2020** for furnishing all labor, materials, services, and equipment to complete the Work described below in accordance with the enclosed Bidding Documents. Due to COVID-19 restrictions, all bids will be received electronically only at the email address above; the low bidder must produce the original bid, bid bond, notary acknowledgement and surety notice within 24 hours of making an announcement of who the low bidder is.

Bids are to be submitted to The Regents of the University of California ("University") **via email only** at:

Email: [kara.longtin@ucr.edu](mailto:kara.longtin@ucr.edu)

Immediately following the Bid Deadline, bids will be opened and posted on the University's website. Bids will be made available to be reviewed by bidders shortly after bids have been validated. Efforts will be made to accommodate and observe all typical procedures during COVID-19 restrictions.

Bid Security in the amount of 10% of the Lump Sum Base Bid shall accompany each Bid. The Surety issuing the Bid Bond shall be, on the Bid Deadline, an admitted surety insurer (as defined in California Code of Civil Procedure Section 995.120).

The successful Bidder and its subcontractors will be required to follow the nondiscrimination requirements set forth in the Bidding and Contract Documents and to pay prevailing wage rates at the location of the Work.

Every effort will be made to ensure that all persons have equal access to contracts and other business opportunities with the University within the limits imposed by law or University policy. Each Bidder may be required to show evidence of its equal employment opportunity policy. The successful Bidder and its subcontractors will be required to follow the nondiscrimination requirements set forth in the Bidding Documents and to pay prevailing wage at the location of the work.

The successful Bidder must have the following State of California Contractor's license current and active at the time of submission of the Bid: **B, General Building**.

The work described in the contract is a public work subject to section 1771 of the California Labor Code.

The successful Bidder shall pay all persons providing construction services and/or any labor on site, including any University location, no less than the UC Fair Wage (defined as \$13 per hour as of 10/1/15, \$14 per hour as of 10/1/16, and \$15 per hour as of 10/1/17) and shall comply with all applicable federal, state and local working condition requirements.

Estimated construction cost: **\$860,500.00**

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA  
University of California, Riverside

Dates of Publication: September 4, 2020 & September 8, 2020

## PROJECT DIRECTORY

Project Name: **Physics 2000 Renewal - REBID**

Project Number: **957443**

Location: **University of California, Riverside**

University: **The Regents of the University of California**

University's Representative: **Scott Donnell**  
**Senior Project Manager**  
Planning, Design & Construction  
University of California, Riverside  
1223 University Avenue, Suite 240  
Riverside, CA 92507

Tel: (951) 827-4706  
Email: [scott.donnell@ucr.edu](mailto:scott.donnell@ucr.edu)

**Kara Longtin**  
**Contract Administrator**  
Planning, Design & Construction  
University of California, Riverside  
1223 University Avenue, Suite 240  
Riverside, CA 92507

Tel: (951) 827-2610  
Email: [kara.longtin@ucr.edu](mailto:kara.longtin@ucr.edu)

**Charles Blumer**  
**Senior Construction Inspector**  
Planning, Design & Construction  
University of California, Riverside  
1223 University Avenue, Suite 240  
Riverside, CA 92521

Tel: (951) 827-1535  
Email: [charles.blumer@ucr.edu](mailto:charles.blumer@ucr.edu)

Design Professional: **Shawn Chinudomsub**  
**Principal Architect**  
IDAS, Inc.  
3903 10<sup>th</sup> Street  
Riverside, CA. 92501

Tel: 951-342-3152  
Email: [sc@idas.net](mailto:sc@idas.net)

Address for Stop Notices: University of California, Riverside  
Accounting Office -002  
Riverside, CA 92521-0123

Address for Demand for Arbitration: Western Case Management Center  
6795 N. Palm Avenue, 2nd Floor  
Fresno, CA 93704

A copy of the Demand for Arbitration must be sent to: University of California  
Office of the General Counsel  
1111 Franklin Street, 8<sup>th</sup> Floor  
Oakland, CA 94607-5200

END OF PROJECT DIRECTORY

## **INSTRUCTIONS TO BIDDERS**

### **TABLE OF CONTENTS**

#### **ARTICLE 1 - DEFINITIONS**

#### **ARTICLE 2 - BIDDER'S REPRESENTATIONS**

#### **ARTICLE 3 - BIDDING DOCUMENTS**

- 3.1 COPIES
- 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS
- 3.3 PRODUCT SUBSTITUTIONS
- 3.4 SUBCONTRACTORS
- 3.5 ADDENDA
- 3.6 BUILDER'S RISK PROPERTY INSURANCE

#### **ARTICLE 4 - PRE-BID CONFERENCE**

#### **ARTICLE 5 - BIDDING PROCEDURES**

- 5.1 FORM AND STYLE OF BIDS
- 5.2 BID SECURITY
- 5.3 SUBMISSION OF BIDS
- 5.4 MODIFICATION OR WITHDRAWAL OF BID

#### **ARTICLE 6 - CONSIDERATION OF BIDS**

- 6.1 OPENING OF BIDS
- 6.2 REJECTION OF BIDS
- 6.3 AWARD

#### **ARTICLE 7 - BID PROTEST**

- 7.1 FILING A BID PROTEST
- 7.2 RESOLUTION OF BID CONTROVERSY

## **ARTICLE 1**

### **DEFINITIONS**

- 1.1 Except as otherwise specifically provided, definitions set forth in the General Conditions or in other Contract Documents are applicable to all Bidding Documents.
- 1.2 The term “Addenda” means written or graphic instruments issued by University prior to the Bid Deadline which modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections.
- 1.3 The term “Alternate” means a proposed change in the Work, as described in the Bidding Documents which, if accepted, may result in a change to either the Contract Sum or the Contract Time, or both.
- 1.4 The term “Bid Deadline” means the date and time on or before which Bids must be received, as designated in the Advertisement for Bids and which may be revised by Addenda.
- 1.5 The term “Bidder” means a person or firm that submits a Bid.
- 1.6 The term “Bidding Documents” means the construction documents prepared and issued for bidding purposes including all Addenda thereto.
- 1.7 The term “Estimated Quantity” means the estimated quantity of an item of Unit Price Work.
- 1.8 As used in these Instructions to Bidders, the term “Facility” means the University’s Facility office issuing the Bidding Documents.
- 1.9 The term “Lump Sum Base Bid” means the sum stated in the Bid for which Bidder offers to perform the Work described in the Bidding Documents, but not including Unit Price items or Alternates.
- 1.10 The term “Planholder” means a person or entity known by the Facility to have received a complete set of Bidding Documents and who has provided a street address for receipt of any written pre-bid communications.
- 1.11 The term “Unit Price” means an amount stated in the Bid for which Bidder offers to perform an item of Unit Price Work for a fixed price per unit of measurement.
- 1.12 As used in these Instructions to Bidders, the term “Business Day” means any day other than a Saturday, a Sunday, and the holidays specified herein, and to the extent provided herein, if the Facility or applicable office of the University is closed for the whole of any day, insofar as the business of that office is concerned, that day shall be considered as a holiday for the purposes of computing time in these Instructions to Bidders. Holidays include January 1<sup>st</sup>, the third Monday in January, the third Monday in February, the last Monday in May, July 4<sup>th</sup>, the first Monday in September, November 11<sup>th</sup>, Thanksgiving Day, December 25<sup>th</sup>, and every day designated by the University as a holiday.

## **ARTICLE 2**

### **BIDDER'S REPRESENTATIONS**

- 2.1 Bidder, by making a Bid, represents that:
- 2.1.1 Bidder has read, understood, and made the Bid in accordance with the provisions of the Bidding Documents.

2.1.2 Bidder has visited the Project site and is familiar with the conditions under which the Work is to be performed and the local conditions as related to the requirements of the Contract Documents.

2.1.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.

2.1.4 At the time of submission of the Bid, Bidder and all Subcontractors, regardless of tier, have the appropriate current and active licenses issued by the State of California Contractors State License Board for the Work to be performed and any licenses specifically required by the Bidding Documents. If Bidder is a joint venture, at the time of submission of the Bid, Bidder shall have the licenses required by the preceding sentence in the name of the joint venture itself. The State of California Business and Professions Code, Division 3, Chapter 9, known as the "Contractor's License Law," establishes licensing requirements for contractors.

2.1.5 Bidder has read and shall abide by the nondiscrimination requirements contained in the Bidding Documents.

2.1.6 Bidder has the expertise and financial capacity to perform and complete all obligations under the Bidding Documents.

2.1.7 The person executing the Bid Form is duly authorized and empowered to execute the Bid Form on behalf of Bidder.

2.1.8 Bidder is aware of and, if awarded the Contract, will comply with Applicable Code Requirements in its performance of the Work.

### **ARTICLE 3**

#### **BIDDING DOCUMENTS**

##### **3.1 COPIES**

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement for Bids for the sum stated therein, if any. Documents are only available in full sets and shall not be returned.

3.1.2 Bidders shall use a complete set of Bidding Documents in preparing Bids.

3.1.3 University makes copies of the Bidding Documents available, on the above terms, for the sole purpose of obtaining Bids for the Work and does not confer a license or grant permission for any other use of the Bidding Documents.

##### **3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS**

3.2.1 Bidder shall, before submitting its Bid, carefully study and compare the components of the Bidding Documents and compare them with any other work being bid concurrently or presently under construction which relates to the Work for which the Bid is submitted; shall examine the Project site, the conditions under which the Work is to be performed, and the local conditions; and shall at once report to University's Representative errors, inconsistencies, or ambiguities discovered. If Bidder is awarded the Contract, Bidder waives any claim arising from any errors, inconsistencies or ambiguities, that Bidder, its subcontractors or suppliers, or any person or entity under Bidder on the Contract became aware of, or reasonably should have become aware of, prior to Bidder's submission of its Bid.

3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be addressed only to the person or firm designated in the Supplementary Instructions to Bidders.



3.2.3 Clarifications, interpretations, corrections, and changes to the Bidding Documents will be made by Addenda issued as provided in Article 3.5. Clarifications, interpretations, corrections, and changes to the Bidding Documents made in any other manner shall not be binding and Bidders shall not rely upon them.

### **3.3 PRODUCT SUBSTITUTIONS**

3.3.1 No substitutions will be considered prior to award of Contract. Substitutions will only be considered after award of the Contract and as provided for in the Contract Documents.

### **3.4 SUBCONTRACTORS**

3.4.1 Each Bidder shall list in the Bid Form all first-tier Subcontractors that will perform work, labor or render such services as defined in Article 9 of the Bid Form. The Bid Form contains spaces for the following information when listing Subcontractors: (1) portion of the Work; (2) name of Subcontractor; (3) city of Subcontractor's business location. The failure to list, on the Bid Form, any one of the items set forth above will result in the University treating the Bid as if no Subcontractor was listed for that portion of the Work and Bidder will thereby represent to University that Bidder agrees that it is fully qualified to perform that portion of the Work and shall perform that portion of the Work.

3.4.2 Subcontractors listed in the Bid Form shall only be substituted after the Bid Deadline with the written consent of University and in accordance with the State of California "Subletting and Subcontracting Fair Practices Act."

### **3.5 ADDENDA**

3.5.1 Addenda will be issued only by University and only in writing. Addenda will be identified as such and will be mailed or delivered to all Planholders. At its sole discretion, the University may elect to deliver Addenda via facsimile to Planholders who have provided a facsimile number for receipt of Addenda.

3.5.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for inspection.

3.5.3 Addenda will be issued such that Planholders should receive them no later than 3 full business days prior to the Bid Deadline. Addenda withdrawing the request for Bids or postponing the Bid Deadline may be issued anytime prior to the Bid Deadline.

3.5.4 Each Bidder shall be responsible for ascertaining, prior to submitting a Bid, that it has received all issued Addenda.

### **3.6 BUILDER'S RISK PROPERTY INSURANCE**

3.6.1 University will provide builder's risk property insurance subject to the deductibles in the policy as required by the General Conditions if the Contract Sum exceeds \$200,000 at the time of award and the requirements of the Project are not excluded by such coverage. A summary of the provisions of the policy is included as an Exhibit to the Contract; the policy may be reviewed at the Facility's office. Bidder agrees that the University's provision of builder's risk property insurance containing said provisions meets the University's obligation to provide builder's risk property insurance under the Contract and, in the event of a conflict between the provisions of the policy and any summary or description of the provisions contained herein or otherwise, the provisions of the policy shall control and shall be conclusively presumed to fulfill the University's obligation to provide such insurance.

## **ARTICLE 4**

### **PRE-BID CONFERENCE**

4.1 Bidder shall attend the Pre-Bid Conference at which the requirements of the Bidding Documents are reviewed by University, comments and questions are received from Bidders, and a Project site visit is conducted. University requires all Pre-Bid Conference attendees to arrive for the meeting on time and to sign an attendance list, which in turn is used to determine if Bidders meet this requirement. Any Bidder not attending the Pre-Bid Conference in its entirety will be deemed to have not complied with the requirements of the Bidding Documents and its Bid will be rejected.

## **ARTICLE 5**

### **BIDDING PROCEDURES**

#### **5.1 FORM AND STYLE OF BIDS**

5.1.1 Bids shall be submitted on the Bid Form included with the Bidding Documents. Bids not submitted on the University's Bid Form shall be rejected.

5.1.2 The Bid Form shall be filled in legibly in ink or by typewriter. All portions of the Bid Form must be completed and the Bid Form must be signed before the Bid is submitted. Failure to comply with the requirements of this Article 5.1.2 will result in the Bid being rejected as nonresponsive.

5.1.3 Bidder's failure to submit a price for any Alternate or Unit Price will result in the Bid being considered as nonresponsive. If Alternates are called for and no change in the Lump Sum Base Bid is required, indicate "No Change" by marking the appropriate box.

5.1.4 Bidder shall make no stipulations on the Bid Form nor qualify the Bid in any manner.

5.1.5 The Bid Form shall be signed by a person or persons legally authorized to bind Bidder to a contract. Bidder's Representative shall sign and date the Declaration included in the Bid Form. Failure to sign and date the declaration will cause the Bid to be rejected.

#### **5.2 BID SECURITY**

5.2.1 Each Bid shall be accompanied by Bid Security in the amount of 10% of the Lump Sum Base Bid as security for Bidder's obligation to enter into a Contract with University on the terms stated in the Bid Form and to furnish all items required by the Bidding Documents. Bid Security shall be a Bid Bond on the form provided by University and included herein, or a certified check made payable to "The Regents of the University of California." When a Bid Bond is used for Bid Security, failure to use University's Bid Bond form will result in the rejection of the Bid. Bidder must use the Bid Bond form provided by the University or an exact, true and correct photocopy of such form. The Bid Bond form may not be retyped, reformatted, transcribed onto another form, or altered in any manner except for the purpose of completing the form.

5.2.2 If the apparent lowest responsible Bidder fails to sign the Agreement and furnish all items required by the Bidding Documents within the time limits specified in these Instructions to Bidders, University may reject such Bidder's Bid and select the next apparent lowest responsible Bidder until all Bids have been exhausted or University may reject all Bids. The Bidder whose Bid is rejected for such failure(s) shall be liable for and forfeit to University the amount of the difference, not to exceed the amount of the Bid Security, between the amount of the Bid of the Bidder so rejected and the greater amount for which University procures the Work.

5.2.3 If a Bid Bond is submitted, the signature of the person executing the Bid Bond must be notarized. If an attorney-in-fact executes the Bid Bond on behalf of the surety, a copy of the current power of attorney bearing the notarized signature of the appropriate corporate officer shall be included with the Bid Bond.

Additionally, the surety issuing the Bid Bond shall be, on the Bid Deadline, an admitted surety insurer (as defined in the California Code of Civil Procedure Section 995.120).

5.2.4 Bid Security will be returned after the contract has been awarded. Notwithstanding the preceding, if a Bidder fails or refuses, within 10 days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents, the University will retain that Bidder's Bid Security. If the Bid Security is in the form of a Bid Bond, the Bid Security will be retained until the University has been appropriately compensated; if the Bid Security is in the form of certified check, the University will negotiate said check and after deducting its damages, return any balance to Bidder.

### **5.3 SUBMISSION OF BIDS**

5.3.1 The Bid Form, Bid Security, and all other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the office designated in the Supplementary Instructions to Bidders for receipt of Bids. The envelope shall be identified with the Project name, Bidder's name and address, and, if applicable, the designated portion of the Project for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

5.3.2 Bids shall be deposited at the designated location on or before the Bid Deadline. A Bid received after the Bid Deadline will be returned to Bidder unopened.

5.3.3 Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

5.3.4 Oral, telephonic, electronic mail (e-mail), facsimile, or telegraphic Bids are invalid and will not be accepted.

### **5.4 MODIFICATION OR WITHDRAWAL OF BID**

5.4.1 Prior to the Bid Deadline, a submitted Bid may be modified or withdrawn by notice to the Facility receiving Bids at the location designated for receipt of Bids. Such notice shall be in writing over the signature of Bidder and, in order to be effective, must be received on or before the Bid Deadline. A modification so made shall be worded so as not to reveal the amount of the original Bid.

5.4.2 A withdrawn Bid may be resubmitted on or before the Bid Deadline, provided that it then fully complies with the Bidding Requirements.

5.4.3 Bid Security shall be in an amount sufficient for the Bid as modified or resubmitted.

5.4.4 Bids may not be modified, withdrawn, or canceled within 60 days after the Bid Deadline unless otherwise provided in Supplementary Instructions to Bidders.

## **ARTICLE 6**

### **CONSIDERATION OF BIDS**

#### **6.1 OPENING OF BIDS**

6.1.1 Bids which have the required identification as stipulated in Article 5.3.1 and are received on or before the Bid Deadline will be opened publicly.

#### **6.2 REJECTION OF BIDS**

6.2.1 University will have the right to reject all Bids.

6.2.2 University will have the right to reject any Bid not accompanied by the required Bid Security or any other item required by the Bidding Documents, or a Bid which is in any other way incomplete or irregular.

### 6.3 AWARD

6.3.1 University will have the right, but is not required, to waive nonmaterial irregularities in a Bid. If the University awards the Contract, it will be awarded to the responsible Bidder submitting the lowest responsive Bid as determined by University and who is not rejected by University for failing or refusing, within 10 days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents.

6.3.2 University will have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents. The opening of Bids and evaluation of Alternates will be conducted in accordance with a procedure that, at University's option, either (i) prescribes, prior to the time of Bid opening, the order in which Alternates will be selected or (ii) prevents, before the determination of the apparent low Bidder has been made, information that would identify which Bid belongs to which Bidder from being revealed to the representative of the University selecting the Alternates to be used in determining the low Bidder. After determination of the apparent low Bidder has been made, University will publicly disclose the identity of each Bidder that submitted a Bid and the amount of each such Bid.

6.3.3 University will determine the low Bidder on the basis of the sum of the Lump Sum Base Bid plus all Unit Prices multiplied by their respective Estimated Quantities as stated in the Bid Form, if any, plus the daily rate for Compensable Delay multiplied by the "multiplier" as stated in the Bid Form, plus the amounts of all Alternates to be included in the Contract Sum at the time of award. The Contract Sum will be the sum of the Lump Sum Base Bid and the additive or deductive amounts for all Alternates that University has elected to be included in the Contract Sum as of the time of award.

6.3.4 The University will post the Bid results in a public place at the address where the Bids are received (unless another address is specified in the Bidding Documents).

6.3.5 University will select the apparent lowest responsive and responsible Bidder and notify such Bidder on University's form within 50 days (unless the number of days is modified in Supplementary Instructions to Bidders) after the Bid Deadline or reject all Bids. Within 10 days after receipt of notice of selection as the apparent lowest responsive and responsible Bidder, Bidder shall submit to University all of the following items:

- .1 Three originals of the Agreement signed by Bidder.
- .2 Three originals of the Payment Bond required under Article 11 of the General Conditions.
- .3 Three originals of the Performance Bond required under Article 11 of the General Conditions.
- .4 Certificates of Insurance on form provided by University required under Article 11 of the General Conditions.
- .5 Name of, qualifications of, and references for the Superintendent proposed for the Work.
- .6 Names of all Subcontractors, with their addresses, telephone number, facsimile number, contact person, portion of the Work and designation of any Subcontractor as a Small Business Enterprise (SBE), Disadvantaged Business Enterprise (DBE), Women-owned Business Enterprise (WBE) and Disabled Veteran Business Enterprise (DVBE) on Report of Subcontractor Information in the form

contained in the Exhibits. Evidence, as required by University, of the reliability and responsibility of the proposed Subcontractors such as statements of experience, statements of financial condition, and references.

- .7 Preliminary Contract Schedule as required under Article 3 of the General Conditions.
- .8 If Bidder wishes to utilize securities in lieu of retention beginning with the first Application for Payment, Selection of Retention Options accompanied by a completed Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention in the form contained in the Exhibits.
- .9 Cost Breakdown as required by Article 9 of the General Conditions.

6.3.6 Prior to award of the Contract, University will notify Bidder in writing, if University, after due investigation, objects to a Subcontractor or Superintendent proposed by Bidder, in which case Bidder shall propose a substitute acceptable to University. Substitution of Superintendent shall be made in accordance with Article 3 of the General Conditions. Substitution of a Subcontractor shall be made in accordance with Article 5 of the General Conditions. Failure of University to object to a proposed Superintendent or Subcontractor prior to award shall not preclude University from requiring replacement of Superintendent or any Subcontractor based upon information received subsequent to award, information which cannot be properly evaluated prior to award due to time constraints, or information relating to a failure to comply with the requirements of the Contract.

6.3.7 If Bidder submits three originals of the signed Agreement and all other items required to be submitted to University within 10 days after receipt of notice of selection as the apparent lowest responsive and responsible Bidder, and if all such items comply with the requirements of the Bidding Documents and are acceptable to University, University will award the Contract to Bidder by signing the Agreement and returning a signed copy of the Agreement to Bidder.

6.3.8 If University consents to the withdrawal of the Bid of the apparent lowest responsive and responsible Bidder, or the apparent lowest responsive and responsible Bidder fails or refuses to sign the Agreement or submit to University all of the items required by the Bidding Documents, within 10 days after receipt of notice of selection, or that Bidder is not financially or otherwise qualified to perform the Contract, University may reject such Bidder's Bid and select the next apparent lowest responsible Bidder, until all Bids are exhausted, or reject all Bids. Any Bidder whose Bid is rejected because the Bidder has failed or refused, within 10 days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents, shall be liable to the University for all resulting damages.

## **ARTICLE 7**

### **BID PROTEST**

#### **7.1 FILING A BID PROTEST**

7.1.1 Any Bidder, person, or entity may file a Bid protest. The protest shall specify the reasons and facts upon which the protest is based and shall be in writing and received by with the Facility not later than 5:00 PM on the 3<sup>rd</sup> business day following:

- .1 if the Bid Form does not contain any Alternate(s), the date of the Bid opening;
- .2 if the Bid Form contains any Alternate(s), the date of posting in a public place of Bid results.

7.1.2 If a Bid is rejected by the Facility, and such rejection is not in response to a Bid protest, any Bidder, person or entity may dispute that rejection by filing a Bid protest (limited to the rejection) in writing and received by the Facility not later than 5:00 PM on the 3<sup>rd</sup> business day following the rejected Bidder's receipt of the notice of rejection.

7.1.3 For the purpose of computing any time period in this Article 7, the date of receipt of any notice shall be the date on which the intended recipient of such notice actually received it. Delivery of any notice may be by any means, with verbal or written confirmation of receipt by the intended recipient.

## 7.2 RESOLUTION OF BID CONTROVERSY

7.2.1 Facility will investigate the basis for the Bid protest and analyze the facts. Facility will notify Bidder whose Bid is the subject of the Bid protest of evidence presented in the Bid protest and evidence found as a result of the investigation, and, if deemed appropriate, afford Bidder an opportunity to rebut such evidence, and permit Bidder to present evidence that it should be allowed to perform the Work. If deemed appropriate by Facility, an informal hearing will be held. Facility will issue a written decision within 15 days following receipt of the Bid protest, unless factors beyond Facility's reasonable control prevent such a resolution, in which event such decision will be issued as expeditiously as circumstances reasonably permit. The decision will state the reasons for the action taken by Facility. A written copy of the decision will be furnished to the protestor, the Bidder whose Bid is the subject of the Bid protest, and all Bidders affected by the decision. As used in this Article 7, a Bidder is affected by the decision on a Bid protest if a decision on the protest could have resulted in the Bidder not being the lowest responsible and responsive Bidder for the Contract. A written copy of the Facility's decision must be received by the protestor, the Bidder whose Bid is the subject of the Bid protest, and all Bidders affected by the decision no later than 3 business days prior to award of the contract.

7.2.2 Notwithstanding the provisions of Article 7.2.1, at the election of Facility, a Bid protest may be referred directly to University's Construction Review Board without prior investigation and review by Facility. The Chair of the Construction Review Board will either decide the Bid protest or appoint a Hearing Officer. If a Hearing Officer is appointed, the Hearing Officer will review the Bid protest in accordance with the provisions of Article 7.2.4.

7.2.3 Bidder whose Bid is the subject of the protest, all Bidders affected by the Facility's decision on the protest, and the protestor have the right to appeal to the Construction Review Board if not satisfied with Facility's decision. The appeal must be in writing and shall specify the decision being appealed and all the facts and circumstances relied upon in support of the appeal. A copy of the appeal must be received by the Chair, Construction Review Board, not later than 5:00 pm on the 3rd business day following appellant's receipt of the written decision of Facility, at the following address:

Chair, Construction Review Board  
University of California  
Office of the President  
1111 Franklin Street, 6<sup>th</sup> Floor  
Oakland, CA 94607-5200  
Attention: Associate Director, Design & Construction Policy

**And, by email to:**

constructionreviewboard@ucop.edu

A copy of the appeal must be sent to all parties involved in the Bid protest and to Facility, to the same address and in the same manner as the original protest. An appeal received after 5:00 pm is considered received as of the next business day. If the final date for receipt of an appeal falls on a Saturday, Sunday, or University holiday, the appeal will be considered timely only if received by 5:00 pm on the following business day. The burden of proving timely receipt of the appeal is on the appealing party.

7.2.4 The Chair of the Construction Review Board will review the Facility's decision and the appeal, and issue a written decision, or if appropriate, appoint a Hearing Officer to conduct a hearing and issue a written decision. If a hearing is held, the hearing shall be held not later than the 10th day following the appointment of the Hearing Officer unless the Hearing Officer for good cause determines otherwise. The written decision of the Chair or Hearing Officer will state the basis of the decision, and the decision will be



final and not subject to any further appeal to University. The Chair or Hearing Officer may consult with the University's Office of the General Counsel on the decision as to legal form. The University will complete its internal Bid protest procedures before award of the Contract.

END OF INSTRUCTIONS TO BIDDERS

## SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1. Contract Time: As specified in Section 1 of the Bid Form.
2. List of Subcontractors (Bid Form Paragraph 9.0) and List of Changes in Subcontractors Due to Alternates (Bid Form Paragraph 10.0).

The default rule is that, if a Bidder lists one subcontractor for a Work Activity (such as “Electrical”) under Bid Form Paragraph 9.0 and a different subcontractor for the same Work Activity (such as “Electrical”) for the Alternate Work under Bid Form Paragraph 10.0 without reference to the Alternate, then it is deemed that the second subcontractor listed in Paragraph 10.0 will perform the Base Bid Work and the Alternate Work, unless the Bidder expressly writes otherwise.

A Bidder may list more than one subcontractor per trade, provided that the Work Activity to be performed by each listed subcontractor is adequately described on the spaces provided on the Bid Form, so that which subcontractor will perform which Work Activity can be determined.

For example, in case of Alternates, if a Bidder wants one subcontractor to perform the electrical Base Bid Work and another subcontractor to perform the electrical Alternate Work, then the Bidder should list the first subcontractor under Bid Form Paragraph 9.0 as performing the “Electrical” Work Activity, and list the second subcontractor under Bid Form Paragraph 10.0 (for listing changes in subcontractors due to Alternates) as performing the “Electrical Alt” or “Electrical Alt Work” or “Electrical Alt Only” or similarly to define the Alternate Work Activity separately to be performed.

3. Requests for clarification or interpretation of the Bidding Documents must be submitted in writing, and shall be addressed only to:

Kara Longtin  
Email: [kara.longtin@ucr.edu](mailto:kara.longtin@ucr.edu)  
Tel: 951.827.2610

**The deadline to submit requests for clarification or interpretation is on or before 2:00 PM, on Tuesday, September 15, 2020.**

4. A mandatory Pre-Bid Zoom conference call will take place on **Wednesday, September 9, 2020** beginning promptly at **2:00 PM**. Only bidders who participate in the Pre-Bid conference will be allowed to bid on the Project as prime contractors. For further information, including the Zoom Meeting ID, interested bidders must contact the Project’s Contract Administrator, **Kara Longtin** via email, at [kara.longtin@ucr.edu](mailto:kara.longtin@ucr.edu). And must use the project’s number and name in the subject header to request the Zoom information.

Due to COVID-19 restrictions, there will be no mandatory site visit. However, if a contractor would like to visit the site, it will be by appointment only; please contact Kara Longtin to schedule a time.

5. Bids must be received on or before the Bid Deadline and only at the location specified in the **ADVERTISEMENT FOR BIDS**.
6. Bids will be opened at the same location specified in the **ADVERTISEMENT FOR BIDS** for the receipt of bids.
7. Contractor will be assessed as liquidated damages the sum of **\$500** for each day the Work remains incomplete beyond the expiration of the Contract Time. After Substantial Completion, the rate for liquidated damages shall be reduced to the sum of **\$250** per day. See Article 5 of the Agreement for detailed requirements



8. Replace the existing Paragraph 1.4 with the following:
  - 1.4 The term "Bid Deadline" means the date and time on or before which Bids must be received, as designated in the **ADVERTISEMENT FOR BIDS** and which may be revised by Addenda.
9. Replace the existing Paragraph 3.1.1 with the following:
  - 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the **ADVERTISEMENT FOR BIDS**.
10. Replace the existing Paragraph 3.5.1 with the following:
  - 3.5.1 Addenda will be issued only by University and only in writing. Addenda will be identified as such and will be mailed or delivered to all Planholders. At its sole discretion, the University may elect to deliver Addenda via facsimile or email to Planholders who have provided a facsimile number or email address for receipt of Addenda or communications.
11. Replace the existing Paragraph 3.5.3 with the following:
  - 3.5.3 Addenda will be issued such that Planholders should receive them no later than 72 hours prior to the Bid Deadline. Addenda withdrawing the request for Bids or postponing the Bid Deadline may be issued anytime prior to the Bid Deadline.
12. Replace the existing Paragraph 5.2.4 with the following:
  - 5.2.4 ***Bid Security must be physically produced in its original form within 24 hours of being found as apparent low bidder.*** Bid Security will be returned after the contract has been awarded. Notwithstanding the preceding, if a Bidder fails or refuses, within **10** days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents, the University will retain that Bidder's Bid Security. If the Bid Security is in the form of a Bid Bond, the Bid Security will be retained until the University has been appropriately compensated; if the Bid Security is in the form of certified check, the University will negotiate said check and after deducting its damages, return any balance to Bidder.
13. Add the following as Paragraph 5.3.5:
  - 5.3.5 As specified in the **ADVERTISEMENT FOR BIDS**, the University has determined that bidders who submit bids for this Project do not need to be prequalified.
14. Replace the existing Paragraph 5.4.4 with the following:
  - 5.4.4 Bids may not be modified, withdrawn, or canceled within **60** days after the Bid Deadline.
15. Replace the existing Paragraph 6.3.1 with the following:
  - 6.3.1 University will have the right, but is not required, to waive nonmaterial irregularities in a Bid. If the University awards the Contract, it will be awarded to the responsible Bidder submitting the lowest responsive Bid as determined by University and who is not rejected by University for failing or refusing, within **10** days after receipt of notice of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents.
16. Replace the existing Paragraph 6.3.5 with the following:

6.3.5 University will select the apparent lowest responsive and responsible Bidder and notify such Bidder on University's form within **50** days (unless the number of days is modified in Supplementary Instructions to Bidders) after the Bid Deadline or reject all Bids. Within **10** days after receipt of notice of selection as the apparent lowest responsive and responsible Bidder, Bidder shall submit to University all of the following items:

- .1 One original of the Agreement signed by Bidder.
- .2 One original of the Payment Bond required under Article 11 of the General Conditions.
- .3 One original of the Performance Bond required under Article 11 of the General Conditions.
- .4 Certificates of Insurance on form provided by University required under Article 11 of the General Conditions.
- .5 Names of all Subcontractors, with their addresses, telephone and facsimile numbers, contact persons, portions of the Work and designation of any Subcontractor as a Small Business Enterprise (SBE), Disadvantaged Business Enterprise (DBE), Women-owned Business Enterprise (WBE) and Disabled Veteran Business Enterprise (DVBE) on the Report of Subcontractor Information form, along with a completed Self-Certification form, contained in the Exhibits. Evidence, as required by University, of the reliability and responsibility of the proposed Subcontractors such as statements of experience, statements of financial condition, and references.
- .6 Preliminary Contract Schedule as required under Article 3 of the General Conditions.
- .7 If Bidder wishes to utilize securities in lieu of retention beginning with the first Application for Payment, a completed Selection of Retention Options form accompanied by a completed Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention in the form contained in the Exhibits.
- .8 Cost Breakdown as required by Article 9 of the General Conditions.

17. Replace the existing Paragraph 6.3.7 with the following:

6.3.7 If Bidder submits the original of the signed Agreement and all other items required to be submitted to University within **10** days after receipt of notice of selection as the apparent lowest responsive and responsible Bidder, and if all such items comply with the requirements of the Bidding Documents and are acceptable to University, University will award the Contract to Bidder by signing the Agreement and returning a signed copy of the Agreement to Bidder.

18. Replace the existing Paragraph 6.3.8 with the following:

6.3.8 If University consents to the withdrawal of the Bid of the apparent lowest responsive and responsible Bidder, or the apparent lowest responsive and responsible Bidder fails or refuses to sign the Agreement or submit to University all of the items required by the Bidding Documents, within **10** days after receipt of notice of selection, or that Bidder is not financially or otherwise qualified to perform the Contract, University may reject such Bidder's Bid and select the next apparent lowest responsive Bidder, until all Bids are exhausted, or reject all Bids. Any Bidder whose Bid is rejected because the Bidder has failed or refused, within **10** days after receipt of notice

- of selection, to sign the Agreement or submit to University all of the items required by the Bidding Documents, shall be liable to the University for all resulting damages.
19. The University has negotiated contracts with certain suppliers (listed in the “Information Available to Bidders”) to supply materials to University construction projects. Bidders may be able to obtain favorable pricing from the listed suppliers for materials required for this Contract. Bidders are not obligated to obtain any required materials from the listed suppliers. Use of any of the listed suppliers is at the Bidder’s risk, and the University does provide any warranties, express or implied, with respect to the listed suppliers, their products and/or services. In particular, University does not warrant that the listed suppliers, their products and/or services are suitable for this Project.
20. **PREVAILING WAGE INFORMATION:** A bidder can obtain the prevailing wage information through the internet at [www.dir.ca.gov](http://www.dir.ca.gov) or at <http://www.dir.ca.gov/DLSR/PWD>.

END OF SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

## **INFORMATION AVAILABLE TO BIDDERS**

The following information is made available for the convenience of bidders and is not a part of the Contract. The information is provided subject to the provisions of Article 3 of the General Conditions.

1. The University of California has contracts for materials, equipment and/or services with the suppliers listed on the Office of the President Procurement Services website at:

<http://www.ucop.edu/procurement-services/for-suppliers/ucop-designated-construction-agreements.html>

General Contractors or others submitting bids for University construction projects may enter into agreements with these suppliers that utilize the pricing and terms contained in the University-supplier agreements. The university does not represent or warrant that materials/equipment/services of these suppliers meet the requirements of the University's construction contracts.

Use of such suppliers shall not relieve Contractor from its obligation to meet all contractual requirements in any contracts with the University. The university will not be a party to any agreements with such suppliers and accepts no performance obligations or liability with respect to such agreements.

2. Reports:

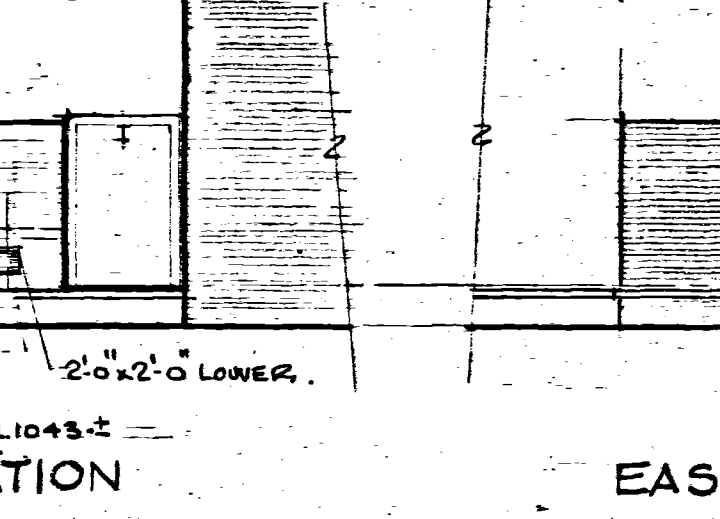
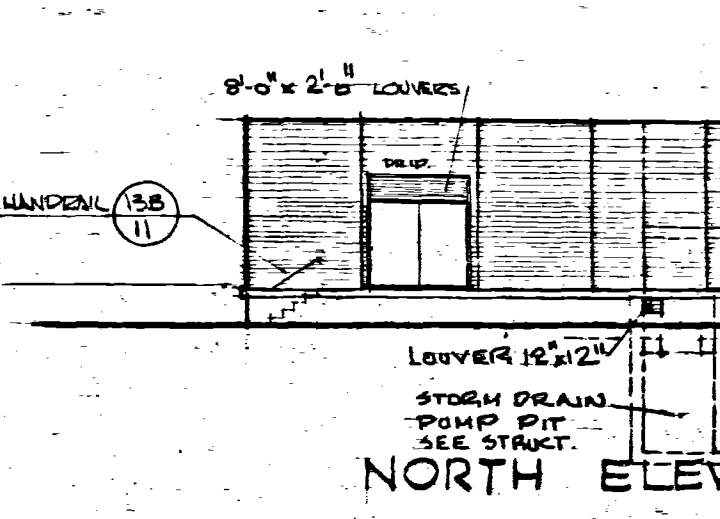
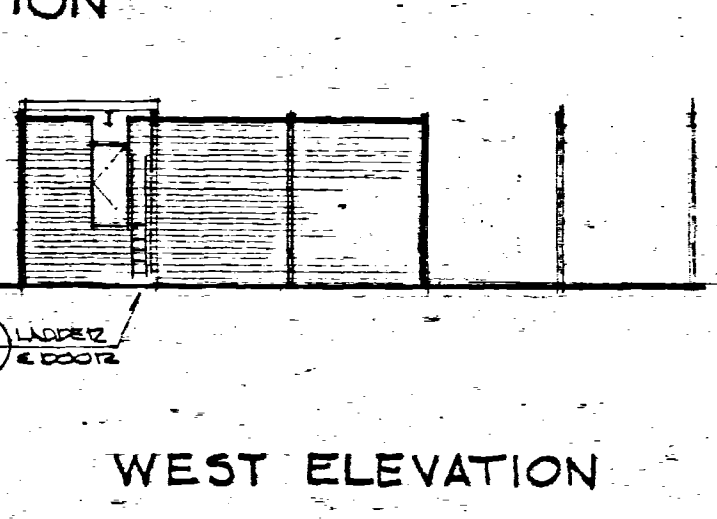
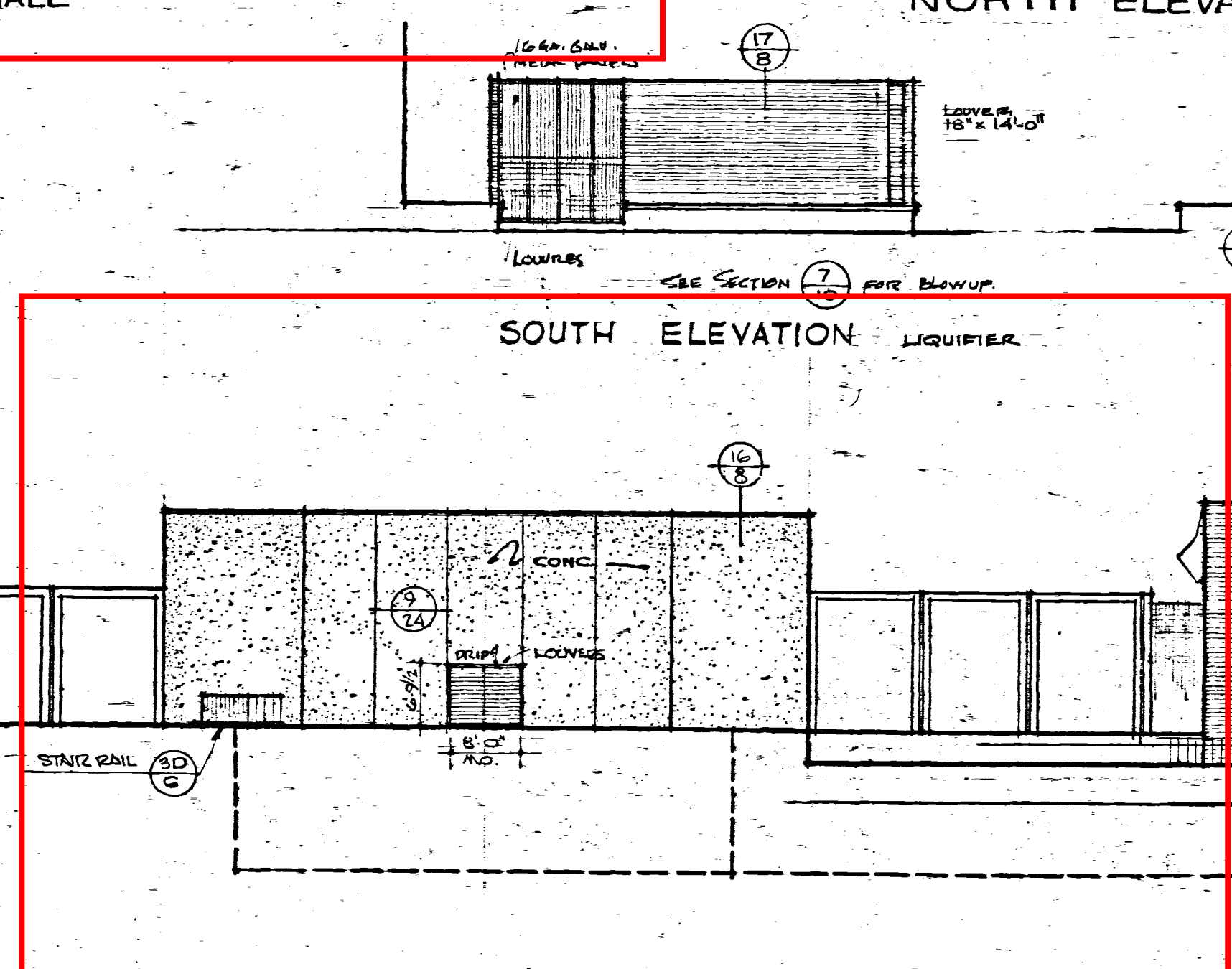
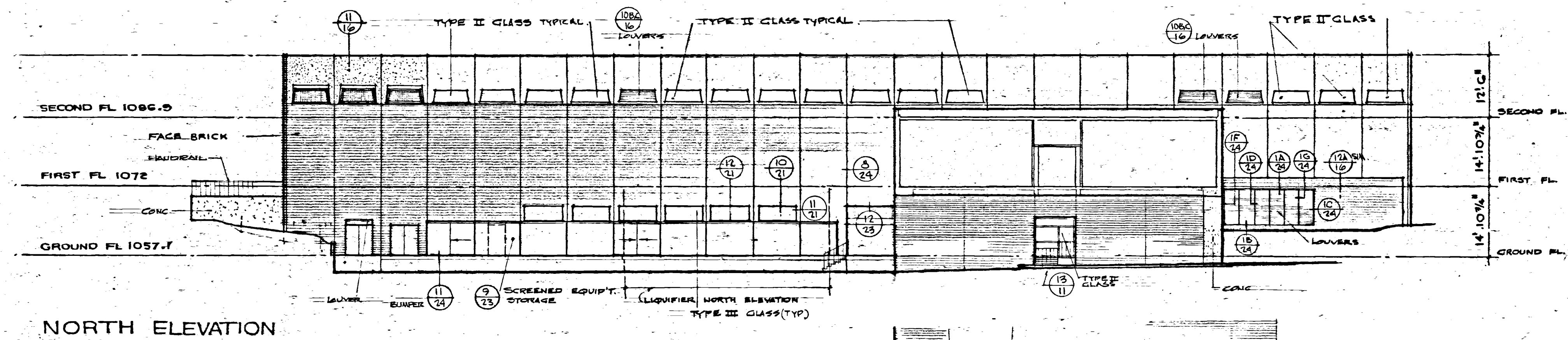
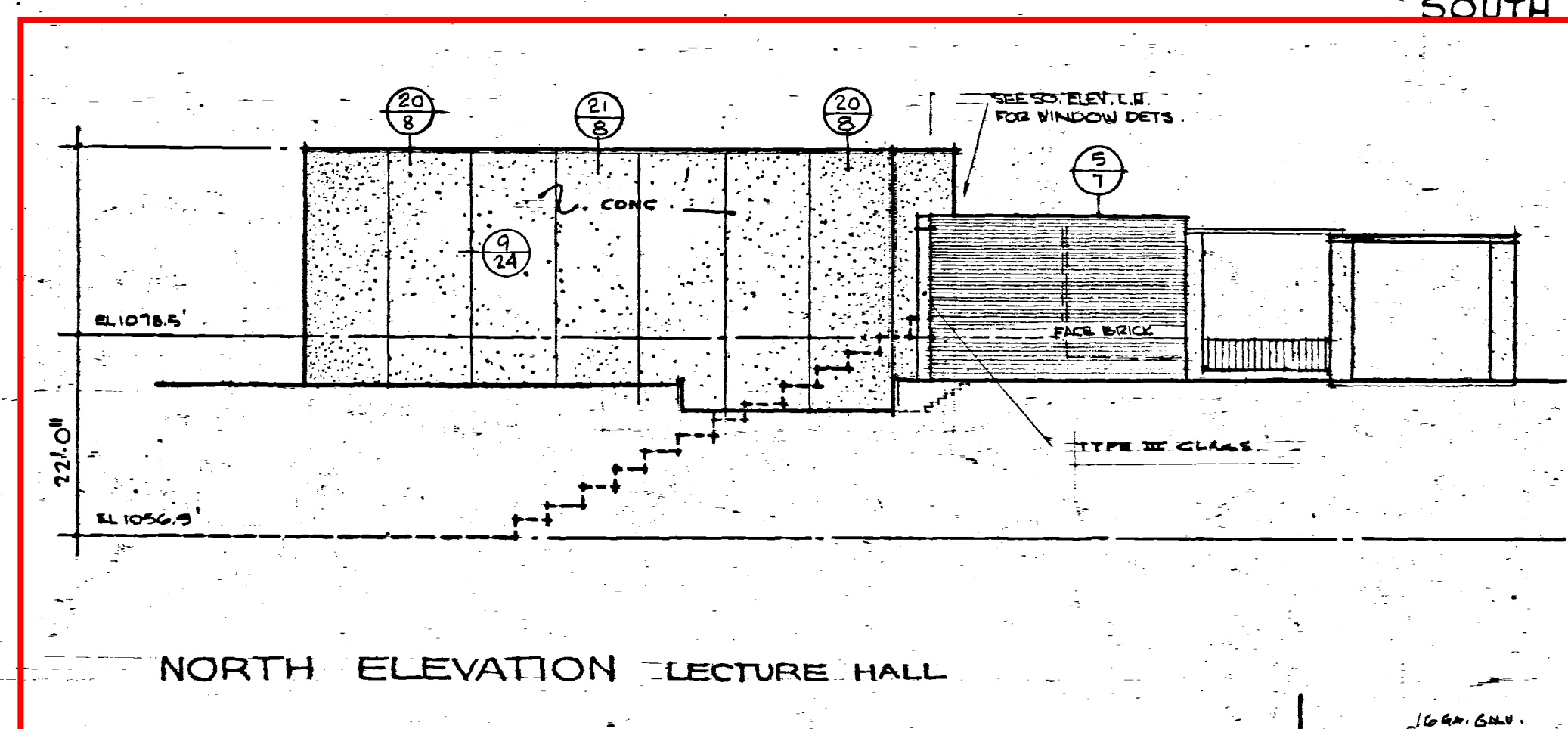
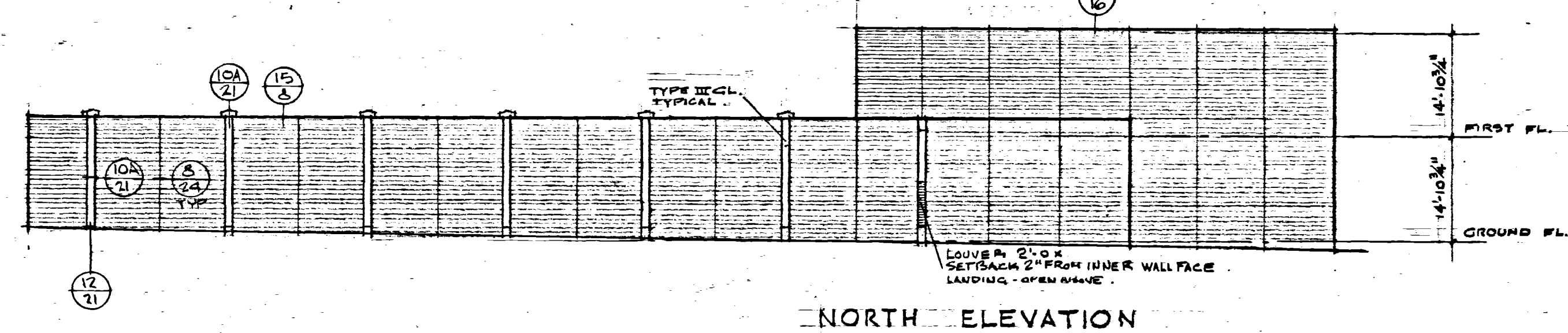
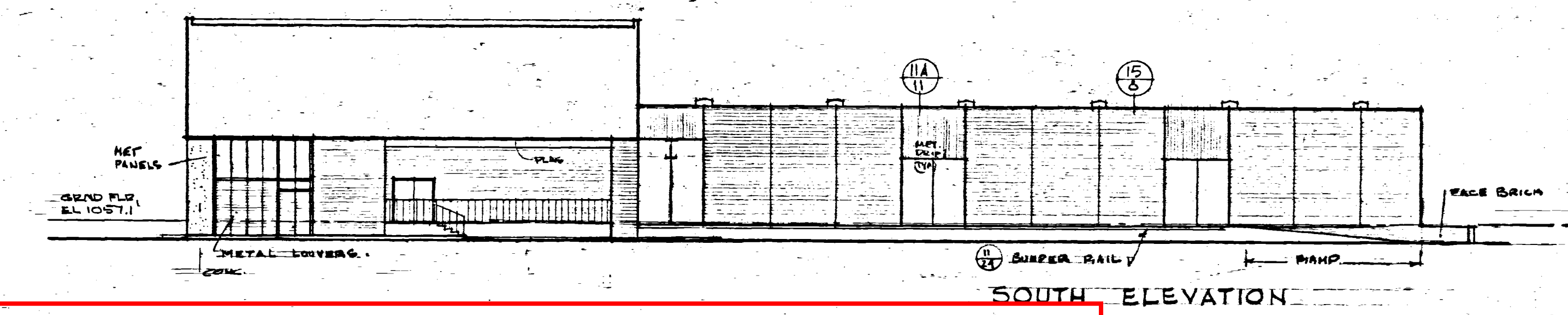
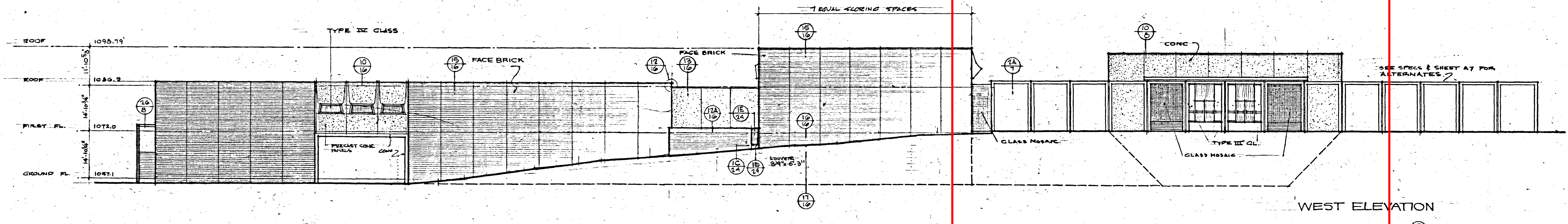
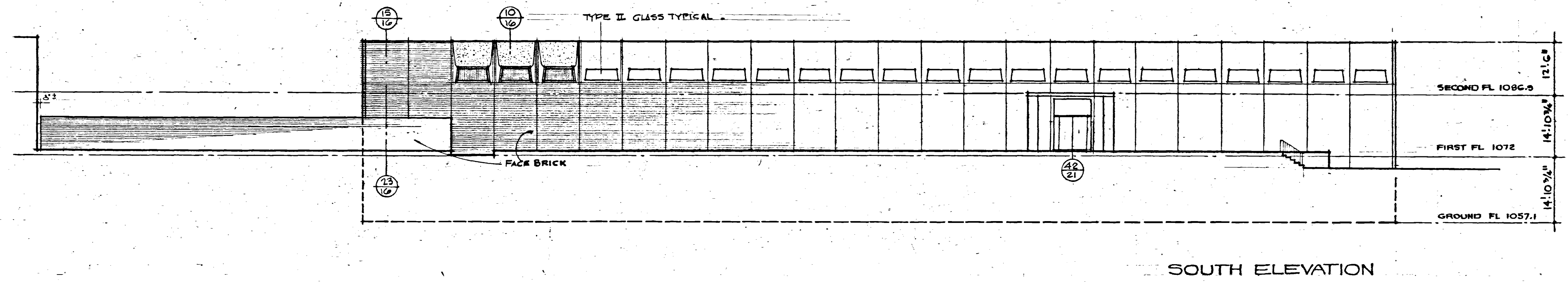
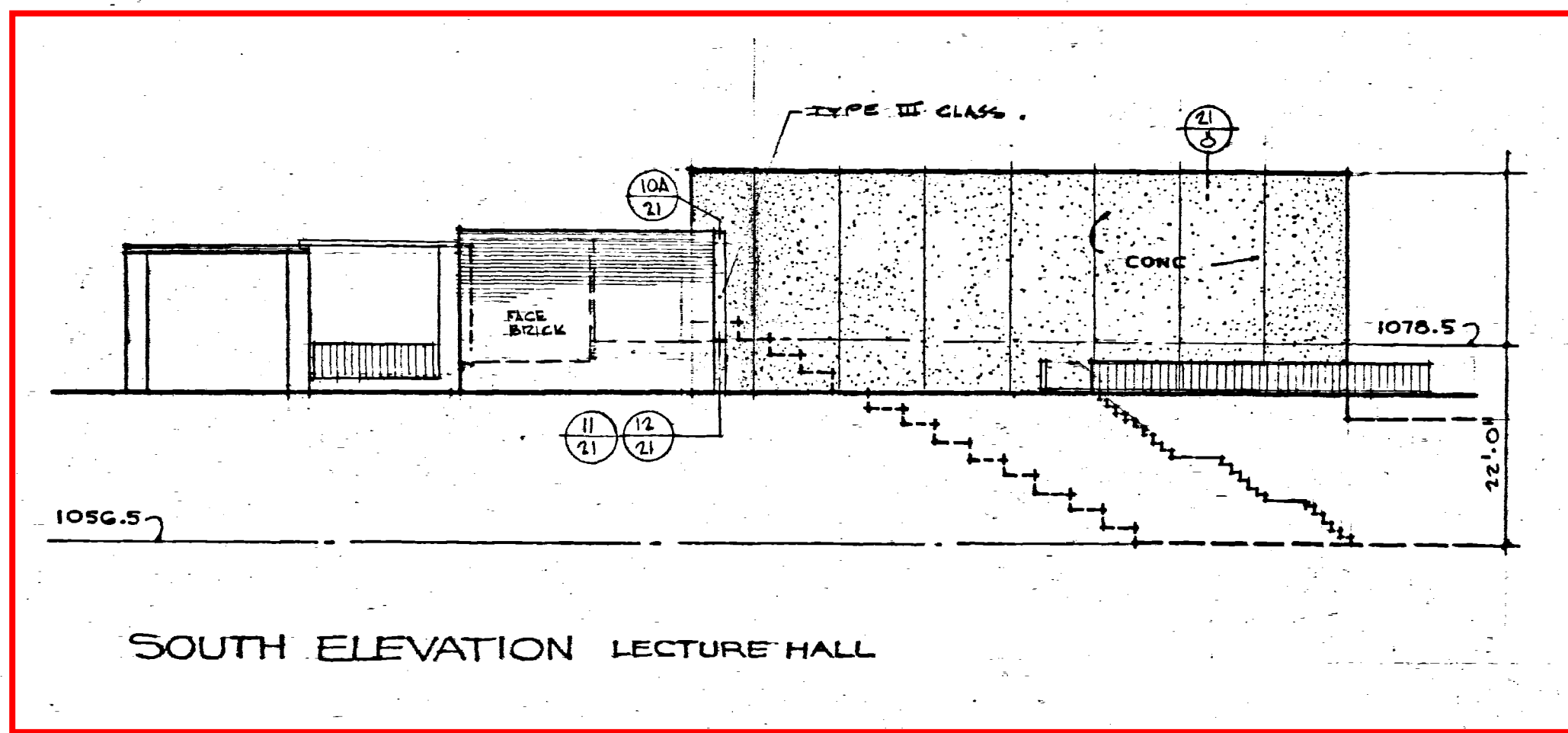
Comprehensive Asbestos, PCB's & XRF-Lead Assessment

3. Record Documents and As-Builts:

Physics 2000  
Physics 2000\_Arch  
Physics 2000\_Lecture Hall\_Electrical Light 2006  
Physics 2000\_ Elevations

END OF INFORMATION AVAILABLE TO BIDDERS





SCALE OF ELEVATIONS THIS SHEET 1/16" = 1'-0"

PHYSICAL SCIENCES UNIT NO. 3 UNIVERSITY OF CALIFORNIA RIVERSIDE  
 ARCHITECT MAYNARD LYNDON F.A.I.A. SUPERVISING ARCHITECT GEORGE VERNON RUSSELL F.A.I.A. AND ASSOCIATES  
 CONSULTANTS: LLOYD DYSLAND, LLOYD PETICOLAS, W. A. WIESE, ROBERT LEONARD, JOYCE EARLEY  
 PROJECT 905065, DATE 11/7/63, REVISIONS  
 FILE 6110, SHEET NUMBER A12





# A-Tech Consulting, Inc.

1640 N. Batavia Street, Orange, CA 92867  
Phone (714) 434-6360 Fax (714) 221-6360  
[www.atechinc.net](http://www.atechinc.net)

## **COMPREHENSIVE ASBESTOS, PCB'S & XRF-LEAD ASSESSMENT**

### **Physics 2000**

City of Riverside  
County of Riverside  
State of California

Project Number: Atch-201291

June 01, 2020

PREPARED FOR:

**University of California, Riverside**

**PRIVILEGED & CONFIDENTIAL**

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**Cover**

**ASBESTOS**

**Table of Contents**

**I. Executive Summary**

- 1.0 Introduction
- 2.0 Scope of Assessment
- 3.0 Previous Assessment/Historical Data
- 4.0 Visual Inspection and Sampling/Analytical Methodology
- 5.0 Laboratory Accreditation and Analytical Procedures
- 6.0 Asbestos Identification
- 7.0 Material Condition
- 8.0 Recommendations
- 9.0 Limitations

**II. Appendices**

- A.** Asbestos Bulk Sample Analysis
- B.** PCB's Sample Analysis
- C.** Diagrams: Asbestos Bulk and PCB Sample Locations
- D.** Digital Photographs – Asbestos
- E.** Digital Photographs – PCB's
- F.** Laboratory Reports-Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method Using Polarized Light Microscopy and Chain of Custody
- G.** Laboratory Reports-Polychlorinated Biphenyls Analysis via EPA 3540C/8082A and Chain of Custody

Atch-201291  
Comprehensive Asbestos and PCB's Assessment  
900 University Avenue  
Riverside, California 92521

June 1, 2020

University of California, Riverside  
900 University Avenue  
Riverside, California 92521

Attn: Mr. Scott Donnell

Re: Physics 2000  
Riverside, California 92521

Pursuant to your request, A-Tech Consulting, Inc. (A-Tech) has completed a Comprehensive Asbestos Assessment of Physics 2000 in Riverside, California. The following report summarizes the findings of this inspection.

## **1.0 INTRODUCTION**

A-Tech was contacted by Mr. Scott Donnell with University of California, Riverside to confirm the presence or absence of asbestos in Physics 2000 in Riverside, California. The assessment was conducted by Josue Romero - CAC #19-6484 and Brennen Reed - CSST #19-6734 with A-Tech on May 20, 2020 and May 21, 2020.

## **2.0 SCOPE OF ASSESSMENT**

This comprehensive asbestos assessment was performed to identify visible and/or readily accessible suspect friable and non-friable Asbestos-Containing Building Materials (ACBMs) at a subject property. The intent of this assessment was to satisfy all regulatory requirements for renovation and/or demolition. Friable ACM, as defined by the U.S. Environmental Protection Agency (EPA) and South Coast Air Quality Management District (SCAQMD), Rule 1403, is a material that, when dry, can be easily pulverized, crushed or reduced to powder by hand pressure. Non-friable ACBM that can potentially be broken, crumbled, pulverized or reduced to powder in the course of demolition or renovation activities are classified as Category I or Category II, non-friable ACBM. These assessments are typically accomplished by, and limited to, an in-depth site reconnaissance, a review of readily available building records, and a review of readily available asbestos Operation and Maintenance (O&M) plans. In the event that suspected or known ACBMs exist at a given site, samples of the potential ACBMs may be collected for subsequent laboratory analysis.

This Comprehensive Asbestos Assessment was conducted in accordance with the scope of services authorized by Mr. Scott Donnell with University of California, Riverside in accordance with current regulatory guidelines.

## **3.0 PREVIOUS ASSESSMENT/HISTORICAL DATA**

No prior asbestos related documentation for the subject property was reviewed or made available.

## **4.0 VISUAL INSPECTION AND SAMPLING/ANALYTICAL METHODOLOGY**

### Asbestos

To identify suspect friable and non-friable ACBM, as required under California law, a California Occupational Safety Health Administration (CAL-OSHA), Certified Site Surveillance Technicians (CSST) and/or Certified Asbestos Consultant (CAC) is required to conduct visual and/or bulk assessments of a subject property.



During this assessment, A-Tech identified homogenous areas of suspected ACBMs for purpose of sampling in accordance with current CAL-OSHA/EPA (AHERA) requirements. These areas were defined with respect to similarities in appearance, age, use, type, color, and/or texture. The condition and estimated quantity of the suspected materials were also assessed. Based upon A-Tech Consulting, Inc.'s observations, fifty-six (56) homogeneous suspect asbestos containing building materials were identified. Please refer to Appendix A for a complete list of sampled materials.

To evaluate the presence of asbestos in these suspected ACBMs, A-Tech Consulting, Inc. obtained two hundred (200) bulk samples, which appeared to represent each homogeneous area (see tables). However, some of the samples analyzed may have multiple layers of material, which the laboratory is required to separate and analyze independently. The total amount of samples analyzed was two hundred and ninety-eight (298). Regarding multiple layered materials, if one layer tests positive for asbestos content, the entire sample is considered positive.

Note: The Built-Up Roofing on the Lower, Middle and Upper Roof consists of 1 system and 3 layers.

Materials containing greater than one-tenth of one percent (>0.1%) asbestos by weight is considered positive in this report and defined as asbestos containing construction material (ACCM), and anything >1% is an asbestos containing material.

Following Asbestos Hazard Emergency Response Act (AHERA) inspection methodology, the inspector identifies each suspect material and categorizes it into one of three established material types: surfacing, thermal system or miscellaneous (See Attached Table: Asbestos Bulk Sample Analysis for Individual Sample Identification). The following describes the characteristics for these three categories:

- *Surfacing material* - means material in a building that is sprayed on, troweled on, or otherwise applied to surfaces such as acoustical plaster on ceilings, fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.
- *Thermal system insulation* - means material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.
- *Miscellaneous material* - means interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

Amended water-spray wet methods were used during the collection of each friable sample, such as suspended ceiling tiles. For buildings to be demolished, A-Tech conducts destructive sampling. All sampling was conducted down to stud/joist level. After collecting each sample, the sampling equipment was cleaned with a moist towelette. Each sample was sealed in a sample container and assigned a discrete sample identification number.

#### PCB's

During the inspection, representative suspect window and door frame caulking samples were collected and analyzed for the presence of PCB's per 40 CRF 761 subparts M, O, P and R. Suspect caulking is defined as being associated with windows or expansion joints installed prior to 1980.

Bulk samples are collected using a utility blade and/or a sharp metal spatula/putty knife. The bulk sample was placed in a 2 oz. glass jar with a Teflon cap. The sample was labeled and packaged in a cooler and kept cool with ice during shipment.

## **5.0 LABORATORY ACCREDITATION & ANALYTICAL PROCEDURES**

The two hundred (200) samples obtained from the subject property were delivered to LA Testing of Huntington Beach, California (714) 828-4999 (under chain-of-custody procedures) for analysis. This laboratory is a fully accredited laboratory by the National Institute of Standards and Technology (NIST) through participation in the National Voluntary Laboratory Accreditation Program (NVLAP) lab code #101650-0.

The samples were analyzed for asbestos by PLM, using dispersion staining in accordance with U.S. EPA Procedures outlined in 40 CFR 763, Subpart F, Appendix A (AHERA). Utilizing the PLM 600R/R-93/116 method, the result given is a semi-quantitative result (down to <1%) which reflects a calibrated visual estimate from an analyst using both Polarized Light Microscopy and Stereomicroscopy.

### PCB's

Two (2) samples were delivered to LA Testing of Huntington Beach, California and analyzed using EPA Method 3540C/8082A for PCB's.

## **6.0 ANALYTICAL RESULTS**

Based upon the analytical results, asbestos is present in fifty-nine (59) of the samples analyzed, of which all fifty-two (52) of the samples were considered to be non-friable materials and seven (7) were considered to be friable. These samples were obtained from the roof penetration mastic, vent putty, gray transite hvac inlet box, light gray speckled vinyl sheet flooring, 12"x12" light gray speckled resilient flooring/resilient floor mastic, 9"x9" gray resilient flooring/resilient floor mastic, 12"x12" light tan resilient flooring/resilient floor mastic, 2'x4' dark brown transite wall panel, 1'x2' dark brown transite wall panel, black window putty, transite sink, transite fume hood, 24" transite fume exhaust pipe, brown plumbing putty, gray hardpack fireproofing, 24" transite pipe, black transite wall panel, stucco, gray window putty, stucco, black window putty.

Based upon the analytical results, asbestos is present in the following material:

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Asbestos Type - Percentage</u>	<u>Est. Qty.</u>
201291-A-0011	Roof Penetration Mastic	Lower Roof	Chrysotile - 10 %	30 SF
201291-A-0022	Vent Putty	Middle Roof	Chrysotile - 5 %	3 SF
201291-A-0023	Vent Putty	Middle Roof	Chrysotile - 5 %	See 22
201291-A-0024	Vent Putty	Middle Roof	Chrysotile - 5 %	See 22
201291-A-0025	Gray Transite HVAC Inlet Box	Middle Roof	Chrysotile - 30 %	2 EA
201291-A-0026	Gray Transite HVAC Inlet Box	Middle Roof	Chrysotile - 30 %	See 25
201291-A-0027	Gray Transite HVAC Inlet Box	Middle Roof	Chrysotile - 30 %	See 25
201291-A-0040	Light Gray Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Chrysotile - 5 %	600 SF
201291-A-0042	12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic	Basement, Tunnel Hallway	Chrysotile - 3 %	50 SF
201291-A-0043	12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic	Basement, Tunnel Hallway	Chrysotile - 3 %	See 42
201291-A-0045	9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room	Chrysotile - 8 %	500 SF
201291-A-0046	9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room	Chrysotile - 8 %	See 45
201291-A-0047	9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room	Chrysotile - 8 %	See 45

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Asbestos Type - Percentage</u>	<u>Est. Qty.</u>
201291-A-0053	12"x12" Light Tan Resilient Flooring/Resilient Floor Mastic	1st Floor, Lobby	Chrysotile - 2 %	750 SF
201291-A-0072	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 30 %	4,000 SF
201291-A-0073	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 30 %	See 72
201291-A-0074	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 30 %	See 72
201291-A-0075	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 30 %	See 72
201291-A-0076	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 30 %	See 72
201291-A-0077	1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby	Chrysotile - 25 %	500 SF
201291-A-0078	1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby	Chrysotile - 25 %	See 77
201291-A-0079	1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby	Chrysotile - 25 %	See 77
201291-A-0100	Black Window Putty	1st Floor, Lobby	Chrysotile - 8 %	20 SF
201291-A-0102	Black Window Putty	1st Floor, Lobby	Chrysotile - 4 %	See 100
201291-A-0109	Transite Sink	Basement, Room 1063B	Chrysotile - 25 %	3 EA
201291-A-0110	Transite Sink	Basement, Room 1063B	Chrysotile - 25 %	See 109
201291-A-0111	Transite Sink	Basement, Room 1063D	Chrysotile - 25 %	See 109
201291-A-0112	Transite Fume Hood	Basement, Room 1063D	Chrysotile - 30 %	1 EA
201291-A-0113	Transite Fume Hood	Basement, Room 1063D	Chrysotile - 30 %	See 112
201291-A-0114	Transite Fume Hood	Basement, Room 1063D	Chrysotile - 30 %	See 112
201291-A-0115	24" Transite Fume Exhaust Pipe	Basement, Room 1063D	Chrysotile - 30 %	60 SF (1 EA)
201291-A-0116	24" Transite Fume Exhaust Pipe	Basement, Room 1063D	Chrysotile - 30 %	See 115
201291-A-0117	24" Transite Fume Exhaust Pipe	Basement, Room 1063D	Chrysotile - 25 % Crocidolite - 7 %	See 115
201291-A-0118	Brown Plumbing Putty	Basement, Room 1063D	Chrysotile - 15 %	50 SF
201291-A-0119	Brown Plumbing Putty	1st Floor, Room 2000D	Chrysotile - 15 %	See 118
201291-A-0120	Brown Plumbing Putty	1st Floor, Room 2000D	Chrysotile - 15 %	See 118
201291-A-0121	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	4,000 SF
201291-A-0122	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	See 121

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Asbestos Type - Percentage</u>	<u>Est. Qty.</u>
201291-A-0123	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	See 121
201291-A-0124	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	See 121
201291-A-0125	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	See 121
201291-A-0126	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	See 121
201291-A-0127	Gray Hardpack Fireproofing	Attic	Chrysotile - 20 %	See 121
201291-A-0133	24" Transite Pipe	1st Floor, Room 2000D	Chrysotile - 15 % Crocidolite - 10 %	160 SF (2 EA)
201291-A-0134	24" Transite Pipe	1st Floor, Room 2000D	Chrysotile - 15 %	See 133
201291-A-0135	24" Transite Pipe	1st Floor, Room 2000D	Chrysotile - 15 %	See 133
201291-A-0164	Black Transite Wall Panel	Basement, Room 1063C	Chrysotile - 25 %	50 SF
201291-A-0165	Black Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 25 %	See 164
201291-A-0166	Black Transite Wall Panel	Basement, Lecture Hall	Chrysotile - 25 %	See 164
201291-A-0170	Stucco Overhang	1st Floor, Entrance	Chrysotile - 2 %	700 SF
201291-A-0171	Stucco Overhang	1st Floor, Entrance	Chrysotile - 2 %	See 170
201291-A-0172	Stucco Overhang	1st Floor, Entrance	Chrysotile - 2 %	See 170
201291-A-0173	Gray Window Putty	Exterior, Window	Chrysotile - 5 %	5 SF
201291-A-0174	Gray Window Putty	Exterior, Window	Chrysotile - 5 %	See 173
201291-A-0175	Gray Window Putty	Exterior, Window	Chrysotile - 4 %	See 173
201291-A-0179	Stucco Wall	Exterior	Chrysotile - <1 %	250 SF
201291-A-0180	Stucco Wall	Exterior	Chrysotile - <1 %	See 179
201291-A-0181	Stucco Wall	Exterior	Chrysotile - <1 %	See 179
201291-A-0183	Black Window Putty	Exterior	Chrysotile - 3 %	10 SF

The homogenous locations for the material containing asbestos are as follows:

<u>Materials</u>	<u>Material Locations</u>
Roof Penetration Mastic	Lower Roof
Vent Putty	Middle Roof
Gray Transite HVAC Inlet Box	Middle Roof
Light Gray Speckled Vinyl Sheet Flooring	Basement, Lecture Hall and Room 1063C
12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic	Basement, Tunnel Hallway

<u>Materials</u>	<u>Material Locations</u>
9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room
12"x12" Light Tan Resilient Flooring/Resilient Floor Mastic	1st Floor, Lobby
2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall
1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby
Black Window Putty	1st Floor, Lobby
Transite Sink	Basement, Rooms 1063B, 1063C and 1063D
Transite Fume Hood	Basement, Room 1063D
24" Transite Fume Exhaust Pipe	Basement, Room 1063D
Brown Plumbing Putty	1st Floor, 2000D and Basement, Room 1063D
Gray Hardpack Fireproofing	Attic
24" Transite Pipe	1st Floor, Room 2000D
Black Transite Wall Panel	Basement, Lecture Hall and Room 1063C
Stucco	1st Floor, Entrance
Gray Window Putty	Exterior
Stucco Wall	Exterior
Black Window Putty	Exterior

Asbestos is present at <1% Chrysotile in the three (3) stucco samples analyzed. Note: Based on SCAQMD's Rule 1403, all materials detected at <1% asbestos content and not point counted, must be considered greater than 1%. A more definitive analytical method (Point Counting) which is capable of detecting asbestos below 1%, is recommended for the stucco.

#### PCB's

PCB's concentrations in the one (1) door frame caulking sample from the Back Exterior of the subject property analyzed was found to be above 50 ppm. Any materials that contain elevated concentrations are interpreted to require removal and disposal as PCB's waste.

Based upon the analytical results, PCB's is present in the following material:

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Component</u>	<u>Substrate</u>	<u>Color</u>	<u>Results PPM</u>	<u>Est. Qty.</u>
201291-PCB-0002	1st	Exterior, East End	Door Frame	Concrete	Light Gray	Aroclor-1016 - <0.43 Aroclor-1221 - <0.43 Aroclor-1232 - <0.43 Aroclor-1242 - <0.43 Aroclor-1248 - <0.43 Aroclor-1254 - <0.43 Aroclor-1260 - <b>77</b> Aroclor-1262 - <0.43 Aroclor-1268 - <0.43	5 SF (21 LF)

## **7.0 MATERIAL CONDITION**

The building materials identified as ACM's are in good and fair condition and are considered to be friable and non-friable (See Appendix A. Asbestos Bulk Analysis for detailed information).

Materials in good condition have a low exposure potential in their current state. Monitor conditions regularly and maintain all asbestos-containing materials in good (intact) condition.

Materials in fair condition have a moderate exposure potential in their current state and are more likely to deteriorate than materials in good condition. Stabilization of material by properly certified personnel should be conducted to restore material into a good (intact) state.

## **8.0 RECOMMENDATIONS**

Due to the potential hazards of exposure, an Asbestos Management Program (AMP) should be prepared, and implemented, to avoid incidental, and/or accidental disturbance of ACM. The AMP should set forth operational and maintenance guidelines to minimize fiber release, which may be caused by, age, normal wear and tear, delamination, building maintenance, repairs, renovation and other activities which may disturb ACM.

Prior to renovation, specifications should be properly modified to incorporate the removal of ACM. If removal of ACM is required in connection with demolition, renovation, or building repair, such work should only be performed by personnel who are appropriately trained, experienced, and registered. Intentional disturbance of ACM should be performed in a manner such that emissions are controlled. Control measures should include, but not be limited to, wet methods; encapsulation, removal with HEPA-filter equipped vacuums, and appropriately labeled polyethylene bags. HVAC systems in work areas where asbestos is to be abated should be deactivated and the register closed and temporarily sealed. Air monitoring relating to such work should be performed by or under the direct supervision of a California State Certified Asbestos Consultant before, during, and after the abatement work, as required by EPA and other regulations.

California law requires a building owner to provide tenant, employee and vendor notifications within fifteen (15) days of receipt of information identifying the presence of ACM in their building(s) and annually thereafter. Specific notification requirements are outlined in Assembly Bill 3713.

There are potential liabilities associated with the presence, and removal of ACM. Precautionary measures, as outlined herein, should be taken in accordance with the guidelines set forth by the EPA, the Occupational Safety and Health Administration (OSHA) and other regulatory agencies. The Division of Occupational Safety and Health (DOSH or CAL/OSHA) must be notified a minimum of 24 hours prior to the start of any asbestos-abatement project.

The local National Emission Standards for Hazardous Air Pollutants (NESHAP) regulatory agency as listed below must be notified ten (10) working days prior to the start of any demolition or asbestos – abatement projects which exceed 100 square feet or 120 linear feet of asbestos-containing material. This project is within the jurisdiction of South Coast Air Quality Management District (SCAQMD), Rule 1403.

If additional suspect materials are observed by the contractor, abatement contractor, building owner and/or its representatives, A-Tech should be notified to conduct additional testing. Certain materials may not have been visible/accessible during the initial assessment such as subsurface materials, live electrical equipment, materials in pipe chases, barrier paper under wood, sub-slab membranes, materials under the building structure, in wall and ceiling cavities, etc.

## **9.0 LIMITATIONS**

The conclusions presented in this report are professional opinions based solely upon visual observations at the site and laboratory analysis of the tested samples. They are intended exclusively for the purpose outlined herein, and for the site location and project indicated.

This assessment report is not specifications for asbestos abatement and it should not be used as a stand-alone asbestos abatement bid document. Recognizing that even the most comprehensive assessment may fail to detect ACM at a particular site, this study was not intended to identify all potential ACM present in the building or at the site for such reasons as the possible existence of buried, covered and inaccessible areas and features. A-Tech does not warrant that all sub-surface, wall cavity or other inaccessible materials were tested. A-Tech did not test any live electrical components or disassemble operational building equipment such as fans or HVAC components. These components may contain untested suspect ACM's. If any suspect ACMs not tested herein are discovered, they must be tested prior to impact.

Samples were collected from materials of similar appearance, age, use, type, color and/or texture. However, this does not guarantee that they are of the same composition. No guarantee is expressed or implied that all ACM has been identified. **Asbestos quantities are estimates only (see Asbestos Tables-Est. Qty.) Exact quantities should be verified by the abatement contractor prior to removal.**

A-Tech assumes no responsibility for the identification of suspect asbestos containing materials, which are not included in this assessment, concealed and/or inaccessible (i.e. locked rooms, under carpet, etc.) However, A-Tech makes every attempt possible to inspect all designated areas for asbestos containing materials (i.e. check under carpeting, inspect attic, crawl space, etc.).

Services performed by A-Tech were conducted in a manner above the care and skill ordinarily and currently exercised by members of the same profession that even the most comprehensive scope of services might fail to detect environmental liabilities on a particular site. Therefore, A-Tech cannot act as insurers and cannot "certify" that a site is free of environmental contamination.

No expressed or implied representation or warranty is included or intended in our reports, except that our services were performed, within the limits prescribed by the Scope of Services, with the customary thoroughness and competence of our profession.

This report is intended for the sole use of the contracted Client and its authorized representatives. The exchange of information was unique between A-Tech and the client regarding the mutually agreed upon scope of service. Unless explicitly authorized in this report, no third party is beneficiary to the contract or findings of this report. The unauthorized use or reliance of this document or the findings, conclusion or recommendations presented herein, by any other party or parties is at the sole risk of any such third party. For the same reasons, no warranties or representations, expressed or implied in this report, are provided to any such third party.

Information and opinions presented herein apply to the existing and reasonable foreseeable site conditions at the time of our investigation. They cannot necessarily apply to site changes of which this office is unaware and have not had the opportunity to review. Changes in the conditions of this property may occur with time due to natural processes or works of man on the subject property or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part by changes beyond our control.

A-Tech trusts that the information presented herein provides the data you require. Should you have any questions or comments please contact A-Tech Consulting, Inc. at (800) 434-1025.

Respectfully submitted,  
A-Tech Consulting, Inc.



Robert L. Williams, DPH, CAC, CIEC  
Certified Asbestos Consultant #96-1980

## Asbestos Bulk Analysis

**Client Name:** University of California, Riverside

**A-Tech Project Number:** 201291

**Location:** Physics 2000

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0001	Built-Up Roofing	Lower Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0002	Built-Up Roofing	Lower Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0003	Built-Up Roofing	Lower Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0004	Built-Up Roofing	Middle Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0005	Built-Up Roofing	Middle Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0006	Built-Up Roofing	Middle Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0007	Built-Up Roofing	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0008	Built-Up Roofing	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0009	Built-Up Roofing	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0010	Roof Penetration Mastic	Lower Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0011	Roof Penetration Mastic	Lower Roof	<b>Positive</b>	Chrysotile - 10 %	Surfacing	Non-Friable	Good	Low	30 SF
201291-A-0012	Roof Penetration Mastic	Lower Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A



<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0013	Roof Penetration Mastic	Middle Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0014	Roof Penetration Mastic	Middle Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0015	Roof Penetration Mastic	Middle Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0016	Roof Penetration Mastic	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0017	Roof Penetration Mastic	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0018	Roof Penetration Mastic	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0019	Gray HVAC Mastic	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0020	Gray HVAC Mastic	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0021	Gray HVAC Mastic	Upper Roof	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0022	Vent Putty	Middle Roof	Positive	Chrysotile - 5 %	Surfacing	Non-Friable	Good	Low	3 SF
201291-A-0023	Vent Putty	Middle Roof	Positive	Chrysotile - 5 %	Surfacing	Non-Friable	Good	Low	See 22
201291-A-0024	Vent Putty	Middle Roof	Positive	Chrysotile - 5 %	Surfacing	Non-Friable	Good	Low	See 22
201291-A-0025	Gray Transite HVAC Inlet Box	Middle Roof	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	Low	2 EA
201291-A-0026	Gray Transite HVAC Inlet Box	Middle Roof	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	Low	See 25

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0027	Gray Transite HVAC Inlet Box	Middle Roof	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	Low	See 25
201291-A-0028	Red Brick Wall and Mortar	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0029	Red Brick Wall and Mortar	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0030	Red Brick Wall and Mortar	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0031	Concrete Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0032	Concrete Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0033	Concrete Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0034	Concrete Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0035	Concrete Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0036	Light Tan Speckled Vinyl Sheet Flooring	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0037	Light Tan Speckled Vinyl Sheet Flooring	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0038	Light Tan Speckled Vinyl Sheet Flooring	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0039	Light Gray Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0040	Light Gray Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Positive	Chrysotile - 5 %	Misc.	Non-Friable	Fair	High	600 SF

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0041	Light Gray Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0042	12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic	Basement, Tunnel Hallway	Positive	Chrysotile - 3 %	Misc.	Non-Friable	Good	High	50 SF
201291-A-0043	12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic	Basement, Tunnel Hallway	Positive	Chrysotile - 3 %	Misc.	Non-Friable	Good	High	See 42
201291-A-0044	12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0045	9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room	Positive	Chrysotile - 8 %	Misc.	Non-Friable	Good	High	500 SF
201291-A-0046	9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room	Positive	Chrysotile - 8 %	Misc.	Non-Friable	Good	High	See 45
201291-A-0047	9"x9" Gray Resilient Flooring/Resilient Floor Mastic	Basement, Projector Room	Positive	Chrysotile - 8 %	Misc.	Non-Friable	Good	High	See 45
201291-A-0048	10"x10" Light Gray Resilient Flooring/Resilient Floor Mastic	Basement, Lecture Hall, Stairs	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0049	10"x10" Light Gray Resilient Flooring/Resilient Floor Mastic	Basement, Lecture Hall, Stairs	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0050	10"x10" Light Gray Resilient Flooring/Resilient Floor Mastic	Basement, Lecture Hall, Stairs	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0051	12"x12" Light Tan Resilient Flooring/Resilient Floor Mastic	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0052	12"x12" Light Tan Resilient Flooring/Resilient Floor Mastic	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0053	12"x12" Light Tan Resilient Flooring/Resilient Floor Mastic	1st Floor, Lobby	Positive	Chrysotile - 2 %	Misc.	Non-Friable	Good	High	750 SF
201291-A-0054	4" Light Tan Cove Base and Mastic	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A



<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0055	4" Light Tan Cove Base and Mastic	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0056	4" Light Tan Cove Base and Mastic	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0057	4" Dark Tan Cove Base and Mastic	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0058	4" Dark Tan Cove Base and Mastic	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0059	4" Dark Tan Cove Base and Mastic	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0060	4" Black Cove Base and Mastic	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0061	4" Black Cove Base and Mastic	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0062	4" Black Cove Base and Mastic	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0063	4" Light Gray Cove Base and Mastic	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0064	4" Light Gray Cove Base and Mastic	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0065	4" Light Gray Cove Base and Mastic	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0066	4" Dark Gray Cove Base and Mastic	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0067	4" Dark Gray Cove Base and Mastic	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0068	4" Dark Gray Cove Base and Mastic	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0069	2" Light Brown Cove Base and Mastic	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0070	2" Light Brown Cove Base and Mastic	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0071	2" Light Brown Cove Base and Mastic	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0072	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Fair	High	4,000 SF
201291-A-0073	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Fair	High	See 72
201291-A-0074	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Fair	High	See 72
201291-A-0075	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Fair	High	See 72
201291-A-0076	2'x4' Dark Brown Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Fair	High	See 72
201291-A-0077	1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	High	500 SF
201291-A-0078	1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	High	See 77
201291-A-0079	1'x2' Dark Brown Transite Wall Panel	1st Floor, Lobby	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	High	See 77
201291-A-0080	1'x1' White Random Hole Ceiling Tile and Mastic	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0081	1'x1' White Random Hole Ceiling Tile and Mastic	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0082	1'x1' White Random Hole Ceiling Tile and Mastic	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0083	1'x1' White Random Hole Ceiling Tile and Mastic	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0084	1'x1' White Random Hole Ceiling Tile and Mastic	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0085	1'x1' White Pinhole Ceiling Tile	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0086	1'x1' White Pinhole Ceiling Tile	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0087	1'x1' White Pinhole Ceiling Tile	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0088	1'x1' White Pinhole Ceiling Tile	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0089	1'x1' White Pinhole Ceiling Tile	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0090	1'x1' White Pinhole Ceiling Tile	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0091	Tan Wheat Tape	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0092	Tan Wheat Tape	Basement, Room 2000C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0093	Tan Wheat Tape	Basement, Room 2000C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0094	Black Wheat Tape	Basement, Room 1063D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0095	Black Wheat Tape	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0096	Black Wheat Tape	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0097	Brown Window Putty	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0098	Brown Window Putty	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0099	Brown Window Putty	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0100	Black Window Putty	1st Floor, Lobby	Positive	Chrysotile - 8 %	Surfacing	Non-Friable	Good	High	20 SF
201291-A-0101	Black Window Putty	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0102	Black Window Putty	1st Floor, Lobby	Positive	Chrysotile - 4 %	Surfacing	Non-Friable	Good	High	See 100
201291-A-0103	Brown Tile Grout	1st Floor, Lobby Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0104	Brown Tile Grout	1st Floor, Lobby	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0105	Brown Tile Grout	1st Floor, Lobby Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0106	Wheat Tape	Attic	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0107	Wheat Tape	Attic	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0108	Wheat Tape	Attic	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0109	Transite Sink	Basement, Room 1063B	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	High	3 EA
201291-A-0110	Transite Sink	Basement, Room 1063B	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	High	See 109

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0111	Transite Sink	Basement, Room 1063D	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	High	See 109
201291-A-0112	Transite Fume Hood	Basement, Room 1063D	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	High	1 EA
201291-A-0113	Transite Fume Hood	Basement, Room 1063D	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	High	See 112
201291-A-0114	Transite Fume Hood	Basement, Room 1063D	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	High	See 112
201291-A-0115	24" Transite Fume Exhaust Pipe	Basement, Room 1063D	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	Moderate	60 SF (1 EA)
201291-A-0116	24" Transite Fume Exhaust Pipe	Basement, Room 1063D	Positive	Chrysotile - 30 %	Misc.	Non-Friable	Good	Moderate	See 115
201291-A-0117	24" Transite Fume Exhaust Pipe	Basement, Room 1063D	Positive	Chrysotile - 25 % Crocidolite - 7 %	Misc.	Non-Friable	Good	Moderate	See 115
201291-A-0118	Brown Plumbing Putty	Basement, Room 1063D	Positive	Chrysotile - 15 %	Surfacing	Non-Friable	Good	Moderate	50 SF
201291-A-0119	Brown Plumbing Putty	1st Floor, Room 2000D	Positive	Chrysotile - 15 %	Surfacing	Non-Friable	Good	Moderate	See 118
201291-A-0120	Brown Plumbing Putty	1st Floor, Room 2000D	Positive	Chrysotile - 15 %	Surfacing	Non-Friable	Good	Moderate	See 118
201291-A-0121	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	4,000 SF
201291-A-0122	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	See 121
201291-A-0123	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	See 121
201291-A-0124	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	See 121



<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0125	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	See 121
201291-A-0126	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	See 121
201291-A-0127	Gray Hardpack Fireproofing	Attic	Positive	Chrysotile - 20 %	Surfacing	Friable	Good	Low	See 121
201291-A-0128	Gray Softpack Fireproofing	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0129	Gray Softpack Fireproofing	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0130	Gray Softpack Fireproofing	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0131	Gray Softpack Fireproofing	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0132	Gray Softpack Fireproofing	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0133	24" Transite Pipe	1st Floor, Room 2000D	Positive	Chrysotile - 15 % Crocidolite - 10 %	Misc.	Non-Friable	Good	Moderate	160 SF (2 EA)
201291-A-0134	24" Transite Pipe	1st Floor, Room 2000D	Positive	Chrysotile - 15 %	Misc.	Non-Friable	Good	Moderate	See 133
201291-A-0135	24" Transite Pipe	1st Floor, Room 2000D	Positive	Chrysotile - 15 %	Misc.	Non-Friable	Good	Moderate	See 133
201291-A-0136	Off-White Pipe Wrap	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0137	Off-White Pipe Wrap	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0138	Off-White Pipe Wrap	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0139	Black Pipe Wrap	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0140	Black Pipe Wrap	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0141	Black Pipe Wrap	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0142	Cork Board with Hockey Puck Mastic	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0143	Cork Board with Hockey Puck Mastic	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0144	Cork Board with Hockey Puck Mastic	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0145	Cork Board with Hockey Puck Mastic	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0146	Cork Board with Hockey Puck Mastic	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0147	Vibration Collar	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0148	Vibration Collar	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0149	Vibration Collar	1st Floor, Room 2000D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0150	Plaster	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0151	Plaster	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0152	Plaster	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0153	Plaster	Basement, Room 1063D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0154	Plaster	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0155	Plaster	Basement, Lecture Hall, Ceiling	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0156	Plaster	Basement, Lecture Hall, Ceiling	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0157	Concrete Wall	Basement, Tunnel Hallway	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0158	Concrete Wall	Basement, Room 2000C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0159	Concrete Wall	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0160	Concrete Wall	Basement, Projector Room	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0161	Concrete Wall	Basement, Room 1063D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0162	Concrete Wall	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0163	Concrete Wall	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0164	Black Transite Wall Panel	Basement, Room 1063C	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	Moderate	50 SF
201291-A-0165	Black Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	Moderate	See 164
201291-A-0166	Black Transite Wall Panel	Basement, Lecture Hall	Positive	Chrysotile - 25 %	Misc.	Non-Friable	Good	Moderate	See 164

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0167	Black Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0168	Black Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0169	Black Speckled Vinyl Sheet Flooring	Basement, Lecture Hall	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0170	Stucco Overhang	1st Floor, Entrance	Positive	Chrysotile - 2 %	Surfacing	Non-Friable	Good	High	700 SF
201291-A-0171	Stucco Overhang	1st Floor, Entrance	Positive	Chrysotile - 2 %	Surfacing	Non-Friable	Good	High	See 170
201291-A-0172	Stucco Overhang	1st Floor, Entrance	Positive	Chrysotile - 2 %	Surfacing	Non-Friable	Good	High	See 170
201291-A-0173	Gray Window Putty	Exterior, Window	Positive	Chrysotile - 5 %	Surfacing	Non-Friable	Good	High	5 SF
201291-A-0174	Gray Window Putty	Exterior, Window	Positive	Chrysotile - 5 %	Surfacing	Non-Friable	Good	High	See 173
201291-A-0175	Gray Window Putty	Exterior, Window	Positive	Chrysotile - 4 %	Surfacing	Non-Friable	Good	High	See 173
201291-A-0176	Red Brick Wall Caulking	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0177	Red Brick Wall Caulking	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0178	Red Brick Wall Caulking	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0179	Stucco Wall	Exterior	Positive	Chrysotile - <1 %	Surfacing	Non-Friable	Good	High	250 SF
201291-A-0180	Stucco Wall	Exterior	Positive	Chrysotile - <1 %	Surfacing	Non-Friable	Good	High	See 179

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0181	Stucco Wall	Exterior	Positive	Chrysotile - <1 %	Surfacing	Non-Friable	Good	High	See 179
201291-A-0182	Black Window Putty	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0183	Black Window Putty	Exterior	Positive	Chrysotile - 3 %	Surfacing	Non-Friable	Good	High	10 SF
201291-A-0184	Black Window Putty	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0185	Black Concrete Decking	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0186	Black Concrete Decking	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0187	Black Concrete Decking	Basement, Room 1063B	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0188	Black Concrete Decking	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0189	Black Concrete Decking	Basement, Room 1063C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0190	Black Concrete Decking	Basement, Room 1063D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0191	Black Concrete Decking	Basement, Room 1063D	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0192	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0193	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0194	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

<u>Sample Number</u>	<u>Material</u>	<u>Sample Locations</u>	<u>Pos/Neg</u>	<u>Asbestos Type - Percentage</u>	<u>Classification</u>	<u>Friability</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-A-0195	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0196	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0197	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0198	Exterior Concrete Wall	Exterior	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0199	Concrete Flooring	Basement, Room 2000C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A
201291-A-0200	Concrete Flooring	Basement, Room 2000C	Negative	None Detected	N/A	N/A	N/A	N/A	N/A

**LEGEND:**

N/A: Not Applicable

## PCB Sample Analysis

**Client Name:** University of California, Riverside

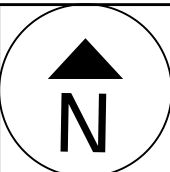
**A-Tech Project Number:** 201291

**Location:** Physics 2000

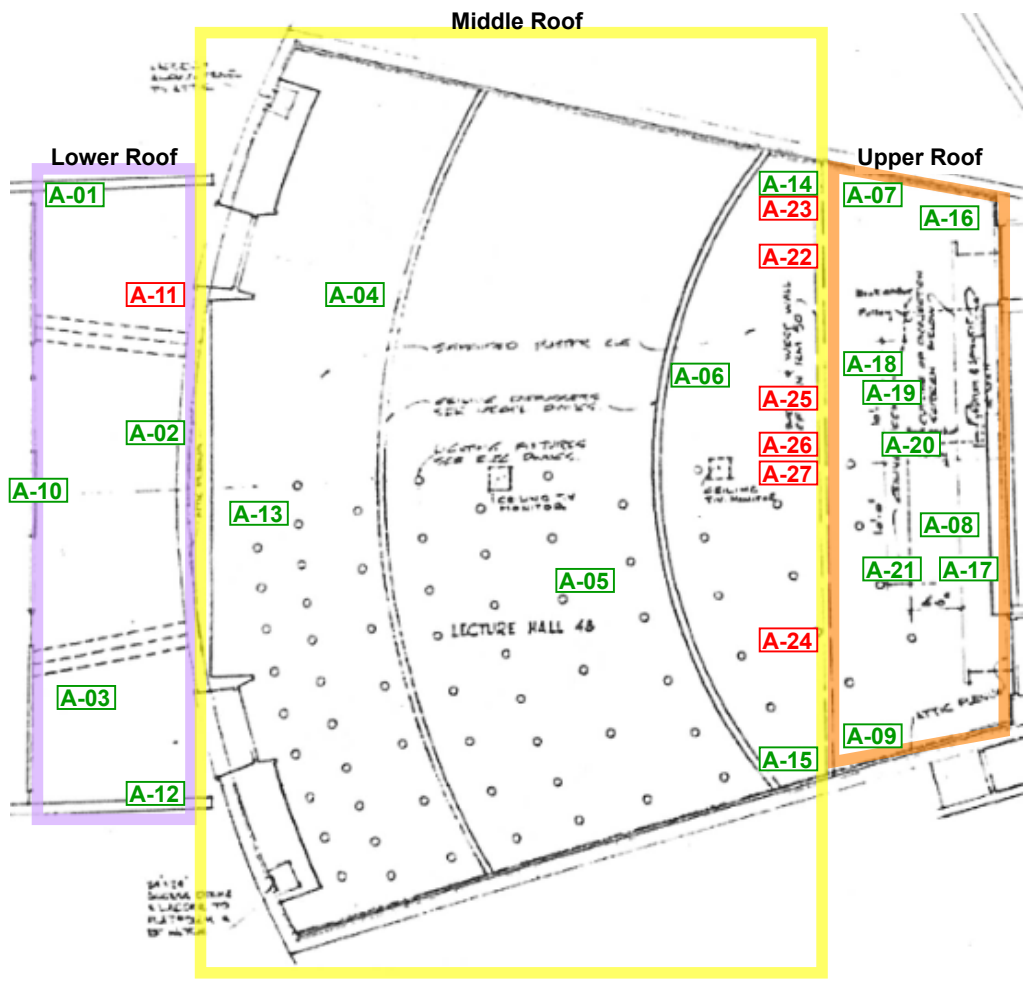
Sample Number	Floor	Area	Component	Substrate	Color	Pos/Neg	Cond.	Access.	Results PPM	Est. Qty.
201291-PCB-0001	1st	Exterior, West End	Window	Glass/Metal	Black	Negative	Intact	High	Aroclor-1016 - <0.42 Aroclor-1221 - <0.42 Aroclor-1232 - <0.42 Aroclor-1242 - <0.42 Aroclor-1248 - 16 Aroclor-1254 - <0.42 Aroclor-1260 - <0.42 Aroclor-1262 - <0.42 Aroclor-1268 - <0.42	N/A
201291-PCB-0002	1st	Exterior, East End	Door Frame	Concrete	Light Gray	Positive	Intact	High	Aroclor-1016 - <0.43 Aroclor-1221 - <0.43 Aroclor-1232 - <0.43 Aroclor-1242 - <0.43 Aroclor-1248 - <0.43 Aroclor-1254 - <0.43 Aroclor-1260 - <b>77</b> Aroclor-1262 - <0.43 Aroclor-1268 - <0.43	5 SF (21 LF)

**LEGEND:**

N/A: Not Applicable



Not to Scale



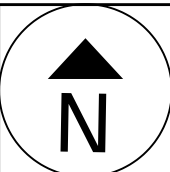
# Roof

<b>Site Drawing - Asbestos - Page 1 of 4</b>	
Physics 2000 Riverside, California 92521	
Project #: Atch-201291	University of California, Riverside

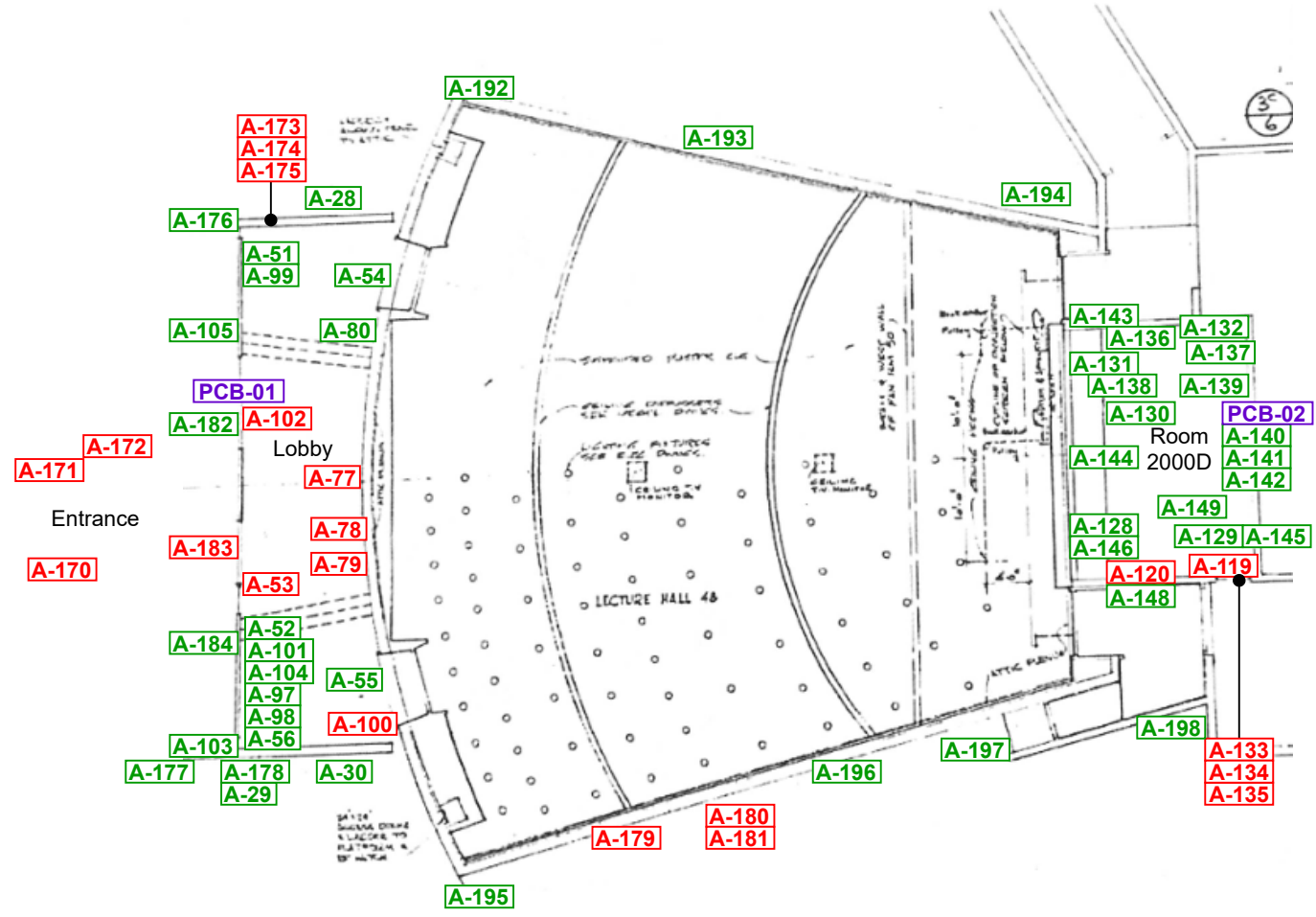
**LEGEND:**  
**A** = Positive Asbestos Sample Locations  
**A** = Negative Asbestos Sample Locations







Not to Scale



# 1st Floor and Exterior

**LEGEND:**  
**A** = Positive Asbestos Sample Locations  
**A** = Negative Asbestos Sample Locations  
**PCB** = PCB's Sample Locations

<b>Site Drawing - Asbestos - Page 3 of 4</b>	
Physics 2000 Riverside, California 92521	
Project #: Atch-201291	University of California, Riverside





## Digital Photographs - Asbestos

Client: University of California, Riverside

Project #Atch-201291

Physics 2000  
Riverside, California 92521



View of Roof Penetration Mastic



View of Vent Putty



View of Gray Transite HVAC Inlet Box



View of Light Gray Speckled Vinyl Sheet  
Flooring





View of 12"x12" Light Gray Speckled Resilient Flooring/Resilient Floor Mastic



View of 9"x9" Gray Resilient Flooring/Resilient Floor Mastic



View of 12"x12" Light Tan Resilient Flooring/Resilient Floor Mastic



View of 2'x4' Dark Brown Transite Wall Panel



View of 1'x2' Dark Brown Transite Wall Panel



View of Black Window Putty



View of Transite Sink



View of Transite Fume Hood



View of 24" Transite Fume Exhaust Pipe



View of Brown Plumbing Putty



View of Gray Hardpack Fireproofing



View of 24" Transite Pipe



View of Black Transite Wall Panel



View of Stucco Overhang





View of Gray Window Putty



View of Stucco



View of Black Window Putty





**Digital Photographs – PCB's**

Client: University of California, Riverside

**Project #Atch-201291**

Physics 2000  
Riverside, California 92521



View of Exterior Light Gray Door Frame  
Caulking

A-Tech Consulting, Inc.  
 1640 N. Batavia Street  
 Orange, California 92867  
 Attn: A-Tech Office  
 Project: **2012191 - UC Riverside Physics 2000 Lecture Hall Ltd ACM And Lend**  
 Condition of Sample(s) Upon Receipt: **Acceptable**



Date Collected: 05/20/2020  
 Date Received: 05/20/2020  
 Date Analyzed: 05/21/2020  
 Date Reported: 05/21/2020  
 Project ID: 20019173  
 Page 1 of 9

Test Requested: **Asbestos Bulk Analysis, Polarized Light Microscopy (PLM)** Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

Lab Sample #	Client Sample # / Location	Physical Description of Sample	Homogeneous	Layer %	Asb.	Asb. %	Non-asb. Fiber %	Non-fibrous mat %	Matrix
20019173-001	A-01	Gray/White Foam Like Material	Y	100	ND			100	B
20019173-002	A-02	Gray/White Foam Like Material	Y	100	ND			100	B
20019173-003	A-03	Black/Yellow Foam Like Material	Y	25	ND			100	B
20019173-003	A-03	Gray/White Foam Like Material	Y	75	ND			100	B
20019173-004	A-04	Black/Yellow Foam Like Material	Y	100	ND			100	B
20019173-005	A-05	Black/Yellow Foam Like Material	Y	100	ND			100	B
20019173-006	A-06	Gray/White Foam Like Material	Y	100	ND			100	B
20019173-007	A-07	Black/Yellow Foam Like Material	Y	100	ND			100	B
20019173-008	A-08	Black/Yellow Foam Like Material	Y	100	ND			100	B
20019173-009	A-09	Black/Yellow Foam Like Material	Y	100	ND			100	B
20019173-010	A-10	Black Mastic	Y	20	ND			100	B

Francisco Moreno  
 Laboratory Analyst

Miguel Ines  
 Asbestos Laboratory Supervisor

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 CHRY = Chrysotile  
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 TR = Tremolite  
 ND = None Detected  
 Trace = Less Than 1%

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 FBG = Fiberglass  
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NVLAP LAB CODE 201076-0

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20019173-010	A-10	Yellow Mastic	Y	80	ND			100	B
20019173-011	A-11	Black Mastic	Y	100	CHRY	10		90	T
20019173-012	A-12	Yellow Mastic	Y	50	ND			100	B
20019173-012	A-12	Tan Mastic	Y	50	ND			100	B
20019173-013	A-13	White Foam Like Material	Y	85	ND			100	B
20019173-013	A-13	Black/Gray Rubbery Material	Y	15	ND			100	B
20019173-014	A-14	Gray/White Foam Like Material	Y	90	ND			100	B
20019173-014	A-14	Black Tar Like Material	Y	10	ND			100	B
20019173-015	A-15	Gray/White Foam Like Material	Y	100	ND			100	B
20019173-016	A-16	Gray Rubbery Material	Y	100	ND			100	B
20019173-017	A-17	Gray/White Foam Like Material	Y	100	ND			100	B
20019173-018	A-18	Gray/White Foam Like Material	Y	100	ND			100	B
20019173-019	A-19	Gray Mastic	Y	100	ND			100	B
20019173-020	A-20	Gray Mastic	Y	100	ND			100	B
20019173-021	A-21	Gray Mastic	Y	100	ND			100	B
20019173-022	A-22	Gray Rubbery Material	Y	100	CHRY	5		95	B

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 Page 3 of 9

Condition of Sample(s) Upon Receipt: Acceptable

20019173-023	A-23	Gray Rubbery Material	Y	70	CHRY	5		95	B
20019173-023	A-23	White Rubbery Material	Y	30	ND			100	B
20019173-024	A-24	Gray Rubbery Material	Y	90	CHRY	5		95	B
20019173-024	A-24	Yellow Rubbery Material	Y	10	ND			100	B
20019173-025	A-25	Gray Fibrous Material	Y	100	CHRY	30		70	B
20019173-026	A-26	Gray Fibrous Material	Y	100	CHRY	30		70	B
20019173-027	A-27	Gray Fibrous Material	Y	100	CHRY	30		70	B
20019173-028	A-28	Brown Cementitious Material	Y	60	ND			100	C
20019173-028	A-28	Tan Cementitious Material	Y	40	ND			100	C
20019173-029	A-29	Brown Cementitious Material	Y	60	ND			100	C
20019173-029	A-29	Tan Cementitious Material	Y	40	ND			100	C
20019173-030	A-30	Brown Cementitious Material	Y	60	ND			100	C
20019173-030	A-30	Tan Cementitious Material	Y	40	ND			100	C
20019173-031	A-31	Gray Cementitious Material	Y	100	ND			100	C
20019173-032	A-32	Gray Cementitious Material	Y	100	ND			100	C
20019173-033	A-33	Gray Cementitious Material	Y	100	ND			100	C

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 Page 4 of 9

20019173-034	A-34	Gray Cementitious Material	Y	100	ND			100	C
20019173-035	A-35	Gray Cementitious Material	Y	100	ND			100	C
20019173-036	A-36	Tan Vinyl Sheet with Backing	Y	90	ND		30 CELL, 5 SYN, 5 FBG	60	B
20019173-036	A-36	Tan Mastic	Y	10	ND			100	B
20019173-037	A-37	Tan Vinyl Sheet with Backing	Y	90	ND		30 CELL, 5 SYN, 5 FBG	60	B
20019173-037	A-37	Tan Mastic	Y	10	ND			100	B
20019173-038	A-38	Tan Vinyl Sheet with Backing	Y	90	ND		30 CELL, 5 SYN, 5 FBG	60	B

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NVLAP LAB CODE 201076-0

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 Project ID: 20019173  
 Page 5 of 9

Condition of Sample(s) Upon Receipt: Acceptable

20019173-038	A-38	Tan Mastic	Y	10	ND			100	B
20019173-039	A-39	Tan Mastic	Y	10	ND			100	B
20019173-039	A-39	Gray Vinyl Sheet with Backing	Y	90	ND		30 SYN	70	B
20019173-040	A-40	Gray Vinyl Sheet with Backing	Y	80	ND		30 SYN	70	B
20019173-040	A-40	Tan Mastic	Y	5	ND			100	B
20019173-040	A-40	Gray Texture	Y	10	ND			100	C
20019173-040	A-40	Black Mastic	Y	5	CHRY	5		95	T
20019173-041	A-41	Gray Vinyl Sheet with Backing	Y	90	ND		30 SYN	70	B
20019173-041	A-41	Tan Mastic	Y	10	ND			100	B
20019173-042	A-42	White Flooring Material	Y	90	ND			100	B
20019173-042	A-42	Black Mastic	Y	5	CHRY	3		97	T
20019173-042	A-42	White Texture	Y	5	ND			100	B
20019173-043	A-43	White Flooring Material	Y	90	ND			100	B
20019173-043	A-43	Black Mastic	Y	5	CHRY	3		97	T

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 Page 6 of 9

Condition of Sample(s) Upon Receipt: Acceptable

20019173-043	A-43	White Texture	Y	5	ND			100	B
20019173-044	A-44	White Flooring Material	Y	90	ND			100	B
20019173-044	A-44	Black/Tan Mastic	Y	10	ND			100	B
20019173-045	A-45	Beige Flooring Material	Y	90	CHRY	7		93	B
20019173-045	A-45	Black Mastic	Y	10	CHRY	8		92	T
20019173-046	A-46	Beige Flooring Material	Y	80	CHRY	7		93	B
20019173-046	A-46	Black Mastic	Y	10	CHRY	8		92	T
20019173-046	A-46	Gray Texture	Y	10	ND			100	C
20019173-047	A-47	Beige Flooring Material	Y	80	CHRY	7		93	B
20019173-047	A-47	Black Mastic	Y	10	CHRY	8		92	T
20019173-047	A-47	Gray Texture	Y	10	ND			100	C
20019173-048	A-48	Gray Tile	Y	75	ND			100	Other
20019173-048	A-48	White Woven Backing	Y	20	ND		85 SYN	15	B
20019173-048	A-48	Gray/White Mastic	Y	5	ND		10 CELL	90	B

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 Page 7 of 9

20019173-049	A-49	Gray Tile	Y	75	ND			100	Other
20019173-049	A-49	White Woven Backing	Y	20	ND		85 SYN	15	B
20019173-049	A-49	Gray/White Mastic	Y	5	ND		10 CELL	90	B
20019173-050	A-50	Gray Tile	Y	65	ND			100	Other
20019173-050	A-50	White Woven Backing	Y	20	ND		85 SYN	15	B
20019173-050	A-50	Gray/White Mastic	Y	15	ND		10 CELL	90	B
20019173-051	A-51	Beige Tile	Y	85	ND			100	Other
20019173-051	A-51	Orange Mastic	Y	15	ND		8 CELL	92	B
20019173-052	A-52	Beige Tile	Y	90	ND			100	Other
20019173-052	A-52	Orange Mastic	Y	10	ND		8 CELL	92	B
20019173-053	A-53	Beige Tile	Y	85	ND			100	Other
20019173-053	A-53	Orange/Black Mastic	Y	15	CHRY	2	10 CELL	88	B

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NVLAP LAB CODE 201076-0

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 Page 8 of 9

Condition of Sample(s) Upon Receipt: Acceptable

20019173-054	A-54	Dark Brown Mastic	Y	15	ND		2 WO	98	B
20019173-054	A-54	Beige Rubbery Material	Y	85	ND			100	Other
20019173-055	A-55	Beige Rubbery Material	Y	75	ND			100	Other
20019173-055	A-55	Dark Brown Mastic	Y	25	ND		2 WO	98	B
20019173-056	A-56	Beige Rubbery Material	Y	85	ND			100	Other
20019173-056	A-56	Dark Brown Mastic	Y	15	ND		2 WO	98	B
20019173-057	A-57	Tan Rubbery Material	Y	92	ND			100	Other
20019173-057	A-57	Dark Brown Mastic	Y	8	ND		3 CELL, 2 SYN	95	B
20019173-058	A-58	Tan Rubbery Material	Y	90	ND			100	Other
20019173-058	A-58	Dark Brown/Cream Mastic	Y	10	ND		5 CELL, 2 SYN	93	B
20019173-059	A-59	Dark Brown/Cream Mastic	Y	35	ND		5 CELL, 2 SYN	93	B
20019173-059	A-59	Tan Rubbery Material	Y	65	ND			100	Other

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 Page 9 of 9

Condition of Sample(s) Upon Receipt: **Acceptable**

**General Notes**

- **ND** indicates no asbestos was detected; the method detection limit is 1%.
- **Trace** or "<1" indicates asbestos was identified in the sample, but the concentration is less than the method detection limit of 1%.
- All regulated asbestos minerals (i.e. chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite) were sought in every layer of each sample, but only those asbestos minerals detected are listed. Amosite is the common name for the asbestiform variety of the mineral grunerite. Crocidolite is the common name used for the asbestiform variety of the mineral riebeckite.
- Tile, vinyl, foam, plastic, and fine powder samples may contain asbestos fibers of such small diameter (< 0.25 microns in diameter) that these fibers cannot be detected by PLM. For such samples, more sensitive analytical methods (e.g. TEM, SEM, and XRD) are recommended if greater certainty about asbestos content is required. Semi-quantitative bulk TEM floor tile analysis is accepted under the NESHAP regulations.
- These results are submitted pursuant to Aerobiology Laboratory Associates, Inc.'s current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- Aerobiology Laboratory shall be responsible for all the information provided in the report, except when information is provided by the customer. Aerobiology Laboratory is not responsible for the sampling activity, such as air and water volume, area and mass unit.
- Unless notified in writing to return the samples covered by this report, Aerobiology Laboratory Associates, Inc. will store the samples for a minimum period of thirty (30) days before discarding. A shipping and handling charge will be assessed for the return of any samples.
- Samples identified as inhomogeneous (containing more than one layer) shall be divided into individual layers and each layer tested separately. The results for each individual layer shall be listed separately on the report.

**Notes Required by NVLAP**

- This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
- This test report relates only to the items tested or calibrated.
- This report is not valid unless it bears the name of a NVLAP-approved signatory.
- Any reproduction of this document must include the entire document in order for the report to be valid. Total Layers Analyzed: 102

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 Project: **201291-UCR, Physics 2000 Lecture Hall**  
 Condition of Sample(s) Upon Receipt: Acceptable



Date Collected: 05/21/2020  
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 Date Analyzed: 05/26/2020  
 Date Reported: 05/26/2020  
 Project ID: 20019411  
 Page 1 of 18

Test Requested: **Asbestos Bulk Analysis, Polarized Light Microscopy (PLM)** Method: EPA 600/R-93/116: Method for Asbestos in Bulk Building Materials, EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method for Asbestos in Bulk Insulation Samples

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20019411-001	A-60	Tan Mastic	Y	15	ND			100	B
20019411-001	A-60	Brown Mastic	Y	5	ND		5 FT	95	B
20019411-002	A-61	Black Rubbery Material	Y	90	ND			100	B
20019411-002	A-61	White Mastic	Y	10	ND			100	B
20019411-003	A-62	Black Rubbery Material	Y	90	ND			100	B
20019411-003	A-62	White Mastic	Y	10	ND			100	B
20019411-004	A-63	Gray Rubbery Material	Y	90	ND			100	B
20019411-004	A-63	Brown Mastic	Y	10	ND		5 FT	95	B
20019411-005	A-64	Gray Rubbery Material	Y	75	ND			100	B
20019411-005	A-64	Brown Mastic	Y	10	ND		5 FT	95	B

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Date Analyzed: 05/26/2020  
Date Reported: 05/26/2020  
Project ID: 20019411  
Page 2 of 18

20019411-005	A-64	Gray Cementitious Material	Y	15	ND			100	C
20019411-006	A-65	Gray Rubbery Material	Y	85	ND			100	B
20019411-006	A-65	Brown Mastic	Y	10	ND		5 FT	95	B
20019411-006	A-65	Yellow Mastic	Y	5	ND			100	B
20019411-007	A-66	Yellow Mastic	Y	10	ND			100	B
20019411-007	A-66	Gray Rubbery Material	Y	70	ND			100	B
20019411-007	A-66	Brown Mastic	Y	20	ND		5 FT	95	B
20019411-008	A-67	Gray Rubbery Material	Y	90	ND			100	B
20019411-008	A-67	Brown Mastic	Y	10	ND			100	B
20019411-009	A-68	Gray Rubbery Material	Y	85	ND			100	B
20019411-009	A-68	Brown Mastic	Y	5	ND		5 FT	95	B
20019411-009	A-68	White Mastic	Y	10	ND			100	B
20019411-010	A-69	Tan Rubbery Material	Y	85	ND			100	B
20019411-010	A-69	Brown Mastic	Y	5	ND		5 FT	95	B
20019411-010	A-69	Tan Mastic	Y	10	ND			100	B
20019411-011	A-70	Tan Rubbery Material	Y	85	ND			100	B



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Project ID: 20019411  
Page 3 of 18

20019411-011	A-70	Brown Mastic	Y	5	ND		5 FT	95	B
20019411-011	A-70	Tan Mastic	Y	10	ND			100	B
20019411-012	A-71	Tan Rubbery Material	Y	85	ND			100	B
20019411-012	A-71	Brown Mastic	Y	5	ND		5 FT	95	B
20019411-012	A-71	Tan Mastic	Y	10	ND			100	B
20019411-013	A-72	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-014	A-73	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-015	A-74	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-016	A-75	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-017	A-76	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-018	A-77	White Fibrous Material	Y	100	CHRY	25		75	B
20019411-019	A-78	White Fibrous Material	Y	100	CHRY	25		75	B
20019411-020	A-79	White Fibrous Material	Y	100	CHRY	25		75	B
20019411-021	A-80	White/Brown Fibrous Material	Y	85	ND		90 CELL	10	B
20019411-021	A-80	Brown Mastic	Y	15	ND			100	B



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Project ID: 20019411  
Page 4 of 18

20019411-022	A-81	White/Brown Fibrous Material	Y	80	ND		45 CELL, 20 FBG	35	B,P
20019411-022	A-81	Brown Mastic	Y	20	ND			100	B
20019411-023	A-82	White/Brown Fibrous Material	Y	80	ND		45 CELL, 20 FBG	35	B,P
20019411-023	A-82	Brown Mastic	Y	20	ND			100	B
20019411-024	A-83	White/Brown Fibrous Material	Y	80	ND		45 CELL, 20 FBG	35	B,P
20019411-024	A-83	Brown Mastic	Y	20	ND			100	B
20019411-025	A-84	White/Brown Fibrous Material	Y	80	ND		45 CELL, 20 FBG	35	B,P
20019411-025	A-84	Brown Mastic	Y	20	ND			100	B



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 Project ID: 20019411  
 Page 5 of 18

20019411-026	A-85	White/Brown Fibrous Material	Y	80	ND		45 CELL, 20 FBG	35	B,P
20019411-026	A-85	Brown Mastic	Y	20	ND			100	B
20019411-027	A-86	White/Gray Fibrous Material	Y	100	ND		45 CELL, 30 FBG	25	B,P
20019411-028	A-87	White/Gray Fibrous Material	Y	100	ND		45 CELL, 30 FBG	25	B,P
20019411-029	A-88	White/Gray Fibrous Material	Y	100	ND		45 CELL, 30 FBG	25	B,P
20019411-030	A-89	White/Gray Fibrous Material	Y	100	ND		45 CELL, 30 FBG	25	B,P

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 Project ID: 20019411  
 Page 6 of 18

20019411-031	A-90	White/Gray Fibrous Material	Y	100	ND		45 CELL, 30 FBG	25	B,P
20019411-032	A-91	Tan Fibrous Material	Y	100	ND		60 CELL	40	B
20019411-033	A-92	Tan Fibrous Material	Y	100	ND		60 CELL	40	B
20019411-034	A-93	Tan Fibrous Material	Y	100	ND		60 CELL	40	B
20019411-035	A-94	Black/Tan Fibrous Material	Y	100	ND		60 CELL	40	B
20019411-036	A-95	Black/Tan Fibrous Material	Y	100	ND		60 CELL	40	B
20019411-037	A-96	Black/Tan Fibrous Material	Y	100	ND		60 CELL	40	B
20019411-038	A-97	Brown Rubbery Material	Y	100	ND			100	B
20019411-039	A-98	Brown Rubbery Material	Y	100	ND			100	B
20019411-040	A-99	Brown Rubbery Material	Y	100	ND			100	B

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Date Reported: 05/26/2020  
Project ID: 20019411  
Page 7 of 18

20019411-041	A-100	Black Rubbery Material	Y	100	CHRY	8		92	T
20019411-042	A-101	Black Rubbery Material	Y	100	ND			100	B
20019411-043	A-102	Black Rubbery Material	Y	100	CHRY	4		96	T
20019411-044	A-103	Gray Cementitious Material	Y	70	ND			100	C
20019411-044	A-103	Brown Cementitious Material	Y	20	ND			100	C
20019411-044	A-103	White Cementitious Material	Y	10	ND			100	C
20019411-045	A-104	Gray Cementitious Material	Y	80	ND			100	C
20019411-045	A-104	Brown Cementitious Material	Y	20	ND			100	C
20019411-046	A-105	Gray Cementitious Material	Y	80	ND			100	C
20019411-046	A-105	White Cementitious Material	Y	10	ND			100	C
20019411-046	A-105	Brown Cementitious Material	Y	10	ND			100	C
20019411-047	A-106	Tan Fibrous Material	Y	100	ND		80 CELL	20	B
20019411-048	A-107	Tan Fibrous Material	Y	100	ND		80 CELL	20	B
20019411-049	A-108	Tan Fibrous Material	Y	100	ND		80 CELL	20	B



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Project ID: 20019411  
Page 8 of 18

20019411-050	A-109	Black/White Fibrous Material	Y	100	CHRY	25		75	B
20019411-051	A-110	Black/White Fibrous Material	Y	100	CHRY	25		75	B
20019411-052	A-111	Black/White Fibrous Material	Y	100	CHRY	25		75	B
20019411-053	A-112	Gray Fibrous Material	Y	100	CHRY	30		70	B
20019411-054	A-113	Gray Fibrous Material	Y	100	CHRY	30		70	B
20019411-055	A-114	Gray Fibrous Material	Y	100	CHRY	30		70	B
20019411-056	A-115	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-057	A-116	White Fibrous Material	Y	100	CHRY	30		70	B
20019411-058	A-117	White Fibrous Material	Y	100	CHRY	25		68	B
20019411-058	A-117				CR	7			
20019411-059	A-118	Black Rubbery Material	Y	100	CHRY	15		85	T
20019411-060	A-119	Black Rubbery Material	Y	100	CHRY	15		85	T
20019411-061	A-120	Black Rubbery Material	Y	100	CHRY	15		85	T
20019411-062	A-121	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M



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 Project ID: 20019411  
 Page 6 of 18

20019411-063	A-122	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M
20019411-064	A-123	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M
20019411-065	A-124	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M
20019411-066	A-125	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M
20019411-067	A-126	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M
20019411-068	A-127	Light Gray Fibrous Material	Y	100	CHRY	20	40 CELL	40	B,M
20019411-069	A-128	Gray Fibrous Material	Y	100	ND		60 FBG, 10 CELL	30	B
20019411-070	A-129	Gray Fibrous Material	Y	100	ND		60 FBG, 10 CELL	30	B

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Project ID: 20019411  
Page 10 of 18

20019411-071	A-130	Gray Fibrous Material	Y	100	ND		60 FBG, 10 CELL	30	B
20019411-072	A-131	Gray Fibrous Material	Y	100	ND		60 FBG, 10 CELL	30	B
20019411-073	A-132	Gray Fibrous Material	Y	100	ND		60 FBG, 10 CELL	30	B
20019411-074	A-133	Gray Cementitious Material	Y	100	CHRY	15	25 CELL	50	B
20019411-074	A-133				CR	10			
20019411-075	A-134	Gray Cementitious Material	Y	100	CHRY	15	25 CELL	60	B
20019411-076	A-135	Gray Cementitious Material	Y	100	CHRY	15	25 CELL	60	B



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 Page 11 of 18

20019411-077	A-136	Silver/Tan Fibrous Material	Y	10	ND		20 CELL, 10 FBG	70	Foil
20019411-077	A-136	Tan Woven Material	Y	50	ND		90 CELL	10	B
20019411-077	A-136	Beige Rubbery Material	Y	40	ND			100	B
20019411-078	A-137	Silver/Tan Fibrous Material	Y	10	ND		20 CELL, 10 FBG	70	Foil
20019411-078	A-137	Tan Woven Material	Y	60	ND		90 CELL	10	B
20019411-078	A-137	Beige Rubbery Material	Y	10	ND			100	B
20019411-078	A-137	Yellow Fibrous Material	Y	20	ND		90 FBG	10	B
20019411-079	A-138	Tan Woven with Gray Paint	Y	100	ND		85 CELL	15	B

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 Page 12 of 18

20019411-080	A-139	Black Tar-Like Material	Y	100	ND		10 CELL, 5 FBG	85	T
20019411-081	A-140	Black Tar-Like Material	Y	100	ND		10 CELL, 5 FBG	85	T
20019411-082	A-141	Black Tar-Like Material	Y	100	ND		10 CELL, 5 FBG	85	T
20019411-083	A-142	Brown Rubbery Material	Y	85	ND			100	B
20019411-083	A-142	Black Tar Like Material	Y	15	ND			100	B
20019411-084	A-143	Brown Rubbery Material	Y	85	ND			100	B
20019411-084	A-143	Black Tar Like Material	Y	15	ND			100	B
20019411-085	A-144	Brown Rubbery Material	Y	85	ND			100	B
20019411-085	A-144	Black Tar Like Material	Y	15	ND			100	B
20019411-086	A-145	Brown Rubbery Material	Y	85	ND			100	B

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Page 13 of 18

20019411-086	A-145	Black Tar Like Material	Y	15	ND			100	B
20019411-087	A-146	Brown Rubbery Material	Y	85	ND			100	B
20019411-087	A-146	Black Tar Like Material	Y	15	ND			100	B
20019411-088	A-147	Black/White Fibrous Material	Y	100	ND		60 FBG	40	B
20019411-089	A-148	Black/White Fibrous Material	Y	100	ND		60 FBG	40	B
20019411-090	A-149	Black/White Fibrous Material	Y	100	ND		60 FBG	40	B
20019411-091	A-150	White Cementitious Material	Y	70	ND			100	C
20019411-091	A-150	Gray Cementitious Material	Y	30	ND			100	C
20019411-092	A-151	White Cementitious Material	Y	45	ND			100	C
20019411-092	A-151	Gray Cementitious Material	Y	45	ND			100	C
20019411-092	A-151	White Texture	Y	10	ND			100	C
20019411-093	A-152	White Cementitious Material	Y	30	ND			100	C
20019411-093	A-152	Gray Cementitious Material	Y	70	ND			100	C
20019411-094	A-153	White Cementitious Material	Y	40	ND			100	C



Francisco Moreno  
Laboratory Analyst



Miguel Ines  
Asbestos Laboratory Supervisor

A = Amosite  
AC = Actinolite  
AN = Anthophyllite  
CHRY = Chrysotile  
CR = Crocidolite  
TR = Tremolite  
ND = None Detected  
Trace = Less Than 1%

CELL = Cellulose  
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NAC = Non-Asbestiform AC  
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AH = Animal Hair

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O = Organic  
B = Binder  
OP = Opaques  
D = Diatoms



A-Tech Consulting, Inc.  
1640 N. Batavia Street  
Orange, California 92867  
Attn: A-Tech Office  
Project: **201291-UCR, Physics 2000 Lecture Hall**  
Condition of Sample(s) Upon Receipt: Acceptable



Date Collected: 05/21/2020  
Date Received: 05/21/2020  
Date Analyzed: 05/26/2020  
Date Reported: 05/26/2020  
Project ID: 20019411  
Page 14 of 18

20019411-094	A-153	Gray Cementitious Material	Y	60	ND			100	C
20019411-095	A-154	White Cementitious Material	Y	40	ND			100	C
20019411-095	A-154	Gray Cementitious Material	Y	60	ND			100	C
20019411-096	A-155	White Cementitious Material	Y	20	ND			100	C
20019411-096	A-155	Gray Cementitious Material	Y	80	ND			100	C
20019411-097	A-156	White Cementitious Material	Y	20	ND			100	C
20019411-097	A-156	Gray Cementitious Material	Y	80	ND			100	C
20019411-098	A-157	Gray Cementitious Material	Y	100	ND			100	C
20019411-099	A-158	Gray Cementitious Material	Y	100	ND			100	C
20019411-100	A-159	Gray Cementitious Material	Y	100	ND			100	C
20019411-101	A-160	Gray Cementitious Material	Y	100	ND			100	C
20019411-102	A-161	Gray Cementitious Material	Y	100	ND			100	C
20019411-103	A-162	Gray Cementitious Material	Y	100	ND			100	C
20019411-104	A-163	Gray Cementitious Material	Y	100	ND			100	C
20019411-105	A-164	Black Fibrous Material	Y	100	CHRY	25		75	B
20019411-106	A-165	Black Fibrous Material	Y	100	CHRY	25		75	B



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Project: **201291-UCR, Physics 2000 Lecture Hall**  
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NVLAP LAB CODE 201076-0

Date Collected: 05/21/2020  
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Date Reported: 05/26/2020  
Project ID: 20019411  
Page 15 of 18

20019411-107	A-166	Black Fibrous Material	Y	100	CHRY	25		75	B
20019411-108	A-167	Gray Flooring Material	Y	90	ND		10 FBG	90	B
20019411-108	A-167	Yellow Mastic	Y	10	ND			100	B
20019411-109	A-168	Gray Flooring Material	Y	90	ND		10 FBG	90	B
20019411-109	A-168	Yellow Mastic	Y	10	ND			100	B
20019411-110	A-169	Gray Flooring Material	Y	75	ND		10 FBG	90	B
20019411-110	A-169	Yellow Mastic	Y	10	ND			100	B
20019411-110	A-169	Gray Texture	Y	15	ND			100	C
20019411-111	A-170	Gray Cementitious Material	Y	100	CHRY	2		98	C
20019411-112	A-171	Gray Cementitious Material	Y	100	CHRY	2		98	C
20019411-113	A-172	Gray Cementitious Material	Y	100	CHRY	2		98	C
20019411-114	A-173	Gray Rubbery Material	Y	100	CHRY	5		95	B
20019411-115	A-174	Gray Rubbery Material	Y	100	CHRY	5		95	B
20019411-116	A-175	Gray Rubbery Material	Y	100	CHRY	4		96	B



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Page 16 of 18

20019411-117	A-176	Red Rubbery Material	Y	100	ND			100	B
20019411-118	A-177	Red Rubbery Material	Y	100	ND			100	B
20019411-119	A-178	Red Rubbery Material	Y	100	ND			100	B
20019411-120	A-179	Gray Cementitious Material	Y	100	CHRY	<1		100	C
20019411-121	A-180	Gray Cementitious Material	Y	100	CHRY	<1		100	C
20019411-122	A-181	Gray Cementitious Material	Y	100	CHRY	<1		100	C
20019411-123	A-182	Black Rubbery Material	Y	100	ND			100	B
20019411-124	A-183	Black Rubbery Material	Y	60	ND			100	B
20019411-124	A-183	Gray Rubbery Material	Y	40	CHRY	3		97	B
20019411-125	A-184	Black Rubbery Material	Y	100	ND			100	B
20019411-126	A-185	Gray Cementitious Material	Y	100	ND			100	C
20019411-127	A-186	Gray Cementitious Material	Y	100	ND			100	C
20019411-128	A-187	Gray Cementitious Material	Y	100	ND			100	C
20019411-129	A-188	Gray Cementitious Material	Y	100	ND			100	C
20019411-130	A-189	Gray Cementitious Material	Y	100	ND			100	C
20019411-131	A-190	Gray Cementitious Material	Y	100	ND			100	C



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Page 17 of 18

20019411-132	A-191	Gray Cementitious Material	Y	100	ND			100	C
20019411-133	A-192	Gray Cementitious Material	Y	100	ND			100	C
20019411-134	A-193	Gray Cementitious Material	Y	80	ND			100	C
20019411-134	A-193	Black Mastic	Y	20	ND			100	B
20019411-135	A-194	Gray Cementitious Material	Y	100	ND			100	C
20019411-136	A-195	Gray Cementitious Material	Y	100	ND			100	C
20019411-137	A-196	Gray Cementitious Material	Y	100	ND			100	C
20019411-138	A-197	Gray Cementitious Material	Y	100	ND			100	C
20019411-139	A-198	Gray Cementitious Material	Y	100	ND			100	C
20019411-140	A-199	Gray Cementitious Material	Y	100	ND			100	C
20019411-141	A-200	Gray Cementitious Material	Y	100	ND			100	C



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Project ID: 20019411  
Page 18 of 18

### General Notes

- **ND** indicates no asbestos was detected; the method detection limit is 1%.
- **Trace** or "<1" indicates asbestos was identified in the sample, but the concentration is less than the method detection limit of 1%.
- All regulated asbestos minerals (i.e. chrysotile, amosite, crocidolite, anthophyllite, tremolite, and actinolite) were sought in every layer of each sample, but only those asbestos minerals detected are listed. Amosite is the common name for the asbestiform variety of the mineral grunerite. Crocidolite is the common name used for the asbestiform variety of the mineral riebeckite.
- Tile, vinyl, foam, plastic, and fine powder samples may contain asbestos fibers of such small diameter (< 0.25 microns in diameter) that these fibers cannot be detected by PLM. For such samples, more sensitive analytical methods (e.g. TEM, SEM, and XRD) are recommended if greater certainty about asbestos content is required. Semi-quantitative bulk TEM floor tile analysis is accepted under the NESHAP regulations.
- These results are submitted pursuant to Aerobiology Laboratory Associates, Inc.'s current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. No responsibility or liability is assumed for the manner in which the results are used or interpreted.
- Aerobiology Laboratory shall be responsible for all the information provided in the report, except when information is provided by the customer. Aerobiology Laboratory is not responsible for the sampling activity, such as air and water volume, area and mass unit.
- Unless notified in writing to return the samples covered by this report, Aerobiology Laboratory Associates, Inc. will store the samples for a minimum period of thirty (30) days before discarding. A shipping and handling charge will be assessed for the return of any samples.
- Samples identified as inhomogeneous (containing more than one layer) shall be divided into individual layers and each layer tested separately. The results for each individual layer shall be listed separately on the report.

### Notes Required by NVLAP

- This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
- This test report relates only to the items tested or calibrated.
- This report is not valid unless it bears the name of a NVLAP-approved signatory.
- Any reproduction of this document must include the entire document in order for the report to be valid.

Total Layers Analyzed: 196

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Francisco Moreno  
Laboratory Analyst



Miguel Ines  
Asbestos Laboratory Supervisor

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Company: A-Tech Consulting, Inc.
Address: 1640 North Batavia Street
City: Orange
State: CA Zip Code: 92867

Phone Number: (714) 434-6360
Fax Number: (714) 221-6360
Attn: A-Tech Office
Results: Email to labs@atechinc.net

Project Name & Number: 2012191 - UC Riverside Physics 2000 Lecture Hall LTD ACM & Lead

Table with columns: ASBESTOS, 2 Hour, 3 Hour, 4 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

PLM-BULK

Table with columns: EPA 600/R-93/116, EPA Point Count -400, EPA Point Count-1000

TEM-MICRO VAC

Table with columns: Qualitative (Pos/Neg), Quantitative ASTM

PCM-AIR

Table with columns: NIOSH 7400 (A) Issue 2: August 1994, OSHA w/TWA

PARTICULATES

Table with columns: NIOSH 0500 (3005), NIOSH 0600 (3005.1)

Table with columns: LEAD, 2 Hour, 3 Hour, 4 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

Table with columns: Chips EPA 3050/7420, Wipes NIOSH 7082, Soil EPA 3050/7420, Air NIOSH 7082, TTLC (Ceramic Tile)

Table with columns: OTHER SAMPLES, 2 Hour, 3 Hour, 4 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

Client Sample Number: A-01 - A-59 Total: 59

Relinquished: [Signature] Date: 5/20/20 Time: 4:30 AM
Received: [Signature] Date: 5/20/20 Time: 4:30 AM

Fed Ex Yes \_\_\_ Date Sent \_\_\_ No \_\_\_ Laboratory: \_\_\_

Notes: \_\_\_\_\_

[Handwritten signatures]





Company: A-Tech Consulting, Inc.
Address: 1640 North Batavia Street
City: Orange
State: CA Zip Code: 92867

Phone Number: (714) 434-6360
Fax Number: (714) 221-6360
Attn: A-Tech Office
Results: Email to labs@atechinc.net

Project Name & Number: 201291 - UCR, Physics 2000 Lecture Hall

Table with 9 columns: ASBESTOS, 2 Hour, 3 Hour, 4 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

PLM-BULK

Table with 9 columns for PLM-BULK analysis including EPA 600/R-93/116, EPA Point Count -400, and EPA Point Count-1000. Includes a handwritten 'X' in the 24 Hour column.

TEM-MICRO VAC

Table with 9 columns for TEM-MICRO VAC analysis including Qualitative (Pos/Neg) and Quantitative ASTM.

PCM-AIR

Table with 9 columns for PCM-AIR analysis including NIOSH 7400 (A) Issue 2: August 1994 and OSHA w/TWA.

PARTICULATES

Table with 9 columns for PARTICULATES analysis including NIOSH 0500 (3005) and NIOSH 0600 (3005.1).

Table with 9 columns: LEAD, 2 Hour, 3 Hour, 4 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

Table with 9 columns for LEAD analysis including Chips EPA 3050/7420, Wipes NIOSH 7082, Soil EPA 3050/7420, Air NIOSH 7082, and TTLC (Ceramic Tile).

Table with 9 columns: OTHER SAMPLES, 2 Hour, 3 Hour, 4 Hour, 6 Hour, 24 Hour, 48 Hour, 72 Hour, 5 Day

Client Sample Number: A-60 - A-200 Total: 141

Relinquished: [Signature] Date: 5/21/20 Time: 4:50pm
Received: [Signature] Date: 5/21/20 Time: 4:50pm
Relinquished: Date: Time:
Received: Date: Time:

Fed Ex Yes \_\_\_ Date Sent \_\_\_ No \_\_\_ Laboratory: \_\_\_
Notes: \_\_\_





LA Testing  
5431 Industrial Drive, Huntington Beach, CA 92649

Order ID: 332009244

Attn: Robert Williams  
A-Tech Environmental Consulting  
1640 N. Batavia St  
Orange, CA 92867

Customer ID: 32ATEC93  
Customer PO:  
Date Received: 05/20/20 11:45pm  
LA Testing Order: 332009244

Email: labs@ATechnic.net  
Phone: (800) 434-1025  
Fax:  
Report Date: 5/26/2020

Project: **201291 – UC Riverside Physics 2000  
Lecture Hall**  
Date Analyzed: 5/21/2020

### PCBs in Bulk via Method SW-846 8082A

LA Testing Sample ID	Sample ID	Analyte	Result (mg/Kg)	Reporting Limit (mg/Kg)
332009244-0001	PCB-01	Aroclor-1016	<0.42	0.42
		Aroclor-1221	<0.42	0.42
		Aroclor-1232	<0.42	0.42
		Aroclor-1242	<0.42	0.42
		Aroclor-1248	16	0.42
		Aroclor-1254	<0.42	0.42
		Aroclor-1260	<0.42	0.42
		Aroclor-1262	<0.42	0.42
		Aroclor-1268	<0.42	0.42

Sample received in acceptable condition unless otherwise noted. LA Testing dba EMSL does not hold responsibility for sampling activities. This report may not be reproduced except in full, without written approval by LA Testing. Unless otherwise noted, the results in this report have not been blank corrected. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted.

Note: Matrix spike recovery was out of range for Aroclor 1260. DP 5/26/20

DP  
Analyst

*Michael Chapman*  
**Michael Chapman- Laboratory Manager**  
Or other approved signatory



LA Testing  
5431 Industrial Drive, Huntington Beach, CA 92649

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1640 N. Batavia St  
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LA Testing Order: 332009244

Email: labs@ATechnic.net  
Phone: (800) 434-1025  
Fax:  
Report Date: 5/26/2020

Project: **201291 – UC Riverside Physics 2000  
Lecture Hall**  
Date Analyzed: 5/21/2020

### PCBs in Bulk via Method SW-846 8082A

LA Testing Sample ID	Sample ID	Analyte	Result (mg/Kg)	Reporting Limit (mg/Kg)
332009244-0002	PCB-02	Aroclor-1016	<0.43	0.43
		Aroclor-1221	<0.43	0.43
		Aroclor-1232	<0.43	0.43
		Aroclor-1242	<0.43	0.43
		Aroclor-1248	<0.43	0.43
		Aroclor-1254	<0.43	0.43
		Aroclor-1260	77	0.43
		Aroclor-1262	<0.43	0.43
		Aroclor-1268	<0.43	0.43

Sample received in acceptable condition unless otherwise noted. LA Testing dba EMSL does not hold responsibility for sampling activities. This report may not be reproduced except in full, without written approval by LA Testing. Unless otherwise noted, the results in this report have not been blank corrected. Quality Control Data associated with this sample set is within acceptable limits, unless otherwise noted.

Note: Matrix spike recovery was out of range for Aroclor 1260. DP 5/26/20

DP  
Analyst

*Michael Chapman*  
**Michael Chapman- Laboratory Manager**  
Or other approved signatory

EMSL Analytical, Inc.



EMSL ANALYTICAL, INC.  
LABORATORY-PRODUCTS-TRAINING

**Environmental Chemistry  
Chain of Custody**

EMSL Order Number (Lab Use Only):

#332009244

PHONE:  
FAX:

Report To Contact Name: Robert Williams		Bill To Company: A-Tech	
Company Name: A-Tech Consulting		Attention To: Robert Williams	
Street: 1640 N. Batavia Street		Street: 1640 N. Batavia Street	
City: Orange		City: Orange	
State/Province: CA		State/Province: CA	
Zip/Postal Code:		Zip/Postal Code:	
Phone: (714) 800-4341 Fax: (714) 834-1025		Phone: (800) 434-1025 Fax:	
Project Name: Lecture Hall Physics 2000		Purchase Order:	
2012011-VC Riverside Physics 2000 Lecture Hall		Date of Shipment:	
U.S. State where Samples Collected: CA		Number of Samples in Shipment: 2	
Sample for Compliance? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, NPDES? <input type="checkbox"/> Other (Specify):		PWS ID #:	
Samples Collected by: EMSL <input type="checkbox"/> Client <input checked="" type="checkbox"/> check one		State Reporting Required? (Y/N)	
Standard Turnaround Time: <input type="checkbox"/> 2 Weeks		Samples Received Chilled? (Y/N)	
The following TATs are subject to lab approval: <input type="checkbox"/> 1 Week <input type="checkbox"/> 4 Days <input checked="" type="checkbox"/> 3 Days <input type="checkbox"/> 2 Days <input type="checkbox"/> 1 Day		List Test(s) Needed	
Failure to complete will hinder processing of samples		Matrix	
Matrix		Preservative	
W=Water S=Soil A=Air SL=Sludge O=Other		1=HCL 2=HNO3 3=H2SO4 4=ICE 5=Other	
Client Sample ID		Collect Date/Time	
PCB-01		May 20, 2020	
PCB-02		May 20, 2020	
Grab		Date & Time	
Comp		Received By	
Released By (Signature)		Date & Time	
[Signature]		May 20, 2020	
PCB		[Signature]	
PCB		5/20/20 11:45	
Comments		Date & Time	
Please indicate reporting requirements: <input type="checkbox"/> Results Only <input type="checkbox"/> Results and QC <input type="checkbox"/> Reduced Deliverables <input type="checkbox"/> Hzresult EDD <input type="checkbox"/> Excel <input type="checkbox"/> Other		Instructions or Comments:	
Note: Field pH and Field Temperature are tested on the same day as the date of sample collection.		(Lab) Received Temperature: _____ °C	

**Cover**

**LEAD**

**I. Executive Summary**

- 1.0 Introduction
- 2.0 Scope of Assessment
- 3.0 Property Description/Historical Description
- 4.0 Inspector's Qualifications
- 5.0 Testing Methodology
- 6.0 Testing Protocol
- 7.0 Summary of Results
- 8.0 Conclusions and Recommendations
- 9.0 Limitations

**II. Appendices**

- A. Tables: Lead XRF Table
- B. Diagrams: Site Diagram
- C. Digital Photographs
- D. DPH 8552 Form

Atch-201291  
Comprehensive XRF-Lead Assessment  
900 University Avenue  
Riverside, California 92521

May 29, 2020

University of California, Riverside  
900 University Avenue  
Riverside, California 92521

Attn: Mr. Scott Donnell

Re Physics 2000  
Riverside, California 92521

Pursuant to your request, A-Tech Consulting, Inc. performed a Comprehensive XRF-Lead Assessment at Physics 2000 in Riverside, California. The following report summarizes all findings and results of this inspection.

## **1.0 INTRODUCTION**

A-Tech was contacted by Mr. Scott Donnell with University of California, Riverside to confirm the presence or absence of lead. This report presents the results for the Comprehensive XRF-Lead Assessment in various areas throughout Physics 2000 (subject property/site) located in Riverside, California. The inspection was performed in accordance with Environmental Protection Agency (EPA) and California Occupational Safety and Health (CAL-OSHA) requirements, utilizing United States Housing and Urban Development (HUD) protocols. The scope of services, inspection methodology and results are presented herein. The sampling was conducted by Josue Romero - CDPH Inspector/Assessor #23984 and Brennen Reed - CDPH Sampling Technician #LRC-00005707 on May 20 and May 21, 2020.

## **2.0 SCOPE OF ASSESSMENT**

The purpose of this Comprehensive XRF-Lead Assessment is to identify and assess lead containing material (LCM) present at the subject property with the potential impact during upcoming renovation/demolition activities. The intent of the assessment is to ascertain the presence of lead-based paint at or above 1.0 mg/cm<sup>2</sup>.

## **3.0 PROPERTY DESCRIPTION/HISTORICAL DATA**

The subject property inspected consists of a two-story lecture hall with concrete and plaster interior and concrete, brick and ceramic exterior, built on a concrete slab foundation. At the time of the inspection, it was observed that the surfaces tested in the inspected areas are in intact, fair and poor condition. The build date is unknown.

## **4.0 INSPECTOR'S QUALIFICATIONS**

The inspector who conducted the site sampling/assessment is a state certified California Department of Public Health (CA-DPH) Sampling Technician or CA-DPH Lead Inspector/Risk Assessor, has completed an EPA sponsored curriculum in the Lead Sampling Technician or Lead Inspector and Risk Assessor Training, and has attended the manufacturer's radiation safety course for operation and handling of the XRF instrument.

At the time of this report, the California Department of Public Health, Childhood Lead Poisoning Branch, has implemented a State Certification and Model Accreditation Plan adopted from the Environmental Protection Agency (EPA).

## 5.0 TESTING METHODOLOGY

The method employed for testing painted surfaces was with an X-ray fluorescence (XRF) analyzer. A-Tech Consulting, Inc. utilized a Viken Pb200i X-Ray fluorescence (XRF) lead paint analyzer to sample paint for lead content. XRF Instrument serial #2559 was used for this project. The instrument was calibrated to the manufacturer's specifications and was also periodically verified against the National Institute of Standards and Testing (NIST) Standard Reference Material (SRM) 2579 lead film (1.0 mg/cm<sup>2</sup>). The instrument was in-control at all times for the wood zero standard and NIST SRM lead standard.

A visual inspection consisting of a walkthrough of the subject site was conducted to determine the presence of suspect LCM components that were readily accessible and/or exposed. This included the identification of suspect lead-based painted components, ceramic tile, glazed components, etc. and the determination of the condition of those components. All coated surfaces, including but not limited to painted, varnished, and glazed surfaces, were tested for lead content.

## 6.0 TESTING PROTOCOL

Testing was conducted in accordance with Chapter 7 of the Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing as published by HUD in 2012. XRF readings were obtained on representative painted surfaces on each building component in each room equivalent. The HUD definition of lead-based paint is equal to or greater than 1.0 mg/cm<sup>2</sup>. All XRF readings below the regulatory definition are considered negative and all readings at and above this level are considered positive.

## 7.0 SUMMARY OF RESULTS

According to the XRF findings, the following components tested positive for the presence of lead at or above 1.0 mg/cm<sup>2</sup>.

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Component</u>	<u>Substrate</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm<sup>2</sup></u>	<u>Est. Qty.</u>
201291-X-0008	1st	Lobby	Door Frame	Metal	B	Dark Gray	4.4	2 EA
201291-X-0009	1st	Lobby	Handrail	Metal	-	Black	4.4	6 EA
201291-X-0013	1st	Lobby	Door	Wood	D	Dark Gray	1.1	2 EA
201291-X-0019	Basement	Lecture Hall	Wall	Plaster	B	Dark Brown	1.5	500 SF
201291-X-0021	Basement	Lecture Hall	Door Frame	Metal	B	Dark Brown	4.0	2 EA
201291-X-0023	Basement	Lecture Hall	Blackboard Frame	Metal	B	Dark Brown	1.0	1 EA
201291-X-0030	Basement	Lecture Hall	Desk Framing	Metal	-	Gray	12.5	36 EA
201291-X-0033	Basement	Lecture Hall	Wall	Concrete	D	Dark Brown	1.8	100 SF
201291-X-0035	Basement	Lecture Hall	Door Frame	Metal	A	Dark Brown	3.1	2 EA
201291-X-0038	Basement	Lecture Hall	Door Frame	Metal	D	Dark Brown	4.5	2 EA
201291-X-0041	1st	Hallway	Wall	Concrete	B	Off-White	1.1	250 SF
201291-X-0042	1st	Hallway	Wall	Plaster	C	Off-White	1.5	100 SF



<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Component</u>	<u>Substrate</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Est. Qty.</u>
201291-X-0043	1st	Hallway	Door Frame	Metal	B	Off-White	4.0	2 EA
201291-X-0044	Basement	Tunnel Hallway	Wall	Concrete	A	Off-White	1.1	See 41
201291-X-0045	Basement	Tunnel Hallway	Wall	Concrete	D	Off-White	1.5	See 41
201291-X-0046	Basement	Tunnel Hallway	Access Panel	Metal	A	Off-White	1.4	1 EA
201291-X-0051	Basement	Room 1063B	Wall	Concrete	A	Off-White	1.5	1,320 SF
201291-X-0052	Basement	Room 1063B	Shelve Frame	Metal	A	Gray	6.8	7 EA
201291-X-0053	Basement	Room 1063B	Wall	Concrete	B	Off-White	1.3	See 51
201291-X-0054	Basement	Room 1063B	Wall	Concrete	C	Off-White	1.8	See 51
201291-X-0056	Basement	Room 1063B	Wall	Concrete	D	Off-White	1.4	See 51
201291-X-0059	Basement	Room 1063B	Pipe	Metal	-	Dark Gray	4.6	400 LF
201291-X-0060	Basement	Room 1063B	Door Frame	Metal	D	Off-White	4.5	2 EA
201291-X-0061	Basement	Room 1063C	Wall	Concrete	A	Off-White	1.5	340 SF
201291-X-0062	Basement	Room 1063C	Pipe	Metal	A	White	3.3	45 LF
201291-X-0063	Basement	Room 1063C	Wall	Concrete	A	Off-White	1.9	See 61
201291-X-0064	Basement	Room 1063C	Wall	Concrete	B	Off-White	1.6	See 61
201291-X-0065	Basement	Room 1063C	Door Frame	Metal	C	Off-White	3.9	1 EA
201291-X-0067	Basement	Room 1063C	Wall	Transite	D	Dark Gray	1.5	200 SF
201291-X-0070	Basement	Room 1063C	Blackboard Frame	Metal	D	Dark Gray	1.1	1 EA
201291-X-0072	Basement	Room 1063C	Pipe	Metal	-	Dark Gray	4.3	40 LF
201291-X-0073	Basement	Room 1063C	Pipe	Metal	A	Off-White	5.8	35 LF
201291-X-0074	Basement	Room 1063C	Access Panel	Metal	D	Dark Gray	1.3	1 EA
201291-X-0079	-	Attic	Ceiling Beam	Metal	-	Orange	6.2	350 LF
201291-X-0080	-	Attic	Ladder	Metal	D	Orange	4.0	2 EA
201291-X-0083	-	Attic	Door Frame	Metal	B	Gray	6.4	1 EA



<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Component</u>	<u>Substrate</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Est. Qty.</u>
201291-X-0085	-	Attic	Ladder	Metal	B	Gray	3.6	1 EA
201291-X-0086	-	Attic	Handrail	Metal	B	Gray	4.4	1 EA
201291-X-0087	-	Attic	Stair Landing	Metal	B	Gray	4.4	1 EA
201291-X-0089	Basement	Room 1063D	Wall	Concrete	A	Off-White	1.0	400 SF
201291-X-0090	Basement	Room 1063D	Wall	Concrete	B	Off-White	1.4	See 89
201291-X-0091	Basement	Room 1063D	Wall	Concrete	C	Off-White	1.4	See 89
201291-X-0092	Basement	Room 1063D	Wall	Plaster	D	Off-White	1.1	100 SF
201291-X-0093	Basement	Room 1063D	Pipe	Metal	A	Off-White	1.3	80 LF
201291-X-0097	Basement	Room 1063D	Shelf Framing	Metal	C	Gray	6.4	1 EA
201291-X-0098	Basement	Room 1063D	Door Frame	Metal	D	Off-White	4.7	1 EA
201291-X-0104	Basement	Room 1063D	Control Valve	Metal	D	Off-White	4.4	1 EA
201291-X-0106	Basement	Room 1063D	Control Valve	Metal	-	Dark Gray	6.2	1 EA
201291-X-0108	Basement	Room 1063D	Bracket	Metal	A	Off-White	1.2	110 LF
201291-X-0109	Basement	Room 2000C	Wall	Concrete	A	Gray	1.1	400 SF
201291-X-0110	Basement	Room 2000C	Wall	Concrete	B	Gray	1.2	See 109
201291-X-0111	Basement	Room 2000C	Wall	Concrete	C	Gray	1.1	See 109
201291-X-0112	Basement	Room 2000C	Wall	Concrete	D	Gray	1.0	See 109
201291-X-0113	Basement	Room 2000C	Pipe	Metal	A	Gray	6.0	60 LF
201291-X-0118	Basement	Room 2000C	Ceiling	Plaster	-	Gray	1.2	80 SF
201291-X-0119	Basement	Projector Room	Wall	Concrete	A	Off-White	1.2	1,300 SF
201291-X-0120	Basement	Projector Room	Wall	Concrete	B	Off-White	1.0	See 119
201291-X-0121	Basement	Projector Room	Wall	Concrete	C	Off-White	1.2	See 119
201291-X-0127	Basement	Projector Room	Door Frame	Metal	C	Off-White	4.7	2 EA
201291-X-0128	Basement	Projector Room	Ladder	Metal	D	Off-White	3.3	2 EA

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Component</u>	<u>Substrate</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Est. Qty.</u>
201291-X-0129	Basement	Projector Room	Handrail	Metal	D	Off-White	3.9	2 EA
201291-X-0131	Basement	Projector Room	Ceiling	Plaster	-	Off-White	1.1	180 SF
201291-X-0139	1st	Room 2000D, Entrance	Ladder	Metal	A	Gray	7.1	1 EA
201291-X-0143	1st	Room 2000D, Entrance	Ladder	Metal	D	Gray	4.9	1 EA
201291-X-0152	1st	Room 2000D	Beam	Metal	-	Orange	6.5	500 SF
201291-X-0154	1st	Lecture Hall	Catwalk Partition Wall	Plaster	-	Dark Brown	1.7	300 SF
201291-X-0155	1st	Lecture Hall	Projector Bracket	Metal	-	Dark Brown	3.3	50 LF
201291-X-0156	1st	Lecture Hall	Catwalk Handrail	Metal	-	Dark Brown	7.4	2 EA
201291-X-0168	-	Exterior	Handrail	Metal	C	Dark Gray	7.1	7 EA

Please refer to Attachment A Lead XRF Table for detailed sample information.

Samples represent all materials that are similar (homogenous). If a testing combination is found positive in one location, it is presumed to be positive in all other locations. Therefore, you cannot continue sampling to rebut an original positive finding, unless there is plausible evidence that the suspected material was constructed and/or replaced at a later time.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

CAL-OSHA considers levels at 1.0 mg/cm<sup>2</sup> (5,000 ppm HUD) and greater to be an exposure risk to lead containing material and can result in a substantial worker exposure during construction, demolition, etc. CAL-OSHA's current level for objective data/negative determination is 600 ppm. However, anyone performing trigger tasks, regardless of the level of lead, as outlined in 29 CFR 1926.62 and Title 8 CCR 1532.1 can reasonably assume risk of lead exposure. Work activities which may lead to any amount of lead exposure must be conducted in accordance with safe lead work practices, current regulatory guidelines, and current proper protective equipment protocols. Additionally, this was not a comprehensive assessment of the building and any stabilization/removal of materials or areas not assessed would require additional sampling.

Lead is a hazardous substance and poses a health risk when impacted, damaged or sufficiently deteriorated to produce respirable/digestible dust. If lead based/containing components are to be impacted during work activities including but not limited to, sanding, chipping, demolition, renovation and/or construction, specifications should incorporate detailed methodology for proper stabilization and/or removal of the lead surfaces. Anyone performing trigger tasks, regardless of the level of lead, as outlined in 29 CFR 1926.62 and Title 8 CCR 1532.1 can reasonably assume risk of lead exposure. Work activities which may lead to any amount of lead exposure must be conducted in accordance with safe lead work practices, current regulatory guidelines, and current proper protective equipment protocols.

For any materials that will remain in place a Lead Management Program should be prepared and implemented to avoid incidental, and/or accidental disturbance of LCM, present at the subject site. The program should set forth operational and maintenance guidelines to minimize lead consumption or exposures that may be caused by age, normal wear and tear, delamination, building maintenance, repairs, renovation and other activities that may impact LCM. Further assessments should be scheduled with a licensed Risk Assessor/Inspector on an annual basis, to ensure LCM conditions remain stable. Any signs of paint deterioration should be immediately stabilized. Note that under Section 302 of the Lead-Based Paint Poisoning Prevention Act (LBPPPA), LCM hazards equal to or greater than 0.5% by weight (5,000 ppm) or 1.0 mg/cm<sup>2</sup> must be abated.

Any work activities that may exceed the CAL-OSHA action level of lead particles of 30 micrograms per cubic meter (ug/m<sup>3</sup>) or air for an 8 hour time weighted average must comply with CAL-OSHA requirements. Any work activities meeting or exceeding the CAL-OSHA Permissible Exposure Limit of exposure to lead particles of ug/m<sup>3</sup> of air shall comply with Title 8 CCR 1532.1-Lead Construction Standard. All workers and supervisors shall be trained by a state-accredited training provider and certified by the CA-DPH (worker or supervisor certified). All employee exposure monitoring must be adhered to in accordance with CAL-OSHA requirements.

LCM that is intact and is not damaged or delaminating can be disposed of as construction debris as long as it is attached to its original substrate subsequent to proper waste characterization/stream analysis (TTLC, STLC and TCLP). However, appropriate work practices and worker protection must be utilized.

## 9.0 LIMITATIONS

The conclusions presented in this report are professional opinions based solely upon visual observations at the site and laboratory analysis of the tested samples. They are intended exclusively for the purpose outlined herein, and for the site location and project indicated.

This comprehensive inspection was planned, developed, and implemented based on A-Tech's scope of services approved by the client. This inspection was conducted in compliance with current regulatory protocols. A-Tech utilized state-of-the-art-practices and techniques in accordance with regulatory standards, while performing this inspection. A-Tech's evaluation of the relative risk of exposure to lead, identified during this limited inspection, is based on conditions observed at the time of the limited inspection.

A-Tech cannot be responsible for changing conditions that may alter the relative exposure risk or for future changes in accepted methodology. The floor plans and actual test results for each of the tested areas are contained within this report. **Lead quantities are estimates only (see Lead Tables-Est. Qty.) Exact quantities should be verified by the abatement contractor prior to stabilization/removal.**

This assessment report is not specifications for lead abatement and it should not be used as a stand-alone lead abatement bid document. Recognizing that even the most comprehensive assessment may fail to detect lead at a particular site, this study was not intended to identify all potential LCM's present in the building or at the site for such reasons as the possible existence of buried, covered and inaccessible areas and features. A-Tech does not warrant that all sub-surface, wall cavity or other inaccessible materials were tested. A-Tech did not test any live electrical components or disassemble operational building equipment such as fans or HVAC components. These components may contain untested suspect LCM's. If any suspect LCM's not tested herein are discovered, they must be tested prior to impact.

A-Tech assumes no responsibility for the identification of suspect LCM's, which were not included in the client's scope of work or were concealed and/or inaccessible (i.e. locked rooms, under carpet, etc.) However, A-Tech makes every attempt possible to test all designated areas for lead (i.e. check under carpeting, inspect attic, crawl space, etc.). A-Tech assumes no responsibility for the identification of "atypical" LCM, used in the construction trade.

There are potential liabilities associated with the presence, and removal, of LCM. Precautionary measures, as outlined herein, should be taken in accordance with the guidelines set forth by the EPA, CAL-OSHA and other regulatory agencies.

Services performed by A-Tech were conducted in a manner above the care and skill ordinarily and currently exercised by members of the same profession that even the most comprehensive scope of services might fail to detect environmental liabilities on a particular site. Therefore, A-Tech cannot act as insurers and cannot “certify” that a site is free of environmental contamination.

No expressed or implied representation or warranty is included or intended in our reports, except that our services were performed, within the limits prescribed by the Scope of Services, with the customary thoroughness and competence of our profession.

This report is intended for the sole use of the contracted Client and its authorized representatives. The exchange of information was unique between A-Tech and the client regarding the mutually agreed upon scope of service. Unless explicitly authorized in this report, no third party is beneficiary to the contract or findings of this report. The unauthorized use or reliance of this document or the findings, conclusion or recommendations presented herein, by any other party or parties is at the sole risk of any such third party. For the same reasons, no warranties or representations, expressed or implied in this report, are provided to any such third party.

Information and opinions presented herein apply to the existing and reasonable foreseeable site conditions at the time of our investigation. They cannot necessarily apply to site changes of which this office is unaware and have not had the opportunity to review. Changes in the conditions of this property may occur with time due to natural processes or works of man on the subject property or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated, wholly or in part by changes beyond our control.

A-Tech representatives are prepared to meet with your staff, to further discuss this project, upon your request. A-Tech trusts that the information presented herein provides the data you require. Should you have any questions or comments please contact A-Tech Consulting, Inc. at (800) 434-1025.

Respectfully submitted,  
A-Tech Consulting, Inc.



Robert L. Williams, DPH, CAC, CIEC  
Certified Lead Inspector/Assessor #LRC-00004572

## XRF-Lead Assay

**Client Name:** University of California, Riverside

**A-Tech Project Number:** 201291

**Location:** Physics 2000

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0001	-	Calibration	-	NIST	-	Negative	-	-	0.9	-	-	-
201291-X-0002	-	Calibration	-	NIST	-	Negative	-	-	0.8	-	-	-
201291-X-0003	-	Calibration	-	NIST	-	Negative	-	-	0.9	-	-	-
201291-X-0004	1st	Lobby	-	Wall	Plaster	Negative	A	Dark Gray	0.5	Intact	N/A	N/A
201291-X-0005	1st	Lobby	-	Wall	Plaster	Negative	B	Dark Gray	0.8	Intact	N/A	N/A
201291-X-0006	1st	Lobby	-	Door	Wood	Negative	B	Dark Gray	0.2	Intact	N/A	N/A
201291-X-0007	1st	Lobby	-	Door Transom	Wood	Negative	B	Dark Gray	0.2	Intact	N/A	N/A
201291-X-0008	1st	Lobby	-	Door Frame	Metal	Positive	B	Dark Gray	4.4	Intact	High	2 EA
201291-X-0009	1st	Lobby	-	Handrail	Metal	Positive	-	Black	4.4	Intact	High	6 EA
201291-X-0010	1st	Lobby	-	Wall Panel	Transite	Negative	B	Dark Gray	0.2	Intact	N/A	N/A
201291-X-0011	1st	Lobby	-	Wall	Plaster	Negative	C	Dark Gray	0.9	Intact	N/A	N/A

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0012	1st	Lobby	1"x1"	Wall Tile	Ceramic	Negative	D	Dark Gray	0.6	Intact	N/A	N/A
201291-X-0013	1st	Lobby	-	Door	Wood	Positive	D	Dark Gray	1.1	Intact	High	2 EA
201291-X-0014	1st	Lobby	-	Door Transom	Wood	Negative	D	Dark Gray	0.2	Intact	N/A	N/A
201291-X-0015	1st	Lobby	1'x1'	Ceiling Tile	Acoustic	Negative	-	White	0.2	Fair	N/A	N/A
201291-X-0016	1st	Lobby	-	Vent	Metal	Negative	-	White	0.2	Fair	N/A	N/A
201291-X-0017	Basement	Lecture Hall	2'x4'	Wall Panel	Transite	Negative	A	Dark Brown	0.3	Intact	N/A	N/A
201291-X-0018	Basement	Lecture Hall	-	Wall Support	Metal	Negative	A	Dark Brown	0.3	Intact	N/A	N/A
201291-X-0019	Basement	Lecture Hall	-	Wall	Plaster	Positive	B	Dark Brown	1.5	Fair	High	500 SF
201291-X-0020	Basement	Lecture Hall	-	Door	Fiberboard	Negative	B	Dark Brown	0.2	Intact	N/A	N/A
201291-X-0021	Basement	Lecture Hall	-	Door Frame	Metal	Positive	B	Dark Brown	4.0	Intact	High	2 EA
201291-X-0022	Basement	Lecture Hall	-	Door Transom	Metal	Negative	B	Dark Brown	0.6	Intact	N/A	N/A
201291-X-0023	Basement	Lecture Hall	-	Blackboard Frame	Metal	Positive	B	Dark Brown	1.0	Intact	N/A	1 EA
201291-X-0024	Basement	Lecture Hall	-	Pipe	Metal	Negative	B	Dark Brown	0.2	Intact	N/A	N/A



<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0025	Basement	Lecture Hall	-	Vent	Metal	Negative	B	Dark Brown	0.9	Intact	N/A	N/A
201291-X-0026	Basement	Lecture Hall	2'x4'	Wall Panel	Transite	Negative	C	Dark Brown	0.1	Intact	N/A	N/A
201291-X-0027	Basement	Lecture Hall	-	Access Panel	Metal	Negative	C	Dark Brown	0.1	Intact	N/A	N/A
201291-X-0028	Basement	Lecture Hall	-	Handrail	Metal	Negative	-	Dark Brown	0.1	Intact	N/A	N/A
201291-X-0029	Basement	Lecture Hall	-	Floor	Concrete	Negative	-	White	0.1	Intact	N/A	N/A
201291-X-0030	Basement	Lecture Hall	-	Desk Framing	Metal	Positive	-	Gray	12.5	Intact	High	36 EA
201291-X-0031	Basement	Lecture Hall	-	Gate	Metal	Negative	-	Dark Gray	0.0	Intact	N/A	N/A
201291-X-0032	Basement	Lecture Hall	-	Handrail	Metal	Negative	C	Dark Brown	0.1	Intact	N/A	N/A
201291-X-0033	Basement	Lecture Hall	-	Wall	Concrete	Positive	D	Dark Brown	1.8	Intact	High	100 SF
201291-X-0034	Basement	Lecture Hall	-	Door	Wood	Negative	A	Dark Brown	0.0	Intact	N/A	N/A
201291-X-0035	Basement	Lecture Hall	-	Door Frame	Metal	Positive	A	Dark Brown	3.1	Intact	High	2 EA
201291-X-0036	Basement	Lecture Hall	-	Wall	Metal	Negative	D	Dark Brown	0.3	Intact	N/A	N/A
201291-X-0037	Basement	Lecture Hall	-	Door	Metal	Negative	D	Dark Brown	0.0	Intact	N/A	N/A

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0038	Basement	Lecture Hall	-	Door Frame	Metal	Positive	D	Dark Brown	4.5	Intact	High	2 EA
201291-X-0039	Basement	Lecture Hall	-	Ceiling	Plaster	Negative	-	White	0.5	Intact	N/A	N/A
201291-X-0040	Basement	Lecture Hall	-	Ceiling Vent	Metal	Negative	-	White	0.3	Intact	N/A	N/A
201291-X-0041	1st	Hallway	-	Wall	Concrete	Positive	B	Off-White	1.1	Intact	High	250 SF
201291-X-0042	1st	Hallway	-	Wall	Plaster	Positive	C	Off-White	1.5	Fair	High	100 SF
201291-X-0043	1st	Hallway	-	Door Frame	Metal	Positive	B	Off-White	4.0	Intact	High	2 EA
201291-X-0044	Basement	Tunnel Hallway	-	Wall	Concrete	Positive	A	Off-White	1.1	Intact	High	See 41
201291-X-0045	Basement	Tunnel Hallway	-	Wall	Concrete	Positive	D	Off-White	1.5	Intact	High	See 41
201291-X-0046	Basement	Tunnel Hallway	-	Access Panel	Metal	Positive	A	Off-White	1.4	Intact	High	1 EA
201291-X-0047	Basement	Tunnel Hallway	-	Conduit	Fiberglass	Negative	D	Off-White	0.5	Intact	N/A	N/A
201291-X-0048	Basement	Tunnel Hallway	-	Ceiling Tile Frame	Metal	Negative	-	White	0.2	Intact	N/A	N/A
201291-X-0049	Basement	Tunnel Hallway	-	Ceiling Vent	Metal	Negative	-	White	0.1	Intact	N/A	N/A
201291-X-0050	Basement	Tunnel Hallway	-	Pipe	Metal	Negative	-	White	0.0	Intact	N/A	N/A

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0051	Basement	Room 1063B	-	Wall	Concrete	Positive	A	Off-White	1.5	Intact	High	1,320 SF
201291-X-0052	Basement	Room 1063B	-	Shelve Frame	Metal	Positive	A	Gray	6.8	Intact	High	7 EA
201291-X-0053	Basement	Room 1063B	-	Wall	Concrete	Positive	B	Off-White	1.3	Intact	High	See 51
201291-X-0054	Basement	Room 1063B	-	Wall	Concrete	Positive	C	Off-White	1.8	Intact	High	See 51
201291-X-0055	Basement	Room 1060B	-	Pipe	Metal	Negative	C	Off-White	0.8	Intact	N/A	N/A
201291-X-0056	Basement	Room 1063B	-	Wall	Concrete	Positive	D	Off-White	1.4	Intact	High	See 51
201291-X-0057	Basement	Room 1063B	-	HVAC Ducting	Metal	Negative	-	Dark Gray	0.1	Intact	N/A	N/A
201291-X-0058	Basement	Room 1063B	-	Ceiling	Concrete	Negative	-	Dark Gray	0.0	Intact	N/A	N/A
201291-X-0059	Basement	Room 1063B	-	Pipe	Metal	Positive	-	Dark Gray	4.6	Intact	High	400 LF
201291-X-0060	Basement	Room 1063B	-	Door Frame	Metal	Positive	D	Off-White	4.5	Intact	High	2 EA
201291-X-0061	Basement	Room 1063C	-	Wall	Concrete	Positive	A	Off-White	1.5	Intact	High	340 SF
201291-X-0062	Basement	Room 1063C	-	Pipe	Metal	Positive	A	White	3.3	Intact	High	45 LF
201291-X-0063	Basement	Room 1063C	-	Wall	Concrete	Positive	A	Off-White	1.9	Intact	High	See 61

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0064	Basement	Room 1063C	-	Wall	Concrete	Positive	B	Off-White	1.6	Intact	High	See 61
201291-X-0065	Basement	Room 1063C	-	Door Frame	Metal	Positive	C	Off-White	3.9	Intact	High	1 EA
201291-X-0066	Basement	Room 1063C	1'x1'	Wall Tile	Acoustic	Negative	C	White	0.2	Intact	N/A	N/A
201291-X-0067	Basement	Room 1063C	-	Wall	Transite	Positive	D	Dark Gray	1.5	Intact	High	200 SF
201291-X-0068	Basement	Room 1063C	-	Base Plate	Metal	Negative	D	Dark Gray	0.8	Intact	N/A	N/A
201291-X-0069	Basement	Room 1063C	-	Wall Panel	Wood	Negative	D	Black	0.1	Intact	N/A	N/A
201291-X-0070	Basement	Room 1063C	-	Blackboard Frame	Metal	Positive	D	Dark Gray	1.1	Intact	High	1 EA
201291-X-0071	Basement	Room 1063C	-	Ceiling	Concrete	Negative	-	Dark Gray	0.4	Intact	N/A	N/A
201291-X-0072	Basement	Room 1063C	-	Pipe	Metal	Positive	-	Dark Gray	4.3	Intact	Moderate	40 LF
201291-X-0073	Basement	Room 1063C	-	Pipe	Metal	Positive	A	Off-White	5.8	Intact	High	35 SF
201291-X-0074	Basement	Room 1063C	-	Access Panel	Metal	Positive	D	Dark Gray	1.3	Intact	High	1 EA
201291-X-0075	Basement	Room 1063C	-	Vent Panel	Metal	Negative	A	White	0.3	Intact	N/A	N/A
201291-X-0076	-	Calibration	-	NIST	-	-	-	-	0.9	-	-	-

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0077	-	Calibration	-	NIST	-	-	-	-	0.9	-	-	-
201291-X-0078	-	Calibration	-	NIST	-	-	-	-	0.8	-	-	-
201291-X-0079	-	Attic	-	Ceiling Beam	Metal	Positive	-	Orange	6.2	Intact	Low	350 LF
201291-X-0080	-	Attic	-	Ladder	Metal	Positive	D	Orange	4.0	Intact	Low	2 EA
201291-X-0081	-	Attic	-	HVAC Support Bracket	Metal	Negative	-	Green	0.1	Intact	N/A	N/A
201291-X-0082	-	Attic	-	Pipe	Metal	Negative	-	Red	0.0	Intact	N/A	N/A
201291-X-0083	-	Attic	-	Door Frame	Metal	Positive	B	Gray	6.4	Intact	Low	1 EA
201291-X-0084	-	Attic	-	Door	Wood	Negative	B	White	0.0	Intact	N/A	N/A
201291-X-0085	-	Attic	-	Ladder	Metal	Positive	B	Gray	3.6	Intact	Low	1 EA
201291-X-0086	-	Attic	-	Handrail	Metal	Positive	B	Gray	4.4	Intact	Low	1 EA
201291-X-0087	-	Attic	-	Stair Landing	Metal	Positive	B	Gray	4.4	Intact	Low	1 EA
201291-X-0088	-	Attic	-	Roof Access	Metal	Negative	-	Gray	0.1	Intact	N/A	N/A
201291-X-0089	Basement	Room 1063D	-	Wall	Concrete	Positive	A	Off-White	1.0	Intact	High	400 SF

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0090	Basement	Room 1063D	-	Wall	Concrete	Positive	B	Off-White	1.4	Intact	High	See 89
201291-X-0091	Basement	Room 1063D	-	Wall	Concrete	Positive	C	Off-White	1.4	Intact	High	See 89
201291-X-0092	Basement	Room 1063D	-	Wall	Plaster	Positive	D	Off-White	1.1	Poor	High	100 SF
201291-X-0093	Basement	Room 1063D	-	Pipe	Metal	Positive	A	Off-White	1.3	Intact	High	80 LF
201291-X-0094	Basement	Room 1063D	-	Counter	Wood	Negative	A	Gray	0.0	Intact	N/A	N/A
201291-X-0095	Basement	Room 1063D	-	Fume Hood	Transite	Negative	B	Gray	0.0	Intact	N/A	N/A
201291-X-0096	Basement	Room 1063D	-	Pipe	Metal	Negative	A	Light Gray	0.0	Intact	N/A	N/A
201291-X-0097	Basement	Room 1063D	-	Shelf Framing	Metal	Positive	C	Gray	6.4	Intact	High	1 EA
201291-X-0098	Basement	Room 1063D	-	Door Frame	Metal	Positive	D	Off-White	4.7	Intact	High	1 EA
201291-X-0099	Basement	Room 1063D	-	Pipe	Metal	Negative	-	Dark Gray	0.3	Intact	N/A	N/A
201291-X-0100	Basement	Room 1063D	-	Pipe	Transite	Negative	-	Dark Gray	0.6	Intact	N/A	N/A
201291-X-0101	Basement	Room 1063D	-	HVAC Ducting	Metal	Negative	-	Dark Gray	0.3	Intact	N/A	N/A
201291-X-0102	Basement	Room 1063D	-	Ceiling	Concrete	Negative	-	Dark Gray	0.3	Intact	N/A	N/A



<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0103	Basement	Room 1063D	-	Vent	Metal	Negative	-	Dark Gray	0.0	Intact	N/A	N/A
201291-X-0104	Basement	Room 1063D	-	Control Valve	Metal	Positive	D	Off-White	4.4	Intact	High	1 EA
201291-X-0105	Basement	Room 1063D	-	Control Valve Handle	Metal	Negative	D	Red	0.0	Intact	N/A	N/A
201291-X-0106	Basement	Room 1063D	-	Control Valve	Metal	Positive	-	Dark Gray	6.2	Intact	Moderate	1 EA
201291-X-0107	Basement	Room 1063D	-	Bracket	Metal	Negative	-	Dark Gray	0.0	Intact	N/A	N/A
201291-X-0108	Basement	Room 1063D	-	Bracket	Metal	Positive	A	Off-White	1.2	Intact	High	110 LF
201291-X-0109	Basement	Room 2000C	-	Wall	Concrete	Positive	A	Gray	1.1	Poor	High	400 SF
201291-X-0110	Basement	Room 2000C	-	Wall	Concrete	Positive	B	Gray	1.2	Poor	High	See 109
201291-X-0111	Basement	Room 2000C	-	Wall	Concrete	Positive	C	Gray	1.1	Poor	High	See 109
201291-X-0112	Basement	Room 2000C	-	Wall	Concrete	Positive	D	Gray	1.0	Poor	High	See 109
201291-X-0113	Basement	Room 2000C	-	Pipe	Metal	Positive	A	Gray	6.0	Intact	High	60 LF
201291-X-0114	Basement	Room 2000C	-	Electrical Box	Metal	Negative	A	Gray	0.3	Intact	N/A	N/A
201291-X-0115	Basement	Room 2000C	-	Door	Wood	Negative	B	Gray	0.1	Intact	N/A	N/A

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0116	Basement	Room 2000C	-	Door Frame	Metal	Negative	B	Gray	0.5	Intact	N/A	N/A
201291-X-0117	Basement	Room 2000C	-	HVAC Ducting	Metal	Negative	-	Gray	0.9	Intact	N/A	N/A
201291-X-0118	Basement	Room 2000C	-	Ceiling	Plaster	Positive	-	Gray	1.2	Intact	High	80 SF
201291-X-0119	Basement	Projector Room	-	Wall	Concrete	Positive	A	Off-White	1.2	Intact	High	1,300 SF
201291-X-0120	Basement	Projector Room	-	Wall	Concrete	Positive	B	Off-White	1.0	Intact	High	See 119
201291-X-0121	Basement	Projector Room	-	Wall	Concrete	Positive	C	Off-White	1.2	Intact	High	See 119
201291-X-0122	Basement	Projector Room	-	Wall	Concrete	Negative	D	Off-White	0.8	Intact	N/A	N/A
201291-X-0123	Basement	Projector Room	-	Pipe	Metal	Negative	A	Off-White	0.3	Intact	N/A	N/A
201291-X-0124	Basement	Projector Room	-	Pipe	Metal	Negative	A	White	0.3	Intact	N/A	N/A
201291-X-0125	Basement	Projector Room	-	Wall Panel	Metal	Negative	B	Off-White	0.2	Intact	N/A	N/A
201291-X-0126	Basement	Projector Room	-	Door	Metal	Negative	C	Off-White	0.2	Intact	N/A	N/A
201291-X-0127	Basement	Projector Room	-	Door Frame	Metal	Positive	C	Off-White	4.7	Intact	High	2 EA
201291-X-0128	Basement	Projector Room	-	Ladder	Metal	Positive	D	Off-White	3.3	Intact	High	2 EA

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0129	Basement	Projector Room	-	Handrail	Metal	Positive	D	Off-White	3.9	Intact	High	2 EA
201291-X-0130	Basement	Projector Room	-	Access Hatch	Metal	Negative	-	Off-White	0.8	Intact	N/A	N/A
201291-X-0131	Basement	Projector Room	-	Ceiling	Plaster	Positive	-	Off-White	1.1	Intact	High	180 SF
201291-X-0132	Basement	Projector Room	-	Wall	Concrete	Negative	D	White	0.0	Intact	N/A	N/A
201291-X-0133	Basement	Projector Room	-	HVAC Ducting	Metal	Negative	-	Off-White	0.2	Intact	N/A	N/A
201291-X-0134	1st	Room 2000D, Entrance	-	Wall	Plaster	Negative	A	Gray	0.9	Intact	N/A	N/A
201291-X-0135	1st	Room 2000D, Entrance	-	Wall	Concrete	Negative	B	Gray	0.6	Intact	N/A	N/A
201291-X-0136	1st	Room 2000D, Entrance	-	Wall	Plaster	Negative	D	Gray	0.9	Intact	N/A	N/A
201291-X-0137	1st	Room 2000D, Entrance	-	Door	Wood	Negative	D	Gray	0.2	Intact	N/A	N/A
201291-X-0138	1st	Room 2000D, Entrance	-	Door Frame	Metal	Negative	D	Gray	0.4	Intact	N/A	N/A
201291-X-0139	1st	Room 2000D, Entrance	-	Ladder	Metal	Positive	A	Gray	7.1	Intact	Moderate	1 EA
201291-X-0140	1st	Room 2000D, Entrance	-	HVAC Ducting	Metal	Negative	-	Gray	0.6	Fair	N/A	N/A
201291-X-0141	1st	Room 2000D, Entrance	-	Wall	Concrete	Negative	C	Gray	0.9	Intact	N/A	N/A

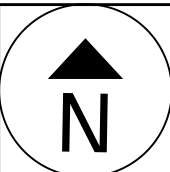
<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0142	1st	Room 2000D, Entrance	-	Pipe	Transite	Negative	B	Gray	0.8	Intact	N/A	N/A
201291-X-0143	1st	Room 2000D, Entrance	-	Ladder	Metal	Positive	D	Gray	4.9	Intact	Moderate	1 EA
201291-X-0144	1st	Room 2000D, Entrance	-	Ceiling	Concrete	Negative	-	Gray	0.5	Intact	N/A	N/A
201291-X-0145	1st	Room 2000D, Entrance	-	Pipe	Metal	Negative	D	Gray	0.6	Poor	N/A	N/A
201291-X-0146	1st	Room 2000D, Entrance	-	Bracket	Metal	Negative	B	Gray	0,2	Intact	N/A	N/A
201291-X-0147	1st	Room 2000D	-	HVAC Ducting	Metal	Negative	-	Gray	0.3	Intact	Moderate	N/A
201291-X-0148	1st	Room 2000D	-	Pipe	Transite	Negative	B	Gray	0.9	Intact	Moderate	N/A
201291-X-0149	1st	Room 2000D	-	Pipe	Fiberglass	Negative	-	Gray	0.8	Intact	Moderate	N/A
201291-X-0150	1st	Room 2000D	-	Access Hatch	Metal	Negative	D	Gray	0.5	Intact	Moderate	N/A
201291-X-0151	1st	Room 2000D	-	Access Hatch	Wood	Negative	-	Gray	0.5	Intact	Moderate	N/A
201291-X-0152	1st	Room 2000D	-	Beam	Metal	Positive	-	Orange	6.5	Intact	Low	500 SF
201291-X-0153	1st	Room 2000D	-	Pipe	Metal	Negative	-	Gray	0.5	Intact	N/A	N/A
201291-X-0154	1st	Lecture Hall	-	Catwalk Partition Wall	Plaster	Positive	-	Dark Brown	1.7	Poor	Moderate	300 SF

<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0155	1st	Lecture Hall	-	Projector Bracket	Metal	Positive	-	Dark Brown	3.3	Intact	Moderate	50 LF
201291-X-0156	1st	Lecture Hall	-	Catwalk Handrail	Metal	Positive	-	Dark Brown	7.4	Intact	Moderate	2 EA
201291-X-0157	1st	Lecture Hall	-	Projector Screen Roller	Metal	Negative	B	Dark Brown	0.0	Intact	N/A	N/A
201291-X-0158	-	Exterior	-	Wall	Concrete	Negative	A	Off-White	0.2	Intact	N/A	N/A
201291-X-0159	-	Exterior	-	Wall	Concrete	Negative	B	Off-White	0.2	Intact	N/A	N/A
201291-X-0160	-	Exterior	-	Wall	Concrete	Negative	C	Off-White	0.2	Intact	N/A	N/A
201291-X-0161	-	Exterior	-	Wall	Concrete	Negative	D	Off-White	0.2	Intact	N/A	N/A
201291-X-0162	-	Exterior	-	Door	Metal	Negative	B	Off-White	0.3	Intact	N/A	N/A
201291-X-0163	-	Exterior	-	Door Frame	Metal	Negative	B	Off-White	0.3	Intact	N/A	N/A
201291-X-0164	-	Exterior	-	Wall	Stucco	Negative	C	Off-White	0.5	Intact	N/A	N/A
201291-X-0165	-	Exterior	-	Door	Wood	Negative	D	Gray	0.1	Intact	N/A	N/A
201291-X-0166	-	Exterior	-	Door Frame	Metal	Negative	D	Gray	0.5	Intact	N/A	N/A
201291-X-0167	-	Exterior	-	Ceiling	Stucco	Negative	-	Off-White	0.8	Intact	N/A	N/A

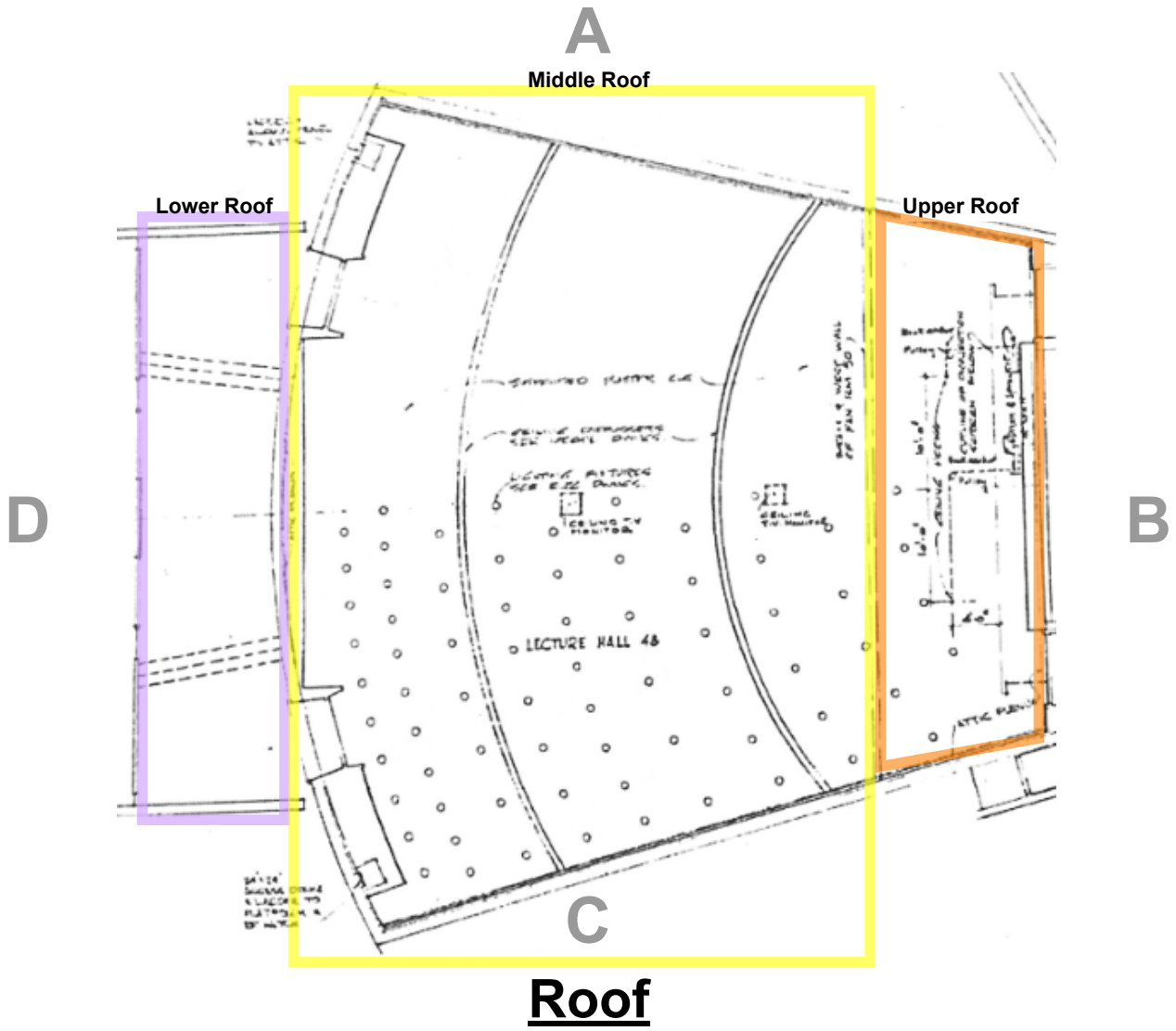
<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0168	-	Exterior	-	Handrail	Metal	Positive	C	Dark Gray	7.1	Poor	High	7 EA
201291-X-0169	-	Exterior	-	Handrail	Metal	Negative	C	Black	0.2	Intact	N/A	N/A
201291-X-0170	-	Exterior	-	Door	Metal	Negative	C	Off-White	0.2	Intact	N/A	N/A
201291-X-0171	-	Exterior	-	Door Frame	Metal	Negative	C	Off-White	0.2	Intact	N/A	N/A
201291-X-0172	-	Exterior	1"x1"	Wall Tile	Ceramic	Negative	D	Gray	0.3	Intact	N/A	N/A
201291-X-0173	-	Exterior	-	Fire Extinguisher Box	Metal	Negative	D	Gray	0.5	Intact	N/A	N/A
201291-X-0174	-	Exterior	-	Door	Metal	Negative	D	Green	0.3	Intact	N/A	N/A
201291-X-0175	-	Exterior	-	Door Transom	Metal	Negative	D	Green	0.8	Intact	N/A	N/A
201291-X-0176	-	Exterior	-	Hand Rail	Metal	Negative	D	Black	0.2	Intact	N/A	N/A
201291-X-0177	-	Exterior	-	Overhang	Stucco	Negative	D	Off-White	0.4	Intact	N/A	N/A
201291-X-0178	-	Exterior	-	Fascia	Metal	Negative	D	Off-White	0.2	Intact	N/A	N/A
201291-X-0179	-	Exterior	-	Flashing	Metal	Negative	D	Off-White	0.2	Intact	N/A	N/A
201291-X-0180	-	Exterior, Covered Walkway	-	Ceiling	Metal	Negative	-	Off-White	0.2	Intact	N/A	N/A



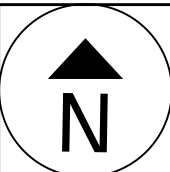
<u>Sample Number</u>	<u>Floor</u>	<u>Area</u>	<u>Dimension</u>	<u>Component</u>	<u>Substrate</u>	<u>Pos/Neg</u>	<u>Side</u>	<u>Color</u>	<u>Reading mg/cm2</u>	<u>Cond.</u>	<u>Access.</u>	<u>Est. Qty.</u>
201291-X-0181	-	Exterior, Covered Walkway	-	Fascia	Metal	Negative	A	Off-White	0.2	Intact	N/A	N/A
201291-X-0182	-	Exterior, Covered Walkway	-	Beam	Metal	Negative	D	Off-White	0.2	Intact	N/A	N/A
201291-X-0183	-	Exterior	-	Column	Concrete	Negative	D	Off-White	0.4	Intact	N/A	N/A
201291-X-0184	Basement	Room 1063C	-	Vent Panel	Metal	Negative	A	White	0.3	Intact	N/A	N/A
201291-X-0185	-	Exterior	-	Ramp	Concrete	Negative	C	Off-White	0.2	Intact	N/A	N/A
201291-X-0186	-	Exterior	-	Planter	Concrete	Negative	D	Off-White	0.2	Intact	N/A	N/A
201291-X-0187	-	Calibration	-	NIST	-	-	-	-	1.0	-	-	-
201291-X-0188	-	Calibration	-	NIST	-	-	-	-	1.1	-	-	-
201291-X-0189	-	Calibration	-	NIST	-	-	-	-	1.0	-	-	-



Not to Scale



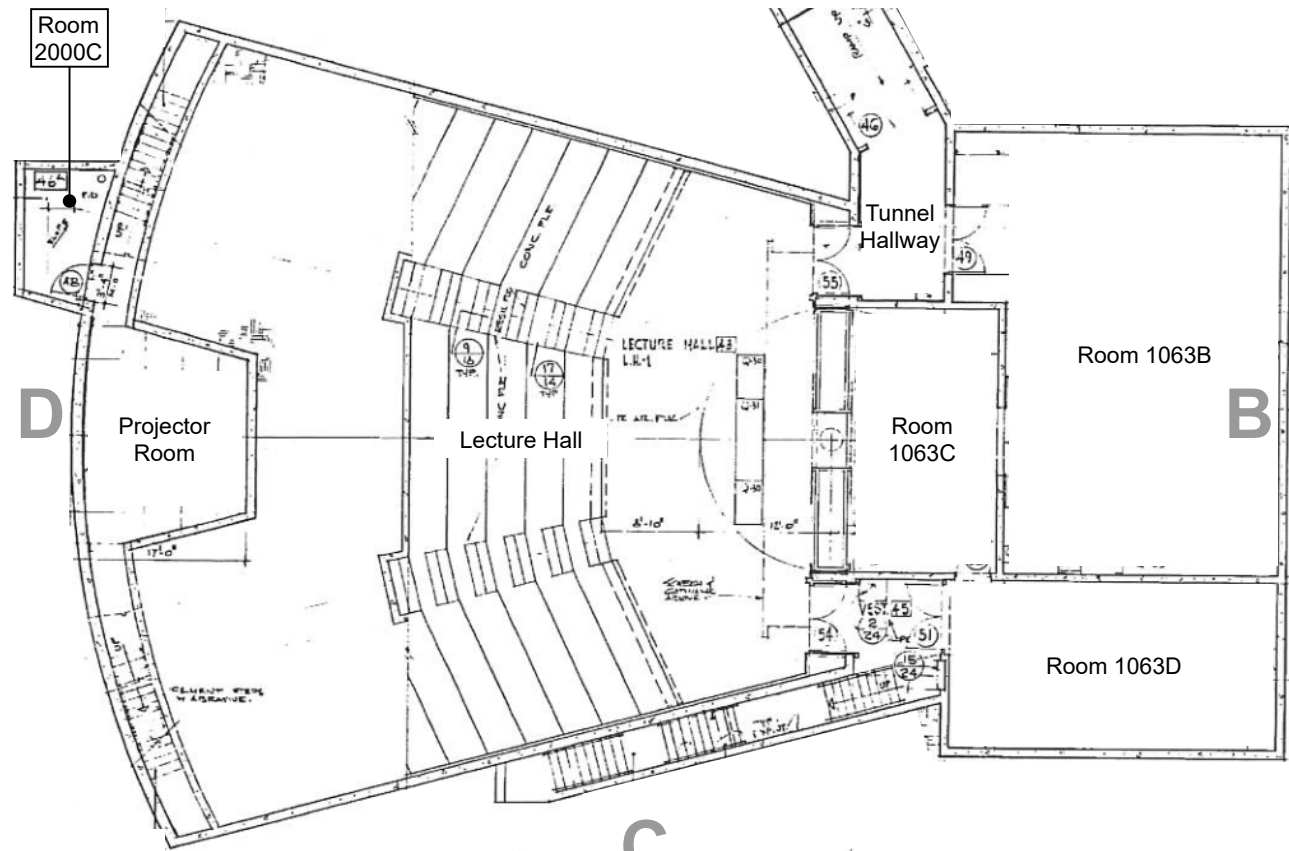
<b>Site Drawing - XRF-Lead - Page 1 of 4</b>	
Physics 2000 Riverside, California 92521	
<b>Project #: Atch-201291</b>	<b>University of California, Riverside</b>



Not to Scale



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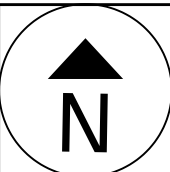
D

B

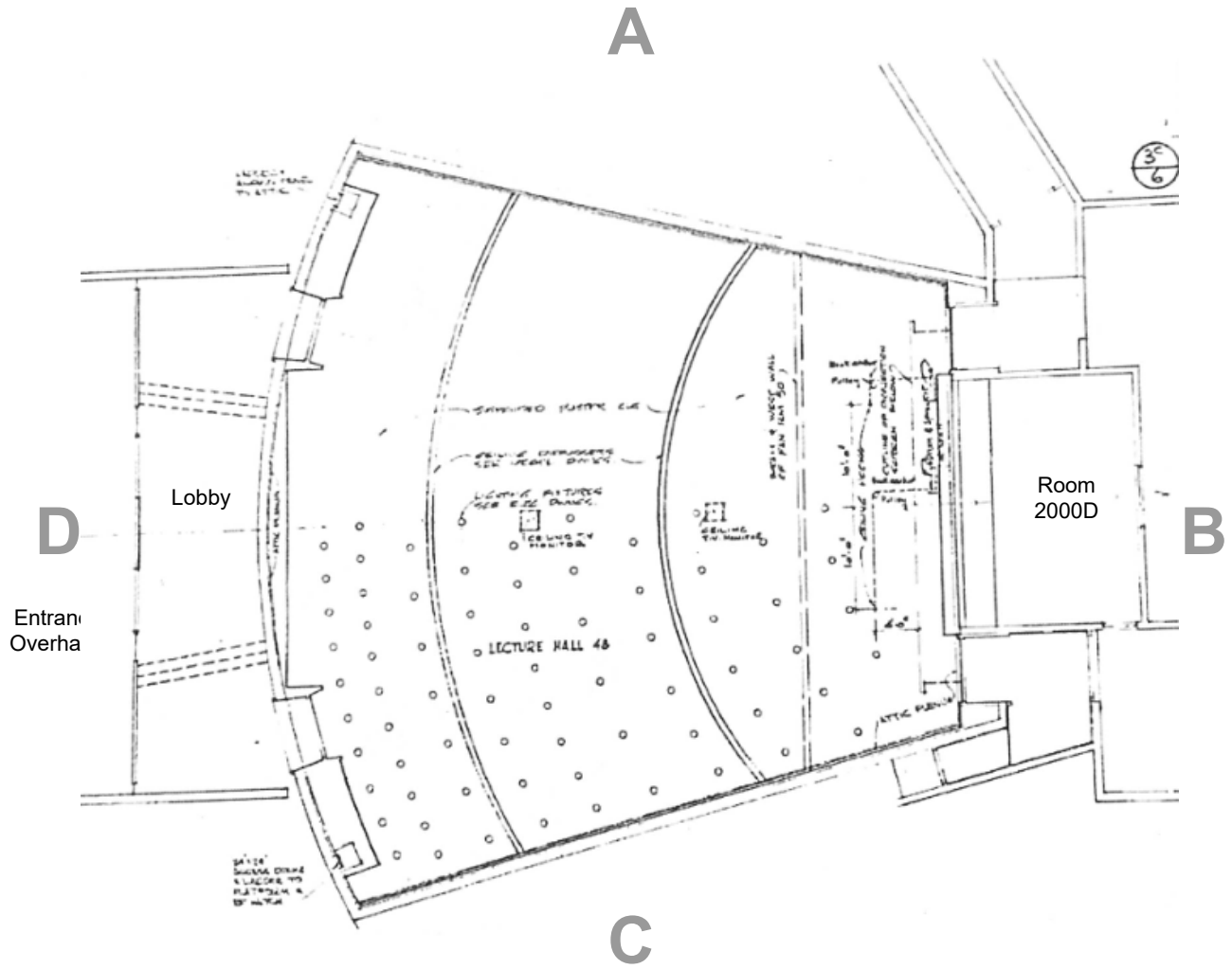
C

**Basement**

<b>Site Drawing - XRF-Lead - Page 2 of 4</b>	
Physics 2000 Riverside, California 92521	
<b>Project #: Atch-201291</b>	<b>University of California, Riverside</b>

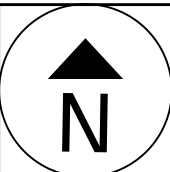


Not to Scale



# 1st Floor and Exterior

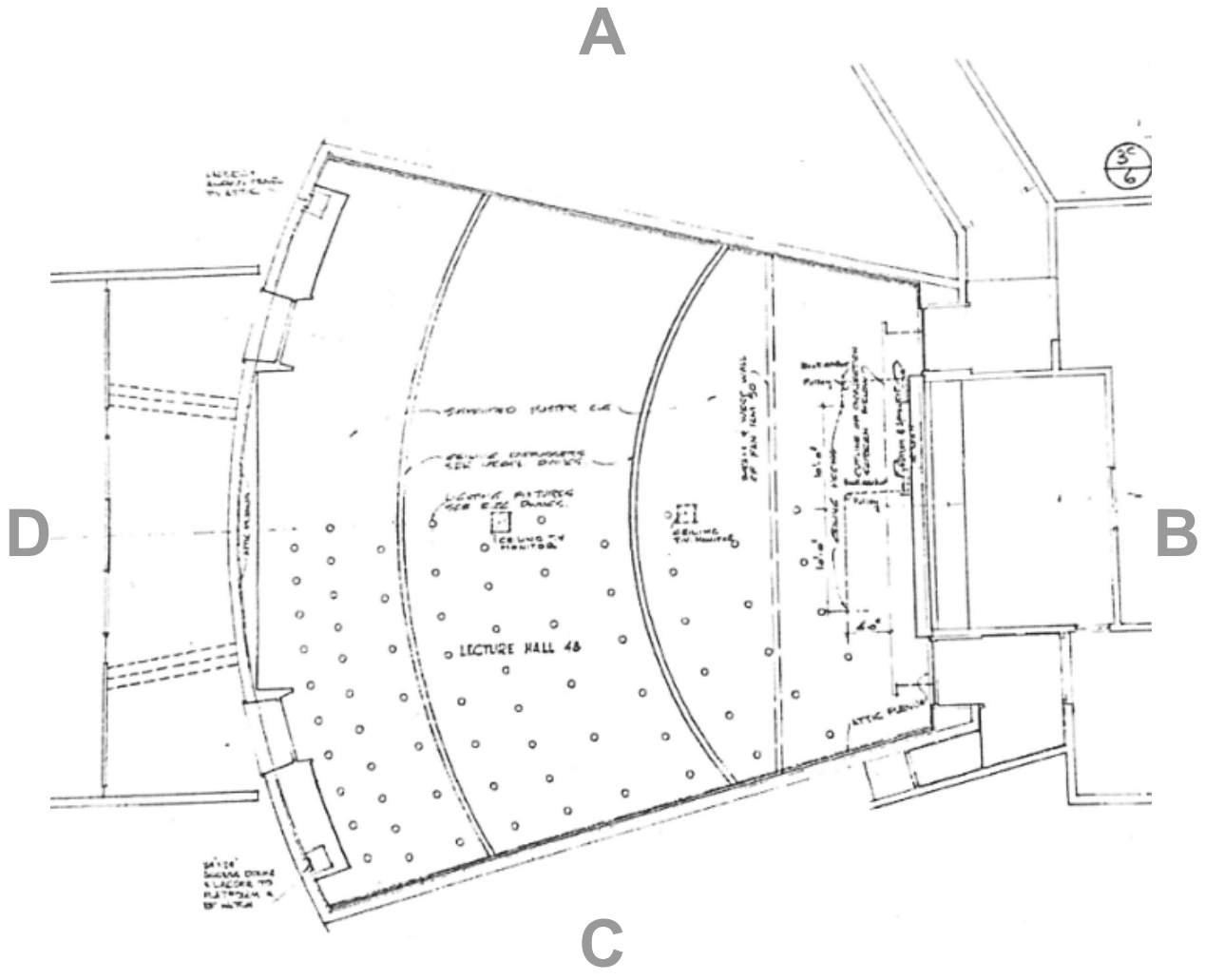
<b>Site Drawing - XRF-Lead - Page 3 of 4</b>	
Physics 2000 Riverside, California 92521	
<b>Project #: Atch-201291</b>	<b>University of California, Riverside</b>



Not to Scale



A-Tech Consulting, Inc.



**Attic**

<b>Site Drawing - XRF-Lead - Page 4 of 4</b>	
Physics 2000 Riverside, California 92521	
<b>Project #: Atch-201291</b>	<b>University of California, Riverside</b>



## Digital Photographs – Lead

Client: University of California, Riverside

Project #Atch-201291

Physics 2000  
Riverside, California 92521



View of Dark Brown Metal Blackboard Frame



View of Gray Metal Shelf Frame



View of Dark Gray Metal Blackboard Frame



View of Orange Metal Ceiling Beam





View of Off-White Metal Control Valve



View of Off-White Metal Access Panel



View of Dark Gray Metal Access Panel



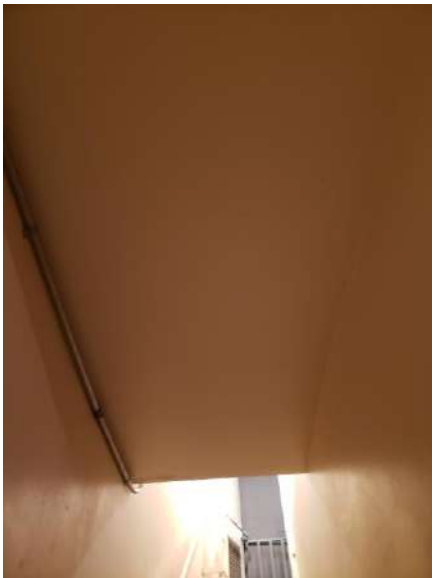
View of Off-White Metal Bracket



View of Dark Brown Metal Projector Bracket



View of Gray Plaster Ceiling



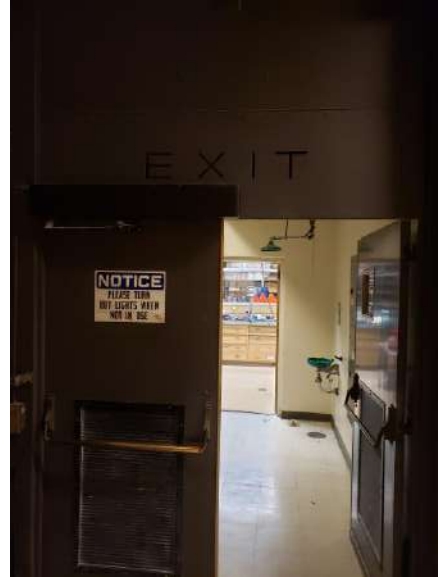
View of Off-White Plaster Ceiling



View of Dark Gray Wood Door



View of Dark Gray Metal Door Frame



View of Dark Brown Metal Door Frame



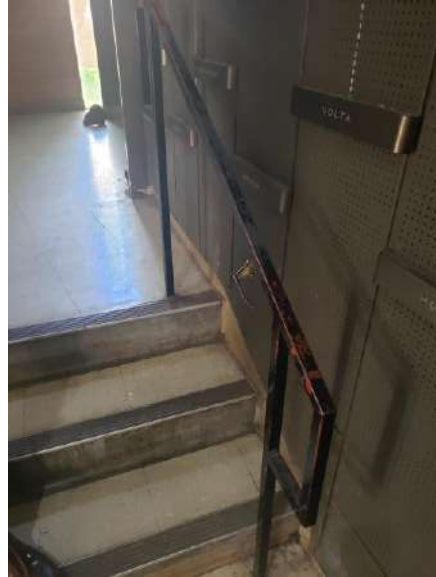
View of Off-White Metal Door Frame



View of Gray Metal Door Frame



View of Off-White Metal Door Frame



View of Black Metal Handrail



View of Off-White Metal Handrail



View of Dark Brown Metal Catwalk Handrail





View of Dark Gray Metal Handrail



View of Orange Metal Ladder



View of Gray Metal Ladder



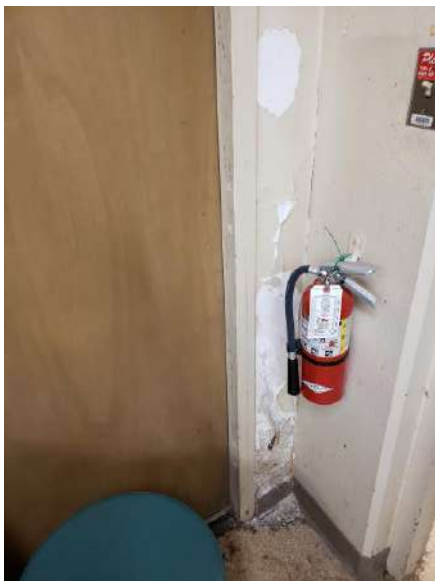
View of Off-White Metal Ladder



View of Gray Metal Pipe



View of Dark Brown Concrete Wall



View of Off-White Plaster Wall



View of Gray Metal Stair Landing





View of Off-White Concrete Wall



View of Dark Brown Plaster Wall



View of Off-White Concrete Wall



View of Gray Concrete Wall



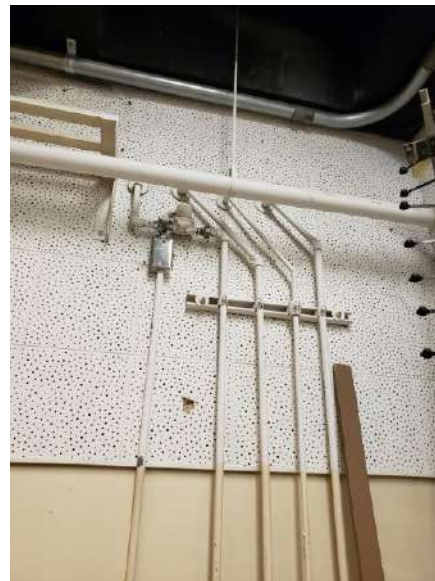
View of Dark Gray Transite Wall



View of Dark Brown Plaster Wall



View of Gray Metal Desk Framing



View of White Metal Pipe



View of Dark Gray Metal Pipe



View of Dark Gray Control Valve



View of Off White Metal Pipe



View of Gray Metal Handrail

# LEAD HAZARD EVALUATION REPORT

## Section 1 – Date of Lead Hazard Evaluation

## Section 2 – Type of Lead Hazard Evaluation (Check one box only)

Lead Inspection     Risk assessment     Clearance Inspection     Other (specify) \_\_\_\_\_

## Section 3 – Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)]		City	County	Zip Code
_____		_____	_____	_____
Construction date (year) of structure	Type of structure		Children living in structure?	
_____	<input type="checkbox"/> Multi-unit building <input type="checkbox"/> School or daycare <input type="checkbox"/> Single family dwelling <input type="checkbox"/> Other _____		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't Know	


## Section 4 – Owner of Structure (if business/agency, list contact person)

Name		Telephone number	
_____		_____	
Address [number, street, apartment (if applicable)]		City	State
_____		_____	_____
		Zip Code	
		_____	_____

## Section 5 – Results of Lead Hazard Evaluation (check all that apply)

No lead-based paint detected     Intact lead-based paint detected     Deteriorated lead-based paint detected  
 No lead hazards detected     Lead-contaminated dust found     Lead-contaminated soil found     Other \_\_\_\_\_

## Section 6 – Individual Conducting Lead Hazard Evaluation

Name		Telephone number	
_____		_____	
Address [number, street, apartment (if applicable)]		City	State
_____		_____	_____
		Zip Code	
		_____	_____
CDPH certification number	Signature		Date
_____			_____

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)  
\_\_\_\_\_

## Section 7 – Attachments

- A. A foundation diagram or sketch of the structure indicating the specific locations of each lead hazard or presence of lead-based paint;
- B. Each testing method, device, and sampling procedure used;
- C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

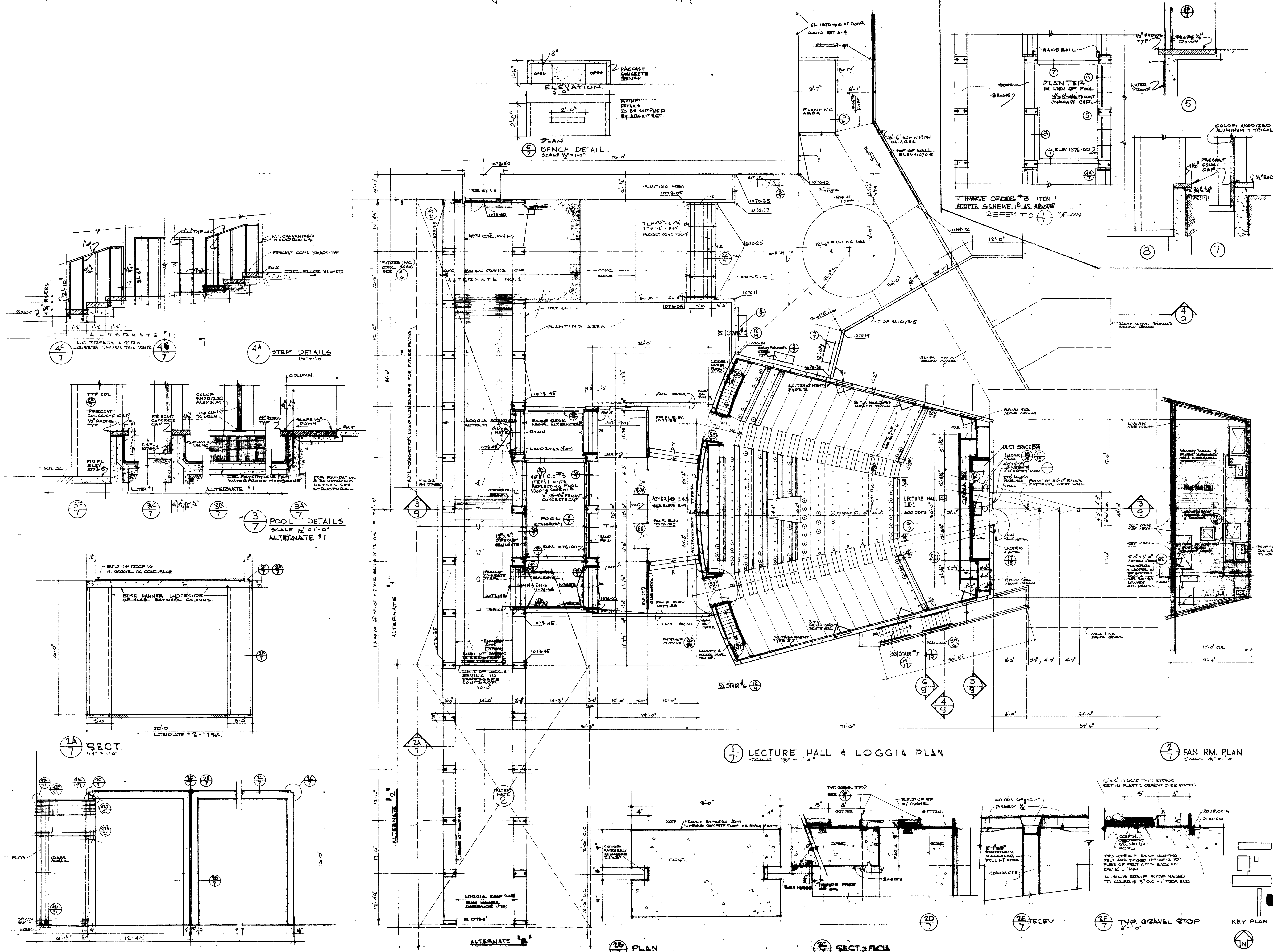
First copy and attachments retained by inspector  
Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:  
California Department of Public Health  
Childhood Lead Poisoning Prevention Branch Reports  
850 Marina Bay Parkway, Building P, Third Floor  
Richmond, CA 94804-6403  
Fax: (510) 620-5656



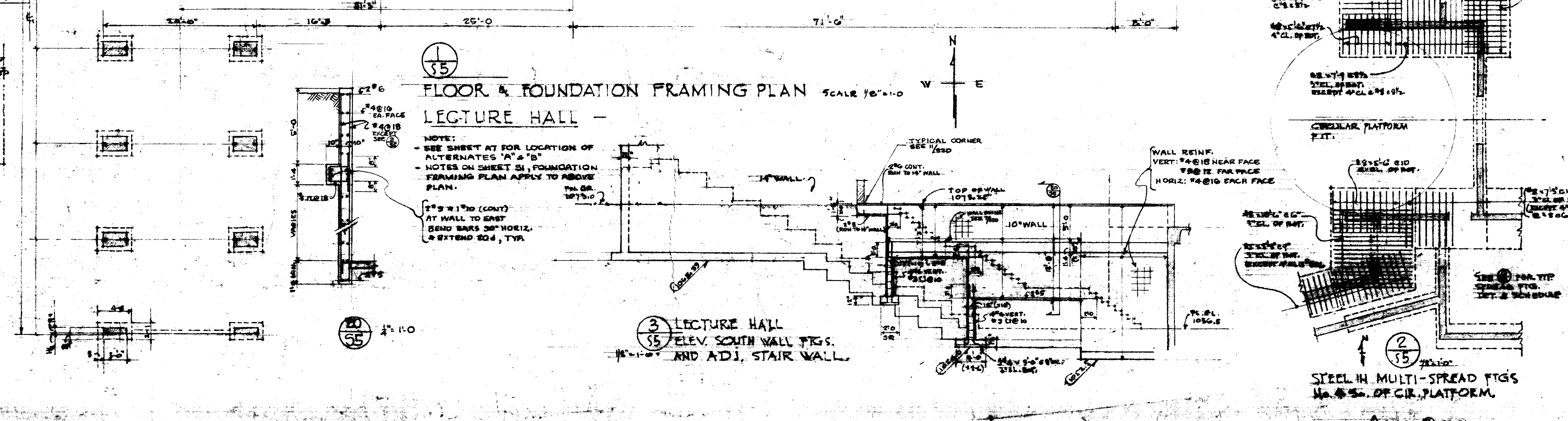
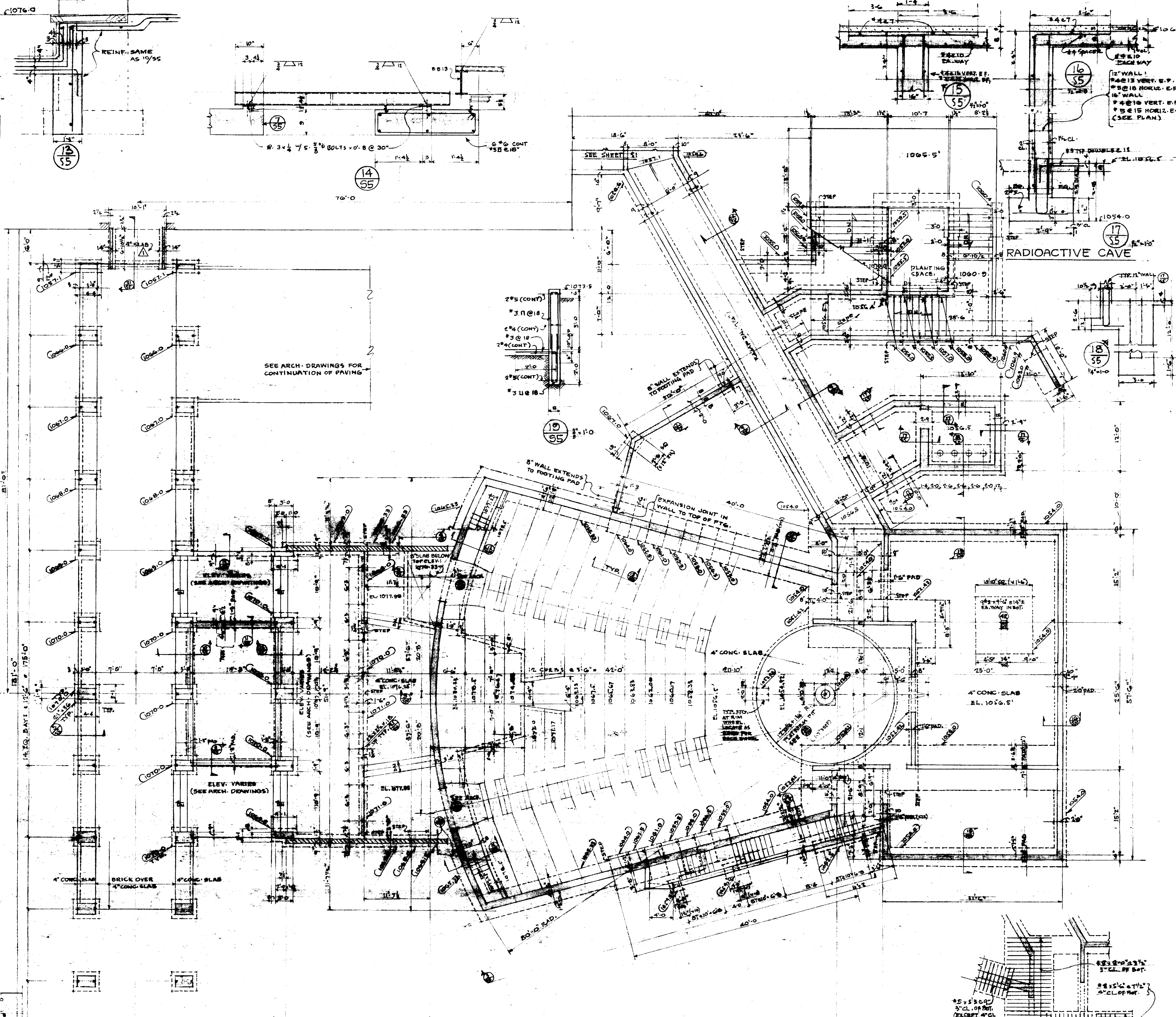
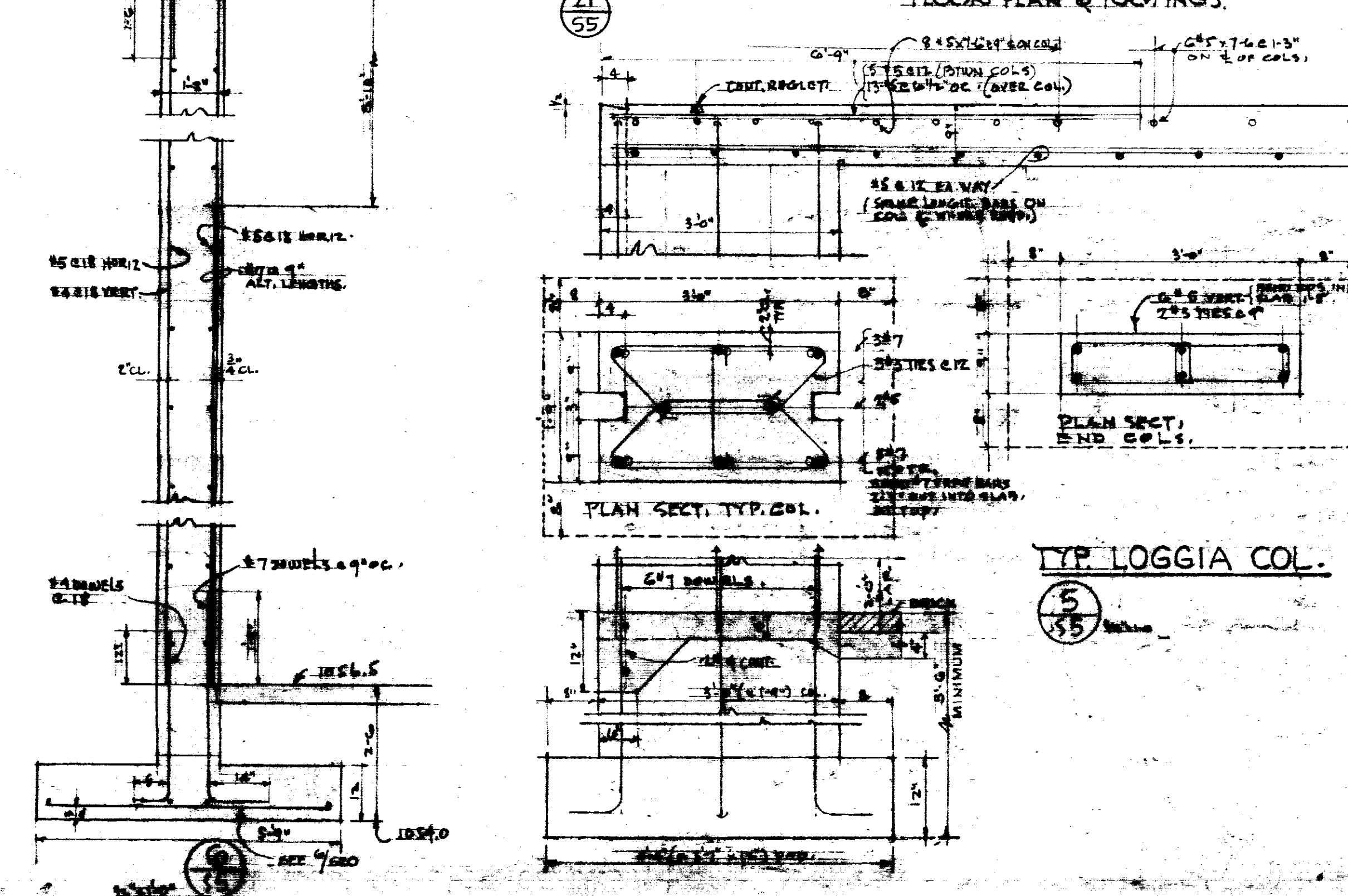
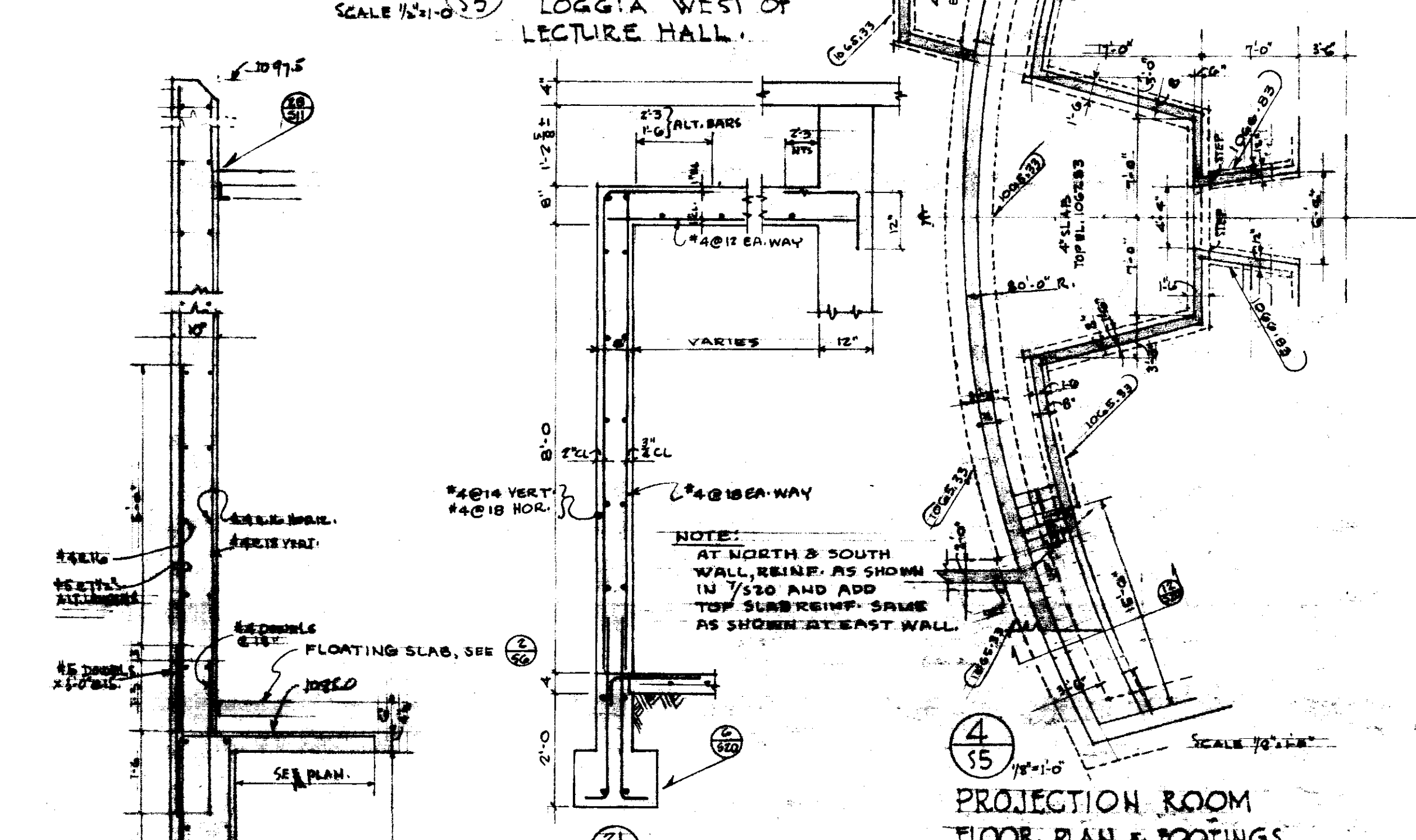
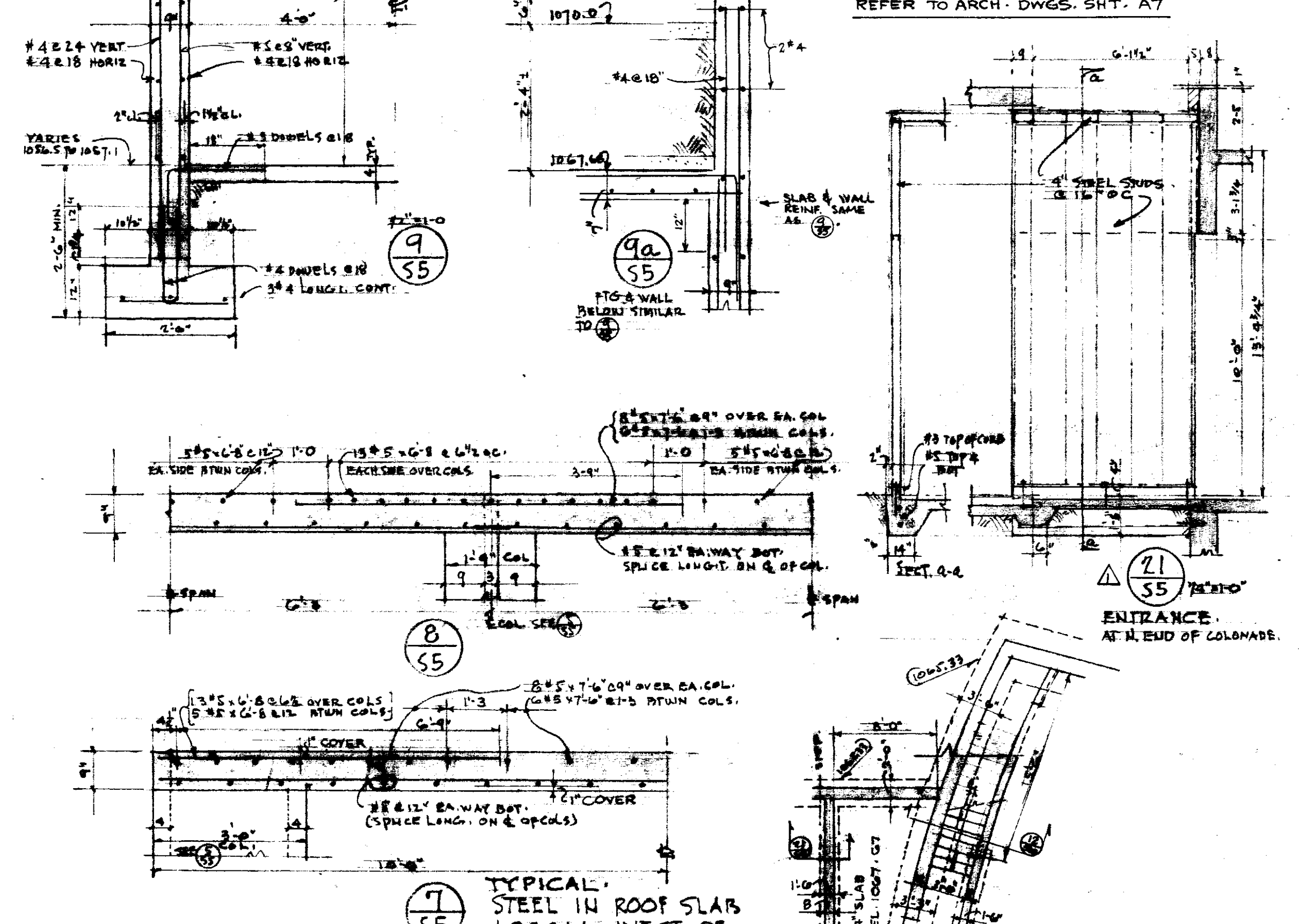
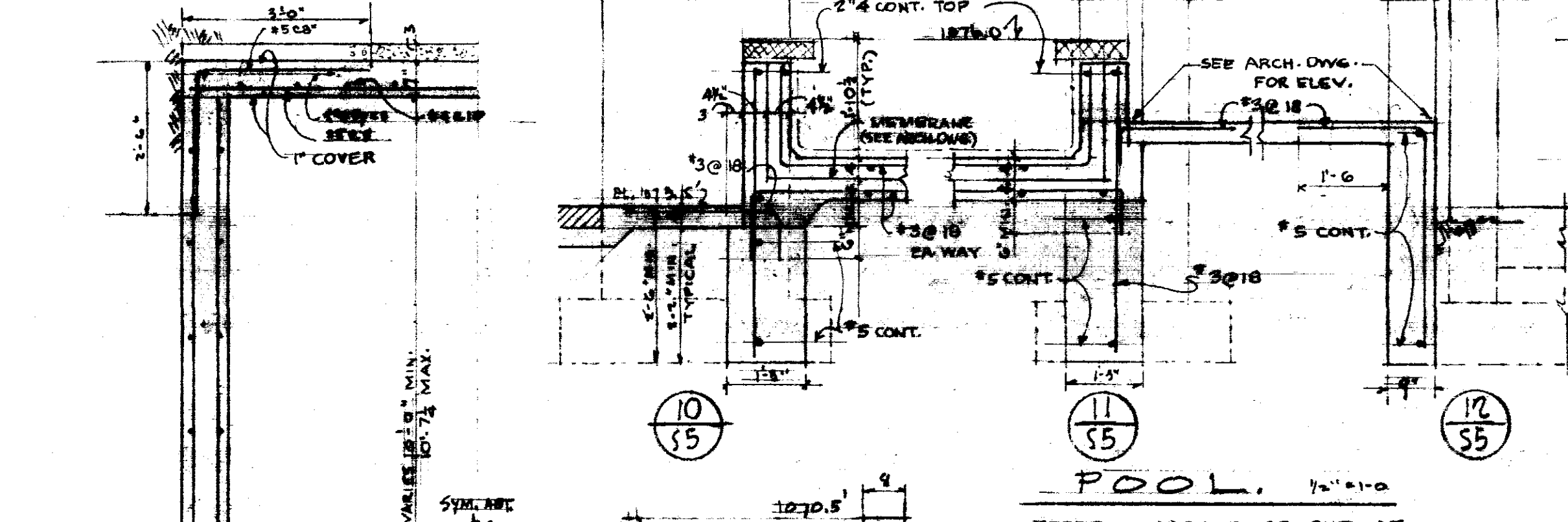




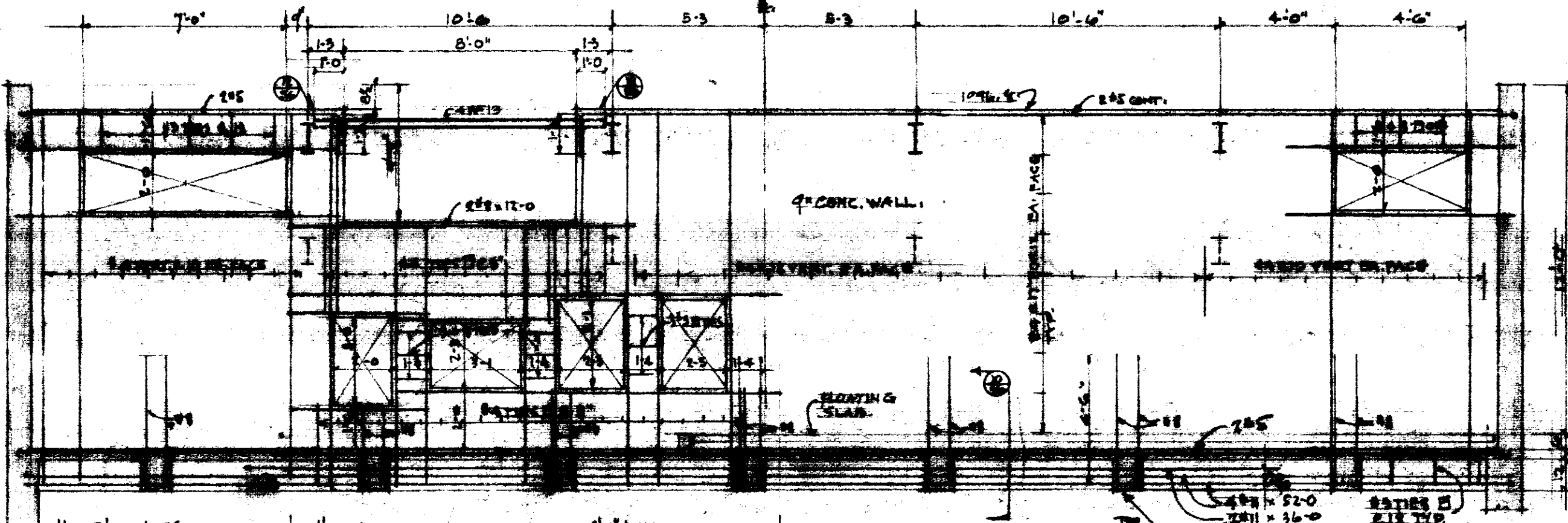


LOGGIA & LECTURE HALL PLAN AT

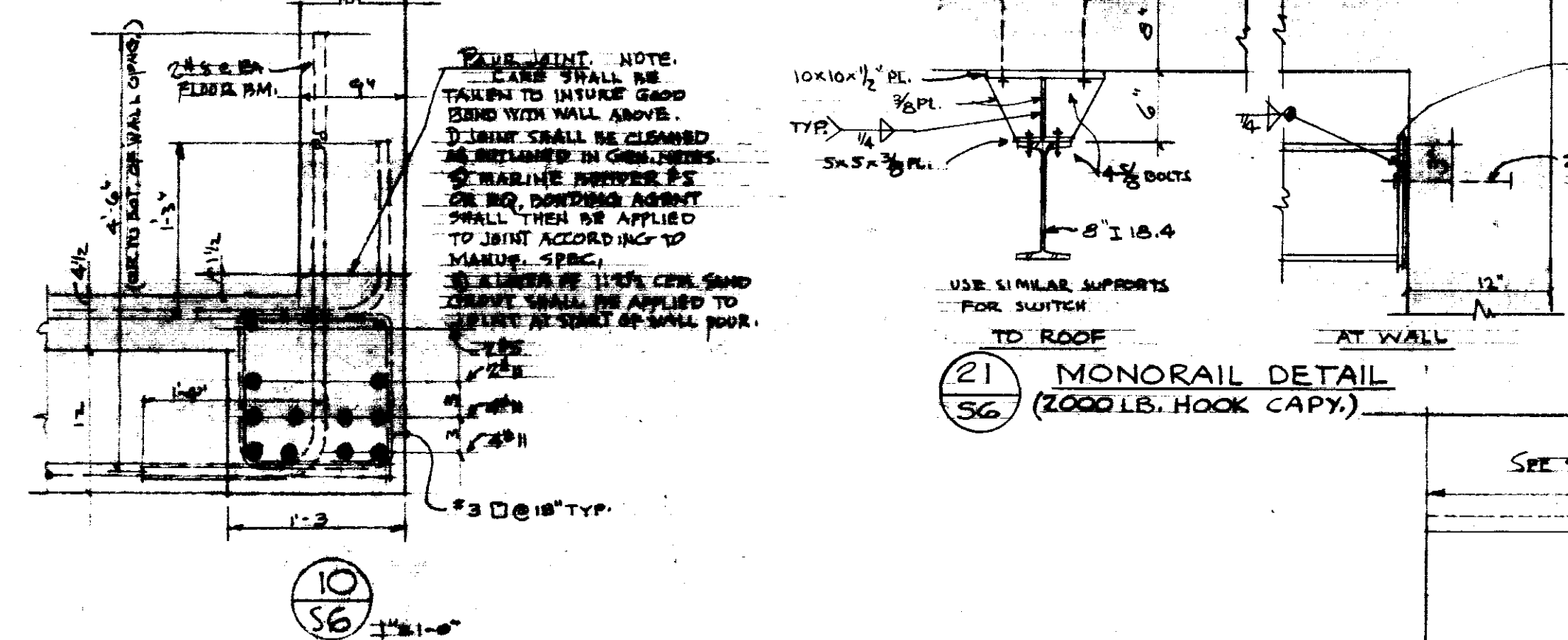




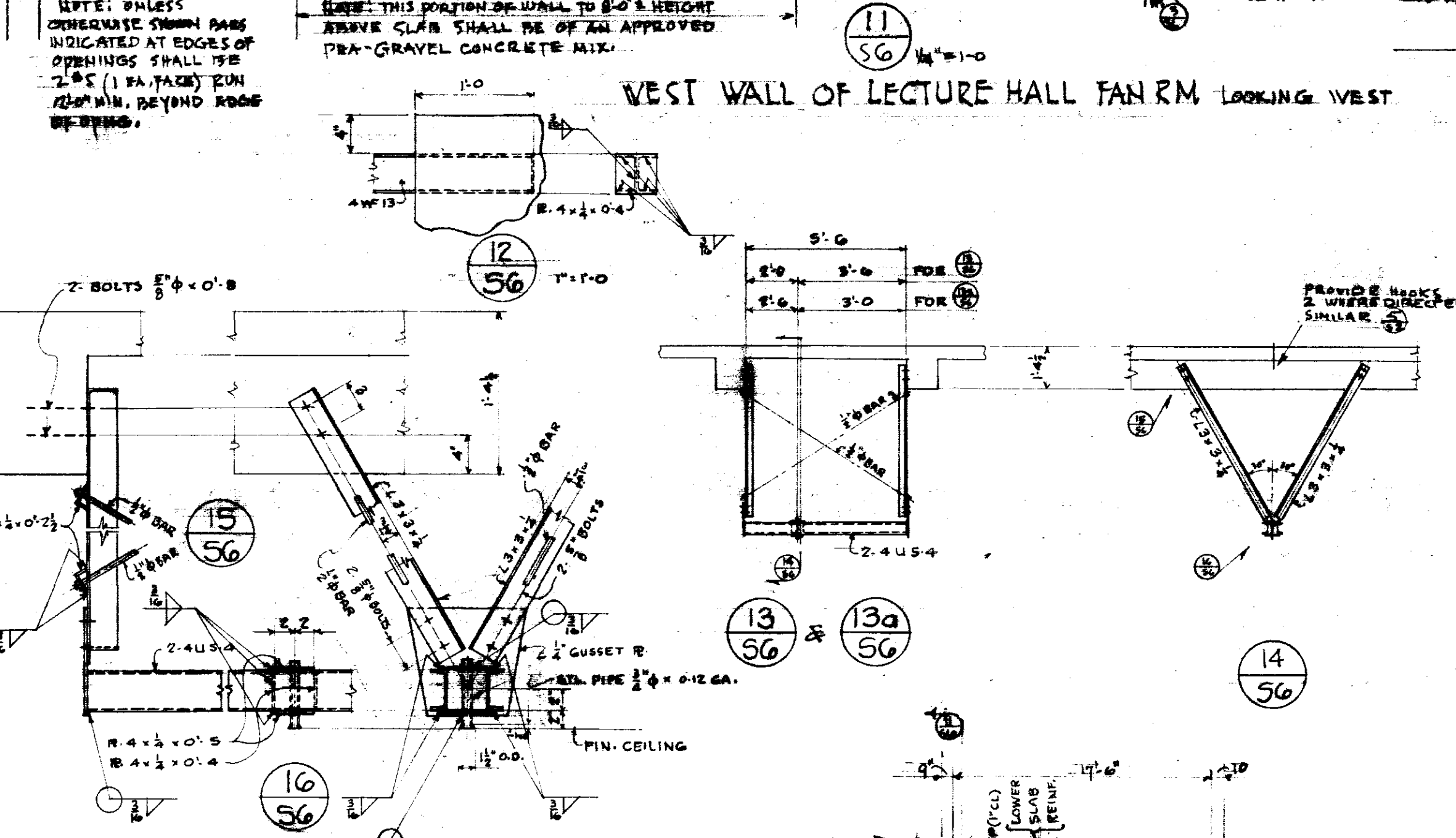
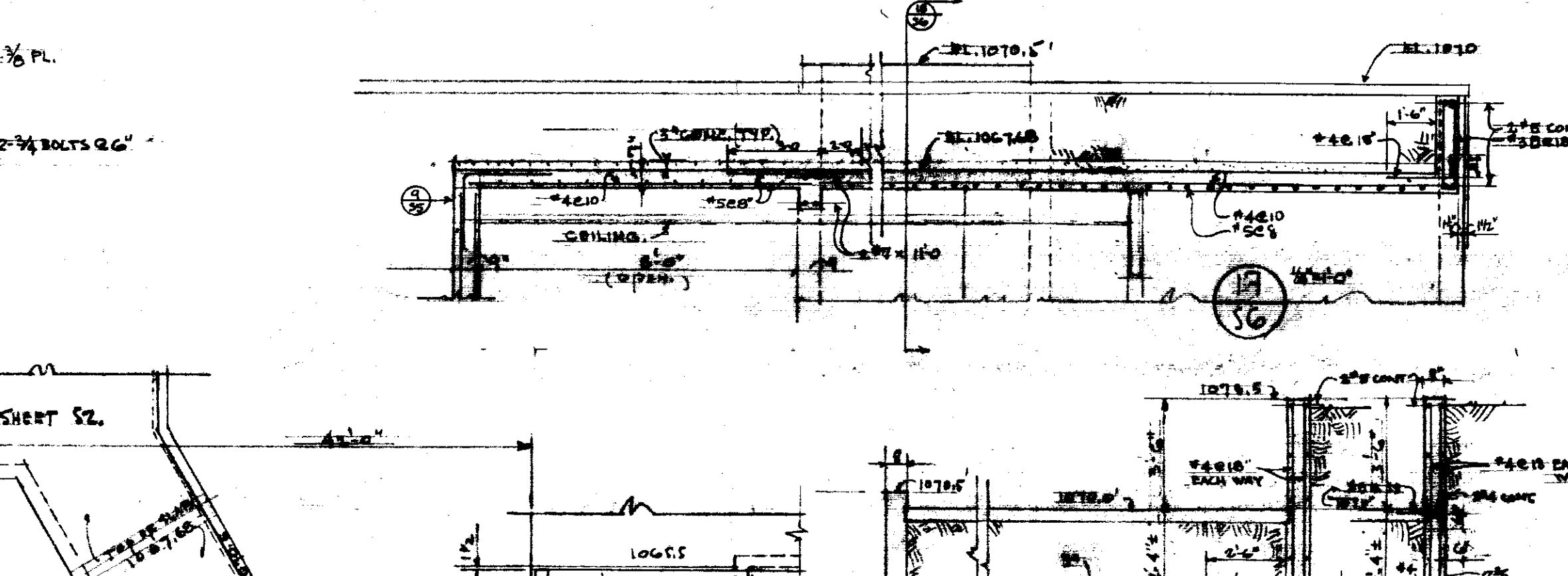




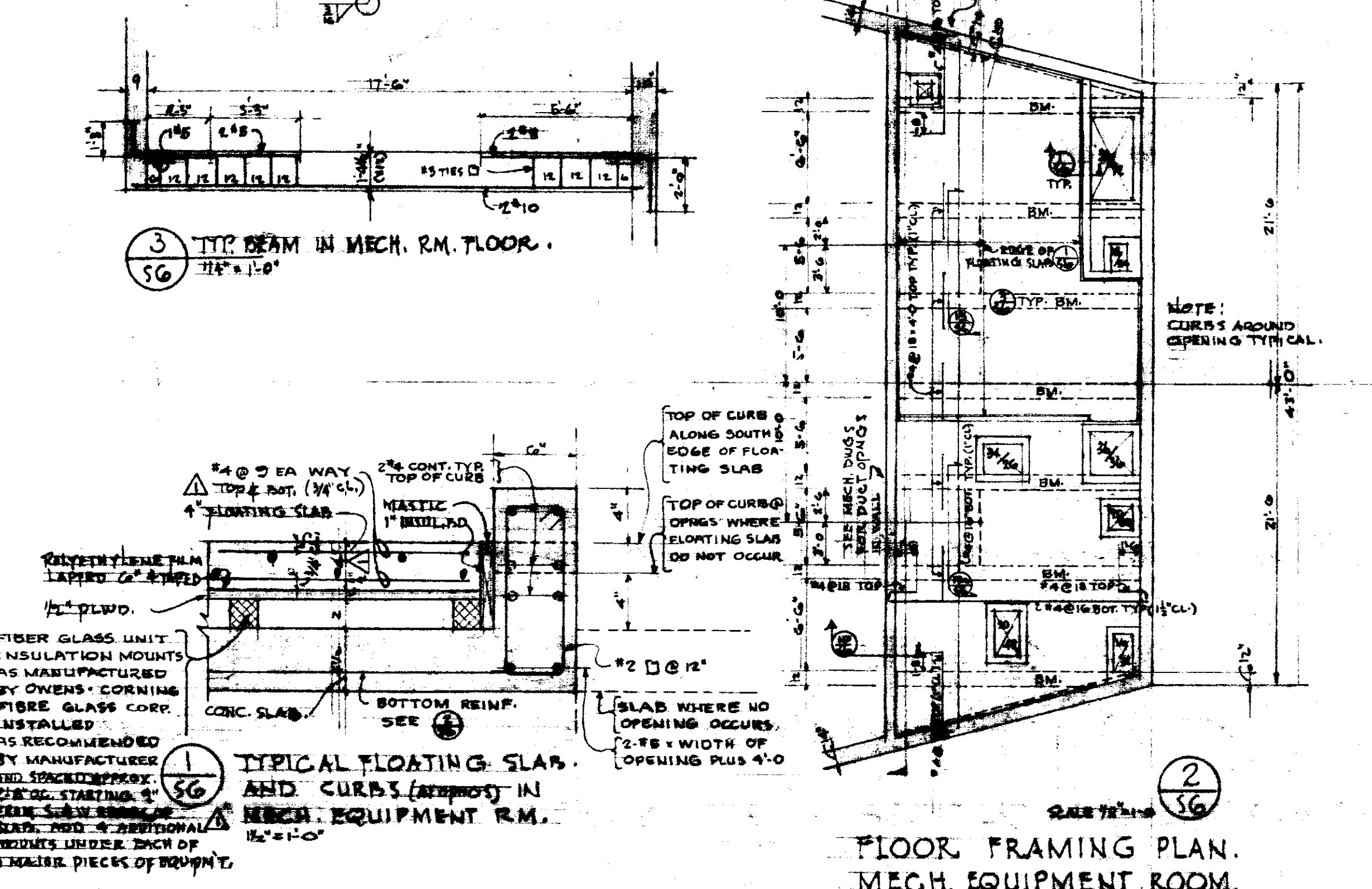
WEST WALL OF LECTURE HALL FAN RM. LOOKING WEST



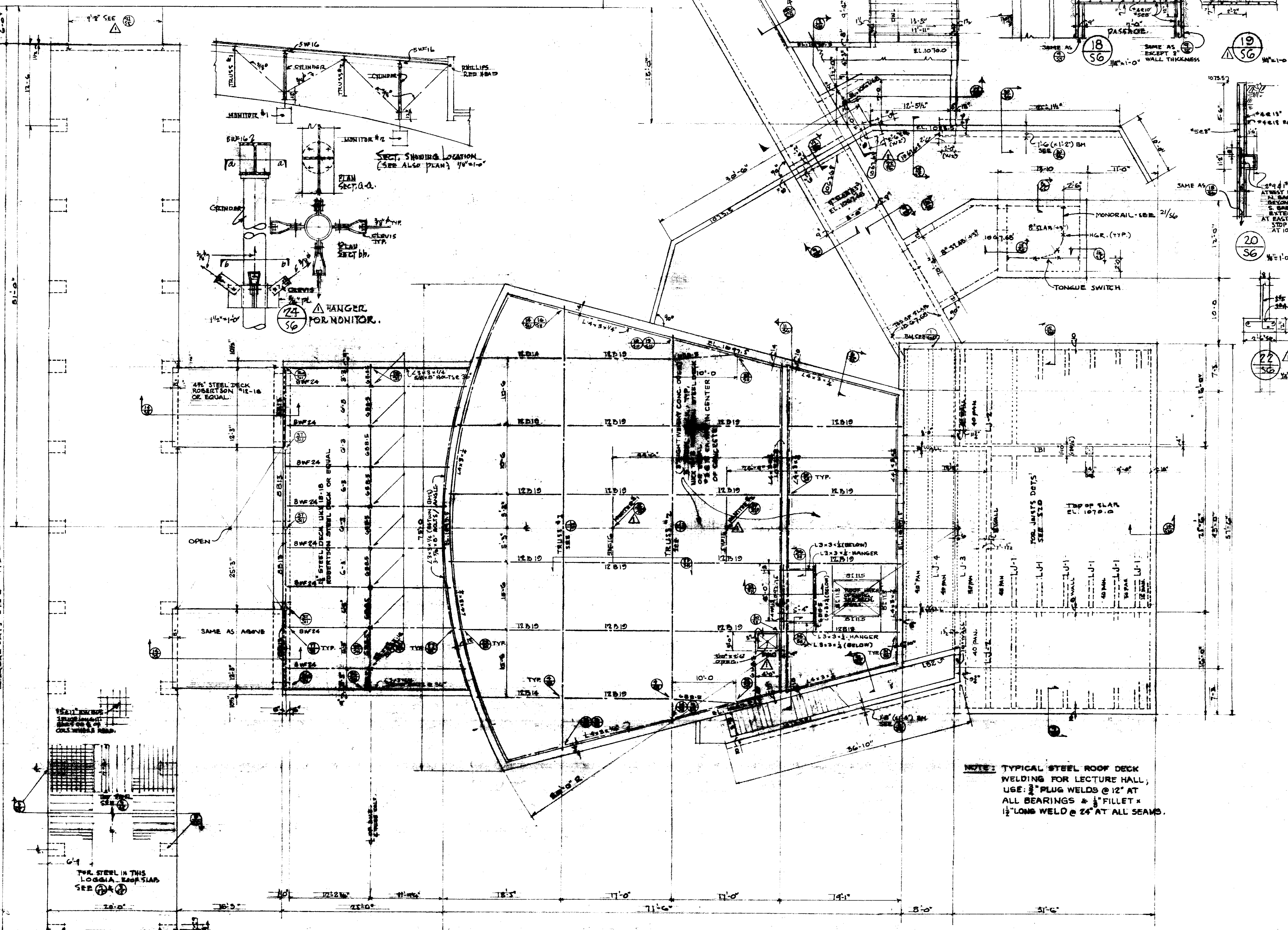
MONORAIL DETAIL (2000 LB. HOOK CAPY.)



TYP. BEAM IN MECH. RM. FLOOR.

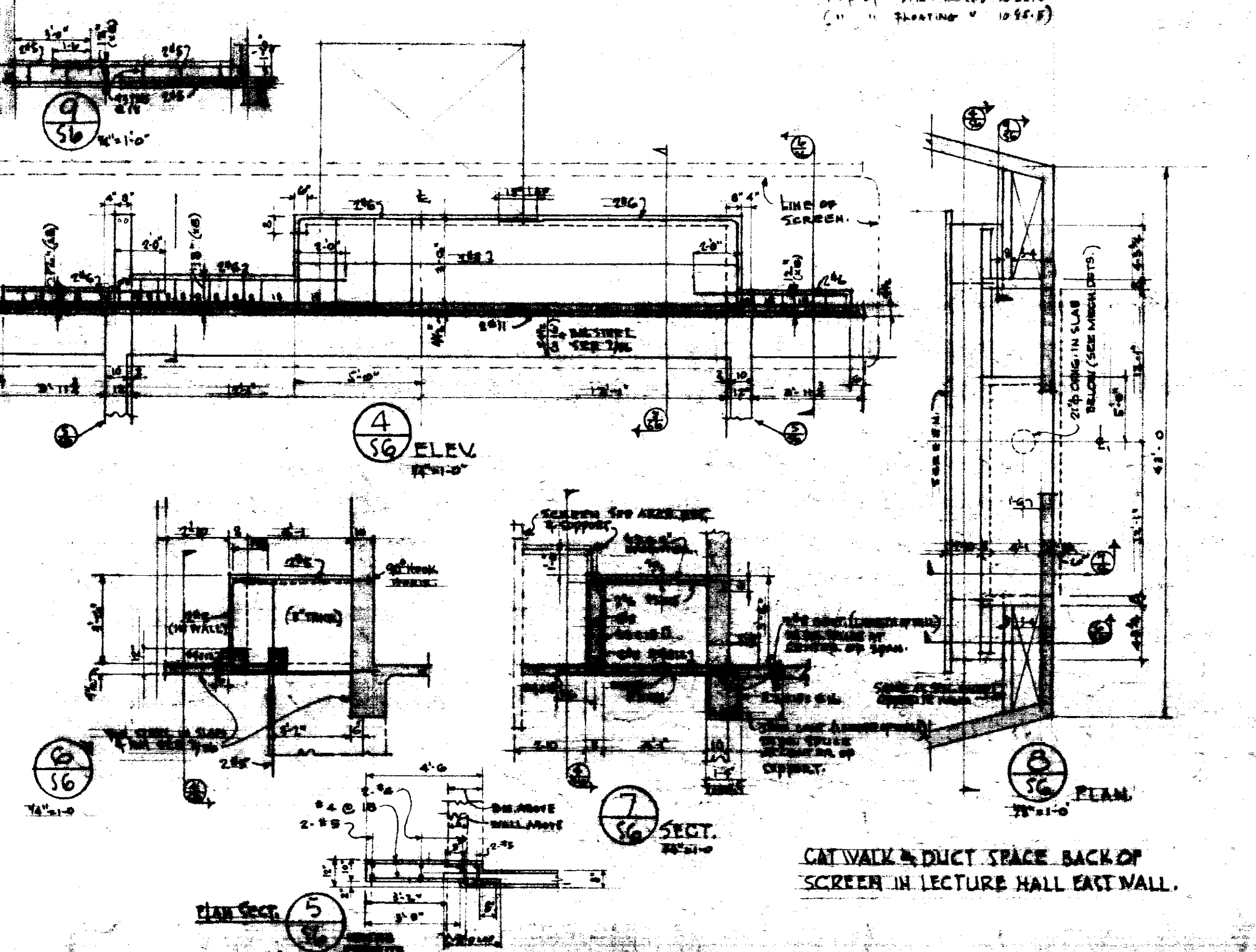


FLOOR FRAMING PLAN, MECH. EQUIPMENT ROOM.

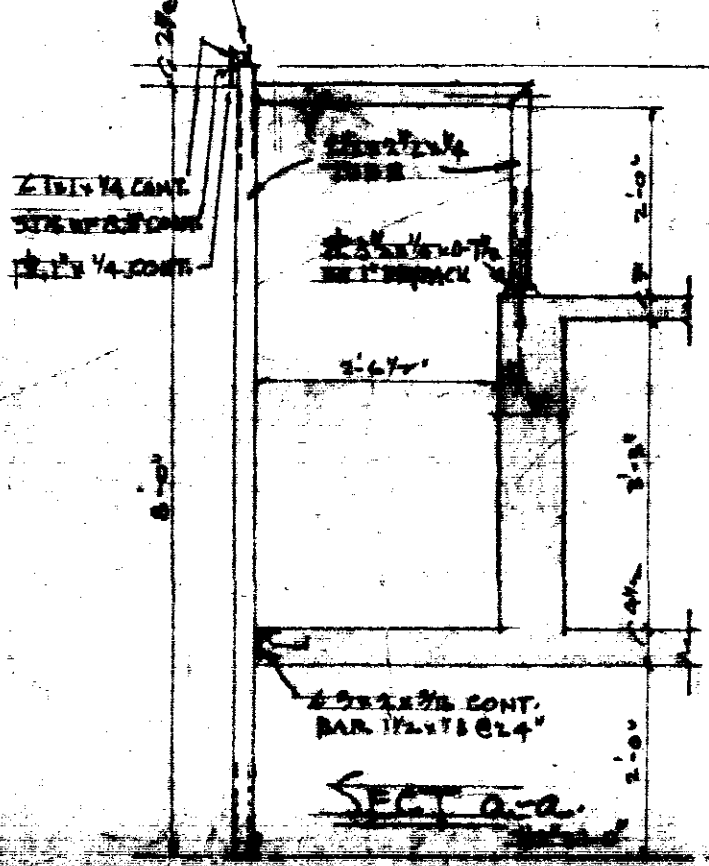


LECTURE HALL - ROOF FRAMING PLAN

SCALE 7/8" = 1'-0"



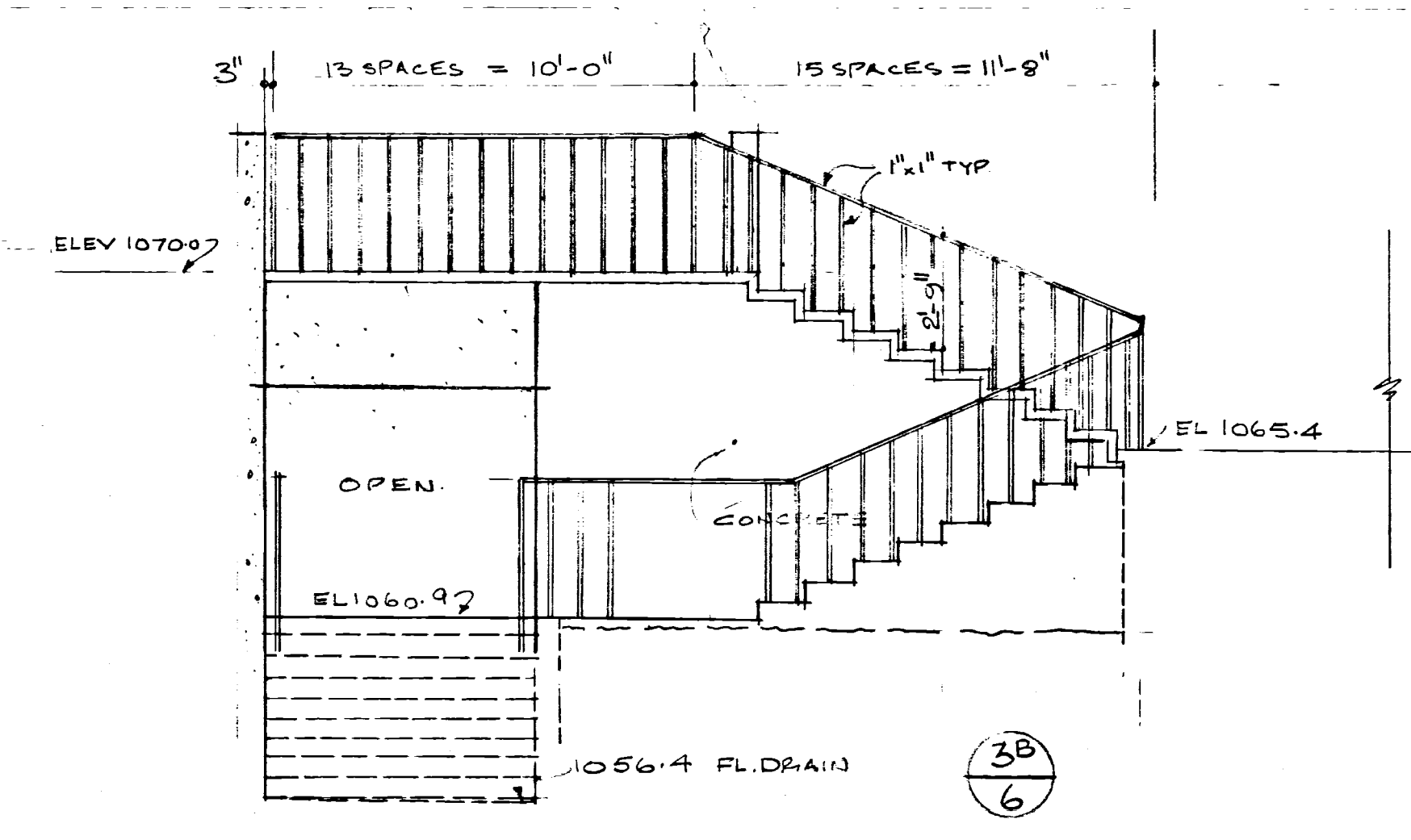
GATE WALK IN DUCT SPACE BACK OF SCREEN IN LECTURE HALL EAST WALL.



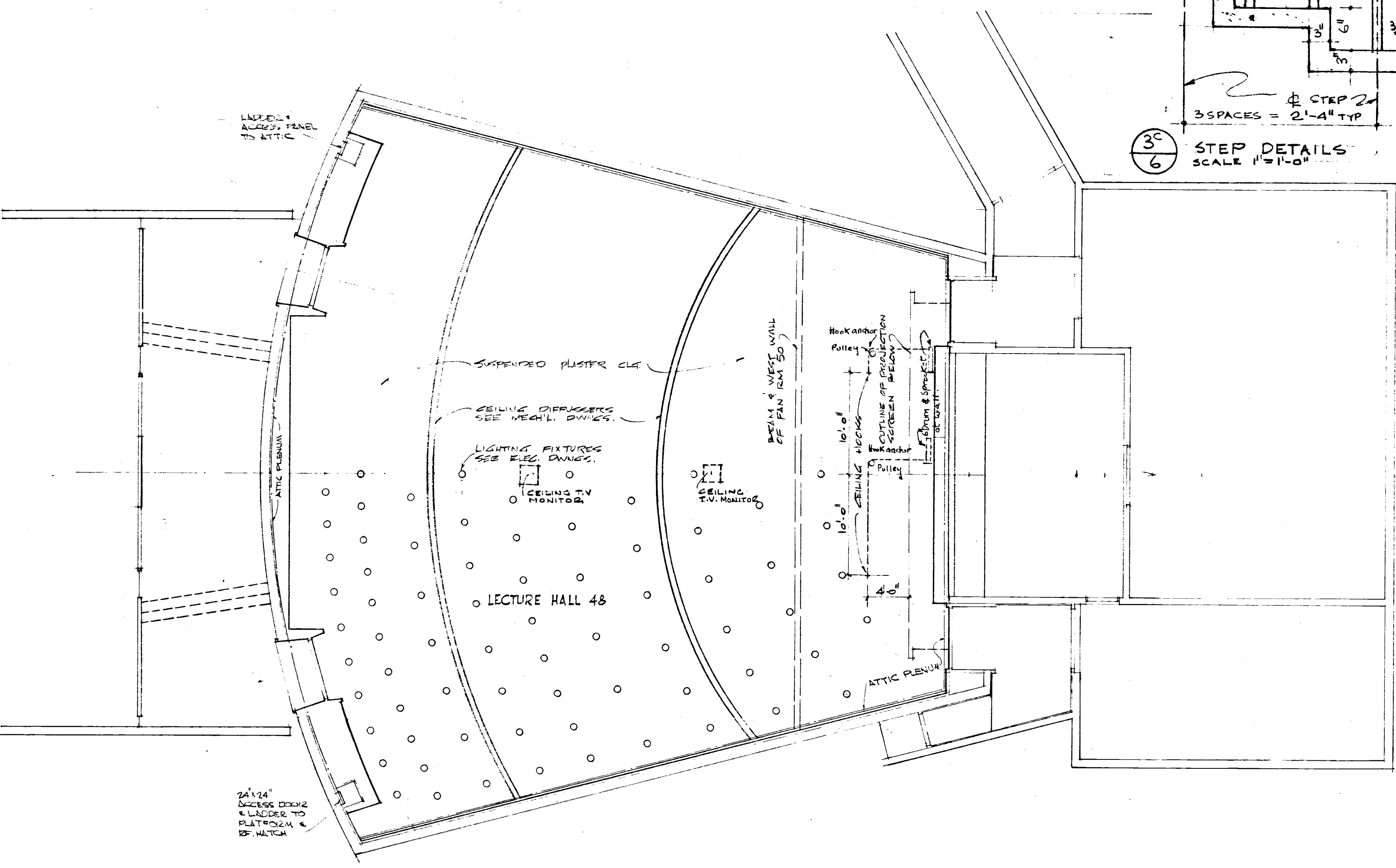
LECTURE HALL SCREEN

NOTE: TYPICAL STEEL ROOF DECK WELDING FOR LECTURE HALL, USE 3/8" PLUG WELDS @ 12" AT ALL BEARINGS & 1/2" FILLET & 1/2" LONG WELD @ 24" AT ALL SEAMS.

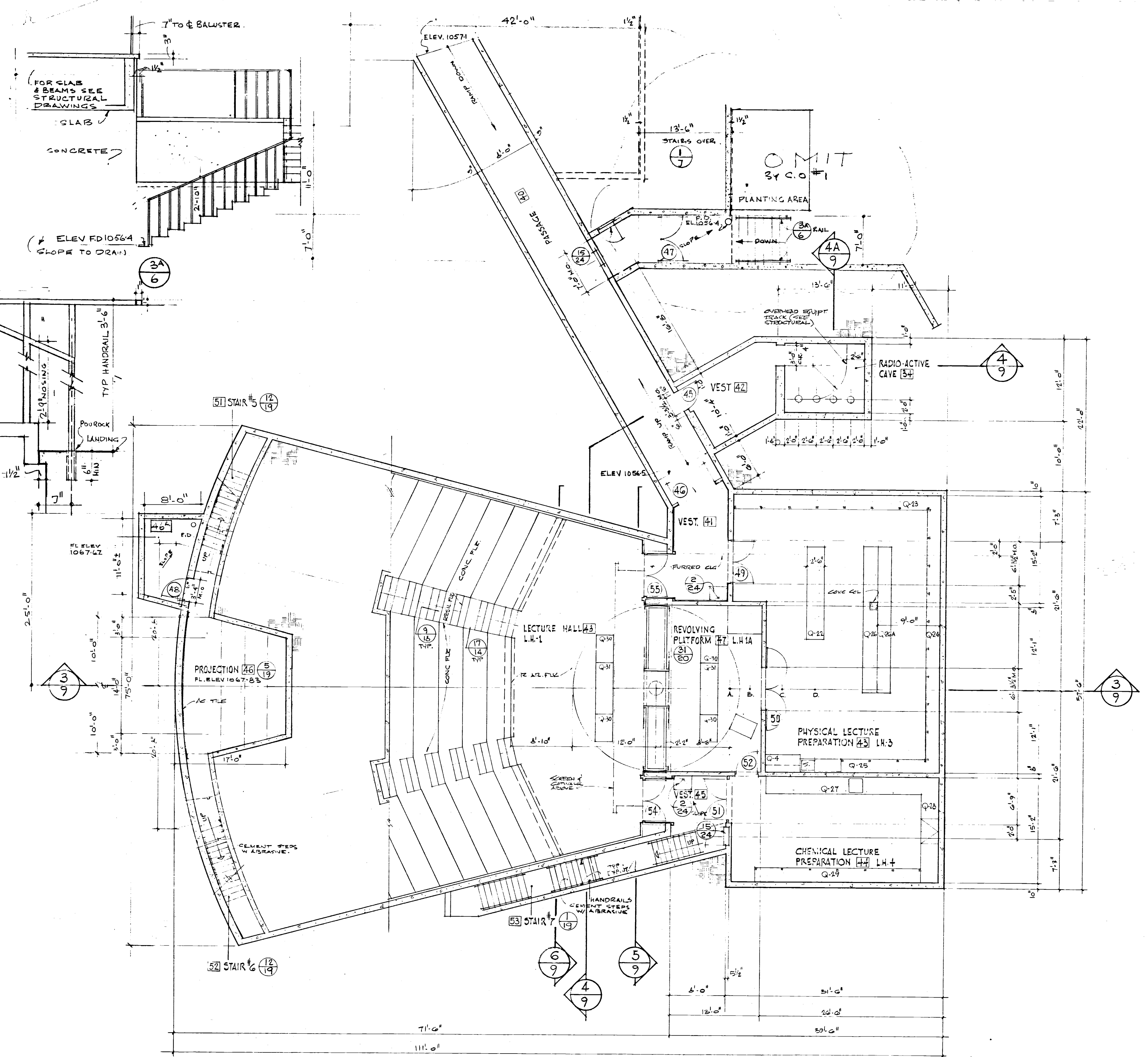




3 STAIR #9 DETAILS (WROUGHT 120N GALVANIZED & PAINTED RAILS; ALL WELDS GROUND SMOOTH.)  
SCALE 1/4" = 1'-0"

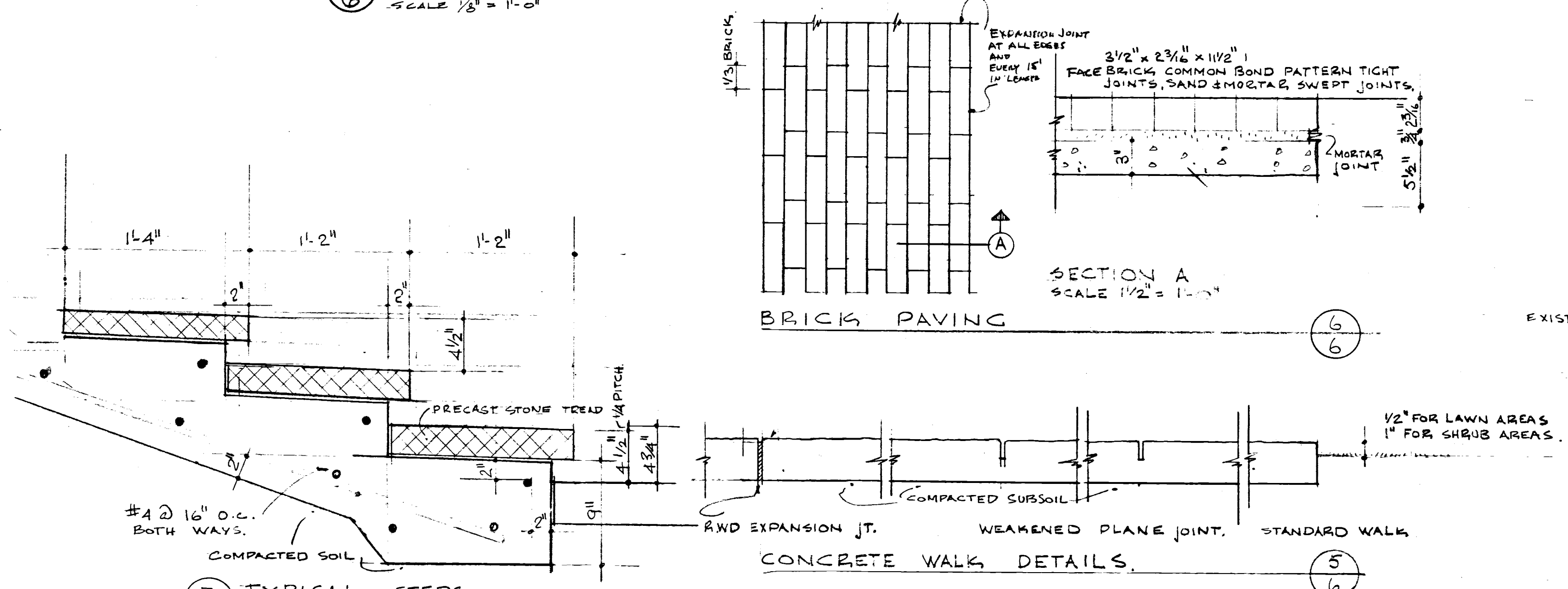


35 STEP DETAILS  
SCALE 1/2" = 1'-0"

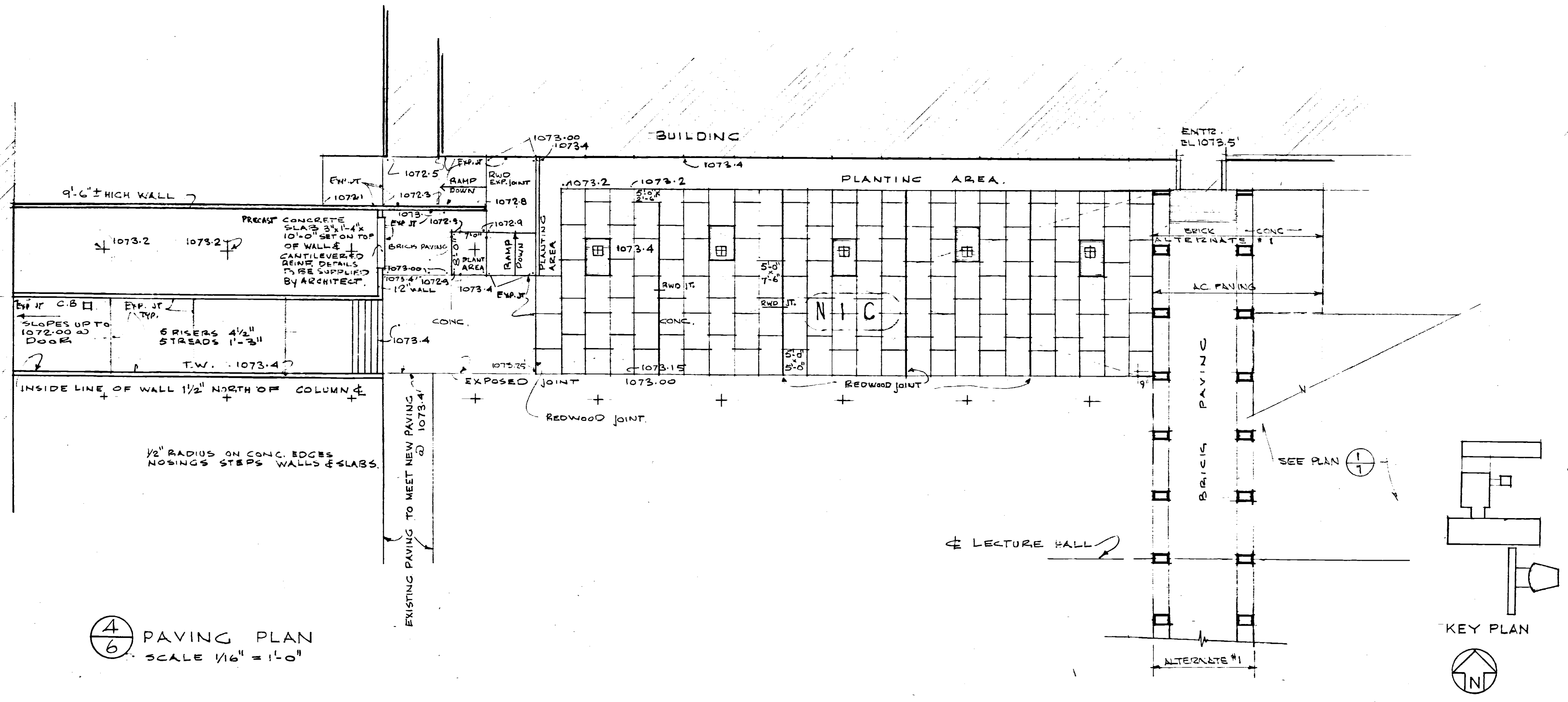


1 LOWER LECTURE HALL PLAN  
SCALE 1/8" = 1'-0"

2 REFLECTED CEILING PLAN  
SCALE 1/8" = 1'-0"



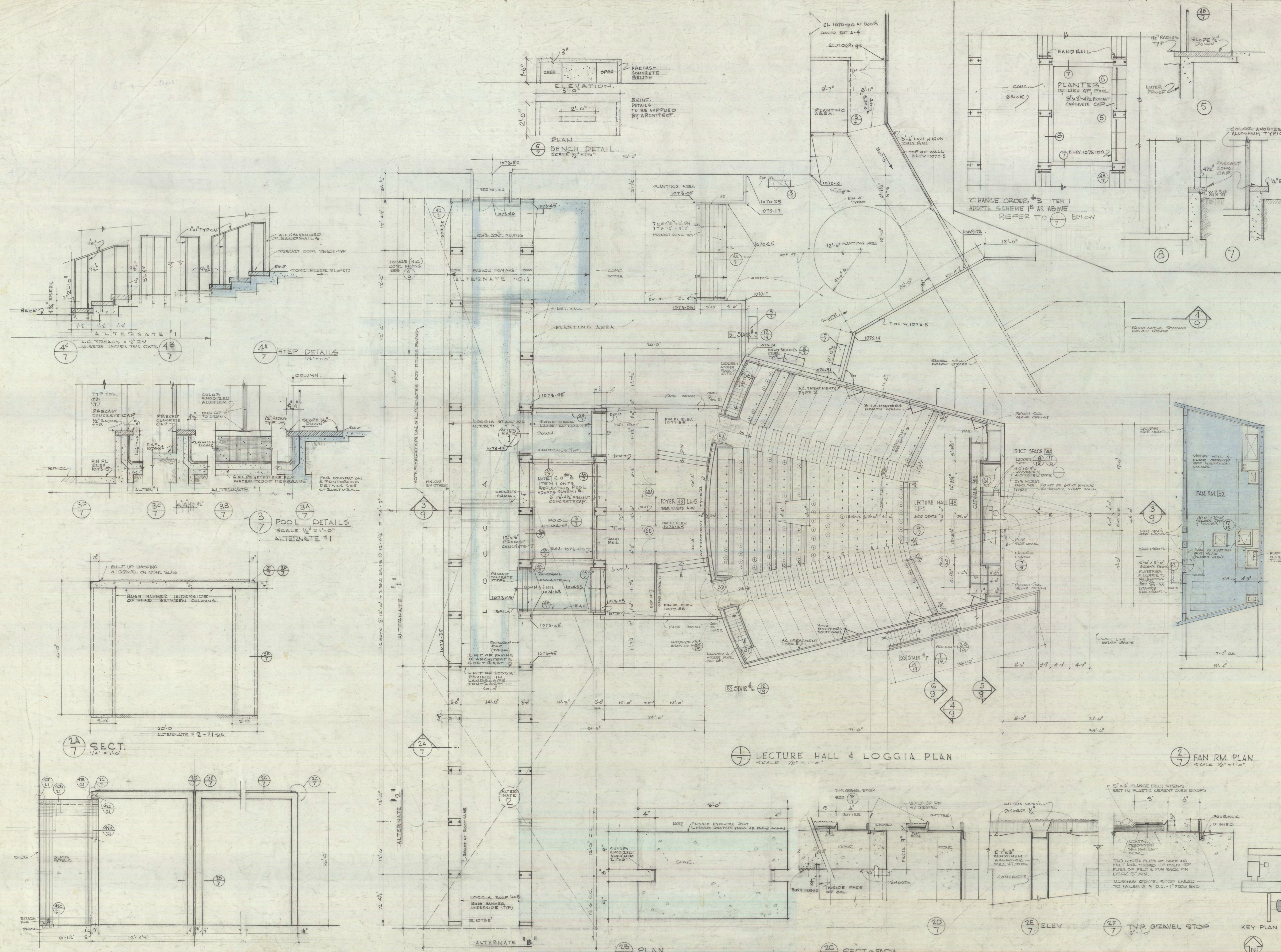
7 TYPICAL STEPS  
SCALE 1/2" = 1'-0"



4 PAVING PLAN  
SCALE 1/16" = 1'-0"

PHYSICAL SCIENCES UNIT NO. 3 UNIVERSITY OF CALIFORNIA RIVERSIDE  
 ARCHITECT MAYNARD LYNDON F.A.I.A. 3460 WILSHIRE BOULEVARD + SUPERVISING ARCHITECT GEORGE VERNON RUSSELL F.A.I.A. AND ASSOCIATES  
 CONSULTANTS:  
 LLOYD DYSLAND  
 LLOYD DYKES  
 LLOYD WEAVER  
 ROBERT LEONARD  
 JOYCE EARLEY  
 PROJECT 905065  
 DATE 7/17/65  
 REVISIONS  
 FILE 6110  
 SHEET NUMBER  
 L-86





LOGGIA & LECTURE HALL PLAN A7R



**17 SECTION**  
 1/4" = 1'-0"  
 PROJECTION RM. 46 EAST ELEVATION

**18 CEILING**  
 1/4" = 1'-0"  
 AC TILE OVER PLAS. EXP. CONC. CHANNELS @ 1'-0" ON CENTER TO STEEL DECK. PLATE GLASS.

**19 CEILING**  
 1/4" = 1'-0"  
 PLAS. CLG. GLASS MASC.

**20 DOOR**  
 1/4" = 1'-0"  
 CHAMFER DOOR BL. W/REINFORCED CONCRETE FRAME. WOODWORK.

**21 SILL**  
 1/4" = 1'-0"  
 MET. CHANNEL. MET. CHANNEL.

**22 SILL**  
 1/4" = 1'-0"  
 MET. CHANNEL. MET. CHANNEL.

**23 CEILING**  
 1/4" = 1'-0"  
 AC TILE OVER PLAS. EXP. CONC. CHANNELS @ 1'-0" ON CENTER TO STEEL DECK. PLATE GLASS.

**24 JAMB**  
 1/4" = 1'-0"  
 1/2" x 1/2" WELDED TUBE. 1/2" x 1/2" TUBE WELD TO 2" x 2" x 1/8" TUBE.

**25 JAMB**  
 1/4" = 1'-0"  
 PLYSTER. ANODIZED ALUMINUM TR. 1/2" x 1/2" WELDED TUBE.

**26 JAMB**  
 1/4" = 1'-0"  
 METAL W/ST. SCREWS (C). AT EACH JAMB AT PIED 2" x 2" WOOD PANEL ABOVE 2" x 2" WOOD DECK.

**27 JAMB**  
 1/4" = 1'-0"  
 AT CORNER OFF PIED WOOD PANEL.

**12 STAIR # 5**  
 STAIR # 6 OPP. HAND SIMILAR  
 1/4" = 1'-0"  
 PROVIDE 2-5/8" x 8" PLATE, 4 4-2 1/4" PLATE @ GLASS PANELS.

**13 DOOR PULL PLAN**  
 1/4" = 1'-0"  
 VOLUNT. DOOR PULL ONLY AT SERVICE ENTRANCE.

**14 PANEL**  
 1/4" = 1'-0"  
 1/2" x 1/2" WELDED TUBE. 1/2" x 1/2" TUBE WELD TO 2" x 2" x 1/8" TUBE.

**15 PLAN SECTION**  
 1/4" = 1'-0"  
 2 1/2" WOOD DOOR OR 1/2" PLATE.

**16 DOOR PULL ELEVATION**  
 1/4" = 1'-0"  
 SELF-ALIGNING TUBES - 90° OFFSET.

**19 SECTION**  
 1/4" = 1'-0"  
 PROJECTION RM. 46 NORTH ELEV. SOUTH SIMILAR.

**19 SECTION**  
 1/4" = 1'-0"  
 STAIR # 7 PLAN.

**2 STAIR # 7 PLAN ABOVE GRADE**  
 1/4" = 1'-0"  
 STAIR # 7 PLAN ABOVE GRADE.

**3 SOUTH ELEVATION**  
 1/4" = 1'-0"  
 SOUTH ELEVATION.

**4 SECTION**  
 1/4" = 1'-0"  
 SECTION.

**6 DESK COUNTER**  
 3/4" = 1'-0"  
 DESK COUNTER.

**19 PART. ELEV. NAME R. WALL FOYER**  
 1/4" = 1'-0"  
 PART. ELEV. NAME R. WALL FOYER.

**19 EXT. ELEV. 49**  
 1/4" = 1'-0"  
 EXT. ELEV. 49.

**19 EXT. ELEV. 41**  
 1/4" = 1'-0"  
 EXT. ELEV. 41.

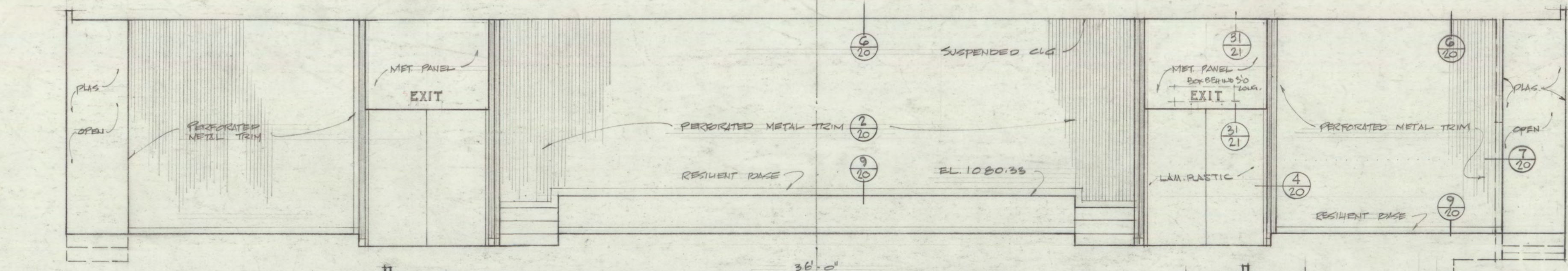
**19 EXT. ELEV. 45**  
 1/4" = 1'-0"  
 EXT. ELEV. 45.

**19 REVOLVING PLATFORM 47**  
 1/4" = 1'-0"  
 REVOLVING PLATFORM 47.

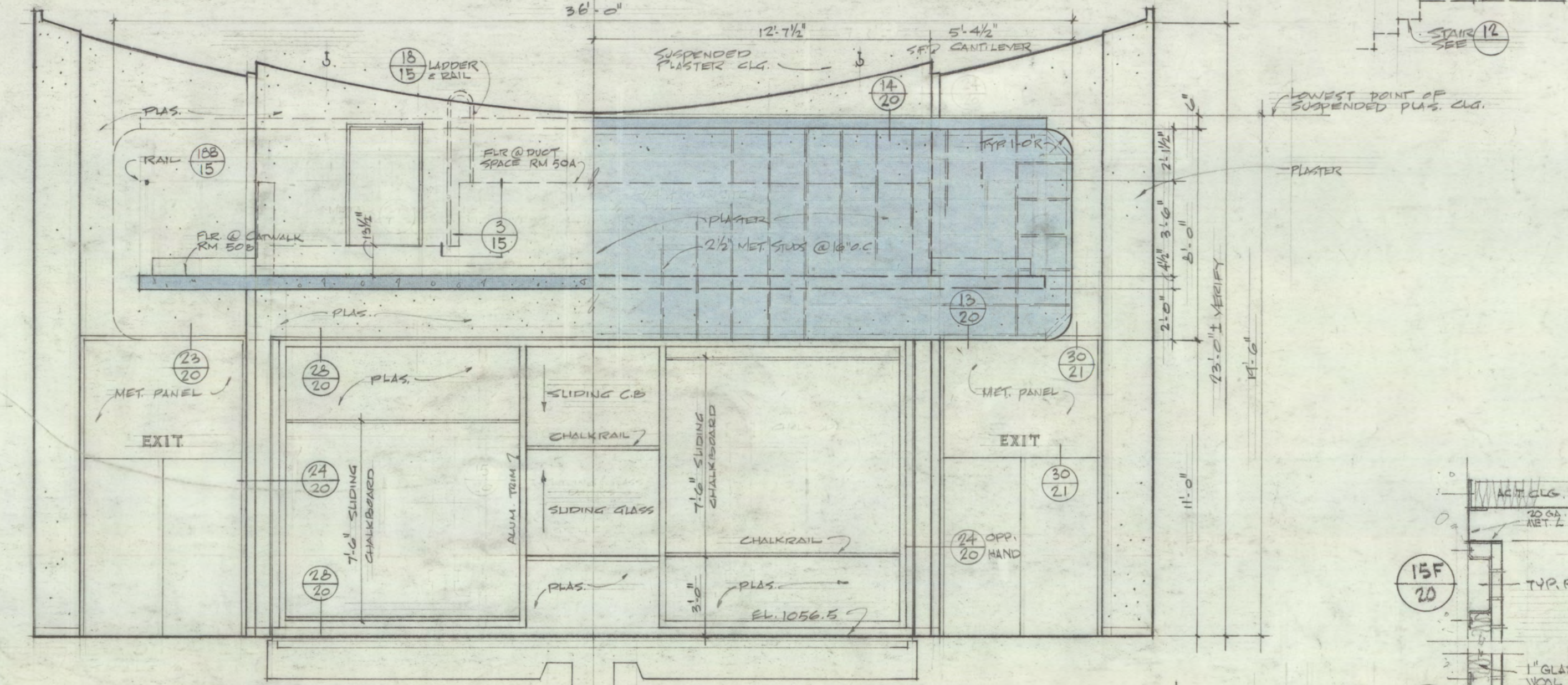
**19 PHYSICAL LECT. 43**  
 1/4" = 1'-0"  
 PHYSICAL LECT. 43.

**19 CHEM. LECT. 44**  
 1/4" = 1'-0"  
 CHEM. LECT. 44.

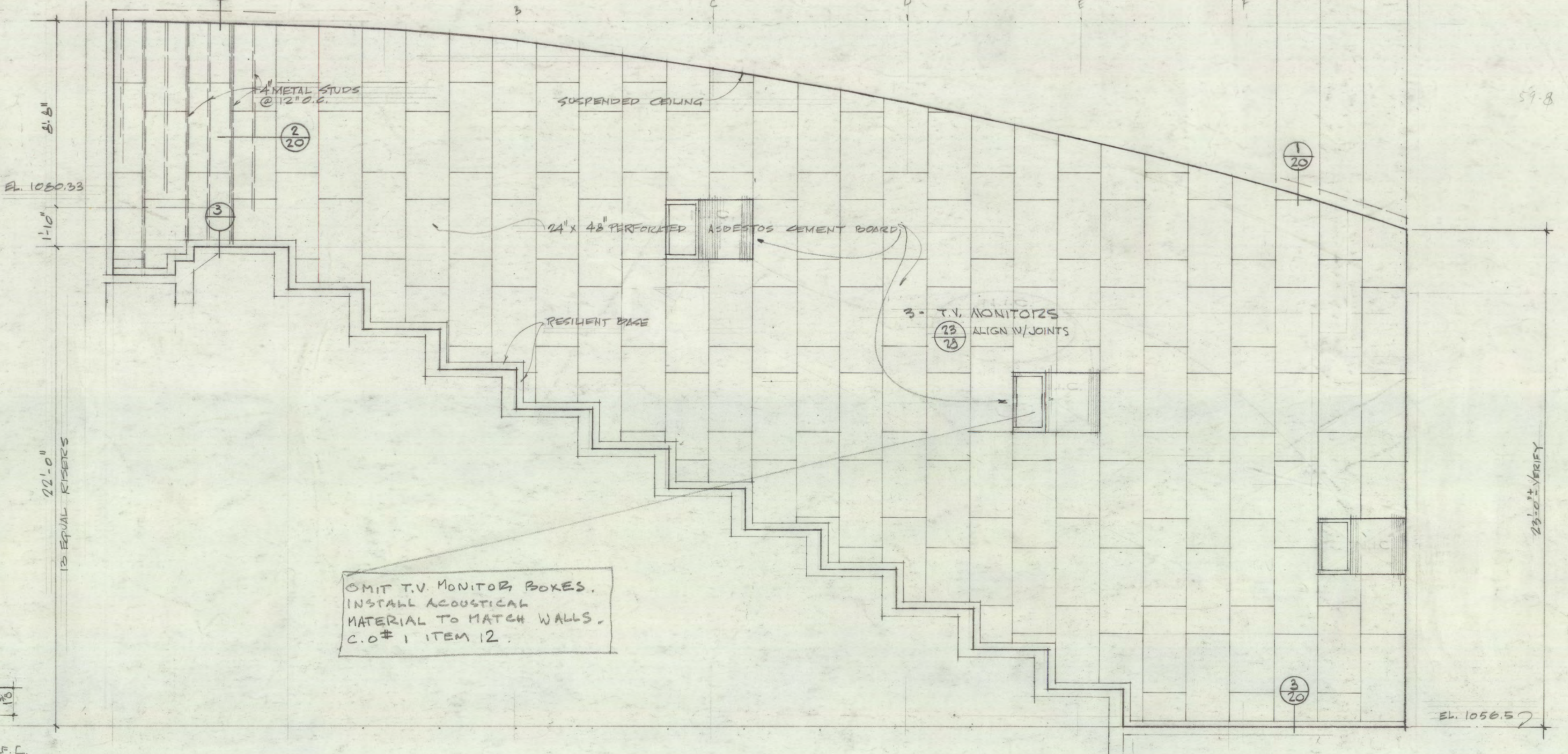




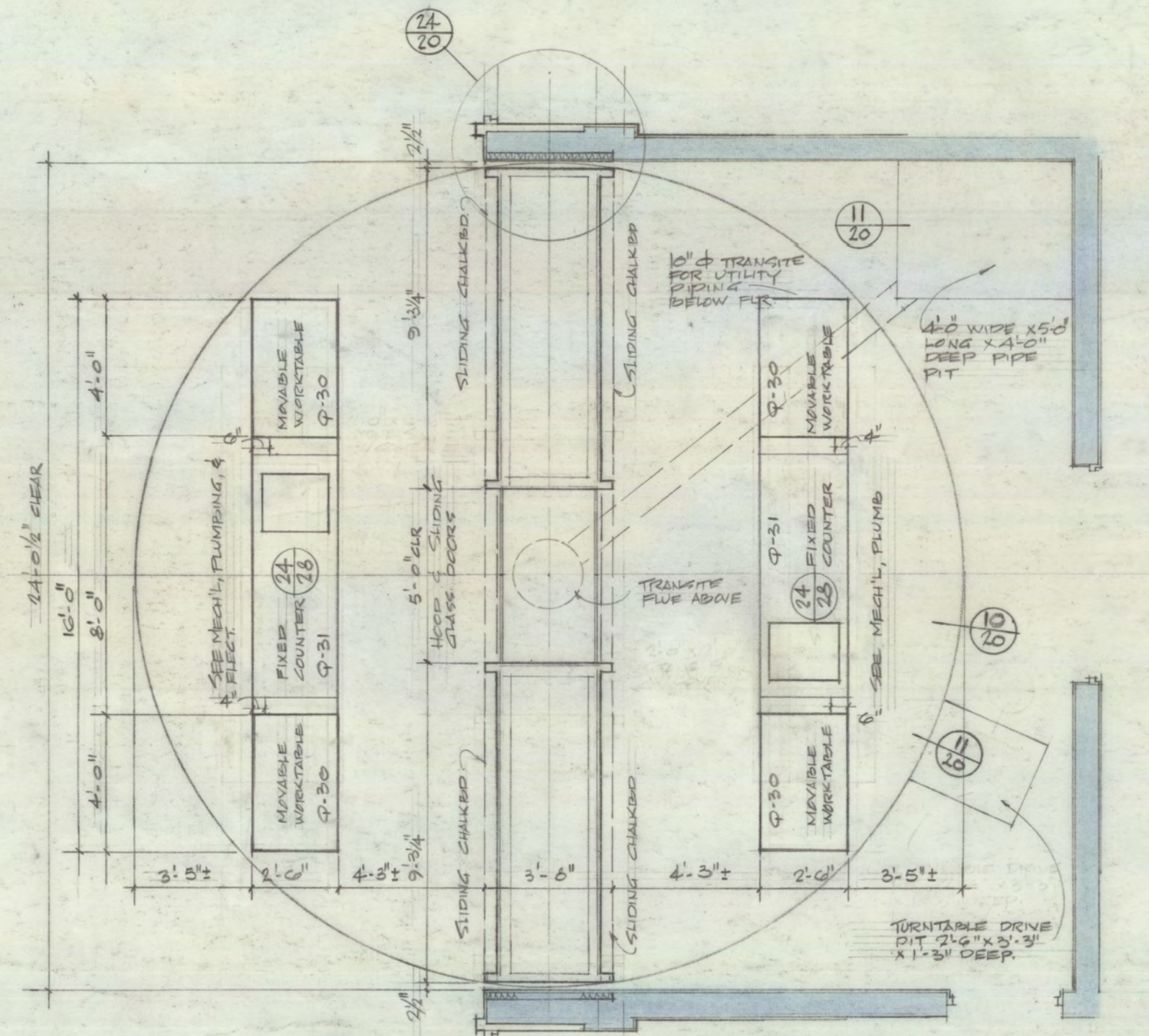
29 WEST ELEV. SCALE 1/4" = 1'-0"



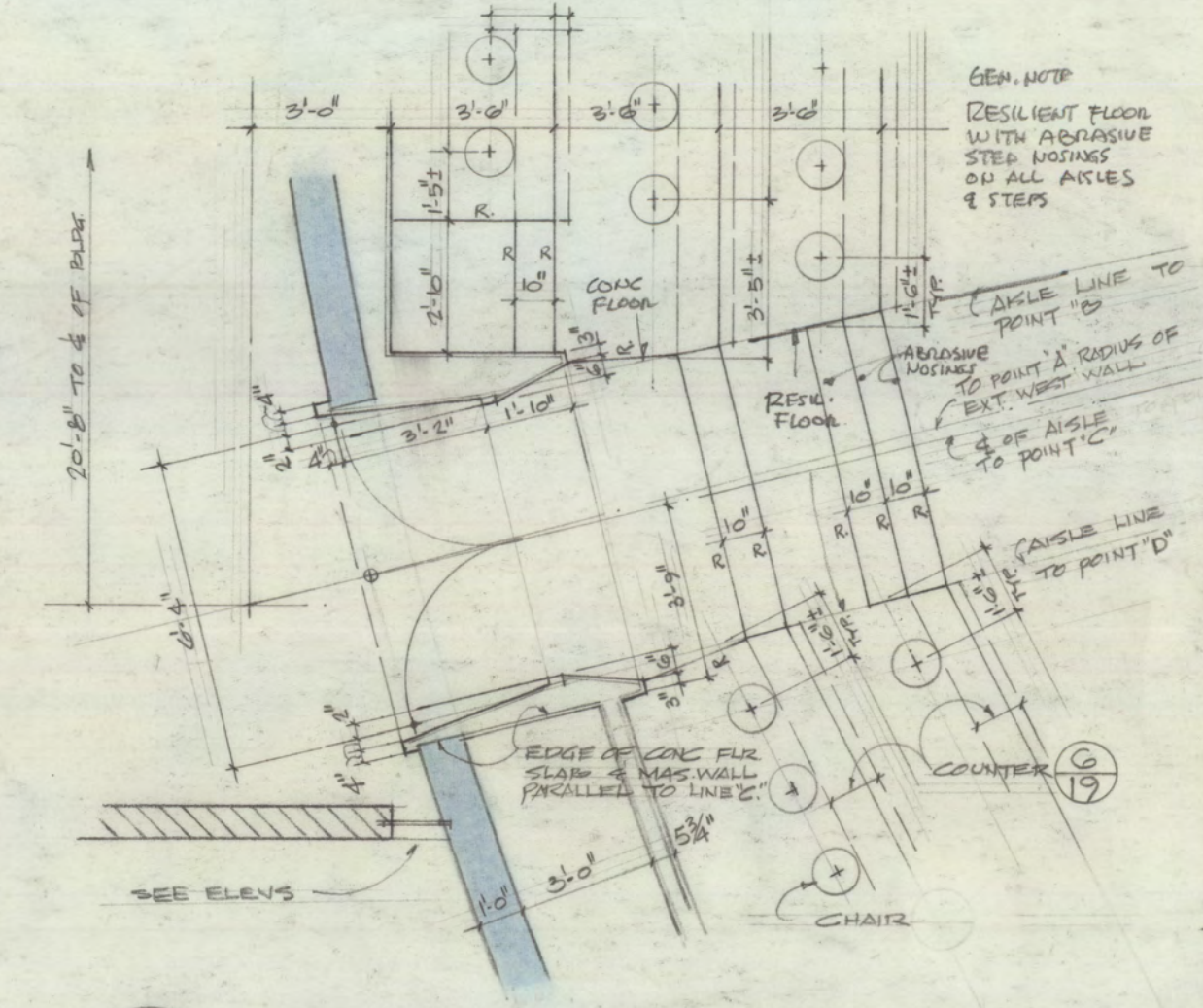
30 EAST ELEV. SCALE 1/4" = 1'-0"



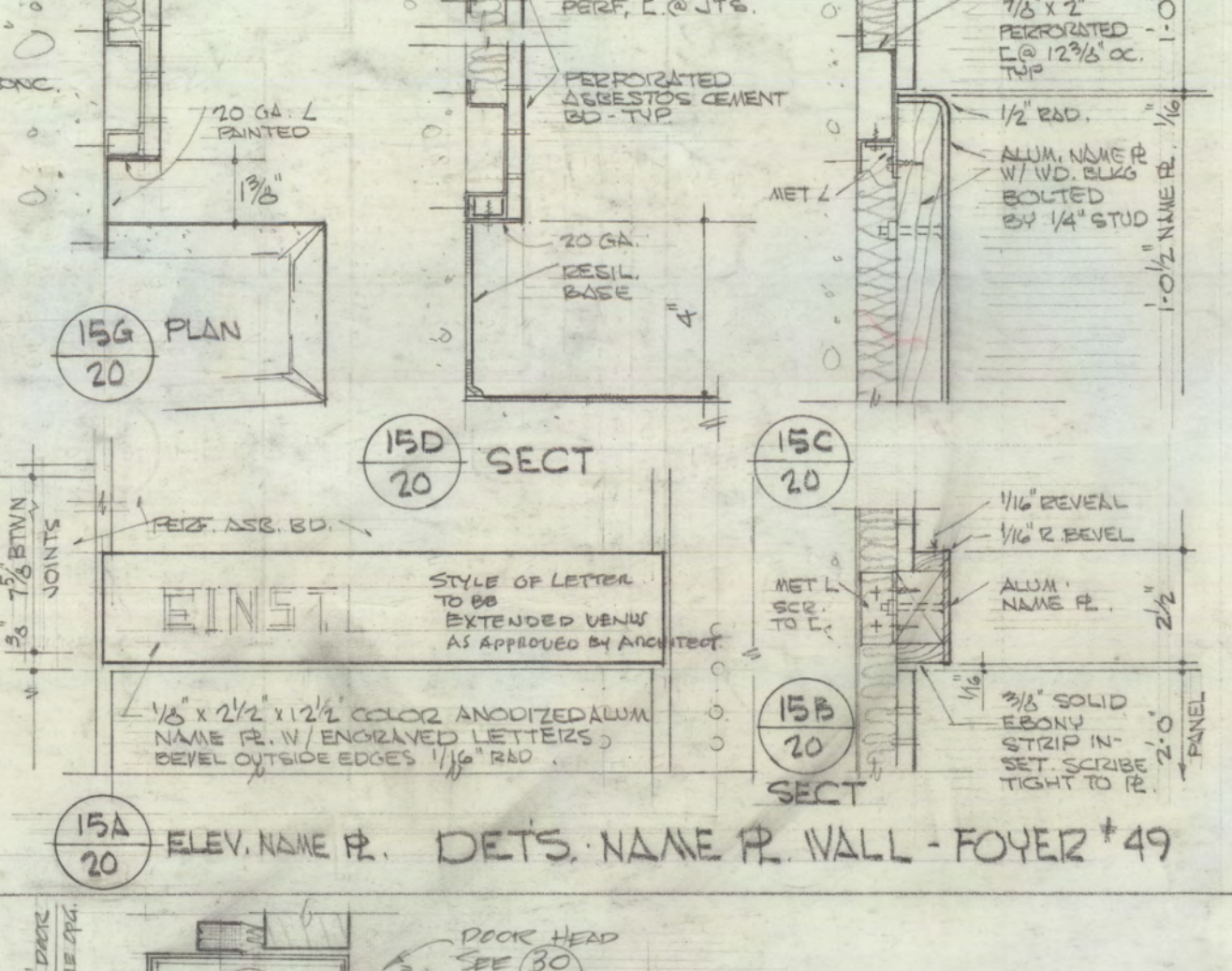
16 NORTH ELEVATION - SOUTH SIMILAR OPPOSITE HAND LECTURE HALL SCALE 1/4" = 1'-0"



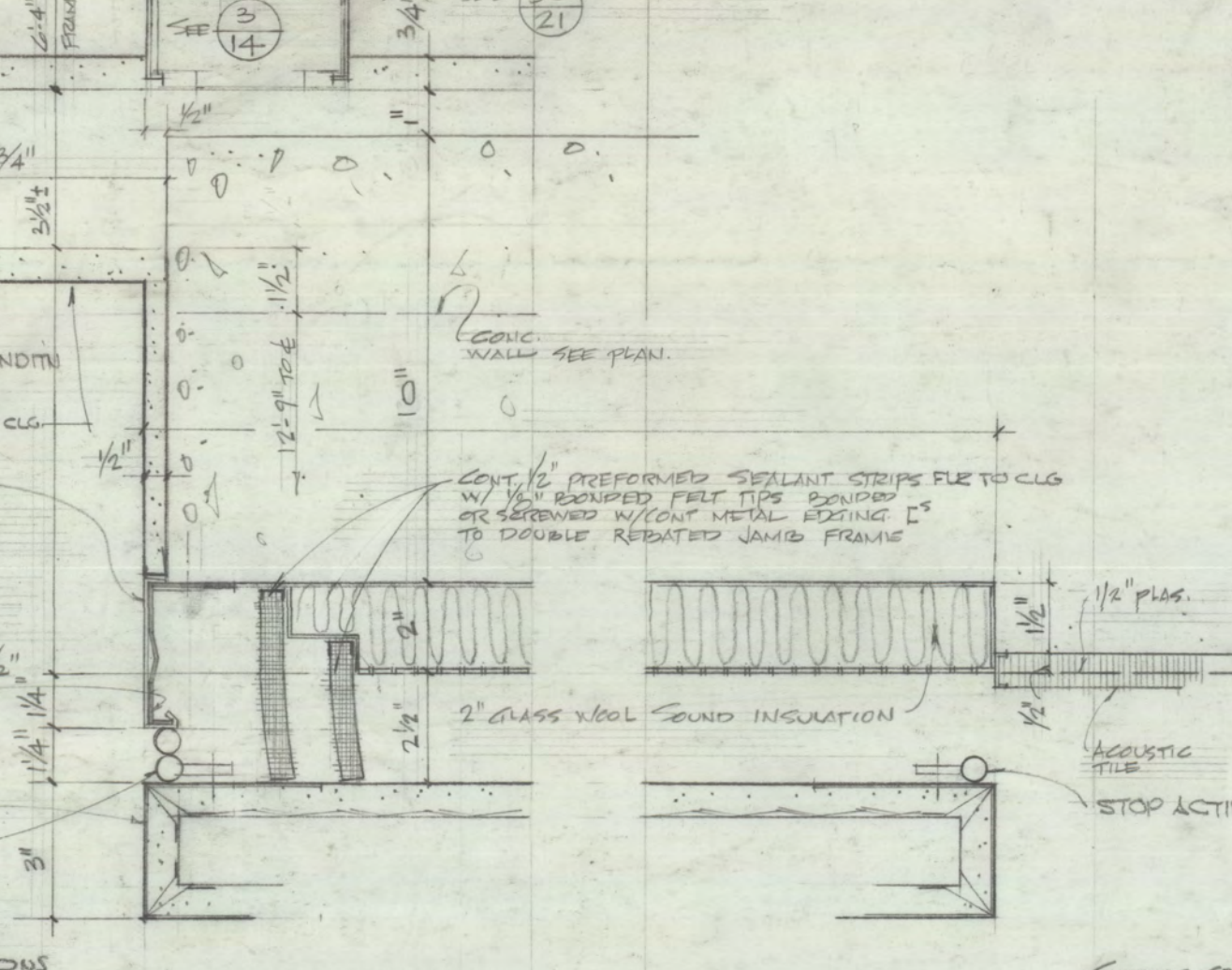
31 REVOLVING PLATFORM PLAN SCALE 1/4" = 1'-0"



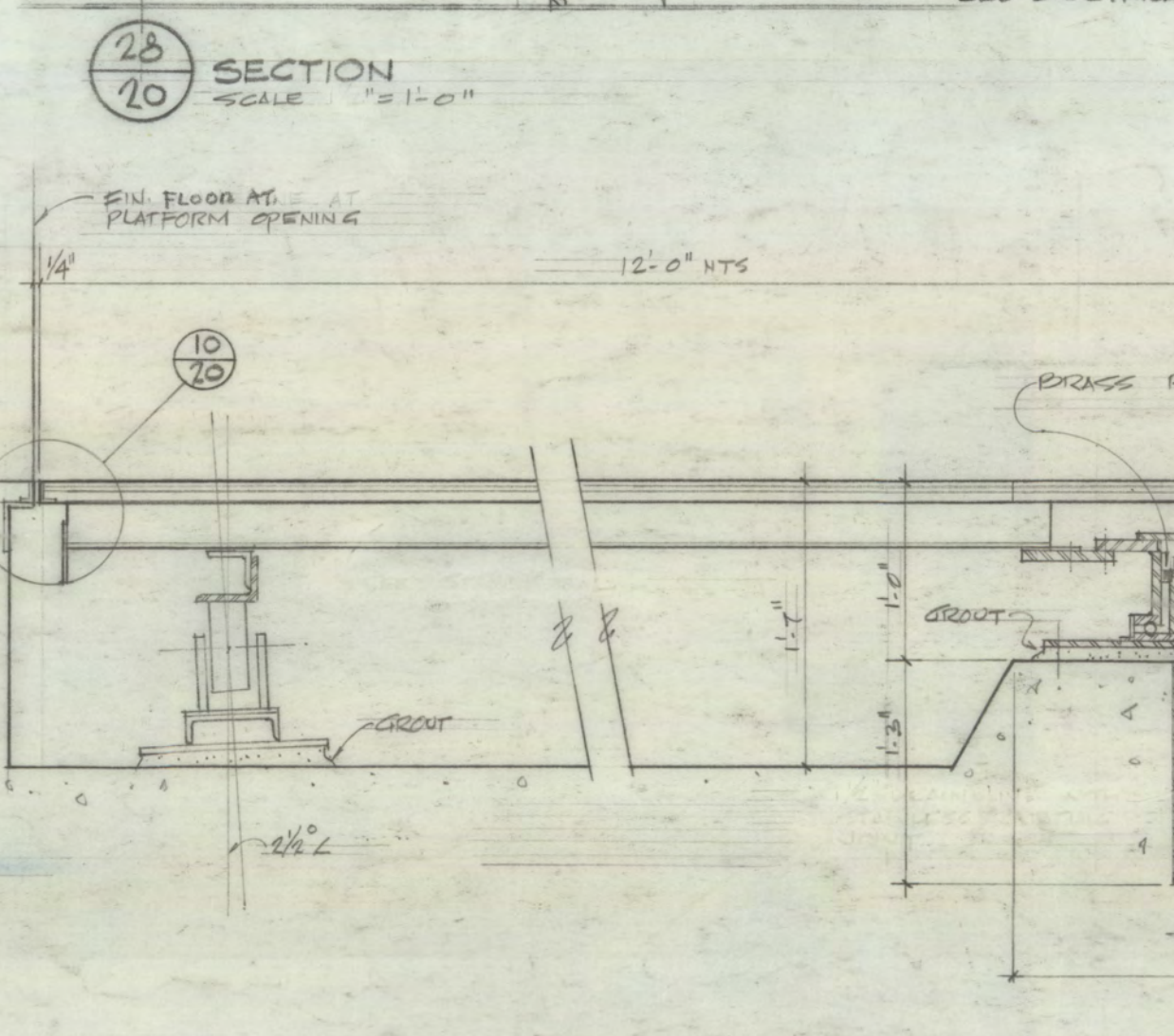
26 ENTRANCE PLAN - TYP. SCALE 1/4" = 1'-0"



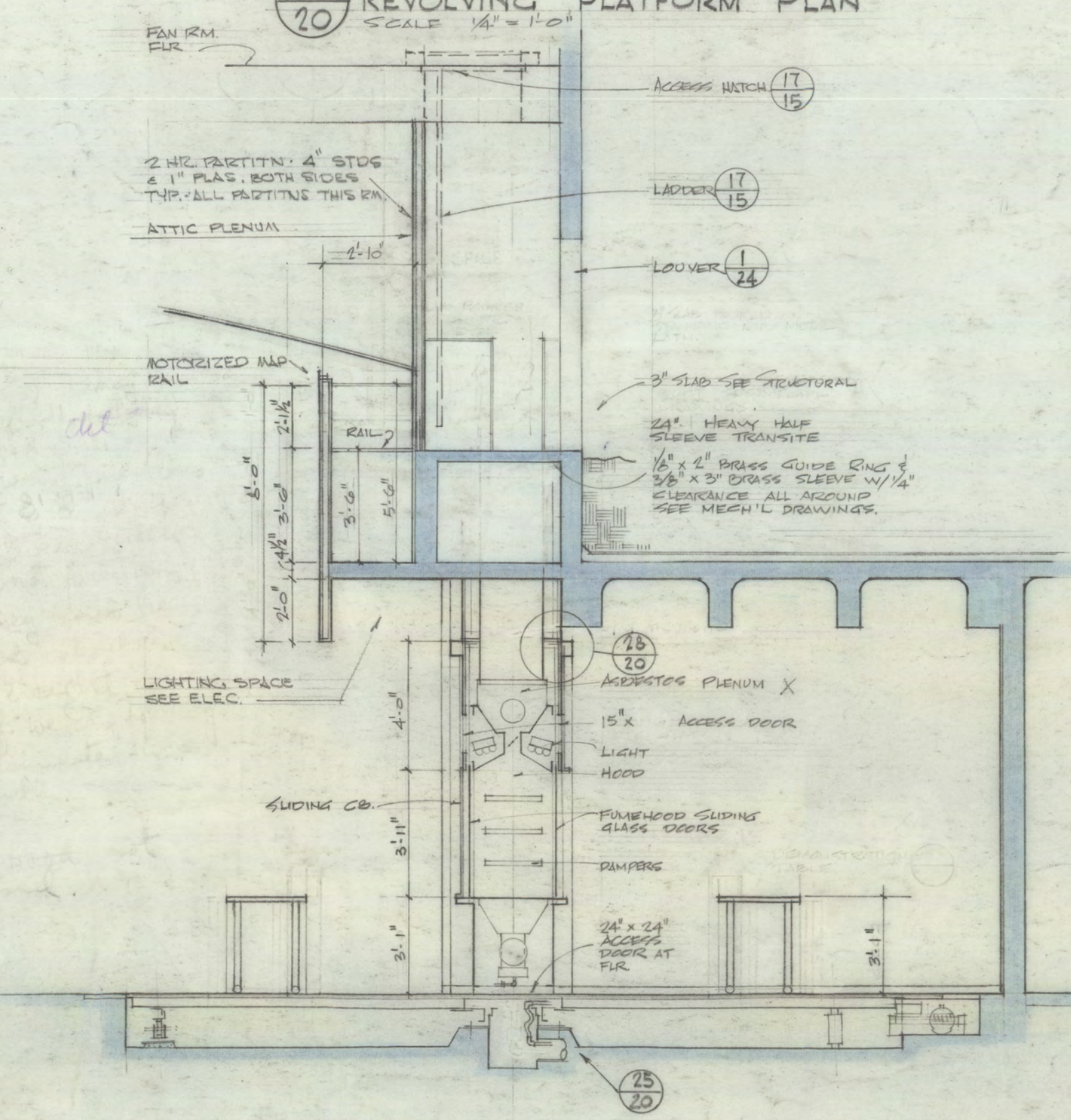
15A ELEV. NAME P. DETS. NAME P. WALL - Foyer +49



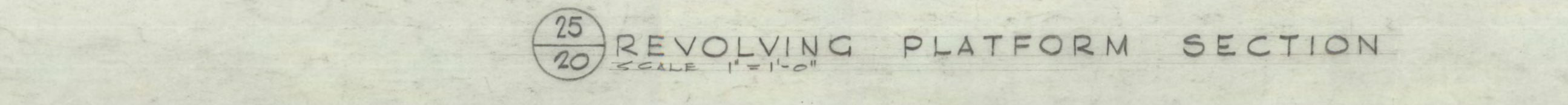
24 PLAN SECTION



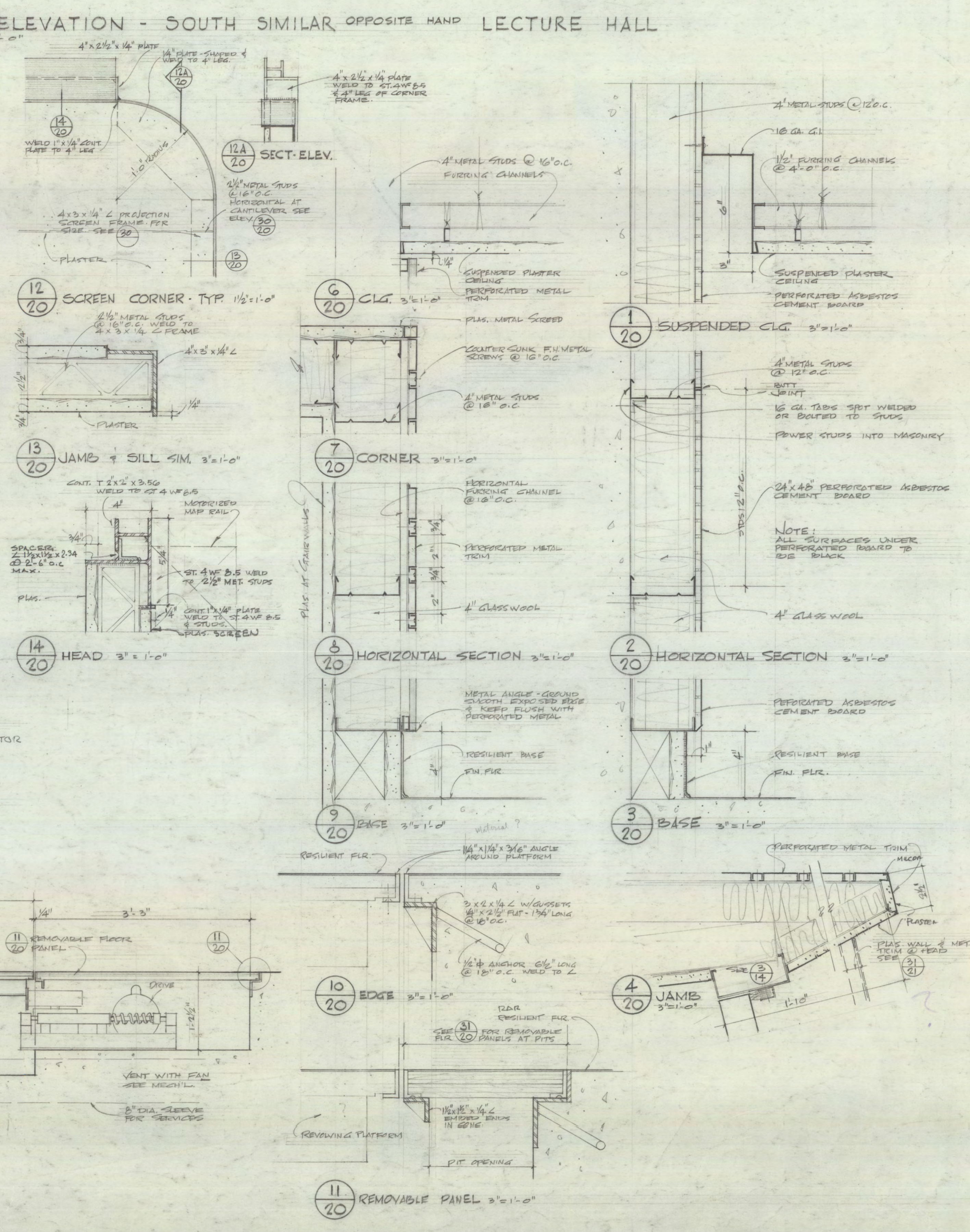
28 SECTION SCALE 1/4" = 1'-0"



32 HOOD & PLATFORM SECTION SCALE 1/4" = 1'-0"



25 REVOLVING PLATFORM SECTION SCALE 1/4" = 1'-0"





**GENERAL NOTES:**

1. ALL ELECTRICAL INSTALLATIONS SHALL BE IN ACCORDANCE WITH LATEST NATIONAL ELECTRICAL CODE ADOPTED BY LOCAL AUTHORITIES AND ALL LOCAL ORDINANCES.
2. ALL RELAYS, TIMECLOCKS, ETC. SHALL BE MOUNTED IN A HINGED, LOCKABLE CABINET ADJACENT TO RESPECTIVE PANEL.
3. ALL JUNCTION BOXES SHALL BE LABELED WITH RESPECTIVE CIRCUIT NUMBERS.
4. ALL EQUIPMENT SHALL BE LISTED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY.
5. PROVIDE CABLE SUPPORTS ON ALL VERTICAL RUNS.
6. ALL WIRING SHALL BE COPPER TYPE THIN AND/OR THIN UNLESS OTHERWISE NOTED AND SHALL BE INSTALLED IN EMT CONDUIT.
7. ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE RATED TO HANDLE MAXIMUM AVAILABLE FAULT CURRENT.
8. ALL FUSES SHALL BE CURRENT LIMITING TYPE RATED FOR A MINIMUM OF 200,000 A.I.C. AND SHALL BE CLASS RK1 UP TO 600 AMPERES.
9. ALL ELECTRICAL DEVICES OUTSIDE SHALL BE WEATHERPROOF.
10. ALL EMPTY CONDUITS SHALL HAVE PULL STRINGS INSTALLED.
11. ALL PANELS SHALL HAVE A HINGED DOOR AND BOLT-ON TYPE CIRCUIT BREAKERS, AND SHALL HAVE TYPED INDEX CARDS WITH DESIGNATIONS AS DETERMINED BY THE OWNER. PANELBOARDS AND CIRCUIT BREAKERS SHALL BE RATED FOR MAXIMUM AVAILABLE FAULT CURRENT AT THE PANELS.
12. BRANCH CIRCUIT OVERCURRENT PROTECTION DEVICES SHALL BE 20 AMPERE CIRCUIT BREAKERS RATED AT 10,000 AIC FOR 120/208 VOLTS, UNLESS OTHERWISE NOTED.
13. ELECTRICAL CONTRACTOR SHALL VISIT SITE AND FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS PRIOR TO BIDDING.
14. ALL WORK SHALL BE NEW UNLESS OTHERWISE INDICATED.
15. SITE SHALL BE LEFT CLEAN, FREE FROM DEBRIS AND ACCEPTABLE TO THE OWNER.
16. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR.
17. COLOR OF DEVICES AND PLATES SHALL BE VERIFIED WITH UCR.
18. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATIONS AND ROUTING TO BE DETERMINED IN THE FIELD TO SUIT FIELD CONDITIONS.
19. ALL VERIFICATIONS SHALL BE PRIOR TO SUBMITTING BID.
20. VERIFY EXACT LOCATIONS OF J-BOXES, SWITCHES, LIGHTS, PANELBOARDS, RECEPTACLES, STUB-UPS AND OTHER EQUIPMENT WITH UCR.
21. ALL 120 VOLT DEDICATED SINGLE OR DUPLEX RECEPTACLES PROTECTED BY A 20 AMP BREAKER SHALL BE 20 AMP DEVICES.
22. INSTALL GROUND CONDUCTOR IN ALL P.V.C. CONDUITS.
23. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONTROLS AND MAKE REQUIRED CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS.
24. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ROUGH-IN AND FINISH WORK WITH THE OTHER TRADES.
25. A SET OF MARKED-UP PRINTS SHALL BE PREPARED SHOWING ALL CHANGES MADE DURING CONSTRUCTION AND TURN IT OVER TO UCR AT THE END OF THE JOB. ALL CHANGES MUST HAVE UCR'S APPROVAL.
26. ANY DISCREPANCY BETWEEN MATERIAL, DESCRIPTION AND/OR CATALOG NUMBERS SHALL BE BROUGHT TO THE ENGINEER'S OR UCR'S ATTENTION IMMEDIATELY.
27. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS INDICATED ON SPECIFICATION.
28. 120 VOLT BRANCH CIRCUIT RUNS OVER 100 FEET IN LENGTH SHALL BE #10 THIN COPPER MINIMUM.
29. PROVIDE SEPARATE COLOR CODING FOR 120/208V, 3Ø-4W. MAINTAIN SAME COLOR THROUGHOUT.
30. FURNISH AND INSTALL THE REQUIRED SUPPORT FOR INSTALLATION OF LIGHTING FIXTURES, TRANSFORMERS AND OTHER EQUIPMENT.
31. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.
32. FIXTURES IN CONTACT WITH INSULATION TO BE UL LISTED FOR THERMAL BARRIERS.
33. PROVIDE TEMPORARY POWER AND LIGHTING AS REQUIRED TO PERFORM WORK.
34. ALL DISCONNECTS SHALL BE FUSED, UNLESS OTHERWISE NOTED.
35. MINIMUM SIZE #10 WIRE AND 3/4" CONDUIT SHALL BE USED BELOW SLAB, GRADE, OR IN THE SLAB.
36. ALL CONDUCTORS USED IN EXTERIOR WIRING SHALL BE RATED FOR WET LOCATIONS.
37. INSTALL LOCK-ON DEVICES ON CIRCUIT BREAKER HANDLES FOR ALL FIRE ALARM, SECURITY, NIGHT LIGHT AND EMERGENCY LIGHTING CIRCUITS.
38. LIGHTING CONTACTORS SHALL BE MECHANICALLY HELD.
39. ALL L.V. LIGHTING TRANSFORMERS SHALL BE AS SPECIFIED BY THE RESPECTIVE LIGHTING FIXTURE MANUFACTURER.
40. ALL ELECTRICAL TERMINATIONS SHALL BE 75 DEGREES C. RATED.
41. ALL LIGHTING WILL BE CONTROLLED BY "LUTRON" GRAFIK EYE LIGHTING CONTROL SYSTEM.

**SYMBOL LIST:**

- 2#12, 1/2" C., U.O.N.
- ||— 3#12, 3/4" C. (1/2" C. WHERE VISIBLE)
- |||— 4#12, 3/4" C. (1/2" C. WHERE VISIBLE)
- ||||— 5#12, 3/4" C. (1/2" C. WHERE VISIBLE)
- |||||— 6#12, 3/4" C. (1/2" C. WHERE VISIBLE)
- > HOMERUN TO PANEL BOARD
- PANEL BOARD
- Ⓚ LUTRON "HOMWORKS" KEYPAD (SEE LUTRON DIAGRAM)
- Ⓜ JUNCTION BOX
- Ⓧ DUPLEX RECEPTACLE OUTLET (INTEGRAL TO F.T.(F) )
- U.O.N. UNLESS OTHERWISE NOTED

**FIXTURE SCHEDULE**

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATT	MOUNTING	NOTES
	Ellipsoidal Downlight	Existing	N/A	See lamping schedule on E-3; verify in field	varies	Recessed	see fixture note below
	Ellipsoidal Downlight	Existing	N/A	"GE" #12347 PAR50/HIR/FL25	50	Recessed	see fixture note below
	Surface Cylinder	Existing	N/A	"GE" #12347 PAR50/HIR/FL25	50	Surface	-
	Surface Wall Wash	"Elliptar"	#F144-T255-S-99-T (ECO-LUTRON)-000 w/ #ADE444910	"GE" (2) #F54WTS/835/HO	120	Surface	-
	Edge-Lit Exit Sign w/ Battery Pack	TBD	#LEN66XBE	<inc>	5	Wall	Verify location & mounting in field
	Fluorescent Task Light w/ Integral Duplex Receptacles	"Celestial Lighting"	#BOL 5000 RF T5*2P IL R ELE DM ECO LUTRON 120V TBD DFX	"GE" #F*WTS/835	10W/ft.	Desk	Exact row lengths TBD in field

Note: Provide socket extenders to locate PAR-50 lamp just above top of aperture.

REVISIONS		
DELTA	DATE	DESCRIPTION

**NIKOLAKOPOULOS and ASSOC., INC.**  
CONSULTING ELECTRICAL ENGINEERS

2780 SKYPARK DRIVE, SUITE #280  
TORRANCE, CA 90505  
310/530-7277 FAX: 310/530-7283

DRAWN BY VP

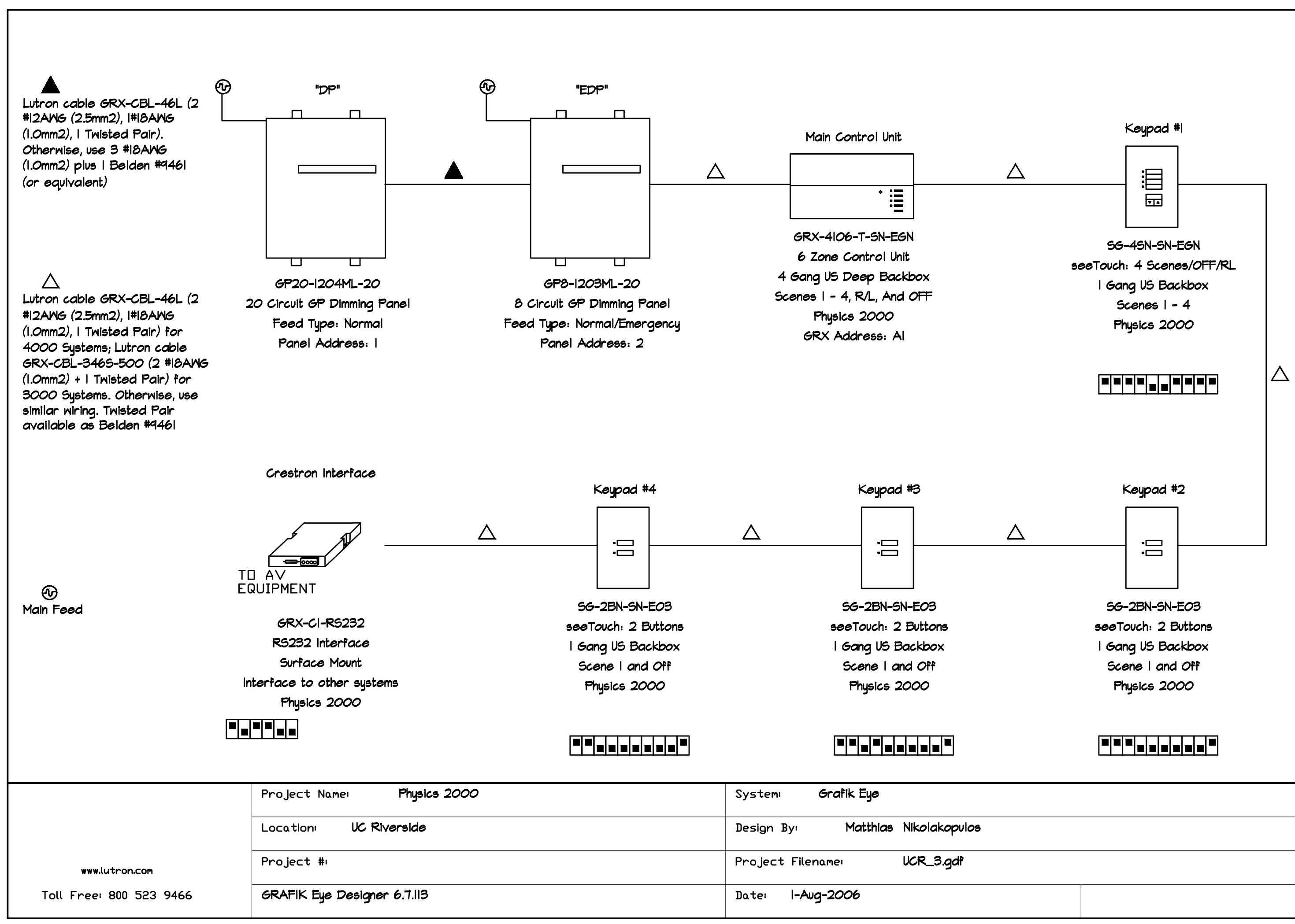
CHECKED BY MN

**UC RIVERSIDE**  
**PHYSICS 2000 LECTURE HALL**  
**GEN. NOTES, SYMBOL LIST,**  
**FIXTURE SCHEDULE &**  
**GRAFIK EYE**

SCALE IN FEET  
NONE

DATE  
8/03/06

SHEET  
**E-1**



Project Name:	Physics 2000	System:	Grafik Eye
Location:	UC Riverside	Design By:	Matthias Nikolakopoulos
Project #:		Project Filename:	UCR_3.gd#
GRAFIK Eye Designer 6.7.11B		Date:	1-Aug-2006

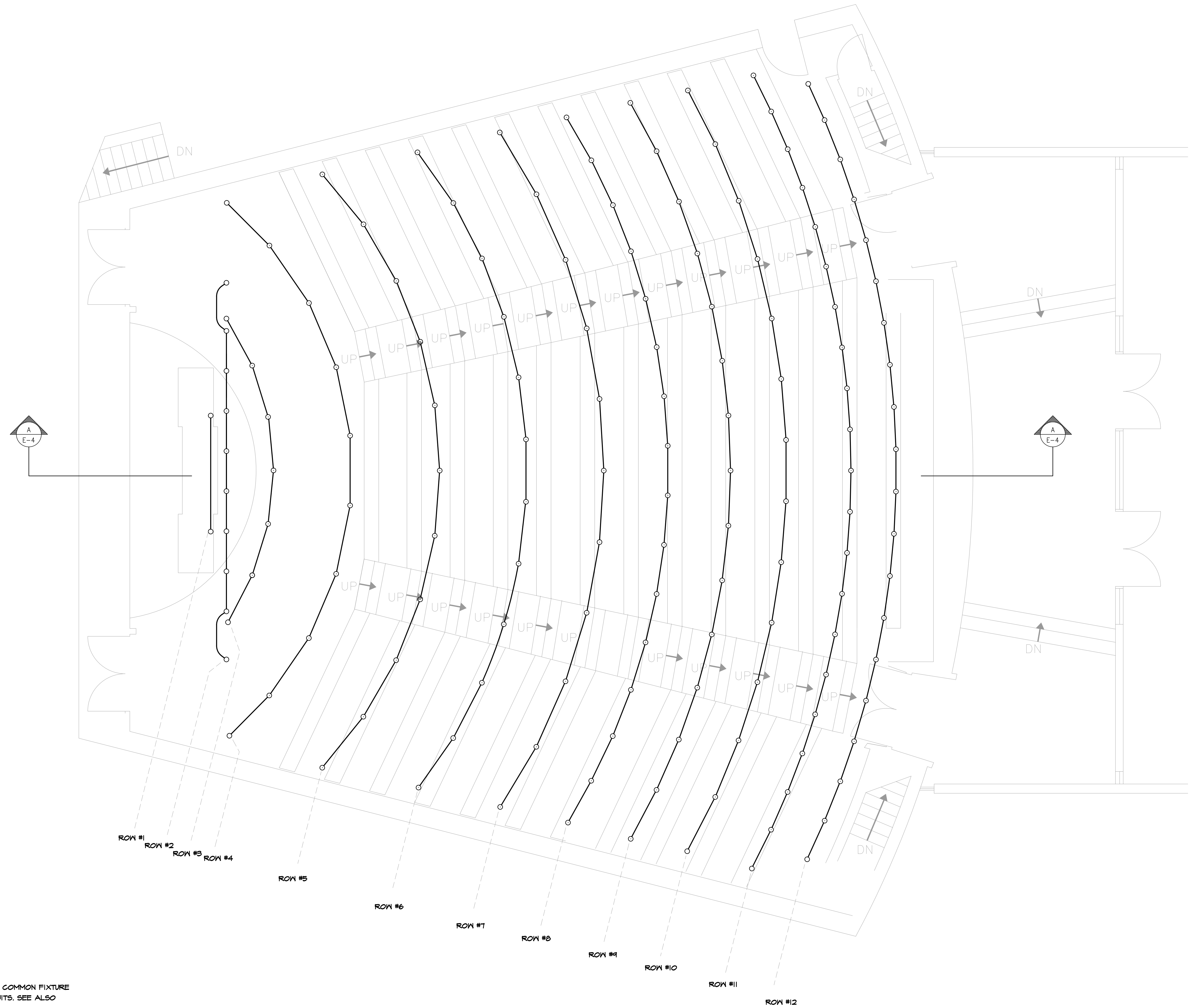
www.lutron.com  
Toll Free: 800 523 9466






**DOWNLIGHT LAMPING SCHEDULE**

FIXTURE ROW	LAMP ("GE")
	#23710 Q250PAR/FL30
	#10473 100PAR/HIR/FL40
	#23710 Q250PAR/FL30
	#23710 Q250PAR/FL30
	#23710 Q250PAR/FL30
	#23710 Q250PAR/FL30
	#23710 Q250PAR/FL30
	#21218 80PAR/HIR/FL25
	#21218 80PAR/HIR/FL25
	#10473 100PAR/HIR/FL40
	#12347 50PAR/HIR/FL25
	#20447 60PAR/HIR/WFL



NOTE:  
 LINES DENOTE ROWS OF COMMON FIXTURE  
 HEIGHT ONLY, NOT CIRCUITS. SEE ALSO  
 SECTION 

**LECTURE HALL - CEILING DOWNLIGHT LAMPING PLAN**

REVISIONS		
DELTA	DATE	DESCRIPTION

**nn**  
 NIKOLAKOPOLOS and ASSOC., INC.  
 CONSULTING ELECTRICAL ENGINEERS  
 2780 SKYPARK DRIVE, SUITE #280  
 TORRANCE, CA 90505  
 310/530-7277 FAX: 310/530-7283

DRAWN BY: VP  
 CHECKED BY: MN

PROJECT  
**UC RIVERSIDE  
 PHYSICS 2000 LECTURE HALL  
 CEILING DOWNLIGHT LAMPING PLAN**

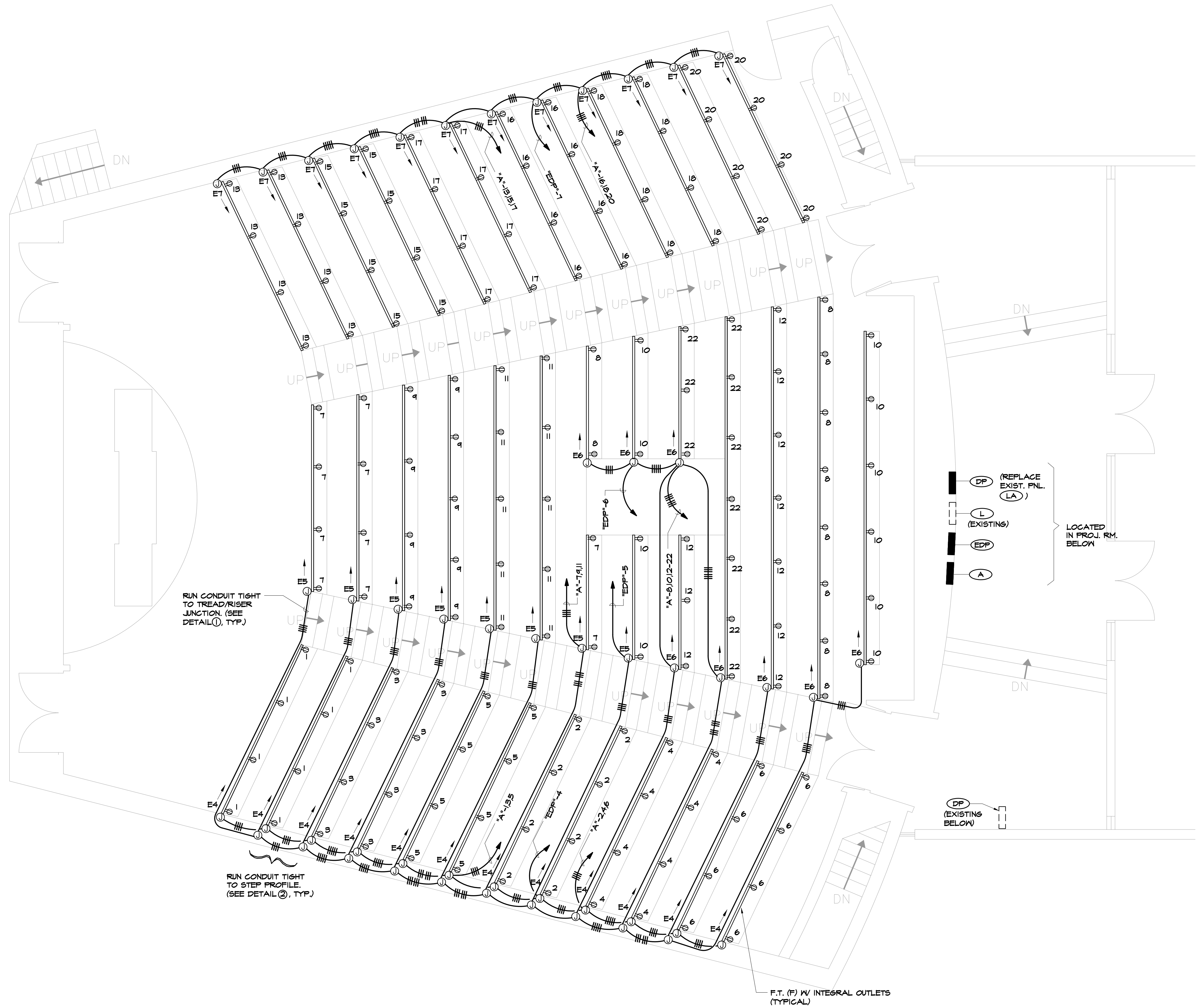
SCALE IN FEET  
 1/4" = 1'-0"

DATE  
 8/03/06

SHEET  
**E-3**







REVISIONS		
DELTA	DATE	DESCRIPTION

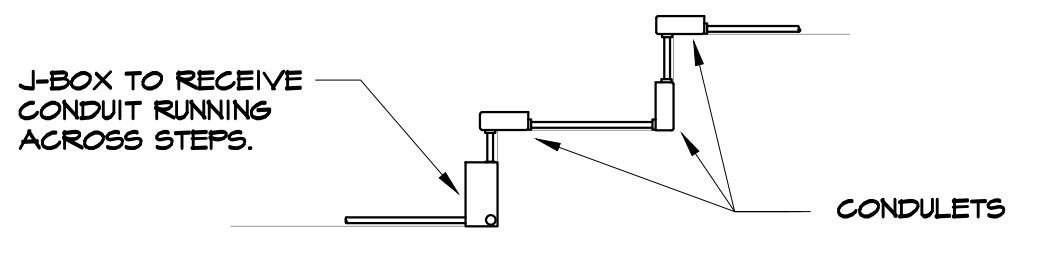
**nn**  
**NIKOLAKOPOULOS and ASSOC., INC.**  
 CONSULTING ELECTRICAL ENGINEERS  
 2780 SKYPARK DRIVE, SUITE #280  
 TORRANCE, CA 90505  
 310/530-7277 FAX: 310/530-7283

DRAWN BY: VP  
 CHECKED BY: MN

PROJECT  
**UC RIVERSIDE**  
**PHYSICS 2000 LECTURE HALL**  
**TASK LIGHTING & LAPTOP POWER PLAN**

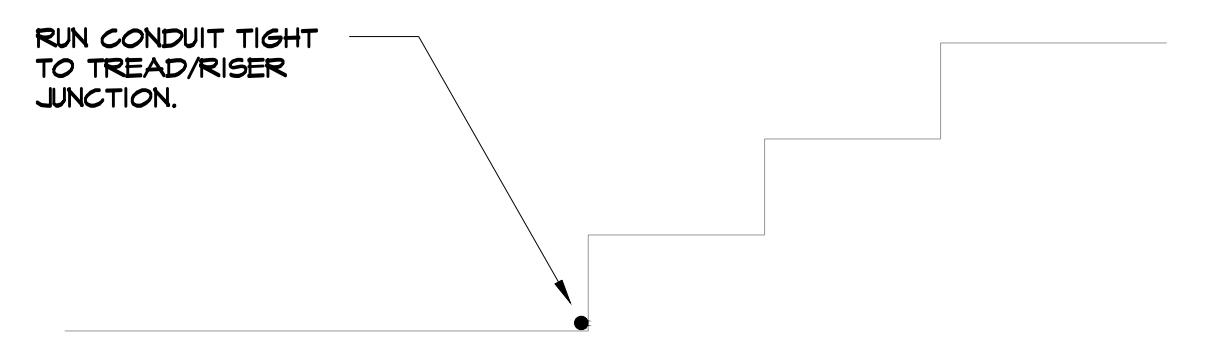
SCALE IN FEET  
 1/4" = 1'-0"  
 DATE  
 8/03/06  
 SHEET  
**E-5**

**CONDUIT SECTION DETAIL 2**



NTS

**CONDUIT SECTION DETAIL 1**



NTS

**LECTURE HALL - TASK LIGHTING & LAPTOP POWER PLAN**

Lecture Hall GP Dimming Panel Load Schedule

Area/Room	Customer Circuit #	Customer Zone	Lutron Circuit #	Lutron Zone	Zone/Circuit Description	Load Type	Actual Load (WVA)	Max. Load (WVA)	BRKR Size	Phase
Lecture Hall	1	1	1	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	A
Lecture Hall	10	1	2	AI-1	House Lts.	Incandescent	800	1920	20A-1P	B
Lecture Hall	11	1	3	AI-1	House Lts.	Incandescent	800	1920	20A-1P	C
Lecture Hall	12	1	4	AI-1	House Lts.	Incandescent	680	1920	20A-1P	A
Lecture Hall	13	1	5	AI-1	House Lts.	Incandescent	800	1920	20A-1P	B
Lecture Hall	14	1	6	AI-1	House Lts.	Incandescent	500	1920	20A-1P	C
Lecture Hall	15	1	7	AI-1	House Lts.	Incandescent	550	1920	20A-1P	A
Lecture Hall	16	1	8	AI-1	House Lts.	Incandescent	600	1920	20A-1P	B
Lecture Hall	17	1	9	AI-1	House Lts.	Incandescent	600	1920	20A-1P	C
Lecture Hall	2	1	10	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	A
Lecture Hall	3	1	11	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	B
Lecture Hall	4	1	12	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	C
Lecture Hall	5	1	13	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	A
Lecture Hall	6	1	14	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	B
Lecture Hall	7	1	15	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	C
Lecture Hall	8	1	16	AI-1	House Lts.	Incandescent	1250	1920	20A-1P	A
Lecture Hall	9	1	17	AI-1	House Lts.	Incandescent	800	1920	20A-1P	B
Lecture Hall	18	3	18	AI-3	Chart Lts.	Incandescent	1000	1920	20A-1P	C
Lecture Hall	19	4	19	AI-4	Chalkboard Lt.	FL - HiLume/Eco 10	360	1920	20A-1P	A
			20		Spare		0	1920	20A-1P	

120/240V, 97-4 Wire Main Lug DP Dimming Panel containing 1 20A-1Pole branch breaker rated at 10,000AIC for each of the 20 dimming circuits. Max input feed = 150A

Feed Type: Normal  
 Phase A: 6590 WVA  
 Phase B: 5500 WVA  
 Phase C: 5400 WVA

Project Name:	Physics 2000	System:	Grafik Eye
Location:	UC Riverside	Design By:	Matthias Nikolakopoulos
Project #:		Project Filename:	UCR_3.gdf
Toll Free: 800 525 4466	GRAFIK Eye Designer 6.7.11B	Date:	1-Aug-2006

Lecture Hall GP Dimming Panel Load Schedule

Area/Room	Customer Circuit #	Customer Zone	Lutron Circuit #	Lutron Zone	Zone/Circuit Description	Load Type	Actual Load (WVA)	Max. Load (WVA)	BRKR Size	Phase
Lecture Hall	E1	1	1	AI-1	House Lts.	Incandescent	1000	1920	20A-1P	L1
Lecture Hall	E2	2	2	AI-2	Lecture Lts.	Incandescent	1250	1920	20A-1P	L2
Lecture Hall	E3	2	3	AI-2	Lecture Lts.	Incandescent	1000	1920	20A-1P	L1
Lecture Hall	E4	5	4	AI-5	Task Lts.	FL - HiLume/Eco 10	1680	1920	20A-1P	L2
Lecture Hall	E5	5	5	AI-5	Task Lts.	FL - HiLume/Eco 10	1160	1920	20A-1P	L1
Lecture Hall	E6	5	6	AI-5	Task Lts.	FL - HiLume/Eco 10	1540	1920	20A-1P	L2
Lecture Hall	E7	5	7	AI-5	Task Lts.	FL - HiLume/Eco 10	1680	1920	20A-1P	L1
Lecture Hall	E8	6	8	AI-6	Egress Lts./Exits	Non-Dim	200	1920	20A-1P	L2

120/240V, 1P-3 Wire Main Lug DP Dimming Panel containing 1 20A-1Pole branch breaker rated at 10,000AIC for each of the 8 dimming circuits. Max input feed = 80A

Feed Type: Normal/Emergency  
 Phase L1: 4840 WVA  
 Phase L2: 4720 WVA

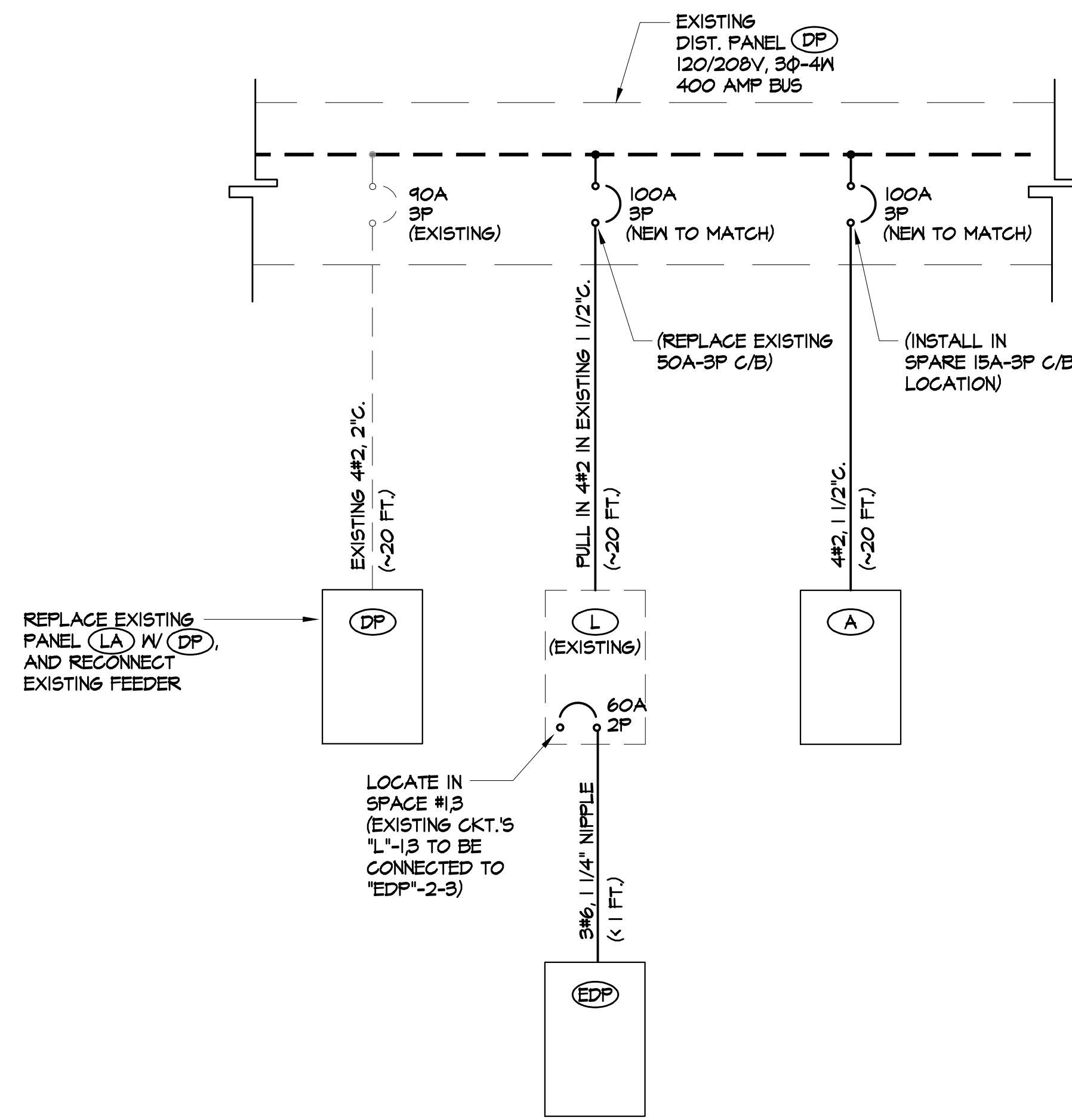
Project Name:	Physics 2000	System:	Grafik Eye
Location:	UC Riverside	Design By:	Matthias Nikolakopoulos
Project #:		Project Filename:	UCR_1.gdf
Toll Free: 800 525 4466	GRAFIK Eye Designer 6.7.11B	Date:	1-Aug-2006

REVISIONS		
DELTA	DATE	DESCRIPTION

Ckt No	Code	L	R	M	CONNECTED VA			L	R	M	Description	TRIP	POLE	CODE	
					ΦA	ΦB	ΦC								
1	R	20	1		8	1440					LAPTOP OUTLETS	20	1	R	2
3	R	20	1		8	1440					LAPTOP OUTLETS	20	1	R	4
5	R	20	1		8			1440			LAPTOP OUTLETS	20	1	R	6
7	R	20	1		10	1800					LAPTOP OUTLETS	20	1	R	8
9	R	20	1		9			1620			LAPTOP OUTLETS	20	1	R	10
11	R	20	1		10			1800			LAPTOP OUTLETS	20	1	R	12
13	R	20	1		8	1440					LAPTOP OUTLETS	20	1	R	14
15	R	20	1		8	1440					LAPTOP OUTLETS	20	1	R	16
17	R	20	1		8			1440			LAPTOP OUTLETS	20	1	R	18
19		20	1								SPARE	20	1		20
21		20	1								LAPTOP OUTLETS	20	1	R	22
23		20	1					1800			SPARE	20	1		24
25											SPACE				26
27											SPACE				28
29											SPACE				30

PANEL NOTES: PHASE TOTALS ΦA: 9360 ΦB: 10980 ΦC: 9360 TOTAL CONNECTED VA 29700

CONNECTED VA (CODE N) 0  
 CONNECTED VA (CODE L) 0  
 CONNECTED VA (CODE R) 29700  
 CONNECTED VA (CODE K) 0  
 PANEL CONNECTED KVA 29.7  
 PANEL DEMAND KVA 19.9  
 PANEL DEMAND AMPS 55.3



PARTIAL SINGLE LINE DIAGRAM

NOTE: DOTTED LINES INDICATE EXISTING.

**nn**  
 NIKOLAKOPOLOS and ASSOC., INC.  
 CONSULTING ELECTRICAL ENGINEERS  
 2780 SKYPARK DRIVE, SUITE #280  
 TORRANCE, CA 90505  
 310/530-7277 FAX: 310/530-7283

DRAWN BY: VP  
 CHECKED BY: MN

PROJECT: UC RIVERSIDE PHYSICS 2000 LECTURE HALL  
 PANEL SCHEDULES & SINGLE LINE DIAGRAM

SCALE IN FEET: NONE  
 DATE: 8/03/06  
 SHEET: E-6



**BID FORM**

FOR: PHYSICS 2000 RENEWAL - REBID  
PROJECT NUMBER: 957443  
CONTRACT NUMBER: 957443-LF-2020-88  
UNIVERSITY OF CALIFORNIA, RIVERSIDE  
RIVERSIDE, CALIFORNIA

September 8, 2020

BID TO:

Planning, Design & Construction  
UNIVERSITY OF CALIFORNIA, RIVERSIDE  
1223 University Avenue, Suite 240  
Riverside, CA 92521

(951) 827-2610

BID FROM:

\_\_\_\_\_  
(Name of Bidder)

\_\_\_\_\_  
(Contact Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_ (Telephone Number) \_\_\_\_\_ (Facsimile Number)

\_\_\_\_\_  
(E-mail)

\_\_\_\_\_  
(Date Bid Submitted)

Note: All portions of this Bid Form must be completed and the Bid Form must be signed before the Bid is submitted. Failure to do so will result in the Bid being rejected as non-responsive.

**BIDDER'S NAME:** \_\_\_\_\_

**1.0 BIDDER'S REPRESENTATIONS**

Bidder, represents that a) Bidder and all Subcontractors, regardless of tier, has the appropriate current and active Contractor's licenses required by the State of California and the Bidding Documents; b) it has carefully read and examined the Bidding Documents for the proposed Work on this Project; c) it has examined the site of the proposed Work and all Information Available to Bidders; d) it has become familiar with all the conditions related to the proposed Work, including the availability of labor, materials, and equipment; e) Bidder and all Subcontractors, regardless of tier, are currently registered with the California Department of Industrial Relations pursuant to California Labor Code Section 1725.5 and 1771.1. Bidder hereby offers to furnish all labor, materials, equipment, tools, transportation, and services necessary to complete the proposed Work on this Project in accordance with the Contract Documents for the sums quoted. Bidder further agrees that it will not withdraw its Bid within **{60}** days after the Bid Deadline, and that, if it is selected as the apparent lowest responsive and responsible Bidder, that it will, within 10 days after receipt of notice of selection, sign and deliver to University the Agreement in triplicate and furnish to University all items required by the Bidding Documents. If awarded the Contract, Bidder agrees to complete the proposed Work within **140** days after the date of commencement specified in the Notice to Proceed.

**2.0 ADDENDA**

Bidder acknowledges that it is Bidder's responsibility to ascertain whether any Addenda have been issued and if so, to obtain copies of such Addenda from University's Facility at the appropriate address stated on Page 1 of this Bid Form. Bidder therefore agrees to be bound by all Addenda that have been issued for this Bid.

**3.0 NOT USED**

**4.0 LUMP SUM BASE BID**

\$ 

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(Place figures in appropriate boxes.)

**5.0 SELECTION OF APPARENT LOW BIDDER**

Refer to the Instructions to Bidders for selection of apparent low bidder.

**6.0 NOT USED**

**7.0 NOT USED**



**BIDDER'S NAME:** \_\_\_\_\_

**8.0 ALTERNATES**

In order for a Bid to be responsive, Bidder must submit an additive bid, a deductive bid, or a "no change" bid, for each Alternate listed below. The failure to do so shall result in the Bid being rejected as non-responsive. The failure to quote an amount, unless the bidder marks the "no change" box, will result in the bid being rejected as non-responsive.

The Contract Time will change by the number of days, if any, specified for each accepted Alternate.

Alternate No. 1

Add Projection Room Platform, as specified in 01 2300, Alternates.

Bid for Alternate No. 1

If "Add" or "Deduct" is intended, indicate by placing figures in the corresponding boxes. If "No Change" is intended, indicate by marking the "No Change" box

Add           \$  ,  ,  .

Deduct       \$  ,  ,  .

No Change: Bidder will perform this Alternate without change to Contract Sum.

No extension of time will be granted if this Alternate is accepted.

University reserves the right to accept this Alternate within 10 calendar days after the date University signs the Agreement:

Alternate No. 2

Add preparation and painting of the building exterior and colonnade, as specified in 01 2300, Alternates.

Bid for Alternate No. 2

If "Add" or "Deduct" is intended, indicate by placing figures in the corresponding boxes. If "No Change" is intended, indicate by marking the "No Change" box

Add           \$  ,  ,  .

Deduct       \$  ,  ,  .

No Change: Bidder will perform this Alternate without change to Contract Sum.

No extension of time will be granted if this Alternate is accepted.

University reserves the right to accept this Alternate within 10 calendar days after the date University signs the Agreement.





**BIDDER'S NAME:** \_\_\_\_\_

**10.0 LIST OF CHANGES IN SUBCONTRACTORS DUE TO ALTERNATES**

The information below must be provided for all changes in first-tier Subcontractors if University selects Alternates. List changes in Subcontractors only for those portions of the Work valued in excess of one-half of 1 percent of prime contractor's total bid.

Portion of the Work Activity (e.g. electrical, mechanical, concrete)	Subcontractor			
	Name of Business	Location of Business (City)	License No.	DIR Registration No.

(Note: Add additional pages if required.)

**BIDDER'S NAME:** \_\_\_\_\_

**11.0 BIDDER INFORMATION**

TYPE OF ORGANIZATION

\_\_\_\_\_  
(Corporation, Partnership, Individual, Joint Venture, etc.)

IF A CORPORATION, THE CORPORATION IS ORGANIZED UNDER THE LAWS OF:

THE STATE OF \_\_\_\_\_  
(State)

NAME OF PRESIDENT OF THE CORPORATION:

\_\_\_\_\_  
(Insert Name)

NAME OF SECRETARY OF THE CORPORATION:

\_\_\_\_\_  
(Insert Name)

IF A PARTNERSHIP, NAMES OF ALL GENERAL PARTNERS:

\_\_\_\_\_  
(Insert Name(s))

CALIFORNIA CONTRACTORS LICENSE(S):

\_\_\_\_\_  
(Classification(s))                      (License Number)                      (Expiration Date)

(For Joint Venture, list Joint Venture's license and licenses for all Joint Venture partners.)



**BIDDER'S NAME:** \_\_\_\_\_

**12.0 REQUIRED COMPLETED ATTACHMENTS**

The following documents are submitted with and made a condition of this Bid:

1. Bid Security in the form of \_\_\_\_\_  
(Bid Bond or Certified Check)

**13.0 DECLARATION**

I, \_\_\_\_\_, hereby declare that I am the  
(Printed Name)  
\_\_\_\_\_ of \_\_\_\_\_  
(Title) (Name of Bidder)

submitting this Bid Form; that I am duly authorized to execute this Bid Form on behalf of Bidder; and that all information set forth in this Bid Form and all attachments hereto are, to the best of my knowledge, true, accurate, and complete as of its submission date.

I further declare that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare, under penalty of perjury, that the foregoing is true and correct and that this Declaration was executed at:

\_\_\_\_\_, in the State of \_\_\_\_\_,  
(Name of City if within a City, otherwise Name of County) (State)

on \_\_\_\_\_,  
(Date)

\_\_\_\_\_  
(Signature)

**BID BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

That we, \_\_\_\_\_,  
 as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound unto THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter called THE REGENTS, in the sum of 10% of the Lump Sum Base Bid amount for payment of which in lawful money of the United States, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, Principal has submitted a Bid for the work described as follows:

Project Name: Physics 2000 Renewal - REBID  
 Project Number: 957443, Contract Number: 957443-LF-2021-26  
 Location: 900 University Avenue, Riverside, CA. 92521

NOW, THEREFORE, if Principal shall not withdraw said Bid within the time period specified after the Bid Deadline, as defined in the Bidding Documents, or within **60** days after the Bid Deadline if no time period be specified, and, if selected as the apparent lowest responsible Bidder, Principal shall, within the time period specified in the Bidding Documents, do the following:

- (1) Enter into a written agreement, in the prescribed form, in accordance with the Bid.
- (2) File two bonds with THE REGENTS, one to guarantee faithful performance and the other to guarantee payment for labor and materials, as required by the Bidding Documents.
- (3) Furnish certificates of insurance and all other items as required by the Bidding Documents.

In the event of the withdrawal of said Bid within the time period specified, or within **60** days if no time period be specified, or the disqualification of said Bid due to failure of Principal to enter into such agreement and furnish such bonds, certificates of insurance, and all other items as required by the Bidding Documents, if Principal shall pay to THE REGENTS an amount equal to the difference, not to exceed the amount hereof, between the amount specified in said Bid and such larger amount for which THE REGENTS procure the required work covered by said Bid, if the latter be in excess of the former, then this obligation shall be null and void, otherwise to remain in full force and effect.

In the event suit is brought upon this bond by THE REGENTS, Surety shall pay reasonable attorneys' fees and costs incurred by THE REGENTS in such suit.

IN WITNESS WHEREOF, we have hereunto set our hands this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

**PRINCIPAL:**

**SURETY:**

\_\_\_\_\_  
 (Name of Company)

\_\_\_\_\_  
 (Name of Company)

By: \_\_\_\_\_  
 (Signature)

By: \_\_\_\_\_  
 (Signature)

\_\_\_\_\_  
 (Printed Name)

\_\_\_\_\_  
 (Printed Name)

\_\_\_\_\_  
 (Title)

\_\_\_\_\_  
 (Title)

**Address for Notices:**

\_\_\_\_\_  
 (Street Address)

\_\_\_\_\_  
 (City, State & Zip Code)

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.



## AGREEMENT

This AGREEMENT is made on \_\_\_\_\_, between THE REGENTS OF THE UNIVERSITY OF CALIFORNIA ("University"),

whose Facility is:	University of California, Riverside
whose address for notices is:	UCR Planning, Design & Construction UNIVERSITY OF CALIFORNIA, RIVERSIDE 1223 University Avenue, Suite 240 Riverside, CA 92507
and Contractor:	<b>Name</b>
whose address for notices is:	Street Address City, State & Zip
for the Project:	PHYSICS 2000 RENEWAL Project Number: 957443 University of California, Riverside County of Riverside Riverside, California 92521
University's Responsible Administrator:	Blythe R. Wilson, Architect Director of Project Management Planning, Design & Construction
University's Representative is:	Scott Donnell Senior Project Manager Planning, Design & Construction
whose address for notices is:	UCR Planning, Design & Construction UNIVERSITY OF CALIFORNIA, RIVERSIDE 1223 University Avenue, Suite 240 Riverside, CA 92507
Contract Documents for the Work Prepared by:	Shawn Chinudomsub IDAS, Inc 3903 10 <sup>th</sup> Street Riverside, CA. 92501 Tel: 951-342.3152 Email: <a href="mailto:sc@idas.net">sc@idas.net</a>

University and Contractor hereby agree as follows:

## ARTICLE 1 WORK

Contractor shall provide all work required by the Contract Documents (the "Work"). Contractor agrees to do additional Work arising from changes ordered by the University pursuant to Article 7 of the General Conditions. Contractor shall (1) pay all sales, consumer and other taxes and (2) obtain and pay for any governmental licenses and permits necessary for the work, other than building and utility permits.

## ARTICLE 2 CONTRACT DOCUMENTS

"Contract Documents" means the Advertisement for Bids, Instructions To Bidders, Supplementary Instructions to Bidders, Bid Form, this Agreement, General Conditions, Supplementary Conditions, Exhibits, Specifications, List of Drawings, Drawings, Addenda, Notice to Proceed, Change Orders, Notice of Completion, and all other documents identified in this Agreement that together form the contract between University and Contractor for the Work (the "Contract"). The Contract constitutes the complete agreement between University and Contractor and supersedes any previous agreements or understandings.

## ARTICLE 3 CONTRACT SUM

Subject to the provisions of the Contract Documents University shall pay to Contractor, for the performance of the Work, \$ [REDACTED], the "Contract Sum".

The Contract Sum includes the following Alternates accepted by University:

### **List Alternates Accepted by University at Time of Award**

University reserves the right to accept the following Alternates within {INSERT NUMBER FROM BID FORM} days after the date of this Agreement:

### **List Alternates Not Accepted by University at Time of Award**

The Contract Sum will be increased by an amount equal to the Unit Price multiplied by the actual number of units of each Unit Price item incorporated in the Work.

## ARTICLE 4 CONTRACT TIME

Contractor shall commence the Work on the date specified in the Notice to Proceed and fully complete the work within **140** days, the "Contract Time".

By signing this agreement, Contractor represents to University that the Contract Time is reasonable for completion of the work and that Contractor will complete the Work within the Contract Time. Time limits stated in the Contract Documents are of the essence of the Contract.



## ARTICLE 5 LIQUIDATED DAMAGES

If Contractor fails to complete the Work within the Contract Time, Contractor shall pay to University, as liquidated damages and not as a penalty, the sum of **\$500** for each day after the expiration of the Contract Time that the Work remains incomplete. After Substantial Completion, the rate for liquidated damages shall be reduced to the sum of **\$250** per day. University and Contractor agree that if the Work is not completed within the Contract Time, University's damages would be extremely difficult or impracticable to determine and that the aforesaid amounts are reasonable estimates of and reasonable sums for such damages. University may deduct any liquidated damages due from Contractor from any amounts otherwise due to Contractor under the Contract Documents. This provision shall not limit any right or remedy of University in the event of any other default of Contractor other than failing to complete the Work within the Contract Time.

## ARTICLE 6 NOT USED

**ARTICLE 7 DUE AUTHORIZATION**

The person or persons signing this Agreement on behalf of Contractor hereby represent and warrant to University that this Agreement is duly authorized, signed, and delivered by Contractor.

THIS AGREEMENT is entered into by University and Contractor as of the date set forth above.

**CONTRACTOR:**

_____ (Name of Company)	California Contractor's License(s):
a _____ (Type of Organization)	_____ (Name of Licensee)
By: _____ (Signature)	_____ (Classification and License Number)
_____ (Print Name)	_____ (Expiration Date)
_____ (Title)	_____ (Employer Identification Number)

**Recommended:**

By University's Representative:

\_\_\_\_\_  
 (Signature & Date)  
**Scott Donnell**  
 Senior Project Manager  
 Planning, Design & Construction  
 \_\_\_\_\_  
 (Print Name & Title)

**Funds Sufficient:**

By Financial Administrative Officer:

\_\_\_\_\_  
 (Signature & Date)  
**Susan McFadden**  
 Senior Financial Analyst  
 Planning, Design & Construction  
 \_\_\_\_\_  
 (Print Name & Title)

**UNIVERSITY:**

By The Regents of the University of California:

\_\_\_\_\_  
 (Signature & Date)  
**Blythe R. Wilson, Architect**  
 Director of Project Management  
 Planning, Design & Construction  
 \_\_\_\_\_  
 (Print Name & Title)

Account No.:	_____	Activity Code:	_____
Fund:	_____	Function:	_____
Cost Center:	_____	Project Code:	_____

Attach notary acknowledgement for all signatures of Contractor. If signed by other than the sole proprietor, a general partner, or corporate officer, attach original notarized Power of Attorney or Corporate Resolution.



**GENERAL CONDITIONS – LONG FORM  
TABLE OF CONTENTS****ARTICLE 1. GENERAL PROVISIONS**

- 1.1 Basic Definitions
- 1.2 Ownership and Use of Contract Documents
- 1.3 Interpretation

**ARTICLE 2. UNIVERSITY**

- 2.1 Information and Services Provided by University
- 2.2 Access to Project Site
- 2.3 University's Right to Stop the Work
- 2.4 University's Right to Carry Out the Work
- 2.5 University's Right to Replace University's Representative

**ARTICLE 3. CONTRACTOR**

- 3.1 Review of Contract Documents and Field Conditions by Contractor
- 3.2 Supervision and Construction Procedures
- 3.3 Labor and Materials
- 3.4 Contractor's Warranty
- 3.5 Taxes
- 3.6 Permits, Fees, and Notices
- 3.7 Applicable Code Requirements
- 3.8 Superintendent
- 3.9 Schedules Required of Contractor
- 3.10 As-Built Documents
- 3.11 Documents and Samples at Project Site
- 3.12 Shop Drawings, Product Data, Samples, and Environmental Product Declarations
- 3.13 Use of Site and Clean Up
- 3.14 Cutting, Fitting, and Patching
- 3.15 Access to Work
- 3.16 Royalties and Patents
- 3.17 Differing Site Conditions
- 3.18 Concealed, Unforeseen, or Unknown Conditions or Events
- 3.19 Hazardous Materials
- 3.20 Information Available to Bidders
- 3.21 Liability for and Repair of Damaged Work
- 3.22 Indemnification

**ARTICLE 4. ADMINISTRATION OF THE CONTRACT**

- 4.1 Administration of the Contract by University's Representative
- 4.2 Contractor Change Order Requests
- 4.3 Claims
- 4.4 Assertion of Claims
- 4.5 Decision of University's Representative on Claims
- 4.6 Mediation
- 4.7 Litigation and Arbitration
- 4.8 Waiver

**ARTICLE 5. SUBCONTRACTORS**

- 5.1 Award of Subcontracts and Other Contracts for Portions of the Work
- 5.2 Subcontractual Relations
- 5.3 Contingent Assignment of Subcontracts

**ARTICLE 6. CONSTRUCTION BY UNIVERSITY OR BY SEPARATE CONTRACTORS**

- 6.1 University's Right to Perform Construction and to Award Separate Contracts
- 6.2 Mutual Responsibility
- 6.3 University's Right to Clean Up

**ARTICLE 7. CHANGES IN THE WORK**

- 7.1 Changes
- 7.2 Definitions
- 7.3 Change Order Procedures
- 7.4 Field Orders
- 7.5 Variation in Quantity of Unit Price Work
- 7.6 Waiver

**ARTICLE 8. CONTRACT TIME**

- 8.1 Commencement of the Work
- 8.2 Progress and Completion
- 8.3 Delay
- 8.4 Adjustment of the Contract Time for Delay
- 8.5 Compensation for Delay
- 8.6 Waiver

**ARTICLE 9. PAYMENTS AND COMPLETION**

- 9.1 Cost Breakdown
- 9.2 Progress Payment
- 9.3 Application For Payment
- 9.4 Certificate For Payment
- 9.5 Deposit of Securities in Lieu of Retention and Deposit of Retention Into Escrow
- 9.6 Beneficial Occupancy
- 9.7 Substantial Completion
- 9.8 Final Completion and Final Payment

**ARTICLE 10. PROTECTION OF PERSONS AND PROPERTY**

- 10.1 Safety Precautions and Programs
- 10.2 Safety of Persons and Property
- 10.3 Emergencies

**ARTICLE 11. INSURANCE AND BONDS**

- 11.1 Contractor's Insurance
- 11.2 Builder's Risk Property Insurance
- 11.3 Performance Bond and Payment Bond

**ARTICLE 12. UNCOVERING AND CORRECTION OF WORK**

- 12.1 Uncovering of Work
- 12.2 Correction of Defective Work and Guarantee to Repair Period

**ARTICLE 13. TERMINATION OR SUSPENSION OF THE CONTRACT**

- 13.1 Termination by Contractor
- 13.2 Termination by University for Cause
- 13.3 Suspension by University for Convenience
- 13.4 Termination by University for Convenience



**ARTICLE 14. STATUTORY AND OTHER REQUIREMENTS**

- 14.1 Patient Health Information
- 14.2 Nondiscrimination
- 14.3 Prevailing Wage Rates
- 14.4 Payroll Records
- 14.5 Apprentices
- 14.6 Work Day

**ARTICLE 15. MISCELLANEOUS PROVISIONS**

- 15.1 Governing Law
- 15.2 Successors and Assigns
- 15.3 Rights and Remedies
- 15.4 Survival
- 15.5 Complete Agreement
- 15.6 Severability of Provisions
- 15.7 University's Right to Audit
- 15.8 Methods of Delivery for Specified Documents
- 15.9 Time of the Essence
- 15.10 Mutual Duty to Mitigate
- 15.11 UC Fair Wage

## ARTICLE 1 GENERAL PROVISIONS

### 1.1 BASIC DEFINITIONS

#### 1.1.1 APPLICABLE CODE REQUIREMENTS

The term "Applicable Code Requirements" means all laws, statutes, the most recent building codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over University, Contractor, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work including without limitation the requirements set forth in Article 3.7.

#### 1.1.2 APPLICATION FOR PAYMENT

The term "Application For Payment" means the submittal from Contractor wherein payment for certain portions of the completed Work is requested in accordance with Article 9.

#### 1.1.3 BENEFICIAL OCCUPANCY

The term "Beneficial Occupancy" means the University's occupancy or use of any part of the Work in accordance with Article 9.

#### 1.1.4 CERTIFICATE FOR PAYMENT

The term "Certificate For Payment" means the form signed by University's Representative attesting to the Contractor's right to receive payment for certain completed portions of the Work in accordance with Article 9.

#### 1.1.5 CHANGE ORDER

See Article 7.2 of the General Conditions.

#### 1.1.6 CLAIM

See Article 4.3 of the General Conditions.

#### 1.1.7 COMPENSABLE DELAY

The term "Compensable Delay" means a delay that entitles the Contractor to an adjustment of the Contract Sum and an adjustment of the Contract Time pursuant to Articles 7 and 8 of the General Conditions.

#### 1.1.8 CONTRACT

The term "Contract" shall have the meaning identified in Article 2 of the Agreement.

#### 1.1.9 CONTRACT DOCUMENTS

The term "Contract Documents" means all documents listed in Article 2 of the Agreement, as modified by Change Order, including but not limited to the Drawings and Specifications.

#### 1.1.10 CONTRACT MILESTONE

The term "Contract Milestone" means any requirement in the Contract Documents that reflects a planned point in time for the start or completion of a portion of the Work measured from i) the date of the Notice to Proceed or ii) the date of another Contract Milestone defined in the Contract Documents, as applicable.

#### 1.1.11 CONTRACT SCHEDULE

The term "Contract Schedule" means the graphical representation of a practical plan, in accordance with the Specifications, to perform and complete the Work within the Contract Time in accordance with Article 3.

#### 1.1.12 CONTRACT SUM

The term "Contract Sum" means the amount of compensation stated in the Agreement for the performance of the Work, as adjusted by Change Order.

#### 1.1.13 CONTRACT TIME

The term "Contract Time" means the number of days set forth in the Agreement, as adjusted by Change Order, within which Contractor must achieve Final Completion.

#### 1.1.14 CONTRACTOR

The term "Contractor" means the person or firm identified as such in the Agreement and is referred to



throughout the Contract Documents as if singular in number.

**1.1.15 CONTRACTOR FEE**

See Article 7.3 of the General Conditions.

**1.1.16 COST OF EXTRA WORK**

See Article 7.3 of the General Conditions.

**1.1.17 DAY**

The term “day,” as used in the Contract Documents, shall mean calendar day, unless otherwise specifically provided.

**1.1.18 DEFECTIVE WORK**

The term “Defective Work” means work that is unsatisfactory, faulty, omitted, incomplete, deficient, or does not conform to the requirements of the Contract Documents, directives of University’s Representative, or the requirements of any inspection, reference standard, test, or approval specified in the Contract Documents.

**1.1.19 DRAWINGS**

The term “Drawings” means the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams. The Drawings are listed in the List of Drawings.

**1.1.20 EXCUSABLE DELAY**

The term “Excusable Delay” means a delay that entitles the Contractor to an adjustment of the Contract Time but not an adjustment of the Contract Sum, pursuant to Articles 7 and 8 of the General Conditions.

**1.1.21 EXTRA WORK**

The term “Extra Work” means Work beyond or in addition to the Work required by the Contract Documents.

**1.1.22 FIELD ORDER**

See Article 7.2 of the General Conditions.

**1.1.23 FINAL COMPLETION**

The term “Final Completion” means the date at which the Work has been fully completed in accordance with the requirements of the Contract Documents pursuant to Article 9.8.1 of the General Conditions.

**1.1.24 GUARANTEE TO REPAIR PERIOD**

See Article 12.2 of the General Conditions.

**1.1.25 HAZARDOUS MATERIAL**

The term “Hazardous Material” means any substance or material identified as hazardous under any California or federal statute governing handling, disposal and/or cleanup of any such substance or material.

**1.1.26 PROJECT**

The term “Project” means the Work of the Contract and all other work, labor, equipment, and materials necessary to accomplish the Project . The Project may include construction by University or by Separate Contractors.

**1.1.27 PROJECT SITE**

The term “Project Site” or “Project site” or “Site” or “site” means lands and facilities upon which the Work pertaining to physical construction operations is performed, including such access and other lands and facilities designated in the Contract Documents for use by Contractor.

**1.1.28 SEPARATE CONTRACTOR**

The term “Separate Contractor” means a person or firm under separate contract with University performing other work related to the Project.

**1.1.29 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES**

See Article 3.12 of the General Conditions.

#### 1.1.30 SPECIFICATIONS

The term "Specifications" means that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

#### 1.1.31 SUBCONTRACTOR

The term "Subcontractor" means a person or firm that has a contract with Contractor or with a Subcontractor to perform a portion of the Work. Unless otherwise specifically provided, the term Subcontractor includes Subcontractors of all tiers.

#### 1.1.32 SUBSTANTIAL COMPLETION

See Article 9.7 of the General Conditions.

#### 1.1.33 SUPERINTENDENT

The term "Superintendent" means the person designated by Contractor to represent Contractor at the Project site in accordance with Article 3.

#### 1.1.34 TIER

The term "tier" means the contractual level of a Subcontractor or supplier with respect to Contractor. For example, a first-tier Subcontractor is under subcontract with Contractor, a second-tier Subcontractor is under subcontract with a first-tier Subcontractor, and so on.

#### 1.1.35 UNEXCUSABLE DELAY

The term "Unexcusable Delay" means a delay that does not entitle the Contractor to an adjustment of the Contract Sum and does not entitle the Contractor to an adjustment of the Contract Time.

#### 1.1.36 UNILATERAL CHANGE ORDER.

See Article 7.2 of the General Conditions.

#### 1.1.37 UNIVERSITY

The term "University" means The Regents of the University of California.

#### 1.1.38 UNIVERSITY'S BUILDING OFFICIAL

The term "University's Building Official," or "Certified Building Official," means the individual the University has designated to act in the capacity as the "Building Official" as defined by the California Building Standards Code. The University's Building Official will determine whether the Work complies with Applicable Code Requirements and will determine whether and when it is appropriate to issue a Certificate of Occupancy.

#### 1.1.39 UNIVERSITY'S REPRESENTATIVE

The term "University's Representative" means the person identified as such in the Agreement.

#### 1.1.40 UNIVERSITY'S RESPONSIBLE ADMINISTRATOR

The term "University's Responsible Administrator" means the person, or his or her authorized designee, who is authorized to execute the Agreement, Change Orders, Field Orders, and other applicable Contract Documents on behalf of the University.

#### 1.1.41 WORK

The term "Work" means all construction, services and other requirements of the Contract Documents as modified by Change Order, whether completed or partially completed, and includes all labor, materials, equipment, tools, and services provided or to be provided by Contractor to fulfill Contractor's obligations. The Work may constitute the whole or a part of the Project.

### 1.2 OWNERSHIP AND USE OF CONTRACT DOCUMENTS

1.2.1 The Contract Documents and all copies thereof furnished to or provided by Contractor are the property of the University and are not to be used on other work.

### 1.3 INTERPRETATION



1.3.1 The Contract Documents are complementary and what is required by one shall be as binding as if required by all. In the case of conflict between terms of the Contract Documents, the following order of precedence shall apply:

- .1 The Agreement,
- .2 The Supplementary Conditions,
- .3 The General Conditions,
- .4 The Specifications,
- .5 The Drawings.

1.3.2 With respect to the Drawings, figured dimensions shall control over scaled measurements and specific details shall control over typical or standard details.

1.3.3 With respect to the Contract Documents, Addenda shall govern over other portions of the Contract Documents to the extent specifically noted; subsequent Addenda shall govern over prior Addenda only to the extent specifically noted.

1.3.4 Organization of the Specifications into various subdivisions and the arrangement of the Drawings shall not control Contractor in dividing the Work among Subcontractors or in establishing the extent of work to be performed by any trade.

1.3.5 Unless otherwise stated in the Contract Documents, technical words and abbreviations contained in the Contract Documents are used in accordance with commonly understood construction industry meanings; and non-technical words and abbreviations are used in accordance with their commonly understood meanings.

1.3.6 The Contract Documents may omit modifying words such as "all" and "any," and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement. The use of the word "including," when following any general statement, shall not be construed to limit such statement to specific items or matters set forth immediately following such word or to similar items or matters, whether or not nonlimiting language (such as "without limitation," "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement.

1.3.7 Whenever the context so requires, the use of the singular number shall be deemed to include the plural and vice versa. Each gender shall be deemed to include any other gender, and each shall include corporation, partnership, trust, or other legal entity whenever the context so requires. The captions and headings of the various subdivisions of the Contract Documents are intended only for reference and convenience and in no way define, limit, or prescribe the scope or intent of the Contract Documents or any subdivision thereof.

## **ARTICLE 2 UNIVERSITY**

### **2.1 INFORMATION AND SERVICES PROVIDED BY UNIVERSITY**

2.1.1 If required for performance of the Work, as determined by University's Representative, University will make available a survey describing known physical characteristics, boundaries, easements, and utility locations for the Project site.

2.1.2 University is not subject to any requirement to obtain or pay for local building permits, inspection fees, plan checking fees, or certain utility fees. Except as otherwise provided in the Contract Documents, University will obtain and pay for any utility permits, demolition permits, easements, and government approvals for the use or occupancy of permanent structures required in connection with the Work.

2.1.3 Contractor will be furnished, free of charge, such copies of the Contract Documents as University deems reasonably necessary for execution of the Work.

### **2.2 ACCESS TO PROJECT SITE**

2.2.1 University will provide, no later than the date designated in the Contract Schedule accepted by University's Representative, access to the lands and facilities upon which the Work is to be performed, including such access and other lands and facilities designated in the Contract Documents for use by Contractor.

### **2.3 UNIVERSITY'S RIGHT TO STOP THE WORK**

2.3.1 If Contractor fails to correct Defective Work as required by Article 12.2 or fails to perform the Work in accordance with the Contract Documents, University or University's Representative may direct Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated by Contractor. Contractor shall not be entitled to any adjustment of Contract Time or Contract Sum as a result of any such order. University and University's Representative have no duty or responsibility to Contractor or any other party to exercise the right to stop the Work.

### **2.4 UNIVERSITY'S RIGHT TO CARRY OUT THE WORK**

2.4.1 If Contractor fails to carry out the Work in accordance with the Contract Documents, fails to provide sufficient labor, materials, equipment, tools, and services to maintain the Contract Schedule, or otherwise fails to comply with any material term of the Contract Documents, and, after receipt of written notice from University, fails within 2 days, excluding Saturdays, Sundays and legal holidays, or within such additional time as the University may specify, to correct such failure, University may, without prejudice to other remedies University may have, correct such failure at Contractor's expense. In such case, University will be entitled to deduct from payments then or thereafter due Contractor the cost of correcting such failure, including without limitation compensation for the additional services and expenses of University's consultants made necessary thereby. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall pay the additional amount to University.

### **2.5 UNIVERSITY'S RIGHT TO REPLACE UNIVERSITY'S REPRESENTATIVE**

2.5.1 University may at any time and from time to time, without prior notice to or approval of Contractor, replace University's Representative with a new University's Representative. Upon receipt of notice from University informing Contractor of such replacement and identifying the new University's representative, Contractor shall recognize such person or firm as University's Representative for all purposes under the Contract Documents.

## **ARTICLE 3 CONTRACTOR**

### **3.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

3.1.1 Contractor and its Subcontractors shall review and compare each of the Contract Documents with the others and with information furnished or made available by University, and shall promptly report in writing to University's Representative any errors, inconsistencies, or omissions in the Contract Documents or inconsistencies with Applicable Code Requirements observed by Contractor or its Subcontractors.

3.1.2 Contractor and its Subcontractors shall take field measurements, verify field conditions, and carefully compare with the Contract Documents such field measurements, conditions, and other information known to Contractor before commencing the Work. Errors, inconsistencies, or omissions discovered at any time shall be promptly reported in writing to University's Representative.

3.1.3 If Contractor and its Subcontractors performs any construction activity involving an error, inconsistency, or omission referred to in Articles 3.1.1 and 3.1.2, without giving the notice required in those Articles and obtaining the written consent of University's Representative, Contractor shall be responsible for the resultant losses, including, without limitation, the costs of correcting Defective Work.

### **3.2 SUPERVISION AND CONSTRUCTION PROCEDURES**

3.2.1 Contractor shall supervise, coordinate, and direct the Work using Contractor's best skill and attention. Contractor shall be solely responsible for and have control over construction means, methods, techniques,



sequences, procedures, and the coordination of all portions of the Work.

3.2.2 Contractor shall be responsible to University for acts and omissions of Contractor's agents, employees, and Subcontractors, and their respective agents and employees.

3.2.3 Contractor shall not be relieved of its obligation to perform the Work in accordance with the Contract Documents either by acts or omissions of University or University's Representative in the administration of the Contract, or by tests, inspections, or approvals required or performed by persons or firms other than Contractor.

3.2.4 Contractor shall be responsible for inspection of all portions of the Work, including those portions already performed under this Contract, to determine that such portions conform to the requirements of the Contract and are ready to receive subsequent Work.

3.2.5 Contractor shall at all times maintain good discipline and order among its employees and Subcontractors. Contractor shall provide competent, fully qualified personnel to perform the Work.

### **3.3 LABOR AND MATERIALS**

3.3.1 Unless otherwise provided in the Contract, Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and Final Completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

### **3.4 CONTRACTOR'S WARRANTY**

3.4.1 Contractor warrants to University that all materials and equipment used in or incorporated into the Work will be of good quality, new, and free of liens, claims, and security interests of third parties; that the Work will be of good quality and free from defects; and that the Work will conform with the requirements of the Contract. If required by University's Representative, Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

### **3.5 TAXES**

3.5.1 Contractor shall pay all sales, consumer, use, and similar taxes for the Work or portions thereof provided by Contractor.

### **3.6 PERMITS, FEES, AND NOTICES**

3.6.1 Except for the permits and approvals which are to be obtained by University or the requirements with respect to which University is not subject as provided in Article 2.1.2, Contractor shall secure and pay for all permits, approvals, government fees, licenses, and inspections necessary for the proper execution and performance of the Work. Contractor shall deliver to University all original licenses, permits, and approvals obtained by Contractor in connection with the Work prior to the final payment or upon termination of the Contract, whichever is earlier.

### **3.7 APPLICABLE CODE REQUIREMENTS**

3.7.1 Contractor shall perform the Work in accordance with the following Applicable Code Requirements:

- .1 All laws, statutes, the most recent building codes, ordinances, rules, regulations, and lawful orders of all public authorities having jurisdiction over University, Contractor, any Subcontractor, the Project, the Project site, the Work, or the prosecution of the Work.
- .2 All requirements of any insurance company issuing insurance required hereunder.
- .3 The Federal Occupational Safety and Health Act and all other Applicable Code Requirements relating to safety.
- .4 Applicable titles in the State of California Code of Regulations.
- .5 Applicable sections in the State of California Labor Code.
- .6 All Applicable Code Requirements relating to nondiscrimination, payment of

prevailing wages, payroll records, apprentices, and work day.

Without limiting the foregoing, Contractor shall comply with the provisions regarding nondiscrimination, payment of prevailing wages, payroll records, apprentices, and work day set forth in Article 14.

3.7.2 Contractor shall comply with and give notices required by all Applicable Code Requirements, including all environmental laws and all notice requirements under the State of California Safe Drinking Water and Enforcement Act of 1986 (State of California Health and Safety Code Section 25249.5 and applicable sections that follow). Contractor shall promptly notify University's Representative in writing if Contractor becomes aware during the performance of the Work that the Contract Documents are at variance with Applicable Code Requirements.

3.7.3 If Contractor performs Work which it knows or should know is contrary to Applicable Code Requirements, without prior notice to University and University's Representative, Contractor shall be responsible for such Work and any resulting damages including, without limitation, the costs of correcting Defective Work.

### **3.8 SUPERINTENDENT**

3.8.1 Contractor shall employ a competent Superintendent satisfactory to University who shall be in attendance at the Project site at all times during the performance of the Work. Superintendent shall represent Contractor and communications given to and received from Superintendent shall be binding on Contractor.

3.8.2 Contractor shall provide the Key Personnel, in addition to the Superintendent, as named in the Key Personnel Exhibit to this Contract. Substitution or replacement of any named individual requires the written approval of the University's Representative and approval will be at the sole discretion of University. Failure to maintain a Superintendent 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 Superintendent is on the Project site. If, by virtue of issuance of said stop Work order, Contractor fails to complete the Contract on time, Contractor will be assessed Liquidated Damages in accordance with the Agreement.

3.8.3 The Superintendent approved for the Project must be able to read, write and verbally communicate in English.

3.8.4 The Superintendent 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 when Work is in progress.

### **3.9 SCHEDULES REQUIRED OF CONTRACTOR**

3.9.1 Contractor shall submit a Preliminary Contract Schedule to University's Representative in the form and within the time limit required by the Specifications. University's Representative will review the Preliminary Contract Schedule with Contractor within the time limit required by the Specifications, or, if no such time period is specified, within a reasonable period of time.

3.9.2 Contractor shall submit a Contract Schedule and updated Contract Schedules to University's Representative in the form and within the time limits required by the Specifications and acceptable to University's Representative. University's Representative will determine acceptability of the Contract Schedule and updated Contract Schedules within the time limits required by the Specifications, or if no such time period is specified, within a reasonable period of time. If University's Representative deems the Contract Schedule or updated Contract Schedule unacceptable, it shall specify in writing to Contractor the basis for its objection.

3.9.3 The Preliminary Contract Schedule, the Contract Schedule, and updated Contract Schedules shall represent a practical plan to complete the Work within the Contract Time. Schedules showing the Work completed in less than the Contract Time may be acceptable if judged by University's Representative to be practical. Schedules showing the Work completed beyond the Contract Time may be submitted under the following circumstances:



- .1 If accompanied by a Change Order Request seeking an adjustment of the Contract Time consistent the requirements of paragraph 8.4 for Adjustment of the Contract Time for Delay.; or
- .2 If the Contract Time has passed, or if it is a practical impossibility to complete the Work within the Contract Time, then the updated Contract Schedule or fragnet schedule shall show completion at the earliest practical date.

University's Representative will timely review the updated Contract Schedule or Fragnet Schedule submitted by Contractor. If University's Representative determines that additional supporting data are necessary to fully evaluate the updated Contract Schedule or Fragnet Schedule, University's Representative will request such additional supporting data in writing. Such data shall be furnished no later than 10 days after the date of such request. University's Representative will render a decision promptly and in any case within 30 days after the later of the receipt of the updated Contract Schedule or Fragnet Schedule or the deadline for furnishing such additional supporting data. Failure of University's Representative to render a decision by the applicable deadline will be deemed a decision denying approval of the updated Contract Schedule or Fragnet Schedule.

Acceptance of any schedule showing completion beyond the Contract Time by University's Representative shall not change the Contract Time and is without prejudice to any right of the University. The Contract Time, not the Contract Schedule, shall control in the determination of liquidated damages payable by Contractor under Article 4 and Article 5 of the Agreement and in the determination of any delay under Article 8 of the General Conditions.

3.9.4 If a schedule showing the Work completed in less than the Contract Time is accepted, Contractor shall not be entitled to extensions of the Contract Time for Excusable Delays or Compensable Delays or to adjustments of the Contract Sum for Compensable Delays until such delays extend the Final Completion of the Work beyond the expiration of the Contract Time.

3.9.5 Contractor shall prepare and keep current to the reasonable satisfaction of University's Representative, a Submittal Schedule in the form contained in the Exhibits, for each submittal, as required by the Specifications, and that are coordinated with the other activities in the Contract Schedule.

3.9.6 The Preliminary Contract Schedule, Contract Schedule, and the Updated Contract Schedules shall meet the following requirements:

- .1 Schedules must be suitable for monitoring progress of the Work.
- .2 Schedules must provide necessary data about the timing for University decisions and University furnished items.
- .3 Schedules must be in sufficient detail to demonstrate adequate planning for the Work.
- .4 Schedules must represent a practical plan to perform and complete the Work within the Contract Time.

3.9.7 University's Representative's review of the form and general content of the Preliminary Contract Schedule, Contract Schedule, and Updated Contract Schedules is for the purpose of determining if the above-listed requirements have been satisfied.

3.9.8 Contractor shall plan, develop, supervise, control, and coordinate the performance of the Work so that its progress and the sequence and timing of Work will permit its completion within the Contract Time, any Contract milestones and any Contract phases.

3.9.9 In preparing the Preliminary Contract Schedule, the Contract Schedule, and updated Contract Schedules, Contractor shall obtain such information and data from Subcontractors as may be required to develop a reasonable and appropriate schedule for performance of the work and shall provide such information and data to the University's Representative upon request. Contractor shall continuously obtain from Subcontractors information and data about the planning for and progress of the Work and the delivery of equipment, shall coordinate and integrate such information and data into updated Contract Schedules, as appropriate, and shall monitor the progress of the Work and the delivery of equipment.

3.9.10 Contractor shall act as the expeditor of potential and actual delays, interruptions, hindrances, or disruptions for its own forces and those forces of Subcontractors, regardless of tier.

3.9.11 Contractor shall cooperate with University's Representative in the development of the Contract

Schedule and updated Contract Schedules. University's Representative's acceptance of or its review comments about any schedule or scheduling data shall not relieve Contractor from its sole responsibility to plan for, perform, and complete the Work within the Contract Time. Acceptance of or review comments about any schedule shall not transfer responsibility for any schedule to University's Representative or University nor imply their agreement with (1) any assumption upon which such schedule is based or (2) any matter underlying or contained in such schedule. Failure of University's Representative to discover errors or omissions in schedules that it has reviewed, or to inform Contractor that Contractor, Subcontractors, or others are behind schedule, or to direct or enforce procedures for complying with the Contract Schedule shall not relieve Contractor from its sole responsibility to perform and complete the Work within the Contract Time and shall not be a cause for an adjustment of the Contract Time or the Contract Sum.

### **3.10 AS-BUILT DOCUMENTS**

3.10.1 Contractor shall maintain one set of As-built drawings and specifications, which shall be kept up to date during the Work of the Contract. All changes which are incorporated into the Work which differ from the documents as drawn and written shall be noted on the As-built set. Notations shall reflect the actual materials, equipment and installation methods used for the Work and each revision shall be initialed and dated by Superintendent. Prior to filing of the Notice of Completion each drawing and the specification cover shall be signed by Contractor and dated attesting to the completeness of the information noted therein. As-built Documents shall be turned over to the University's Representative and shall become part of the Record Documents.

### **3.11 DOCUMENTS AND SAMPLES AT PROJECT SITE**

3.11.1 Contractor shall maintain the following at the Project site:

- .1 One as-built copy of the Contract Documents, in good order and marked to record current changes and selections made during construction.
- .2 The current accepted Contract Schedule.
- .3 Shop Drawings, Product Data, and Samples.
- .4 All other required submittals.

These shall be available to University's Representative and shall be delivered to University's Representative for submittal to University upon the earlier of Final Completion or termination of the Contract.

### **3.12 SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND ENVIRONMENTAL PRODUCT DECLARATIONS**

3.12.1 Definitions:

- .1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor or a Subcontractor to illustrate some portion of the Work.
- .2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by Contractor to illustrate or describe materials or equipment for some portion of the Work.
- .3 Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.
- .4 Environmental Product Declarations are those documents and other submissions required to be furnished by Contractor or a Subcontractor pursuant to California Public Contract Code Section 3500 et seq., the Buy Clean California Act, as further described in Article 3.12.9 below.

3.12.2 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate, for those portions of the Work for which submittals are required, how Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

3.12.3 Contractor shall review, approve, and submit to University's Representative Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of University or of Separate Contractors. Submittals made by Contractor which are not required by the Contract Documents may be returned without



action by University's Representative.

3.12.4 Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been reviewed by University's Representative and no exceptions have been taken by University's Representative. Such Work shall be in accordance with approved submittals and the Contract Documents.

3.12.5 By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, Contractor represents that it has determined or verified materials and field measurements and conditions related thereto, and that it has checked and coordinated the information contained within such submittals with the requirements of the Contract Documents and Shop Drawings for related Work.

3.12.6 If Contractor discovers any conflicts, omissions, or errors in Shop Drawings or other submittals, Contractor shall notify University's Representative and receive instruction before proceeding with the affected Work.

3.12.7 Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by University's Representative's review of Shop Drawings, Product Data, Samples, or similar submittals, unless Contractor has specifically informed University's Representative in writing of such deviation at the time of submittal and University's Representative has given written approval of the specific deviation. Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by University's Representative's review, acceptance, comment, or approval thereof.

1.12.8 Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by University's Representative on previous submittals.

#### **1.12.9 Environmental Product Declarations**

3.12.9.1 Contractor shall comply with California Public Contract Code Section 3500 et seq., the Buy Clean California Act ("BCCA").

3.12.9.2 The term "Eligible Materials", as used herein, shall mean the same as defined by the BCCA, and shall include at a minimum the following materials:

- (1) Carbon steel rebar.
- (2) Flat glass.
- (3) Mineral wool board insulation.
- (4) Structural steel.

3.12.9.3 Compliance with the BCCA and this Article applies to all Eligible Materials for the Project.

3.12.9.4 Contractor shall submit to University a current facility-specific Environmental Product Declaration ("EPD"), Type III, as defined by the International Organization for Standardization ("ISO") standard 14025, or similarly robust life cycle assessment methods that have uniform standards in data collection consistent with ISO standard 14025, industry acceptance, and integrity, for each Eligible Material proposed to be used on the Project.

3.12.9.5 Eligible Materials installed on the Project by Contractor must comply with any standards to the extent established in the BCCA or by University, whichever is more stringent. The facility-specific global warming potential for any Eligible Material must not exceed any existing maximum acceptable global warming potential for that material pursuant to the BCCA or by University, whichever is more stringent ("EM Standards").

3.12.9.6 Contractor shall not install any Eligible Materials on the Project until Contractor submits a facility-specific EPD for that material which demonstrates that the material complies with any existing EM Standards and this Article. Contractor shall be responsible for any losses, expenses, penalties or damages of any type incurred or sustained by University, including any tear out and replacement

of Defective Work, which are caused by Contractor's failure to comply with the requirements of the BCCA or this Article.

### **3.13 USE OF SITE AND CLEAN UP**

3.13.1 Contractor shall confine operations at the Project site to areas permitted by law, ordinances, permits, and the Contract Documents. Contractor shall not unreasonably encumber the Project site with materials or equipment.

3.13.2 Contractor shall, during performance of the Work, keep the Project site and surrounding area free from the accumulation of excess dirt, waste materials, and rubbish caused by Contractor. Contractor shall remove all excess dirt, waste material, and rubbish caused by the Contractor; tools; equipment; machinery; and surplus materials from the Project site and surrounding area at the completion of the Work.

3.13.3 Personnel of Contractor and Subcontractors shall not occupy, live upon, or otherwise make use of the Project site during any time that Work is not being performed at the Project site, except as otherwise provided in the Contract Documents.

### **3.14 CUTTING, FITTING, AND PATCHING**

3.14.1 Contractor shall do all cutting, fitting, or patching of the Work required to make all parts of the Work come together properly and to allow the Work to receive or be received by work of Separate Contractors shown upon, or reasonably implied by, the Contract Documents.

3.14.2 Contractor shall not endanger the Work, the Project, or adjacent property by cutting, digging, or otherwise. Contractor shall not cut or alter the work of any Separate Contractor without the prior consent of University's Representative.

### **3.15 ACCESS TO WORK**

3.15.1 University, University's Representative, their consultants, and other persons authorized by University will at all times have access to the Work wherever it is in preparation or progress. Contractor shall provide safe and proper facilities for such access and for inspection.

### **3.16 ROYALTIES AND PATENTS**

3.16.1 Contractor shall pay all royalties and license fees required for the performance of the Work. Contractor shall defend suits or claims resulting from Contractor's or any Subcontractor's infringement of patent rights and shall Indemnify, defend and hold harmless University and University's Representative from losses on account thereof.

### **3.17 DIFFERING SITE CONDITIONS**

3.17.1 If Contractor encounters any of the following conditions at the site, Contractor shall immediately notify the University's Representative in writing of the specific differing conditions before they are disturbed and before any affected Work is performed, and permit investigation of the conditions:

- .1 Subsurface or latent physical conditions at the site (including Hazardous Materials) which differ materially from those indicated in this Contract, or if not indicated in this Contract, in the Information Available to Bidders; or
- .2 Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

3.17.2 Contractor shall be entitled to an adjustment to the Contract Sum and/or Contract Time as the result of extra costs and/or delays resulting from a materially differing site condition, if and only if Contractor fulfills the following conditions:



- .1 Contractor fully complies with Article 3.17.1; and
- .2 Contractor fully complies with Article 4 (including the timely filing of a Change Order Request and all other requirements for Change Orders Requests and Claims).

3.17.3 Adjustments to the Contract Sum and/or Contract Time shall be subject to the procedures and limitations set forth in Articles 7 and 8.

### **3.18 CONCEALED, UNFORESEEN, OR UNKNOWN CONDITIONS OR EVENTS**

3.18.1 Except and only to the extent provided otherwise in Articles 3.17, 7 and 8 of the General Conditions, by signing the Agreement, Contractor agrees:

- .1 To bear the risk of concealed, unforeseen or unknown conditions or events, if any, which may be encountered in performing the Contract; and
- .2 That Contractor's bid for the Contract was made with full knowledge of this risk.

In agreeing to bear the risk of concealed, unforeseen or unknown conditions or events, Contractor understands that, except and only to the extent provided otherwise in Articles 3.17, 7 and 8, concealed, unforeseen or unknown conditions or events shall not excuse Contractor from its obligation to achieve Final Completion of the Work within the Contract Time, and shall not entitle the Contractor to an adjustment of the Contract Sum.

3.18.2 If Contractor encounters concealed, unforeseen or unknown conditions or events that may require a change to the design shown in the Contract Documents, Contractor shall immediately notify University's Representative in writing such that University's Representative can determine if a change to the design is required. Contractor shall be liable to University for any extra costs incurred as the result of Contractor's failure to immediately give such notice.

3.18.3 If, as the result of concealed, unforeseen or unknown conditions or events, the University issues a Change Order or Field Order that changes the design from the design depicted in the Contract Documents, Contractor shall be entitled, subject to compliance with all the provisions of the Contract, including those set forth in Articles 4, 7 and 8, to an adjustment of the Contract Sum and/or Contract Time, for the cost and delay resulting from implementing the changes to the design. Except as provided in this Article 3.18.3, or as may be expressly provided otherwise in the Contract, there shall be no adjustment of the Contract Sum and/or Contract Time as a result of concealed, unforeseen or unknown conditions or events. .

3.18.4 Contractor shall, as a condition precedent to any adjustment in Contract Sum or Contract Time under Article 3.18.3, fully comply with Article 4 (including the timely filing of a Change Order Request and all other requirements for Change Orders Requests and Claims).

### **3.19 HAZARDOUS MATERIALS**

3.19.1 The University shall not be responsible for any Hazardous Material brought to the site by the Contractor.

3.19.2 If the Contractor: (i) introduces and/or discharges a Hazardous Material onto the site in a manner not specified by the Contract Documents; and/or (ii) disturbs a Hazardous Material identified in the Contract Documents, the Contractor shall hire a qualified remediation contractor at Contractor's sole cost to eliminate the condition as soon as possible. Under no circumstance shall the Contractor perform Work for which it is not qualified. University, in its sole discretion, may require the Contractor to retain at Contractor's cost an independent testing laboratory.

3.19.3 If the Contractor encounters a Hazardous Material which may cause foreseeable injury or damage, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such material or substance (except in an emergency situation); and (iii) notify University (and promptly thereafter confirm such notice in writing)

3.19.4 Subject to Contractor's compliance with Article 3.19.3, the University shall verify the presence or

absence of the Hazardous Material reported by the Contractor, except as qualified under Section 3.19.1 and 3.19.3, and, in the event such material or substance is found to be present, verify that the levels of the hazardous material are below OSHA Permissible Exposure Levels and below levels which would classify the material as a state of California or federal hazardous waste. When the material falls below such levels, Work in the affected area shall resume upon direction by the University. The Contract Time and Sum shall be extended appropriately as provided in Articles 7 and 8.

3.19.5 The University shall indemnify and hold harmless the Contractor from and against claims, damages, losses and expenses, arising from a Hazardous Material on the Project site, if such Hazardous Material: (i) was not shown on the Contract Documents or Information Available to Bidders; (ii) was not brought to the site by Contractor; and (iii) exceeded OSHA Permissible Exposure Levels or levels which would classify the material as a state of California or federal hazardous waste. The indemnity obligation in this Article shall not apply to:

- .1 Claims, damages, losses or expenses arising from the breach of contract, negligence or willful misconduct of Contractor, its suppliers, its Subcontractors of all tiers and/or any persons or entities working under Contractor; and
- .2 Claims, damages, losses or expenses arising from a Hazardous Material subject to Article 3.19.2.

3.19.6 In addition to the requirements in Article 3.22, Contractor shall indemnify and hold harmless the University from and against claims, damages, losses and expenses, arising from a Hazardous Material on the Project site, if such Hazardous Material exceeded OSHA Permissible Exposure Levels or levels which would classify the material as a state of California or federal hazardous waste, and was either i) shown on the Contract Documents or Information Available to Bidders; or (ii) brought to the site by Contractor. Nothing in this paragraph shall obligate the Contractor to indemnify University in the event of the sole negligence of the University, its officers, agents, or employees.

### **3.20 INFORMATION AVAILABLE TO BIDDERS**

3.20.1 Any information provided pursuant to INFORMATION AVAILABLE TO BIDDERS is subject to the following provisions:

- .1 The information is made available for the convenience of Bidders and is not a part of the Contract.
- .2 The Contractor may rely on written descriptions of physical conditions included in the information to the extent such reliance is reasonable.
- .3 Other components of the information, including but not limited to recommendations, may not be relied upon by Contractor. University shall not be responsible for any interpretation of or conclusion drawn from the other components of the information by the Contractor.

### **3.21 LIABILITY FOR AND REPAIR OF DAMAGED WORK**

3.21.1 Contractor shall be liable for any and all damages and losses to the Project (whether by fire, theft, vandalism, earthquake or otherwise) prior to University's acceptance of the Project as fully completed except that Contractor shall not be liable for damages and losses to the Project caused by earthquake in excess of magnitude 3.5 on the Richter Scale, tidal wave, or flood, provided that the damages or losses were not caused in whole or in part by the negligent acts or omissions of Contractor, its officers, agents or employees (including all Subcontractors and suppliers of all tiers). As used herein, "flood" shall have the same meaning as in the builder's risk property insurance.

3.21.2 Contractor shall promptly repair and replace any Work or materials damaged or destroyed for which the Contractor is liable under Article 3.21.1.

### **3.22 INDEMNIFICATION**

3.22.1 Contractor shall indemnify, defend and hold harmless University, University's consultants, University's Representative, University's Representative's consultants, and their respective directors, officers, agents, and employees from and against losses (including without limitation the cost of repairing defective work and remedying the consequences of defective work) arising out of, resulting from, or relating to the following:



- .1 The failure of Contractor to perform its obligations under the Contract.
- .2 The inaccuracy of any representation or warranty by Contractor given in accordance with or contained in the Contract Documents.
- .3 Any claim of damage or loss by any Subcontractor against University arising out of any alleged act or omission of Contractor or any other Subcontractor, or anyone directly or indirectly employed by Contractor or any Subcontractor.
- .4 Any claim of damage or loss resulting from Hazardous Materials introduced, discharged, or disturbed by Contractor as required per Article 3.19.6.

3.22.2 The University shall not be liable or responsible for any accidents, loss, injury (including death) or damages happening or accruing during the term of the performance of the Work herein referred to or in connection therewith, to persons and/or property, and Contractor shall fully indemnify, defend and hold harmless University and protect University from and against the same as provided in paragraph 3.22.1 above. In addition to the liability imposed by law upon the Contractor for damage or injury (including death) to persons or property by reason of the negligence of the Contractor, its officers, agents, employees or Subcontractors, which liability is not impaired or otherwise affected hereby, the Contractor shall defend, indemnify, hold harmless, release and forever discharge the University, its officers, employees, and agents from and against and waive any and all responsibility of same for every expense, liability, or payment by reason of any damage or injury (including death) to persons or property suffered or claimed to have been suffered through any negligent act, omission, or willful misconduct of the Contractor, its officers, agents, employees, or any of its Subcontractors, or anyone directly or indirectly employed by either of them or from the condition of the premises or any part of the premises while in control of the Contractor, its officers, agents, employees, or any of its Subcontractors or anyone directly or indirectly employed by either of them, arising out of the performance of the Work called for by this Contract. Contractor agrees that this indemnity and hold harmless shall apply even in the event of negligence of University, its officers, agents, or employees, regardless of whether such negligence is contributory to any claim, demand, loss, damage, injury, expense, and/or liability; but such indemnity and hold harmless shall not apply (i) in the event of the sole negligence of University, its officers, agents, or employees; or (ii) to the extent that the University shall indemnify and hold harmless the Contractor for Hazardous Materials pursuant to Article 3.19.5 .

3.22.3 In claims against any person or entity indemnified under this Article 3.22 that are made by an employee of Contractor or any Subcontractor, a person indirectly employed by Contractor or any Subcontractor, or anyone for whose acts Contractor or any Subcontractor may be liable, the indemnification obligation under this Article 3.22 shall not be limited by any limitation on amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

3.22.4 The indemnification obligations under this Article 3.22 shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

3.22.5 Contractor shall indemnify University from and against Losses resulting from any claim of damage made by any Separate Contractor against University arising out of any alleged acts or omissions of Contractor, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts either of them may be liable.

3.22.6 Contractor shall indemnify Separate Contractors from and against Losses arising out of the negligent acts, omissions, or willful misconduct of Contractor, any Subcontractor, anyone directly or indirectly employed by either of them, or anyone for whose acts either of them may be liable.

#### **ARTICLE 4 ADMINISTRATION OF THE CONTRACT**

##### **4.1 ADMINISTRATION OF THE CONTRACT BY UNIVERSITY'S REPRESENTATIVE**

4.1.1 University's Representative will provide administration of the Contract as provided in the Contract Documents and will be the representative of University. University's Representative will have authority to act on behalf of University only to the extent provided in the Contract Documents.

4.1.2 University's Representative will have the right to visit the Project site at such intervals as deemed

appropriate by the University's Representative. However, no actions taken during such Project site visit by University's Representative shall relieve Contractor of its obligations as described in the Contract Documents.

4.1.3 University's Representative will not have control over, will not be in charge of, and will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely Contractor's responsibility.

4.1.4 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, University and Contractor shall communicate through University's Representative. Except when direct communication has been specifically authorized in writing by University Representative, communications by Contractor with University's consultants and University's Representative's consultants shall be through University's Representative. Communications by University and University's Representative with Subcontractors will be through Contractor. Communications by Contractor and Subcontractors with Separate Contractors shall be through University's Representative. Contractor shall not rely on oral or other non-written communications.

4.1.5 Based on University's Representative's Project site visits and evaluations of Contractor's Applications For Payment, University's Representative will recommend amounts, if any, due Contractor and will issue Certificates For Payment in such amounts.

4.1.6 University's Representative will have the authority to reject the Work, or any portion thereof, which does not conform to the Contract Documents. University's Representative will have the authority to stop the Work or any portion thereof. Whenever University's Representative considers it necessary or advisable for implementation of the intent of the Contract Documents, University's Representative will have the authority to require additional inspection or testing of the Work in accordance with the Contract Documents, whether or not such Work is fabricated, installed, or completed. However, no authority of University's Representative conferred by the Contract Documents nor any decision made in good faith either to exercise or not exercise such authority, will give rise to a duty or responsibility of University or University's Representative to Contractor, or any person or entity claiming under or through Contractor.

4.1.7 University's Representative will have the authority to conduct inspections as provided in the Contract Documents, to take Beneficial Occupancy and to determine the dates of Substantial Completion and Final Completion; will receive for review and approval any records, written warranties, and related documents required by the Contract Documents and assembled by Contractor; and will issue a final Certificate For Payment upon Contractor's compliance with the requirements of the Contract Documents.

4.1.8 University's Representative will be, in the first instance, the interpreter of the requirements of the Contract Documents and the judge of performance thereunder by Contractor. Should Contractor discover any conflicts, omissions, or errors in the Contract Documents; have any questions about the interpretation or clarification of the Contract Documents; question whether Work is within the scope of the Contract Documents; or question that Work required is not sufficiently detailed or explained, then, before proceeding with the Work affected, Contractor shall notify University's Representative in writing and request interpretation, clarification, or furnishing of additional detailed instructions. University's Representative's response to questions and requests for interpretations, clarifications, instructions, or decisions will be made with reasonable promptness. Should Contractor proceed with the Work affected before receipt of a response from University's Representative, any portion of the Work which is not done in accordance with University's Representative's interpretations, clarifications, instructions, or decisions shall be removed or replaced and Contractor shall be responsible for all resultant losses.

## **4.2 CONTRACTOR CHANGE ORDER REQUESTS**

4.2.1 Contractor may request changes to the Contract Sum and/or Contract Time for Extra Work, materially differing site conditions, or Delays to Final Completion of the Work.

4.2.2 Conditions precedent to obtaining an adjustment of the Contract Sum and/or Contract Time, payment of money, or other relief with respect to the Contract Documents, for any other reason, are:

- .1 Timely submission of a Change Order Request that meets the requirements of Articles 4.2.3.1 and 4.2.3.2; and



.2 If requested, timely submission of additional information requested by the University Representative pursuant to Article 4.2.3.3.

#### 4.2.3 Change Order Request:

4.2.3.1 A Change Order Request will be deemed timely submitted if, and only if, it is submitted within 7 days of the date the Contractor discovers, or reasonably should discover the circumstances giving rise to the Change Order Request, unless additional time is allowed in writing by University's Representative for submission of the Change Order Request, provided that if :

- .1 the Change Order Request includes compensation sought by a Subcontractor; AND
- .2 the Contractor requests in writing to the University's Representative, within the 7-day time period, additional time to permit Contractor to conduct an appropriate review of the Subcontractor Change Order Request,

the time period for submission of the actual Change Order Request shall be extended by the number of days specified in writing by the University's Representative.

4.2.3.2 A Change Order Request must state that it is a Change Order Request, state and justify the reason for the request, and specify the amount of any requested adjustment of the Contract Sum, Contract Time, and/or other monetary relief. If the Contractor requests an adjustment to the Contract Sum or other monetary relief, the Contractor shall submit the following with the Change Order Request:

- .1 a completed Cost Proposal in the form contained in the Exhibits meeting the requirements of Article 7; OR
- .2 a partial Cost Proposal and a declaration of what required information is not then known to Contractor. If Contractor failed to submit a completed Cost Proposal with the Change Order Request, Contractor shall submit a completed Cost Proposal meeting the requirements of Article 7 within 7 days of the date the Contractor submitted the Change Order Request unless additional time is allowed by the University's Representative.

4.2.3.3 Upon request of University's Representative, Contractor shall submit such additional information as may be requested by University's Representative for the purpose of evaluating the Change Order Request. Such additional information may include:

- .1 If Contractor seeks an adjustment of the Contract Sum or other monetary relief, actual cost records for any changed or extra costs (including without limitation, payroll records, material and rental invoices and the like), shall be submitted by the deadline established by the University's Representative, who may require such actual cost records to be submitted and reviewed, on a daily basis, by the University's Representative and/or representatives of the University's Representative.
- .2 If Contractor seeks an adjustment of the Contract Time, written documentation demonstrating Contractor's entitlement to a time extension under Article 8.4, which shall be submitted within 15 days of the date requested. If requested, Contractor may submit a fragnet in support of its request for a time extension. The University may, but is not obligated to, grant a time extension on the basis of a fragnet alone which, by its nature, is not a complete schedule analysis. If deemed appropriate by University Representative, Contractor shall submit a more detailed schedule analysis in support of its request for a time extension.
- .3 If Contractor seeks an adjustment of the Contract Sum or other monetary relief for delay, written documentation demonstrating Contractor's entitlement to such an adjustment under Article 7.3.9, which shall be submitted within 15 days of the date requested.

- .4 Any other information requested by the University's Representative for the purpose of evaluating the Change Order Request, which shall be submitted by the deadline established by the University's Representative.

4.2.4 University's Representative will make a decision on a Change Order Request, within a reasonable time, after receipt of a Change Order Request. In the event the Change Order Request is submitted pursuant to Article 8.4.1, the University's Representative shall promptly review and accept or reject it within thirty (30) days. A final decision is any decision on a Change Order Request which states that it is final. If University's Representative issues a final decision denying a Change Order Request in whole or in part, Contractor may contest the decision by filing a timely Claim under the procedures specified in Article 4.4.

4.2.5 Contractor may file a written demand for a final decision by University's Representative on all or part of any Change Order Request as to which the University's Representative has not previously issued a final decision pursuant to Article 4.2.4; such written demand may not be made earlier than the 30th day after submission of the Change Order Request. Within 30 days of receipt of the demand, University's Representative will issue a final decision on the Change Order Request. The University's Representative's failure to issue a decision within the 30-day period shall be treated as the issuance, on the last day of the 30-day period, of a final decision to deny the Change Order Request in its entirety.

### 4.3 CLAIMS

4.3.1 The term "Claim" means a written demand or assertion by Contractor seeking an adjustment or interpretation of the terms of the Contract Documents, payment of money, extension of time, or other relief with respect to the Contract Documents, including a determination of disputes or matters in question between University and Contractor arising out of or related to the Contract Documents or the performance of the Work. However, the term "Claim" shall not include, and the Claims procedures provided under this Article 4, including but not limited to arbitration, shall not apply to the following:

- .1 Claims respecting penalties for forfeitures prescribed by statute or regulation which a government agency is specifically authorized to administer, settle, or determine.
- .2 Claims respecting personal injury, death, reimbursement, or other compensation arising out of or resulting from liability for personal injury or death.
- .3 Claims by University, except as set forth in Articles 4.5, 4.6, and 4.7.
- .4 Claims respecting stop payment notices.

4.3.2 A Claim arises upon the issuance of a written final decision denying in whole or in part Contractor's Change Order Request pursuant to Articles 4.2.4 and 4.2.5.

4.3.3 A Claim must include the following:

- .1 A statement that it is a Claim and a request for a decision pursuant to Article 4.5.
- .2 A detailed factual narrative of events fully describing the nature and circumstances giving rise to the Claim, including but not limited to, necessary dates, locations, and items of work affected.
- .3 A certification, executed by Contractor, that the claim is filed in good faith. The certification must be made on the Claim Certification form, included in the Exhibits to the Contract. The language of the Claim Certification form may not be modified.
- .4 A certification, executed by each Subcontractor claiming not less than 5% of the total monetary amount sought by the claim, that the subcontractor's portion of the claim is filed in good faith. The certification must be made on the Claim Certification form, included in the Exhibits to the Contract. The language of the Claim Certification form may not be modified.
- .5 A statement demonstrating that a Change Order Request was timely submitted as required by Article 4.2.3
- .6 If a Cost Proposal or declaration was required by Article 4.2.3, a statement demonstrating that the Cost Proposal or the declaration was timely submitted as required by Article 4.2.3.
- .7 A detailed justification for any remedy or relief sought by the Claim, including to the extent applicable, the following:



- .1 If the Claim involves Extra Work, a detailed cost breakdown of the amounts claimed, including the items specified in Article 7.3.2. An estimate of the costs must be provided even if the costs claimed have not been incurred when the Claim is submitted. To the extent costs have been incurred when the Claim is submitted, the Claim must include actual cost records (including without limitation, payroll records, material and rental invoices and the like) demonstrating that costs claimed have actually been incurred. To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records must be submitted on a current basis not less than once a month during any periods costs are incurred. A cost record will be considered current if submitted within 30 days of the date the cost reflected in the record is incurred. At the request of the University's Representative, claimed extra costs may be subject to further verification procedures (such as having an inspector verify the performance of alleged Extra Work on a daily basis). The cost breakdown must include an itemization of costs for i) labor including workers' names, classifications, regular hours and overtime hours worked, dates worked, and other pertinent information; ii) materials stored or incorporated in the work including invoices, purchase orders, location of materials either stored or incorporated into the work, dates materials were transported to the project or incorporated into the work, and other pertinent information; and iii) itemization of machinery and equipment including make, model, hours of use, dates of use and equipment rental rates of any rented equipment.
- .2 If the Claim involves an extension of the Contract Time, written documentation demonstrating the Contractor's entitlement to a time extension under Article 8.4, including the specific dates for which a time extension is sought and the specific reasons for entitlement of a time extension.
- .3 If the Claim involves an adjustment of the Contract Sum for delay, written documentation demonstrating the Contractor's entitlement to such an adjustment under Article 7.3.9, including but not limited to, a detailed time impact analysis of the Contract Schedule. The Contract Schedule must demonstrate Contractor's entitlement to such an adjustment under Article 7.3.9.

#### **4.4 ASSERTION OF CLAIMS**

4.4.1 Claims by Contractor shall be first submitted to University's Representative for decision.

4.4.2 Notwithstanding the making of any Claim or the existence of any dispute regarding any Claim, unless otherwise directed by University's Representative, Contractor shall not cause any delay, cessation, or termination in or of Contractor's performance of the Work, but shall diligently proceed with performance of the Work in accordance with the Contract Documents.

4.4.3 Contractor shall submit a Claim in writing, together with all supporting data specified in Article 4.3.3, to University's Representative as soon as possible but not later than 30 days after the date the Claim arises under Article 4.3.2, provided that after written notification to the University's Representative within such time period, the time period for submission of the Claim shall be extended by the number of days specified in writing by the University's Representative where the Claim includes compensation sought by a Subcontractor and the Contractor requests an extension of time to permit it to discharge its responsibilities to conduct an appropriate review of the Subcontractor claim.

4.4.4 Strict compliance with the requirements of Articles 4.2, 4.3 and 4.4 are conditions precedent to Contractor's right to an informal conference to meet and confer to resolve a Claim, mediate a Claim, or arbitrate or litigate a Claim. Contractor specifically agrees to assert no Claims via an informal conference, mediation, arbitration or litigation unless there has been strict compliance with Articles 4.2, 4.3, and 4.4. The failure of Contractor to strictly comply with the requirements of Articles 4.2, 4.3 and 4.4 constitutes a failure by Contractor to exhaust its administrative remedies with the University, thereby denying any court or arbitration

panel of jurisdiction to adjudicate the Claim.

#### **4.5 DECISION OF UNIVERSITY'S REPRESENTATIVE ON CLAIMS**

4.5.1 University's Representative will timely review Claims submitted by Contractor. If University's Representative determines that additional supporting data are necessary to fully evaluate a Claim, University's Representative will request such additional supporting data in writing. Such data shall be furnished no later than 10 days after the date of such request. University's Representative will render a decision promptly and in any case within 30 days after the later of the receipt of the Claim or the deadline for furnishing such additional supporting data; provided that, if the amount of the Claim is in excess of \$50,000, the aforesaid 30-day period shall be 45 days. Failure of University's Representative to render a decision by the applicable deadline will be deemed a decision denying the Claim on the date of the deadline, unless, upon receipt of a Claim, Contractor and University mutually agree to extend the time periods provided herein, or unless otherwise extended by law. The decision of University's Representative will be final and binding unless appealed in accordance with Articles 4.5.2, 4.6, and 4.7. The University's Representative's decision on a Claim or dispute will include a written statement both identifying all disputed and undisputed portions of the Claim and substantially including the following:

"This is a decision under Article 4.5 of the General Conditions of your contract. If you are dissatisfied with the decision, and if you complied with the procedural requirements for asserting claims specified in Article 4 of the General Conditions of your contract, you may have the right to demand in writing an informal conference to meet and confer for settlement of any remaining issues in dispute, following which, if still dissatisfied, you may demand in writing a further resolution via nonbinding mediation, after which you have the right to arbitrate or litigate this decision. If you fail to take appropriate action within 30 days of the date of this decision, the decision shall become final and binding and not subject to further appeal."

4.5.2 If either Contractor or University disputes University's Representative's decision on a Claim, then, within 30 days after the decision of University's Representative on the Claim, or, if no decision has been issued, within 30 days from the date of the applicable deadline in Article 4.5.1 for University Representative to render a decision, such party (the "Disputing Party") must provide written notice demanding an informal conference to meet and confer. University shall schedule the conference within 30 days upon receipt of the notice demanding an informal conference. The parties will attempt in good faith to resolve any controversy or Claim arising out of or relating to this Contract by negotiation at the conference.

#### **4.6 MEDIATION**

4.6.1 Within 10 business days following the informal conference to meet and confer stated in Article 4.5.2, if the Claim or any portion of the Claim remains in dispute, the University shall provide a written statement identifying the disputed and undisputed portions of the Claim. Within 30 days of receipt of the statement, if either Contractor or University disputes any portion of the Claim, then the Disputing Party must provide written notice to the non-disputing party demanding non-binding mediation. The Contractor and the University shall share the associated costs equally and shall mutually agree to a mediator within 10 business days. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim, with each party bearing the fees and costs of its respective mediator. Mediation shall include, but not be limited to, neutral evaluation, a dispute review board, or other negotiation or evaluation through an independent third party or board. The Contractor and the University may mutually agree to waive any individual mediation in writing and proceed to arbitration or litigation pursuant to this Contract.

#### **4.7 LITIGATION AND ARBITRATION**

4.7.1 Either party may provide a written notice of its election to arbitrate or provide written notice of its election to litigate the Claim within 30 days after the mediation pursuant to Article 4.6.1, or, if the parties mutually agreed in writing to waive mediation, within 30 days after the agreement is signed by both parties.

4.7.2 If a notice of election to arbitrate or litigate is not given by either party within 30 days pursuant to



Article 4.7.1, University's Representative's decision on the Claim will be final and binding and not subject to appeal or challenge.

4.7.3 If the Disputing Party gives timely notice of its election to arbitrate the University's Representative's decision on a Claim, Disputing Party shall have the right, within 120 days after a Notice of Completion, or a Notice of Cessation, as applicable, is filed for the Contract, to make a demand for arbitration in accordance with Article 4.7. Failure to perfect a Claim for which a timely election to arbitrate has been made by the timely filing of a demand for arbitration and timely payment of all applicable and required fees to the American Arbitration Association ("AAA") shall result in the University's Representative's decision on said Claim becoming final and binding and not subject to appeal or challenge. If the Disputing Party makes a timely demand for arbitration, and the amount of the Claim in question, when combined with all other Claims, if any, which are the subject of previously filed demands for arbitration that have not been resolved by settlement or arbitration award, is \$100,000 or more, then the other party may elect to litigate all such Claims by filing a written notice with the "AAA" within 30 days after its receipt of notice from the AAA of the Disputing Party's demand for arbitration of the Claim that raises the total amount of Claims subject to arbitration to \$100,000 or more. If the other party fails to give notice of its election to litigate within such 30-day period, it shall be deemed to have consented to arbitration and waived the right to litigate. If after commencement of arbitration the amount of unresolved Claims in arbitration are allowed to be increased to \$100,000 or more, through an AAA-allowed amendment or otherwise, either party may elect to litigate within 30 days following the date that the electing party first receives written notification from the AAA that total Claims in arbitration equal or exceed \$100,000. If neither party gives notice of its election to litigate within such 30-day period as applicable, then both parties shall be deemed to have consented to arbitration and waived the right to litigate.

4.7.4 A demand for arbitration pursuant to Article 4.7.3 shall include a copy of the Claim presented to University's Representative pursuant to Article 4.4, a copy of the decision of University's Representative pursuant to Article 4.5, if any, a copy of the University's written statement identifying the portion of the Claim that remained in dispute following the informal conference pursuant to Article 4.6.1, and a summary of the remaining portions of the Claim in dispute. The demand shall state the amount in controversy, if any, and state the remedy sought. The demand shall identify the University's Responsible Administrator as the representative of the responding party and the Office of the General Counsel as counsel for the responding party. The demand shall be filed with the AAA and shall not be deemed to have been made until all applicable fees have been paid to the AAA by the demanding party. Copies of the demand and attachments shall be sent to University's Responsible Administrator as the representative of the responding party and the University's Office of General Counsel as attorney for the responding party, at the addresses set forth in the Project Directory, at the time the demand for arbitration is initiated with the AAA.

4.7.5 Except as modified by this Article 4.7, arbitration shall be initiated and conducted in accordance with the Construction Industry Arbitration Rules of the AAA then in effect. The following additional modifications shall be made to the aforesaid AAA rules:

- .1 Civil discovery shall be permitted for the production of documents and taking of depositions. Other discovery may be permitted at the discretion of the arbitrator. All disputes regarding discovery shall be decided by the arbitrator.
- .2 University's Representative and/or University's consultants, shall if required by agreement with University, upon demand by University join in and be bound by the Arbitration. University's Representative and University's consultants will have the same rights in any arbitration proceeding as are afforded by the AAA rules to Contractor and University.
- .3 Contractor's sureties shall be bound by any arbitration award and may join in any arbitration proceeding.
- .4 Except as provided in Articles 4.7.5.2. and 4.7.5.3 above, no Subcontractor or other person shall have a right or obligation to join in or be a party to any arbitration proceeding provided for in this Article 4 either directly, by joinder, by consolidation or actions, by counterclaim or crossclaim, or otherwise without the express written consent of University, Contractor, and the joining party.
- .5 If more than one demand for arbitration is made by a party with respect to Claims referred to University's Representative, all such Claims shall be consolidated into a single arbitration unless the parties otherwise agree in writing.
- .6 If total Claims are less than \$50,000, the AAA expedited procedures as modified by this Article 4 shall apply. If total Claims are between \$50,000 and \$100,000 they

- shall be heard by a single arbitrator who shall be an attorney. If total Claims are in excess of \$100,000 and are submitted to arbitration, either by agreement or by failure to elect litigation the controversy shall be heard by a panel of three arbitrators, one of which shall be an attorney.
- .7 No arbitrator shall be appointed and no discovery may be commenced prior to the date of Final Completion unless University and Contractor otherwise agree.
  - .8 The exclusive forum for determining arbitrability shall be the Superior Court of the State of California. The AAA shall not submit to any arbitrator any matter concerning the arbitrability of the dispute if the arbitrability is contested.
  - 9 If the expedited procedures of the AAA are applicable, the AAA shall submit simultaneously to each party an identical list of 7 proposed arbitrators drawn from the National Panel of Commercial Arbitrators, and each party may strike 3 names from the list on a peremptory basis and return the list to the AAA within 10 days from the date of receipt.
  - .10 Except as provided herein, the arbitration shall be conducted and enforced under California law, including the California Arbitration Act (California Code of Civil Procedure section 1280 and following). The Federal Arbitration Act shall not apply to the arbitration.

4.7.6 Unless University and Contractor otherwise agree in writing, the arbitration decision shall be binding upon the parties, made under and in accordance with the laws of the State of California, supported by substantial evidence, and in writing. If the total of all Claims or cross Claims submitted to arbitration is in excess of \$50,000, the award shall contain the basis for the decision, findings of fact, and conclusions of law. Any arbitration award shall be subject to confirmation, vacation, or correction under the procedures and on the grounds specified in the California Code of Civil Procedure including without limitation Section 1296. The expenses and fees of the arbitrators and the administrative fees of the AAA shall be divided among the parties equally. Each party shall pay its own counsel fees, witness fees, and other expenses incurred for its own benefit.

4.7.7 University may, but is not required, to assert as a counterclaim any matter arising out of the claims asserted by Contractor in the arbitration. University's failure to assert any such counterclaim in an arbitration shall be without prejudice to the University's right to assert the counterclaim in litigation or other proceeding.

4.7.8 Any litigation shall be filed in the Superior Court of the State of California for the County in which the contract was to be performed.

#### **4.8 WAIVER**

4.8.1 A waiver of or failure by University or University's Representative to enforce any requirement in this Article 4 in connection with any Claim shall not constitute a waiver of, and shall not preclude the University or University's Representative from enforcing such requirements in connection with any other Claims.

4.8.2 The Contractor agrees and understands that no oral approval, either express or implied, of any Claim shall be binding upon University unless and until such approval is ratified by execution of a written Change Order.

### **ARTICLE 5 SUBCONTRACTORS**

#### **5.1 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK**

5.1.1 Unless otherwise stated in the Contract Documents, Contractor shall submit in writing, prior to entering into subcontract agreements, the names and addresses of all Subcontractors proposed for the Work that were not previously listed in Contractor's Bid.

5.1.2 Any Subcontractor may be disqualified if University or University's Representative determines that such Subcontractor fails to meet the requirements of the Contract Documents or for any other reason.

5.1.3 In accordance with the Subletting and Subcontracting Fair Practices Act, nothing herein shall be deemed to entitle Contractor, without the approval of University, to substitute other subcontractors for those named in Contractor's List of Subcontractors and List of Changes in Subcontractors Due to Alternates



contained in the completed Bid Form; and, except with such approval, no such substitution shall be made.

5.1.4 Except as hereinafter provided, any increase in the cost of the Work resulting from the replacement or substitution of a Subcontractor, as required by University or University's Representative pursuant to Article 5.1.1 shall be borne solely by Contractor and Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time on account of such replacement or substitution.

## **5.2 SUBCONTRACTUAL RELATIONS**

5.2.1 Any part of the Work performed for Contractor by a first-tier Subcontractor shall be pursuant to a written subcontract. Each such subcontract shall require the Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to Contractor by the terms of the Contract Documents, to assume toward Contractor all the obligations and responsibilities which Contractor assumes towards University by the Contract Documents, and to perform such portion of the Work in accordance with the Contract Documents. Each such subcontract shall preserve and protect the rights of University under the Contract Documents, with respect to the Work to be performed by Subcontractor, so that subcontracting thereof will not prejudice such rights. Contractor shall cause each such subcontract to expressly include the following requirements:

- .1 Subcontractor waives all rights that Subcontractor may have against University for damages caused by fire or other perils covered by builder's risk property insurance carried by Contractor or University, except for such rights Subcontractor may have to the proceeds of such insurance held by University under Article 11.
- .2 University and entities and agencies designated by University will have access to and the right to audit and the right to copy at University's cost all of Subcontractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Subcontractor shall preserve all such records and other items for a period of at least 3 years after Final Completion.
- .3 Subcontractor recognizes the rights of University under Article 5.3, Contingent Assignment of Subcontracts, and agrees, upon notice from University that University has elected to accept said assignment and to retain Subcontractor pursuant to the terms of the subcontract, to complete the unperformed obligations under the subcontract and, if requested by University, to execute a written agreement confirming that Subcontractor is bound to University under the terms of the subcontract.

5.2.2 Upon the request of University, Contractor shall promptly furnish to University a true, complete, and executed copy of any subcontract.

5.2.3 Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor and University, except when, and only to the extent that, University elects to accept the assignment of the subcontract with such Subcontractor pursuant to Article 5.3, Contingent Assignment of Subcontracts.

## **5.3 CONTINGENT ASSIGNMENT OF SUBCONTRACTS**

5.3.1 Contractor hereby assigns to University all its interest in first-tier subcontracts now or hereafter entered into by Contractor for performance of any part of the Work. The assignment will be effective upon acceptance by University in writing and only as to those subcontracts which University designates in writing. University may accept said assignment at any time during the course of the Work and prior to Final Completion in the event of a suspension or termination of Contractor's rights under the Contract Documents. Such assignment is part of the consideration to University for entering into the Contract with Contractor and may not be withdrawn prior to Final Completion.

## **ARTICLE 6 CONSTRUCTION BY UNIVERSITY OR BY SEPARATE CONTRACTORS**

### **6.1 UNIVERSITY'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

6.1.1 University reserves the right to award separate contracts for, or to perform with its own forces, construction or operations related to the Work or other construction or operations at or affecting the Project site, including portions of the Work which have been deleted by Change Order. Contractor shall cooperate with University's forces and Separate Contractors.

6.1.2 University will provide coordination of the activities of University's forces and of each Separate Contractor with the Work of Contractor. Contractor shall participate with University and Separate Contractors in joint review of construction schedules and Project requirements when directed to do so. Contractor shall make necessary revisions to the Contract Schedule after such joint review.

## **6.2 MUTUAL RESPONSIBILITY**

6.2.1 Contractor shall afford University and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities. Contractor shall connect, schedule, and coordinate its construction and operations with the construction and operations of University and Separate Contractors as required by the Contract Documents.

6.2.2 If a portion of the Work is dependent upon the proper execution or results of other construction or operations by University or Separate Contractors, Contractor shall inspect such other construction or operations before proceeding with that portion of the Work. Contractor shall promptly report to University's Representative apparent discrepancies or defects which render the other construction or operations unsuitable to receive the Work. Unless otherwise directed by University's Representative, Contractor shall not proceed with the portion of the Work affected until apparent discrepancies or defects have been corrected. Failure of Contractor to so report within a reasonable time after discovering such discrepancies or defects shall constitute an acknowledgment that the other construction or operations by University or Separate Contractors is suitable to receive the Work, except as to defects not then reasonably discoverable.

## **6.3 UNIVERSITY'S RIGHT TO CLEAN UP**

6.3.1 If a dispute arises between Contractor and Separate Contractors as to the responsibility under their respective contracts for maintaining the Project site and surrounding areas free from waste materials and rubbish, University may clean up and allocate the cost between those firms it deems to be responsible.

## **ARTICLE 7 CHANGES IN THE WORK**

### **7.1 CHANGES**

7.1.1 University may, from time to time, order or authorize additions, deletions, and other changes in the Work by Change Order or Field Order without invalidating the Contract and without notice to sureties. Absence of such notice shall not relieve such sureties of any of their obligations to University.

7.1.2 Contractor may request a Change Order under the procedures specified in Article 4.2.

7.1.3 A Field Order may be issued by University, does not require the agreement of Contractor, and shall be valid with or without the signature of Contractor.

7.1.4 Contractor shall proceed promptly with any changes in the Work, unless otherwise provided in the relevant Change Order or Field Order.

### **7.2 DEFINITIONS**

7.2.1 A Change Order is a Contract Document (as shown in the Exhibits) which has been signed by both University and Contractor, and states their agreement, as applicable, to the following:

- .1 A change in the Work, if any.
- .2 The amount of an adjustment of the Contract Sum, if any.
- .3 The amount of an adjustment of the Contract Time, if any.
- .4 A modification to any other Contract term or condition.

7.2.2 A Unilateral Change Order may be issued by University, without the Contractor' signature, where the



University determines that a change in the Work requires an adjustment of the Contract Sum or Contract Time, even though no agreement has been reached between University and Contractor with regard to such change in the Work.

7.2.3 A Field Order (as shown in the Exhibits) is a Contract Document issued by the University that orders the Contractor to perform Work. A Field Order may, but need not, constitute a change in the Work and may, but need not, entitle Contractor to an adjustment of the Contract Sum or Contract Time.

### 7.3 CHANGE ORDER PROCEDURES

7.3.1 Contractor shall provide a Change Order Request and Cost Proposal pursuant to Article 4.2 and this Article 7.3 of the General Conditions. Adjustments of the Contract Sum resulting from Extra Work and Deductive Work shall be determined using one of the methods described in this Article 7.3. Adjustments of the Contract Time shall be subject to the provisions in Article 8. Contractor's obligation to provide Cost Proposals shall be subject to the following:

- .1 The obligation of Contractor to provide Cost Proposals is not Extra Work, and shall not entitle the Contractor to an adjustment of the Contract Sum or Contract Time.
- .2 The failure of Contractor to timely provide a Cost Proposal pursuant to Article 4.2 and this Article 7.3.1 is a material breach of the Contract. Contractor shall be responsible for any delay in implementing a change for which Contractor failed to timely provide a Cost Proposal consistent with the requirements of Article 4.2 and this Article 7.3.1.

7.3.2 The term "Cost of Extra Work" as used in this Article 7.3 shall mean actual costs incurred or to be incurred by Contractor and each Subcontractor regardless of tier involved, to the extent not otherwise disallowed under Article 7.3.3, and shall be limited to the following (to the extent the Contractor demonstrates that the costs are both reasonable and actually incurred, if such costs have been incurred):

- .1 Straight-time wages or salaries for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .2 Fringe Benefits and Payroll Taxes for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .3 Overtime wages or salaries, specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .4 Fringe Benefits and Payroll Taxes for overtime Work specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, incurred as a result of the performance of the Extra Work.
- .5 Costs of materials and consumable items which are furnished and incorporated into the Extra Work, as approved by University's Representative. Such costs shall be charged at the lowest price available to the Contractor but in no event shall such costs exceed competitive costs obtainable from other subcontractors, suppliers, manufacturers, and distributors in the area of the Project site. All discounts, rebates, and refunds and all returns from sale of surplus materials and consumable items shall accrue to University and Contractor shall make provisions so that they may be obtained.
- .6 Sales taxes on the costs of materials and consumable items which are incorporated into and used in the performance of the Extra Work pursuant to Article 7.3.2.5 above.
- .7 Rental charges for necessary machinery and equipment, whether owned or hired, as authorized in writing by University's Representative, exclusive of hand tools, used directly in the performance of the Extra Work. Such rental charges shall not exceed the current Equipment Rental Rates published by the California Department of Transportation for the area in which the work is performed. Such rental rates are found at <http://www.dot.ca.gov/hq/construc/equipmnt.html> . Contractor shall attach a copy of said schedule to the Cost Proposal. The charges for any machinery and equipment shall cease when the use thereof is no longer necessary for the Extra Work.

- .8 Additional costs of royalties and permits due to the performance of the Extra Work.
- .9 The cost for Insurance and Bonds shall not exceed 2% of items .1 through .8 above.

University and Contractor may agree upon rates to be charged for any of the items listed in this Article 7.3.2. Such agreed upon rates shall be subject to audit pursuant to Article 15.7. Contractor shall promptly refund to University any amounts (including associated mark-ups) in excess of the actual costs of such items.

7.3.3 Cost of Extra Work shall not include any of the following:

- .1 Supervision
- .2 Superintendent(s).
- .3 Assistant Superintendent(s).
- .4 Project Engineer(s).
- .5 Project Manager(s).
- .6 Scheduler(s).
- .7 Estimator(s).
- .8 Small tools (Replacement value does not exceed \$300).
- .9 Office expenses including staff, materials and supplies.
- .10 On-site or off-site trailer and storage rental and expenses.
- .11 Site fencing.
- .12 Utilities including gas, electric, sewer, water, telephone, facsimile, copier equipment.
- .13 Data processing personnel and equipment.
- .14 Federal, state, or local business income and franchise taxes.
- .15 Overhead and Profit.
- .16 Costs and expenses of any kind or item not specifically and expressly included in Article 7.3.2.

7.3.4 The term "Contractor Fee" shall mean the full amount of compensation, both direct and indirect (including without limitation all overhead and profit), to be paid to Contractor for its own Work and the Work of all Subcontractors, for all costs and expenses not included in the Cost of Extra Work, whether or not such costs and expenses are specifically referred to in Article 7.3.3. The Contractor Fee shall not be compounded.

The Contractor Fee shall be computed as follows:

- .1 Fifteen percent (15%) of the cost of that portion of the Extra Work to be performed by the prime contractor with its own forces.
- .2 Fifteen percent (15%) of the cost of that portion of the Work to be performed by a Subcontractor with its own forces, plus 5% for the prime contractor. Total combined Contractor and Subcontractor fee shall not exceed 20%.
- .3 Fifteen percent (15%) of the cost of that portion of the Work to be performed by a sub-subcontractor with its own forces, or any lower tier of Subcontractor, plus 5% for the Subcontractor, plus 5% for the prime contractor. Total combined Contractor, Subcontractor and all sub-subcontractor fee shall not exceed 25%.

7.3.5 Compensation for Extra Work shall be computed on the basis of one or more of the following:

- .1 Where the Work involved is covered by Unit Prices contained in the Contract Documents, by application of the Unit Prices to the quantities of the items involved.
- .2 Where Unit Prices are not applicable, a mutually agreed upon lump sum supported by a Cost Proposal pursuant to 7.3.1.
- .3 Where Contractor and University cannot agree upon a lump sum, by Cost of Extra Work plus Contractor Fee applicable to such Extra Work.

7.3.6 As a condition to Contractor's right to an adjustment of the Contract Sum pursuant to Article 7.3.5.3, Contractor must keep daily detailed and accurate records itemizing each element of cost and shall provide



substantiating records and documentation, including time cards and invoices. Such records and documentation shall be submitted to University's Representative on a daily basis.

7.3.7 For Work to be deleted by Change Order, the reduction of the Contract Sum shall be computed on the basis of one or more of the following:

- .1 Unit Prices stated in the Contract Documents.
- .2 Where Unit Prices are not applicable, a lump sum agreed upon by University and Contractor, based upon the actual costs which would have been incurred in performing the deleted portions of the Work as calculated in accordance with Articles 7.3.2 and 7.3.3, supported by a Cost Proposal pursuant to Article 7.3.1.

7.3.8 If any one Change involves both Extra Work and Deleted Work in the same portion of the Work, a Contractor fee will not be allowed if the deductive cost exceeds the additive cost. If the additive cost exceeds the deductive cost, a Contractor Fee will be allowed only on the difference between the two amounts.

7.3.9 The Contract Sum will be adjusted for a delay if, and only if, Contractor demonstrates that all of the following three conditions are met:

- .1 Condition Number One: The delay results in an extension of the Contract Time pursuant to Article 8.4.1.
- .2 Condition Number Two: The delay is caused solely by one or more of the following:
  - .1 An error or omission in the Contract Documents; or
  - .2 The University's decision to change the scope of the Work, where such decision is not the result of any default or misconduct of the Contractor; or
  - .3 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the Contractor; or
  - .4 The failure of the University (including the University acting through its consultants, Design Professionals, Separate Contractors or the University's Representative) to perform any Contract obligation where the failure to so perform is not the result of any default or misconduct of the Contractor.
  - .5 A materially differing site condition pursuant to Article 3.17.
- .3 Condition Number Three: The delay is not concurrent with a delay caused by an event other than those listed in Article 7.3.9.2.

7.3.10 For each day of delay that meets all three conditions prescribed in Article 7.3.9 the Contract Sum will be adjusted by the daily rate included in the Agreement and specifically identified as the rate to be paid to Contractor for Compensable Delays. Pursuant to Article 9.7.4, said daily rate shall not apply to delays occurring after Substantial Completion.

7.3.11 Except as provided in Articles 7 and 8, Contractor shall have no claim for damage or compensation for any delay, interruption, hindrance, or disruption.

7.3.12 If for any reason one or more of the conditions prescribed in Article 7.3.9 is held legally unenforceable, the remaining conditions must be met as a condition to obtaining an adjustment of the Contract Time under Article 7.3.10.

## 7.4 FIELD ORDERS

7.4.1 Field Orders issued by the University Representative shall be subject to the following:

- .1 A Field Order may state that it does or does not constitute a change in the Work.

- .2 If the Field Order states that it does not constitute a change in the Work and the Contractor asserts that the Field Order constitutes a change in the Work, in order to obtain an adjustment of the Contract Sum or Contract Time for the Work encompassed by the Field Order, Contractor must follow all procedures set forth in Article 4, starting with the requirement of submitting a timely Change Order Request within 7 days of Contractor's receipt of the Field Order; failure to strictly follow those procedures is a bar to any Claim for an adjustment of the Contract Sum or Contract Time arising from performance of the Work described in the Field Order.
- .3 If the Field Order states that it does constitute a change in the Work, the Work described in the Field Order shall be considered Extra Work and the Contractor shall be entitled to an adjustment of the Contract Sum and Contract Time, calculated under and subject to Contractor's compliance with the procedures for verifying and substantiating costs and delays in Articles 7 and 8.
- .4 In addition, if the Field Order states that it does constitute a change in the Work, the Field Order may or may not contain University's estimate of adjustment of Contract Sum and/or Contract Time. If the Field Order contains an estimate of adjustment of Contract Sum or Contract Time, the Field Order is subject to the following:
  - .1 The Contractor shall not exceed the University's estimate of adjustment to Contract Sum or Contract Time without prior written notification to the University's Representative.
  - .2 If the Contractor asserts that the change in the Work encompassed by the Field Order may entitle Contractor to an adjustment of Contract Sum or Contract Time in excess of the University's estimate, in order not to be bound by University's estimate Contractor must follow all procedures set forth in Article 4, starting with the requirement of submitting a timely Change Order Request within 7 days of Contractor's receipt of the Field Order; failure to strictly follow those procedures is a bar to any Claim for an adjustment of the Contract Sum or Contract Time, in excess of the University's estimate, arising from performance of the Work described in the Field Order.

7.4.2 Upon receipt of a Field Order, Contractor shall promptly proceed to perform the Work as ordered in the Field Order notwithstanding any disagreement by the Contractor concerning whether the Work is extra.

## **7.5 VARIATION IN QUANTITY OF UNIT PRICE WORK**

7.5.1 University has the right to increase or decrease the quantity of any Unit price item for which an Estimated Quantity is stated in the Bid Form.

## **7.6 WAIVER**

7.6.1 A waiver of or failure by University or University's Representative to enforce any requirement in this Article 7, including without limitation the requirements in Articles 7.3.6, 7.3.8, 7.3.9, 7.3.10, 7.3.11, or 7.3.12 in connection with any adjustment of the Contract Sum, will not constitute a waiver of, and will not preclude the University or University's Representative from enforcing, such requirements in connection with any other adjustments of the Contract Sum.

7.6.2 The Contractor agrees and understands that no oral approval, either express or implied, of any adjustment of the Contract Sum by University or its agents shall be binding upon University unless and until such approval is ratified by execution of a written Change Order.

## **ARTICLE 8 CONTRACT TIME**

### **8.1 COMMENCEMENT OF THE WORK**

8.1.1 The date of commencement of the Work shall be set forth in the Notice To Proceed. The date of

commencement of the Work shall not be postponed by the failure of Contractor, Subcontractors, or of persons or firms for whom Contractor is responsible, to act.

## 8.2 PROGRESS AND COMPLETION

8.2.1 By signing the Agreement:

- .1 Contractor represents to University that the Contract Time is reasonable for performing the Work and that Contractor is able to perform the Work within the Contract Time.
- .2 Contractor agrees that University is purchasing the right to have the Contractor present on the Project site for the full duration of the Contract Time, even if Contractor could finish the Contract in less than the Contract Time.

8.2.2 Contractor shall not, except by agreement or instruction of University in writing, commence operations on the Project site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by Contractor. The dates of commencement and Final Completion of the Work shall not be changed by the effective date of such insurance.

8.2.3 Contractor shall proceed expeditiously with adequate forces and shall achieve full completion of the Work within the Contract Time. If University's Representative determines and notifies Contractor that Contractor's progress is such that Contractor will not achieve full completion of the Work within the Contract Time, Contractor shall immediately and at no additional cost to University, take all measures necessary, including working such overtime, additional shifts, Sundays, or holidays as may be required to ensure that the Work is fully completed within the Contract Time. Upon receipt of such notice from University's representative, Contractor shall immediately notify University's Representative of all measures to be taken to ensure full completion of the Work within the Contract Time. Contractor shall reimburse University for any extra costs or expenses (including the reasonable value of any services provided by University's employees) incurred by University as the result of such measures.

## 8.3 DELAY

8.3.1 Except and only to the extent provided otherwise in Articles 7 and 8, by signing the Agreement, Contractor agrees:

- .1 to bear the risk of delays to the Work; and
- .2 that Contractor's bid for the Contract was made with full knowledge of this risk.

In agreeing to bear the risk of delays to the Work, Contractor understands that, except and only to the extent provided otherwise in Articles 7 and 8, the occurrence of events that delay the Work shall not excuse Contractor from its obligation to achieve Final Completion of the Work within the Contract Time, and shall not entitle the Contractor to an adjustment of the Contract Sum.

## 8.4 ADJUSTMENT OF THE CONTRACT TIME FOR DELAY

8.4.1 Subject to Article 8.4.2, the Contract Time will be extended for each day of delay for which Contractor demonstrates that all of the following four conditions have been met; a time extension will not be granted for any day of delay for which Contractor fails to demonstrate compliance with the four conditions:

- .1 Condition Number One: The delay is critical. A delay is critical if and only to the extent it delays a work activity that cannot be delayed without delaying Final Completion of the Work beyond the Contract Time. Under this Article 8.4.1.2, if the Contract Schedule shows Final Completion of the Work before expiration of the Contract Time, a delay is critical if and only to the extent the delay pushes Final Completion of the Work to a date that is beyond the Contract Time.
- .2 Condition Number Two: Within 7 days of the date the Contractor discovers or reasonably should discover an act, error, omission or unforeseen condition or event causing the delay is likely to have an impact on the critical path of the Project, (even if the Contractor has not yet been delayed when the Contractor discovers or



reasonably should discover the critical path impact of the act, error, omission or unforeseen condition giving rise to the delay) the Contractor submits both a timely and complete Change Order Request that meets the requirements of Article 4.2.

- .3 Condition Number Three: The delay is not caused by:
  - .1 A concealed, unforeseen or unknown condition or event except for a materially differing site condition pursuant to Article 3.17; or
  - .2 The financial inability, misconduct or default of the Contractor, a Subcontractor or supplier; or
  - .3 The unavailability of materials or parts.
  
- .4 Condition Number Four: The delay is caused by:
  - .1 Fire; or
  - .2 Strikes, boycotts, or like obstructive actions by labor organizations; or
  - .3 Acts of God (As used herein, "Acts of God" shall include only earthquakes in excess of a magnitude of 3.5 on the Richter Scale and tidal waves); or
  - .4 A materially differing site condition pursuant to Article 3.17; or
  - .5 An error or omission in the Contract; or
  - .6 The University's decision to change the scope of the Work, where such decision is not the result of any default or misconduct of the Contractor; or
  - .7 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the Contractor; or
  - .8 The failure of the University (including the University acting through its consultants, Design Professionals, Separate Contractors or the University's representative) to perform any Contract obligation unless such failure is due to Contractor's default or misconduct.
  - .9 "Adverse weather," but only for such days of adverse weather, or on-site conditions caused by adverse weather, that are in excess of the number of days specified in the Supplementary Conditions. In order for a day to be considered a day of adverse weather for the purpose of determining whether Contractor is entitled to an adjustment in Contract Time, both of the following conditions must be met:
    - .1 the day must be a day in which, as a result of adverse weather, less than one half day of critical path work is performed by Contractor; and
    - .2 the day must be identified in the Contract Schedule as a scheduled work day.

8.4.2 If and only if a delay meets all four conditions prescribed in Article 8.4.1, then a time extension will be granted for each day that Final Completion of the Work is delayed beyond the Contract Time, subject to the following:

- .1 When two or more delays (each of which meet all four conditions prescribed in Article 8.4.1) occur concurrently on the same day, and each such concurrent delay by itself without consideration of the other delays would be critical, then all such concurrent delays shall be considered critical. For the purpose of determining whether and to what extent the Contract Time should be adjusted pursuant to Article 8.4.2, such concurrent critical delays shall be treated as a single delay for each such day.

.2 Contractor shall be entitled to a time extension for a day of delay that meets all four requirements of Article 8.4.1 if the delay is concurrent with a delay that does not meet all four conditions of Article 8.4.1.

8.4.3 If for any reason one or more of the four conditions prescribed in Article 8.4.1 is held legally unenforceable, then all remaining conditions must be met as a condition to obtaining an extension of the Contract Time under Article 8.4.2.

## **8.5 COMPENSATION FOR DELAY**

8.5.1 To the maximum extent allowed by law, any adjustment of the Contract Sum as the result of delays shall be limited to the amounts specified in Article 7. Such adjustment shall, to the maximum extent allowed by law, constitute payment in full for all delay related costs (including costs for disruption, interruption and hindrance, general conditions, on and off-site overhead and profit) of Contractor, its Suppliers and Subcontractors of all tiers and all persons and entities working under or claiming through Contractor in connection with the Project.

8.5.2 By signing the Agreement, the parties agree that the University is buying the right to do any or all of the following, which are reasonable and within the contemplation of the parties:

- .1 To order changes in the Work, regardless of the extent and number of changes, including without limitation:
  - .1 Changes to correct errors or omissions, if any, in the Contract Documents.
  - .2 Changes resulting from the University's decision to change the scope of the Work subsequent to execution of the Contract.
  - .3 Changes due to unforeseen conditions.
- .2 To suspend the Work or any part thereof.
- .3 To delay the Work, including without limitation, delays resulting from the failure of the University or the University's Representative to timely perform any Contract obligation and delays for University's convenience.

## **8.6 WAIVER**

8.6.1 A waiver of or failure by University or University's Representative to enforce any requirement in this Article 8, including without limitation the requirements in Article 8.4, in connection with any or all past delays shall not constitute a waiver of, and shall not preclude the University or University's Representative from enforcing, such requirements in connection with any present or future delays.

8.6.2 Contractor agrees and understands that no oral approval, either express or implied, of any time extension by University or its agents shall be binding upon University unless and until such approval is ratified by execution of a written Change Order.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **9.1 COST BREAKDOWN**

9.1.1 Within 10 days after receipt of the Notice of Selection as the apparent lowest responsible Bidder, and with the Agreement, Contractor shall submit to University's Representative a Cost Breakdown of the Contract Sum in the form contained in the Exhibits. The Cost Breakdown shall itemize as separate line items the cost of each Work Activity and all associated costs, including but not limited to warranties, as-built documents, overhead expenses, and the total allowance for profit. Insurance and bonds shall each be listed as separate line items. The total of all line items shall equal the Contract Sum. The Cost Breakdown, when approved by the University's Representative, shall become the basis for determining the cost of Work performed for Contractor's Applications for Payment.

## 9.2 PROGRESS PAYMENT

9.2.1 University agrees to pay monthly to Contractor, subject to Article 9.4.3, an amount equal to 95% of the sum of the following:

- .1 Cost of the Work in permanent place as of the date of the Contractor's Application For Payment.
- .2 Plus cost of materials not yet incorporated in the Work, subject to Article 9.3.5.
- .3 Less amounts previously paid.

Under this Article 9.2.1, University may, but is not required, to pay Contractor more frequently than monthly.

9.2.2 After Substantial Completion and subject to Article 9.4.3, University will make any of the remaining progress payments in full.

## 9.3 APPLICATION FOR PAYMENT

9.3.1 On or before the 10th day of the month or such other date as is established by the Contract Documents, Contractor shall submit to University's Representative an itemized Application For Payment, for the cost of the Work in permanent place, as approved by University's Representative, which has been completed in accordance with the Contract Documents, less amounts previously paid.

The Application For Payment shall be prepared as follows:

- .1 Use the form contained in the Exhibits.
- .2 Itemize in accordance with the Cost Breakdown.
- .3 Include such data substantiating Contractor's right to payment as University's Representative may reasonably require, such as invoices, certified payrolls, daily time and material records, and, if securities are deposited in lieu of retention pursuant to Article 9.5, a certification of the market value of all such securities as of a date not earlier than 5 days prior to the date of the Application For Payment.
- .4 Itemize retention.

9.3.2 Applications For Payment shall not include requests for payment on account of (1) changes which have not been authorized by Change Orders or (2) amounts Contractor does not intend to pay a Subcontractor because of a dispute or other reason.

9.3.3 If required by University, an Application For Payment shall be accompanied by (1) a summary showing payments that will be made to Subcontractors covered by such application and conditional releases upon progress payment or final payment and (2) unconditional waivers and releases of claims and stop payment notices, in the form contained in the Exhibits, from each Subcontractor listed in the preceding Application For Payment covering sums disbursed pursuant to that preceding Application For Payment.

9.3.4 Contractor warrants that, upon submittal of an Application For Payment, all Work, for which Certificates For Payment have been previously issued and payment has been received from University, shall be free and clear of all claims, stop payment notices, security interests, and encumbrances in favor of Contractor, Subcontractors, or other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment relating to the Work.

9.3.5 At the sole discretion of University, University's Representative may approve for inclusion in the Application For Payment the cost of materials not yet incorporated in the Work but already delivered and suitably stored either at the Project site or at some other appropriate location acceptable to University's Representative. In such case, Contractor shall furnish evidence satisfactory to University's Representative (1) of the cost of such materials and (2) that such materials are under the exclusive control of Contractor. Only materials to be incorporated in the Work will be considered for payment. Any payment shall not be construed as acceptance of such materials nor relieve Contractor from sole responsibility for the care and protection of such materials; nor relieve Contractor from risk of loss to such materials from any cause whatsoever; nor relieve Contractor from its obligation to complete the Work in accordance with the Contract; nor act as a waiver of the right of University to require fulfillment of all terms of the Contract. Nothing contained within this Article



9.3.5 shall be deemed to obligate University to agree to payment for any non-incorporated materials or any part thereof, payment being in the sole and absolute discretion of University.

#### **9.4 CERTIFICATE FOR PAYMENT**

9.4.1 If Contractor has submitted an Application For Payment in accordance with Article 9.3, University's Representative shall, not later than 5 working days after the date of receipt of the Application For Payment, issue to University, with a copy to Contractor, a Certificate For Payment for such amount as University's Representative determines to be properly due.

9.4.2 If any such Application For Payment is determined not to be in accordance with Article 9.3, University will inform Contractor as soon as practicable, but not later than 5 working days after receipt. Thereafter, Contractor shall have 3 days to revise and resubmit such Application For Payment; otherwise University's Representative may issue a Certificate For Payment in the amount that University's Representative determines to be properly due without regard to such Application For Payment.

9.4.3 Approval of all or any part of an Application For Payment may be withheld, a Certificate For Payment may be withheld, and all or part of a previous Certificate For Payment may be nullified and that amount withheld from a current Certificate For Payment on account of any of the following:

- .1 Defective Work not remedied.
- .2 Third-party claims against Contractor or University arising from the acts or omissions of Contractor or Subcontractors.
- .3 Stop payment notices.
- .4 Failure of Contractor to make timely payments due Subcontractors for material or labor.
- .5 A reasonable doubt that the Work can be completed for the balance of the Contract Sum then unpaid.
- .6 Damage to University or Separate Contractor for which Contractor is responsible.
- .7 Reasonable evidence that the Work will not be completed within the Contract Time; and that the unpaid balance of the Contract Sum would not be adequate to cover University's damages for the anticipated delay.
- .8 Failure of Contractor to maintain and update as-built documents.
- .9 Failure of Contractor to submit schedules or their updates as required by the Contract Documents.
- .10 Failure to provide conditional or unconditional releases from any Subcontractor or supplier, if such waiver(s) have been requested by University's Representative.
- .11 Performance of Work by Contractor without properly processed Shop Drawings.
- .12 Liquidated damages assessed in accordance with Article 5 of the Agreement.
- .13 Failure to provide updated Reports of Subcontractor Information and Self-Certifications, as applicable.
- .14 Failure to provide a Final Distribution of Contract Dollars with final Application for Payment.
- .15 Any other failure of Contractor to perform its obligations under the Contract Documents.

9.4.4 Subject to the withholding provisions of Article 9.4.3, University will pay Contractor the amount set forth in the Certificate For Payment no later than 10 days after the issuance of the Certificate For Payment.

9.4.5 Neither University nor University's Representative will have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

9.4.6 Neither a Certificate For Payment nor a progress payment made by University will constitute acceptance of Defective Work.

#### **9.5 DEPOSIT OF SECURITIES IN LIEU OF RETENTION AND DEPOSIT OF RETENTION INTO ESCROW**

9.5.1 At the request and expense of Contractor, a substitution of securities may be made for any monies retained by University under Article 9.2 to ensure performance under the Contract Documents. Securities

equivalent in value to the retention amount required by the Contract Documents for each Certificate For Payment shall be deposited by Contractor with a state or federally chartered bank in the State of California ("Escrow Agent"), which shall hold such securities pursuant to the escrow agreement referred to in Article 9.5.3 until retention is due in accordance with Article 9.8. Securities shall be valued as often as conditions of the securities market warrant, but in no case less than once per month. Contractor shall deposit additional securities so that the current market value of the total of all deposited securities shall be at least equal to the total required amount of retention.

9.5.2 Alternatively to Article 9.5.1, and at the request and expense of Contractor, University will deposit retention directly with Escrow Agent. Contractor may direct the investment of such deposited retention into interest bearing accounts or securities, and such deposits or securities shall be held by Escrow Agent upon the same terms provided for securities deposited by Contractor. Contractor and its surety shall bear the risk of failure of the Escrow Agent selected.

9.5.3 A prerequisite to the substitution of securities in lieu of retention or the deposit of retention into escrow shall be the execution by Contractor, University, and Escrow Agent of an Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention in the form contained in the Exhibits. The Contractor shall submit the Selection of Retention Options and the Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention not later than the date when 50% of the Work has been completed. The terms of such escrow agreement are incorporated into the requirements of this Article 9.5.

## 9.6 BENEFICIAL OCCUPANCY

9.6.1 University reserves the right, at its option and convenience, to occupy or otherwise make use of any part of the Work at any time prior to Substantial Completion or Final Completion upon 10 days' notice to Contractor. Such occupancy or use is herein referred to as "Beneficial Occupancy." Beneficial Occupancy shall be subject to the following conditions:

- .1 University's Representative will make an inspection of the portion of the Project to be beneficially occupied and prepare a list of items to be completed or corrected prior to Final Completion. Prior to Beneficial Occupancy, University will issue a Certificate of Beneficial Occupancy on University's form.
- .2 Beneficial Occupancy by University shall not be construed by Contractor as an acceptance by University of that portion of the Work which is to be occupied.
- .3 Beneficial Occupancy by University shall not constitute a waiver of existing claims of University or Contractor against each other.
- .4 Contractor shall provide, in the areas beneficially occupied and on a 24 hour and 7 day week basis as required, utility services, heating, and cooling for systems which are in operable condition at the time of Beneficial Occupancy. All responsibility for the operation and maintenance of equipment shall remain with Contractor while the equipment is so operated. Contractor shall submit to University an itemized list of each piece of equipment so operated with the date operation commences.
- .5 The Guarantee to Repair Periods, as defined in Article 12.2, will commence upon the occupancy date stated in the Certificate of Beneficial Occupancy except that the Guarantee to Repair Periods for that part of equipment or systems that serve portions of the Work for which University has not taken Beneficial Occupancy or issued a Certificate of Substantial Completion shall not commence until the University has taken Beneficial Occupancy for that portion of the Work or has issued a Certificate of Substantial Completion with respect to the entire Project.
- .6 University will pay all normal operating and maintenance costs resulting from its use of equipment in areas beneficially occupied.
- .7 University will pay all utility costs which arise out of the Beneficial Occupancy.
- .8 Contractor shall not be responsible for providing security in areas beneficially occupied.
- .9 University will use its best efforts to prevent its Beneficial Occupancy from interfering with the conduct of Contractor's remaining Work.
- .10 Contractor shall not be required to repair damage caused by University in its

- .11 Beneficial Occupancy. Except as provided in this Article 9.6, there shall be no added cost to University due to Beneficial Occupancy.
- .12 Contractor shall continue to maintain all insurance required by the Contract in full force and effect.

## 9.7 SUBSTANTIAL COMPLETION

9.7.1 "Substantial Completion" means the stage in the progress of the Work, as determined by University's Representative, when the Work is complete and in accordance with the Contract Documents except only for completion of minor items which do not impair University's ability to occupy and fully utilize the Work for its intended purpose and a Certificate of Occupancy has been issued by the University.

9.7.2 When Contractor gives notice to University's Representative that the Work is substantially complete, unless University's Representative determines that the Work is not sufficiently complete to warrant an inspection to determine Substantial Completion, University's Representative will inspect the Work. If the University's Representative determines that the Work is not substantially completed the University's Representative will prepare and give to Contractor a comprehensive list of items to be completed or corrected before establishing Substantial Completion. Contractor shall proceed promptly to complete and correct items on the list. Failure to include an item on such list does not alter the responsibility of Contractor to complete all Work in accordance with the Contract Documents. Upon notification that the items on the list are completed or corrected, as applicable, the University's Representative will make an inspection to determine whether the Work is substantially complete. Costs for additional inspection by University's Representative shall be deducted from any monies due and payable to Contractor.

9.7.3 When University's Representative determines that the Work is substantially complete, University's Representative will arrange for inspection by University's Building Official and other officials, as appropriate, for the purpose of issuing a Certificate of Occupancy. After a Certificate of Occupancy has been issued by the University, the University's Representative will prepare a Certificate of Substantial Completion on University's form as contained in the Exhibits, which, when signed by University, shall establish the date of Substantial Completion and the responsibilities of University and Contractor for security, maintenance, utilities, insurance, and damage to the Work. The University's Representative will prepare and furnish to the Contractor a comprehensive "punch list" of items to be completed or corrected prior to Final Completion.

9.7.4 Unless otherwise provided in the Certificate of Substantial Completion, the Guarantee To Repair Period for the Work covered by the Certificate of Substantial Completion, shall commence on the date of Substantial Completion of the Work except that Substantial Completion shall not commence the Guarantee to Repair Period for any equipment or systems that:

- .1 Are not operational (equipment or systems shall not be considered operational if they cannot be used to provide the intended service; or
- .2 Are not accepted by the University.

The Guarantee To Repair Period for equipment or systems which become operational and accepted subsequent to Substantial Completion will begin on the date of their written acceptance by University.

9.7.5 The daily rate included in the Agreement and specifically identified as the rate to be paid to Contractor for Compensable Delays shall not apply to any delays occurring after the Work is substantially completed.

## 9.8 FINAL COMPLETION, FINAL PAYMENT, AND RELEASE OF RETENTION

9.8.1 Upon receipt of notice from Contractor that the Work is ready for final inspection, University's Representative will make such inspection. Final Completion shall be when University's Representative determines that the Work is fully completed and in accordance with the Contract Documents, including without limitation, satisfaction of all "punch list" items, and determines that a Certificate of Occupancy has been issued by the University. University will file a Notice of Completion within 15 days after Final Completion. After receipt of the final Application For Payment, if University's Representative determines that Final Completion has occurred, University's Representative will issue the final Certificate For Payment.

9.8.2 Final payment and retention shall be released to Contractor, as set forth in Article 9.8.3, after:



.1 Contractor submits the final Application For Payment and all submittals required in accordance with Article 9.3;

.2 Contractor submits all guarantees and warranties procured by Contractor from Subcontractors, all operating manuals for equipment installed in the Project, as-built documents, and all other submittals required by the Contract Documents;

.3 Contractor submits the Final Distribution of Contract Dollars in the form contained in the Exhibits; and

.4 University's Representative issues the final Certificate For Payment.

At its sole discretion, after Final Completion, University may waive the requirement that Contractor submit a final Application For Payment before making final payment and/or release of retention to Contractor.

9.8.3 Final payment shall be paid not more than 10 days after University's Representative issues the final Certificate For Payment. Retention shall be released to Contractor 35 days after the filing of the Notice of Completion.

9.8.4 Acceptance of final payment by Contractor shall constitute a waiver of all claims, except claims for retention and claims previously made in writing and identified by Contractor as unsettled at the time of the final Application For Payment.

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

### **10.1 SAFETY PRECAUTIONS AND PROGRAMS**

10.1.1 Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

### **10.2 SAFETY OF PERSONS AND PROPERTY**

10.2.1 Contractor shall take adequate precautions for safety of and shall provide adequate protection to prevent damage, injury, or loss to the following:

.1 Employees involved in the Work and other persons who may be affected thereby.

.2 The Work in place and materials and equipment to be incorporated therein, whether in storage on or off the Project site, under care, custody, or control of Contractor or Subcontractors.

.3 Other property at the Project site and adjoining property.

10.2.2 Contractor shall erect and maintain, as required by existing conditions and performance of the Work, adequate safeguards for safety and protection, including providing adequate lighting and ventilation, posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

10.2.3 When use or storage of explosives, other hazardous materials, equipment, or unusual methods are necessary for execution of the Work, Contractor shall exercise the utmost care and carry on such activities only under the supervision of properly qualified personnel.

10.2.4 Contractor shall designate a responsible member of Contractor's organization at the Project site whose duty shall be the prevention of accidents. That person shall be the Superintendent, unless otherwise designated by Contractor in writing to University and University's Representative.

10.2.5 Contractor shall not load or permit any part of the Work or the Project site to be loaded so as to

endanger the safety of persons or property.

### **10.3 EMERGENCIES**

10.3.1 In an emergency affecting the safety of persons or property, Contractor shall act to prevent or minimize damage, injury, or loss. Contractor shall promptly notify University's Representative, which notice may be oral followed by written confirmation, of the occurrence of such an emergency and Contractor's action.

## **ARTICLE 11 INSURANCE AND BONDS**

### **11.1 CONTRACTOR'S INSURANCE**

11.1.1 Contractor shall, at its expense, purchase and maintain in full force and effect such insurance as will protect itself and University from claims, such as for bodily injury, wrongful death, and property damage, which may arise out of or result from the Work required by the Contract Documents, whether such Work is done by Contractor, by any Subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The amounts of such insurance and any additional insurance requirements are specified in the Supplementary Conditions. See Article 3.21 regarding the scope and extent of Contractor's liability for and repair of damaged Work.

11.1.2 The following policies and coverages shall be furnished by Contractor:

- .1 COMMERCIAL GENERAL LIABILITY INSURANCE subject to terms no less broad than the Insurance Services Office's (ISO) form CG 0001 (2004 or later edition), or a substitute form providing coverage at least as broad as the ISO form specified, covering all Work done by or on behalf of Contractor and providing insurance for bodily injury, wrongful death, personal injury, property damage, and contractual liability. There shall be no limitations or exclusions of coverage beyond those contained in the standard ISO form CG 0001 (2004 or later edition). Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limit shall apply separately to Work required of Contractor by these Contract Documents. Contractor shall continue to maintain Products/Completed Operations liability insurance coverage for a minimum completed operations period of 10 year(s) or the applicable Statute of Repose as provided by the law of the jurisdiction where the project is located as shown in the policy(ies), whichever is less. All terms and conditions of such coverage shall be maintained during this completed operations period, including the required minimum coverage limits and the requirement to provide the University with coverage as an additional insured for completed operations as specified under this Article 11.1 and the Supplementary Conditions.
- .2 BUSINESS AUTOMOBILE LIABILITY INSURANCE subject to terms no less broad than the Insurance Services Office's (ISO) form CA 0001 (1990 or later edition), or a substitute form providing coverage at least as broad as the ISO form specified, covering owned, hired, leased, and non-owned automobiles used by or on behalf of Insured, and providing liability insurance for bodily injury and property damage arising from the use or operation of such auto(s) with a minimum combined single limit of not less than \$1,000,000 per accident. The minimum limits required may be satisfied by combination of primary and umbrella/excess policies. The Commercial Automobile Liability Insurance shall be provided by Contractor for all on site and off site Work.
- .3 WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE as required by Federal and State of California law. Contractor shall also require all of its Subcontractors to maintain this insurance coverage.

11.1.3 The coverages required under this Article 11 shall not in any way limit the liability of Contractor.

11.1.4 Contractor's Certificates of Insurance, executed by a duly authorized representative of each broker of record or each insurer as evidence of the insurance required by these Contract Documents and on the form contained in the Exhibits, shall be submitted by Contractor to University prior to the commencement of Work by the Contractor. The Certificates of Insurance shall provide for no cancellation or modification of coverage without prior written notice to University, in accordance with policy provisions.

11.1.5 In the event Contractor does not comply with these insurance requirements, University may, at its option, provide insurance coverage to protect University; and the cost of such insurance shall be paid by Contractor and may be deducted from the Contract Sum.

11.1.6 Contractor's insurance as required by Article 11.1.2, shall, by endorsement to the policies, include the following:

- .1 The Regents of the University of California, The University of California, University, and each of their Representatives, consultants, officers, agents, employees, and each of their Representative's consultants, regardless of whether or not identified in the Contract Documents or to the Contractor in writing, will be included as additional insureds on the Contractor's General Liability insurance for and relating to the Work to be performed by the Contractor and Subcontractors. Additional Insured provision or endorsement shall be at least as broad as the CG 20 07 04 in combination with the CG 20 37 07 04 (or earlier versions of CG 20 10 and CG 20 37 or Form B - CG 20 10 11 85 by itself), as published by Insurance Services Offices (ISO) and shall be included with Certificates of Insurance. The additional insured requirement shall not apply to Worker's Compensation and Employer's Liability insurance.

Further, the amount of insurance available to the University shall be for the full amount of the loss up to the available policy limits and shall not be limited to any minimum requirements stated in the Contract Documents.

- .2 University, University's consultants, University's Representative, and University's Representative's consultants will not by reason of their inclusion as insureds incur liability to the insurance carriers for payment of premiums for such insurance.
- .3 Coverage provided is primary and is not in excess of or contributing with any insurance or self-insurance maintained by University, University's consultants, University's Representative, and University's Representative's consultants. This provision, however, shall only apply as per the stipulations of Article 11.1.6.1.

11.1.7 The form and substance of all insurance policies required to be obtained by Contractor shall be subject to approval by University. All policies required by Articles 11.1.2.1, 11.1.2.2, and 11.1.2.3 shall be issued by companies with ratings and financial classifications as specified in the Supplementary Conditions.

11.1.8 Contractor shall, by mutual agreement with University, furnish any additional insurance as may be required by University. Contractor shall provide Certificates of Insurance evidencing such additional insurance.

11.1.9 The Certificate of Insurance shall show (1) all companies affording coverage and (2) the name of the insured exactly in the manner as shown on the Bid Form. The name of the insured must be the name under which the entity is licensed by the Contractors State License Board.

11.1.10 If insurance company refuses to use the Certificate of Insurance form as contained in the Exhibits, it must provide a Certificate of Insurance evidencing compliance with this Article including those provisions noted under DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES section of the Certificate of Insurance Exhibit by including an endorsement to its Certificate of Insurance form covering those noted provisions exactly as they appear on the Certificate of Insurance Exhibit.



11.1.11 At the request of University, Contractor shall submit to University copies of the policies obtained by Contractor.

## **11.2 BUILDER'S RISK PROPERTY INSURANCE**

11.2.1 If and only if the Contract Sum exceeds \$300,000 at the time of award, University will provide its standard builder's risk property insurance, subject to the deductibles, terms and conditions, exclusions, and limitations as contained in the provisions of the policy. A copy of the University's standard builder's risk property insurance policy is available at the University's Facility office. In addition, a summary of the provisions of the policy is included as an Exhibit to the Contract. Contractor agrees that the University's provision of its standard builder's risk property insurance policy meets the University's obligation to provide builder's risk property insurance under the Contract and, in the event of a conflict between the provisions of the policy and any summary or description of the provisions contained herein or otherwise, the provisions of the policy shall control and shall be conclusively presumed to fulfill the University's obligation to provide such insurance. The proceeds under such insurance policies taken out by University insuring the Work and materials will be payable to University and Contractor as their respective interests, from time to time, may appear. Contractor shall be responsible for the deductible amount in the event of a loss. In addition, nothing in this Article 11.2 shall be construed to relieve Contractor of full responsibility for loss of or damage to materials not incorporated in the Work, and for Contractor's tools and equipment used to perform the Work, whether on the Project site or elsewhere, or to relieve Contractor of its responsibilities referred to under this Article 11. Materials incorporated in the Work, as used in this Article 11.2, shall mean materials furnished while in transit to, stored at, or in permanent place at the Project site.

11.2.2 Insurance policies referred to under this Article 11.2 shall:

- .1 Include a provision that the policies are primary and do not participate with nor are excess over any other valid collectible insurance carried by Contractor.
- .2 Include a waiver of subrogation against Contractor, its Subcontractors, its agents, and employees.

11.2.3 Builder's risk insurance coverage under this Article 11.2 will expire on the date of Final Completion recited in a Notice of Completion filed pursuant to Article 9.8.1. Should a Notice of Completion be filed more than 10 days after the date of Final Completion, the date of Final Completion recited in the Notice of Completion will govern.

## **11.3 PERFORMANCE BOND AND PAYMENT BOND**

11.3.1 Contractor shall furnish bonds covering the faithful performance of the Contract (Performance Bond) and payment of obligations arising thereunder (Payment Bond) on the forms contained in Exhibits 3 and 2.

11.3.2 The Payment Bond and Performance Bond shall each be in the amount of the Contract Sum.

11.3.3 The Payment Bond and Performance Bond shall be in effect on the date the Contract is signed by University.

11.3.4 Contractor shall promptly furnish such additional security as may be required by University to protect its interests and those interests of persons or firms supplying labor or materials to the Work. Contractor shall furnish supplemental Payment and Performance Bonds each in the amount of the current Contract Sum at the request of the University.

11.3.5 Surety companies used by Contractor shall be, on the date the Contract is signed by University, an admitted surety insurer (as defined in the California Code of Civil Procedure Section 995.120).

11.3.6 The premiums for the Payment Bond and Performance Bond shall be paid by Contractor.

## **ARTICLE 12 UNCOVERING AND CORRECTION OF WORK**

### **12.1 UNCOVERING OF WORK**

12.1.1 If a portion of the Work is covered contrary to University's Representative's request or direction, or contrary to the requirements of the Contract Documents, it must, if required in writing by University's Representative, be uncovered for University's Representative's observation and be replaced at Contractor's expense without adjustment of the Contract Time or the Contract Sum.

12.1.2 If a portion of the Work has been covered, which is not required by the Contract Documents to be observed or inspected prior to its being covered and which University's Representative has not specifically requested to observe prior to its being covered, University's Representative may request to see such Work and it shall be uncovered and replaced by Contractor. If such Work is in accordance with the Contract Documents, the costs of uncovering and replacing the Work shall be added to the Contract Sum by Change Order; and if the uncovering and replacing of the Work extends the Contract Time, an appropriate adjustment of the Contract Time shall be made by Change Order. If such Work is not in accordance with the Contract Documents, Contractor shall pay such costs and shall not be entitled to an adjustment of the Contract Time or the Contract Sum.

## **12.2 CORRECTION OF DEFECTIVE WORK AND GUARANTEE TO REPAIR PERIOD**

12.2.1 The term "Guarantee To Repair Period" means a period of 1 year, unless a longer period of time is specified, commencing as follows:

- .1 For any Work not described as incomplete in the Certificate of Substantial Completion, on the date of Substantial Completion.
- .2 For space beneficially occupied or for separate systems fully utilized prior to Substantial Completion pursuant to Article 9.6, from the first date of such Beneficial Occupancy or actual use, as established in a Certificate of Beneficial Occupancy.
- .3 For all Work other than .1 or .2 above, from the date of Final Completion.

12.2.2 Contractor shall (1) correct Defective Work that becomes apparent during the progress of the Work or during the Guarantee To Repair Period and (2) replace, repair, or restore to University's satisfaction any other parts of the Work and any other real or personal property which is damaged or destroyed as a result of Defective Work or the correction of Defective Work. Contractor shall promptly commence such correction, replacement, repair, or restoration upon notice from University's Representative or University, but in no case later than 10 days after receipt of such notice; and Contractor shall diligently and continuously prosecute such correction to completion. Contractor shall bear all costs of such correction, replacement, repair, or restoration, and all losses resulting from such Defective Work, including additional testing, inspection, and compensation for University's Representative's services and expenses. Contractor shall perform corrective Work at such times that are acceptable to University and in such a manner as to avoid, to the extent practicable, disruption to University's activities.

12.2.3 If immediate correction of Defective Work is required for life safety or the protection of property and is performed by University or Separate Contractors, Contractor shall pay to University all reasonable costs of correcting such Defective Work. Contractor shall replace, repair, or restore to University's satisfaction any other parts of the Work and any other real or personal property which is damaged or destroyed as a result of such Defective Work or the correction of such Defective Work.

12.2.4 Contractor shall remove from the Project site portions of the Work and materials which are not in accordance with the Contract Documents and which are neither corrected by Contractor nor accepted by University.

12.2.5 If Contractor fails to commence correction of Defective Work within 10 days after notice from University or University's Representative or fails to diligently prosecute such correction to completion, University may correct the Defective Work in accordance with Article 2.4; and, in addition, University may remove the Defective Work and store salvageable materials and equipment at Contractor's expense.

12.2.6 If Contractor fails to pay the costs of such removal and storage as required by Articles 12.2.4 and 12.2.5 within 10 days after written demand, University may, without prejudice to other remedies, sell such materials at auction or at private sale, or otherwise dispose of such material. Contractor shall be entitled to the proceeds of such sale, if any, in excess of the costs and damages for which Contractor is liable to University, including compensation for University's Representative's services and expenses. If such proceeds

of sale do not cover costs and damages for which Contractor is liable to University, the Contract Sum shall be reduced by such deficiency. If there are no remaining payments due Contractor or the remaining payments are insufficient to cover such deficiency, Contractor shall promptly pay the difference to University.

12.2.7 Contractor's obligations under this Article 12 are in addition to and not in limitation of its warranty under Article 3.4 or any other obligation of Contractor under the Contract Documents. Enforcement of Contractor's express warranties and guarantees to repair contained in the Contract Documents shall be in addition to and not in limitation of any other rights or remedies University may have under the Contract Documents or at law or in equity for Defective Work. Nothing contained in this Article 12 shall be construed to establish a period of limitation with respect to other obligations of Contractor under the Contract Documents. Establishment of the Guarantee To Repair Period relates only to the specific obligation of Contractor to correct the Work and in no way limits either Contractor's liability for Defective Work or the time within which proceedings may be commenced to enforce Contractor's obligations under the Contract Documents.

## **ARTICLE 13 TERMINATION OR SUSPENSION OF THE CONTRACT**

### **13.1 TERMINATION BY CONTRACTOR**

13.1.1 Subject to Article 13.1.2, Contractor shall have the right to terminate the Contract only upon the occurrence of one of the following:

- .1 Provided that University has not commenced reasonable action to remove any order of a court within the 90 day period, the Work is stopped for 90 consecutive days, through no act or fault of Contractor, any Subcontractor, or any employee or agent of Contractor or any Subcontractor, due to an issuance of an order of a court or other public authority having jurisdiction or due to an act of government, such as a declaration of a national emergency making material unavailable.
- .2 University fails to perform any material obligation under the Contract and fails to cure such default within 30 days, or University has not commenced to cure such default within 30 days where such cure will require a reasonable period beyond 30 days and diligently prosecutes the same to completion, after receipt of notice from Contractor stating the nature of such default(s).
- .3 Repeated suspensions by University, other than such suspensions as are agreed to by Contractor under Article 13.3, which constitute in the aggregate more than 20% of the Contract Time.

13.1.2 Upon the occurrence of one of the events listed in Article 13.1.1, Contractor may, upon 10 days additional notice to University and University's Representative, and provided that the condition giving rise to Contractor's right to terminate is continuing, terminate the Contract.

13.1.3 Upon termination by Contractor, University will pay to Contractor the sum determined by Article 13.4.4. Such payment will be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract by Contractor pursuant to Article 13.1; and Contractor will be entitled to no other compensation or damages and expressly waives the same.

### **13.2 TERMINATION BY UNIVERSITY FOR CAUSE**

13.2.1 University will have the right to terminate the Contract for cause at any time after the occurrence of any of the following events:

- .1 Contractor becomes insolvent or files for relief under the bankruptcy laws of the United States.
- .2 Contractor makes a general assignment for the benefit of its creditors or fails to pay its debts as the same become due.
- .3 A receiver is appointed to take charge of Contractor's property.
- .4 The commencement or completion of any Work activity on the critical path is more than 30 days behind the date set forth in the Contract Schedule for such Work



activity, as a result of an Unexcusable Delay. For a Contract with a Contract Time of less than 300 days, the 30-day period shall be reduced to the number of days commensurate with 10% of the Contract Time.

.5 Contractor abandons the Work.

13.2.2 Upon the occurrence of any of the following events, University will have the right to terminate the Contract for cause if Contractor fails to promptly commence to cure such default and diligently prosecute such cure within 5 days after notice from University, or within such longer period of time as is reasonably necessary to complete such cure:

- .1 Contractor persistently or repeatedly refuses or fails to supply skilled supervisory personnel, an adequate number of properly skilled workers, proper materials, or necessary equipment to prosecute the Work in accordance with the Contract Documents.
- .2 Contractor fails to make prompt payment of amounts properly due Subcontractors after receiving payment from University.
- .3 Contractor disregards Applicable Code Requirements.
- .4 Contractor persistently or materially fails to execute the Work in accordance with the Contract Documents.
- .5 Contractor is in default of any other material obligation under the Contract Documents.
- .6 Contractor persistently or materially fails to comply with applicable safety requirements.

13.2.3 Upon any of the occurrences referred to in Articles 13.2.1 and 13.2.2, University may, at its election and by notice to Contractor, terminate the Contract and take possession of the Project site and all materials, supplies, equipment, tools, and construction equipment and machinery thereon owned by Contractor; accept the assignment of any or all of the subcontracts; and then complete the Work by any method University may deem expedient. If requested by University, Contractor shall remove any part or all of Contractor's materials, supplies, equipment, tools, and construction equipment and machinery from the Project site within 7 days of such request; and if Contractor fails to do so, University may remove or store, and after 90 days sell, any of the same at Contractor's expense.

13.2.4 If the Contract is terminated by University as provided in this Article 13.2, Contractor shall not be entitled to receive any further payment until the expiration of 35 days after Final Completion and acceptance of all Work by University.

13.2.5 If the unpaid balance of the Contract Sum exceeds the cost of completing the Work, including all additional costs and expenses made necessary thereby, including costs for University staff time, plus all losses sustained, including any liquidated damages provided under the Contract Documents, such excess shall be paid to Contractor. If such costs, expenses, losses, and liquidated damages exceed the unpaid balance of the Contract Sum, Contractor shall pay such excess to University.

13.2.6 No termination or action taken by University after termination shall prejudice any other rights or remedies of University provided by law or by the Contract Documents upon such termination; and University may proceed against Contractor to recover all losses suffered by University.

### **13.3 SUSPENSION BY UNIVERSITY FOR CONVENIENCE**

13.3.1 University may, at any time and from time to time, without cause, order Contractor, in writing, to suspend, delay, or interrupt the Work in whole or in part for such period of time, up to 90 days, as University may determine, with such period of suspension to be computed from the date of delivery of the written order. Such order shall be specifically identified as a "Suspension Order" under this Article 13.3. The Work may be stopped for such further period as the parties may agree. Upon receipt of a Suspension Order, Contractor shall, at University's expense, comply with its terms and take all reasonable steps to minimize costs allocable to the Work covered by the Suspension Order during the period of Work stoppage. Within 90 days after the issuance of the Suspension Order, or such extension to that period as is agreed upon by Contractor and University, University shall either cancel the Suspension Order or delete the Work covered by such Suspension Order by issuing a Change Order.

13.3.2 If a Suspension Order is canceled or expires, Contractor shall continue with the Work. A Change Order will be issued to cover any adjustments of the Contract Sum or the Contract Time necessarily caused by such suspension. Any Claim by Contractor for an adjustment of the Contract Sum or the Contract Time shall be made within 21 days after the end of the Work suspension. Contractor agrees that submission of its claim within said 21 days is an express condition precedent to its right to Arbitrate or Litigate such a claim.

13.3.3 The provisions of this Article 13.3 shall not apply if a Suspension Order is not issued by University. A Suspension Order shall not be required to stop the Work as permitted or required under any other provision of the Contract Documents.

#### **13.4 TERMINATION BY UNIVERSITY FOR CONVENIENCE**

13.4.1 University may, at its option, terminate this Contract, in whole or from time to time in part, at any time by giving notice to Contractor. Upon such termination, Contractor agrees to waive any claims for damages, including loss of anticipated profits, on account thereof; and, as the sole right and remedy of Contractor, University shall pay Contractor in accordance with Article 13.4.4.

13.4.2 Upon receipt of notice of termination under this Article 13.4, Contractor shall, unless the notice directs otherwise, do the following:

- .1 Immediately discontinue the Work to the extent specified in the notice.
- .2 Place no further orders or subcontracts for materials, equipment, services, or facilities, except as may be necessary for completion of such portion of the Work as is not discontinued.
- .3 Promptly cancel, on the most favorable terms reasonably possible, all subcontracts to the extent they relate to the performance of the discontinued portion of the Work.
- .4 Thereafter do only such Work as may be necessary to preserve and protect Work already in progress and to protect materials, plants, and equipment on the Project site or in transit thereto.

13.4.3 Upon such termination, the obligations of the Contract shall continue as to portions of the Work already performed and, subject to Contractor's obligations under Article 13.4.2, as to bona fide obligations assumed by Contractor prior to the date of termination.

13.4.4 Upon such termination, University shall pay to Contractor the sum of the following:

- .1 The amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination, less sums previously paid to Contractor.
- .2 Plus an amount equal to the lesser of \$50,000 or 5% of the difference between the Contract Sum and the amount of the Contract Sum allocable to the portion of the Work properly performed by Contractor as of the date of termination.
- .3 Plus previously unpaid costs of any items delivered to the Project site which were fabricated for subsequent incorporation in the Work.
- .4 Plus any proven losses with respect to materials and equipment directly resulting from such termination.
- .5 Plus reasonable demobilization costs.
- .6 Plus reasonable costs of preparing a statement of the aforesaid costs, expenses, and losses in connection with such termination.

The above payment shall be the sole and exclusive remedy to which Contractor is entitled in the event of termination of the Contract by University pursuant to Article 13.4; and Contractor will be entitled to no other compensation or damages and expressly waives same.

### **ARTICLE 14 STATUTORY AND OTHER REQUIREMENTS**

#### **14.1 PATIENT HEALTH INFORMATION**

Contractor acknowledges that its employees, agents, subcontractors, consultants and others acting on its behalf may come into contact with Patient Health Information ("PHI") while performing work at the Project Site. This contact is most likely rare and brief (e.g. walking through a clinic where patient files may be visible, overhearing conversations between physicians while working or touring a hospital, noticing a relative or acquaintance receiving treatment in a University facility, etc.). Contractor shall immediately notify University Representative of any such contact. Any and all forms of PHI should not be examined closer, copied, photographed, recorded in any manner, distributed or shared. Contractor will adopt procedures to ensure that its employees, agents and subcontractors refrain from such activity. If Contractor, its employees, agents or subcontractors do further examine, copy, photograph, record in any manner, distribute or share this information, Contractor will report such actions immediately to the University Representative. Contractor will immediately take all steps necessary to stop any such actions and will ensure that no further violations of this contractual responsibility will occur. Contractor will report to University Representative within five (5) days after Contractor gives University Representative notice of the event/action of the steps taken to prevent future occurrences.

## 14.2 NONDISCRIMINATION

14.2.1 For purposes of this Article 14.2, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.2.2 Contractor shall comply and shall ensure that all Subcontractors comply with Section 12900 through 12996, of the State of California Government Code.

14.2.3 Contractor agrees as follows during the performance of the Work:

- .1 Contractor shall provide equal treatment to, and shall not willfully discriminate against or allow harassment of any employee or applicant for employment on the basis of: race; color; religion; sex; age; ancestry; national origin; sexual orientation; physical or mental disability; veteran's status; medical condition (as defined in Section 12926 of the State of California Government Code and including cancer-related medical conditions and or genetic characteristics); genetic information (as defined in the Genetic Information Nondiscrimination Act of 2008 and including family medical history); marital status; gender identity, pregnancy, or citizenship (within the limits imposed by law or University's policy) or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994). Contractor will also take affirmative action to ensure that any such employee or applicant for employment is not discriminated against on any of the bases identified above. Such equal treatment shall apply, but not be limited to the following: employment; upgrade; demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor also agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that qualified applicants will receive consideration for employment without regard to: race; color; religion; sex; age; ancestry; national origin; sexual orientation; physical or mental disability; veteran's status; medical condition (as defined in Section 12926 of the State of California Government Code and including cancer-related medical conditions and or genetic characteristics); genetic information (as defined in the Genetic Information Nondiscrimination Act of 2008 and including family medical history); marital status; gender identity, pregnancy, or citizenship (within the limits imposed by law or University's policy) or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994). For purposes of this provision: (1) "Pregnancy" includes pregnancy, childbirth, and medical conditions related to pregnancy and childbirth; and (2) "Service in the uniformed services" includes membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services.
- .2 Contractor and all Subcontractors will permit access to their records of employment, employment advertisements, application forms, and other pertinent data and records by University or any appropriate agency of the State of California designated by University for the purposes of investigation to ascertain compliance with this Article 14.2. The outcome of



the investigation may result in the following:

- .1 A finding of willful violation of the provisions of this Contract or of the Fair Employment Practices Act may be regarded by University as (1) a basis for determining that Contractor is not a "responsible bidder" as to future contracts for which such Contractor may submit bids or (2) a basis for refusing to accept or consider the bids of Contractor for future contracts.
- .2 University may deem a finding of willful violation of the Fair Employment Practices Act to have occurred upon receipt of written notice from the Fair Employment Practices Commission that it has (1) investigated and determined that Contractor has violated the Fair Employment Practices Act and (2) issued an order under the State of California Government Code Section 12970 or obtained an injunction under Government Code Section 12973.
- .3 Upon receipt of such written notice from the Fair Employment Practices Commission, University may notify Contractor that, unless it demonstrates to the satisfaction of University within a stated period that the violation has been corrected, Contractor's bids on future projects will not be considered.
- .4 Contractor agrees that, should University determine that Contractor has not complied with this Article 14.2, Contractor shall forfeit to University, as a penalty, for each day or portion thereof, for each person who was denied employment as a result of such non-compliance, the penalties provided in Article 14.3 for violation of prevailing wage rates. Such penalty amounts may be recovered from Contractor; and University may deduct any such penalty amounts from the Contract Sum.
- .5 Nothing contained in this Article 14.2 shall be construed in any manner so as to prevent University from pursuing any other remedies that may be available at law.
- .6 Contractor shall meet the following standards for compliance and provide University with satisfactory evidence of such compliance upon University's request, which shall be evaluated in each case by University:
  - .1 Contractor shall notify its Superintendent and other supervisory personnel of the nondiscrimination requirements of the Contract Documents and their responsibilities thereto.
  - .2 Contractor shall notify all sources of employee referrals (including unions, employment agencies, and the State of California Department of Employment) of the nondiscrimination requirements of the Contract Documents by sending to such sources and by posting the Notice of Equal Employment Opportunity (EEO).
  - .3 Contractor or its representative shall, through all unions with whom it may have agreements, develop agreements that (1) define responsibilities for nondiscrimination in hiring, referrals, upgrading, and training and (2) implement an affirmative nondiscrimination program, in terms of the unions' specific areas of skill and geography, such that qualified minority women, nonminority women, and minority men shall be available and given an equal opportunity for employment.
  - .4 Contractor shall notify University of opposition to the nondiscrimination requirements of the Contract Documents by individuals, firms, or organizations during the term of the Contract.
- .7 Contractor shall include the provisions of the foregoing Articles 14.2.3.2.1 through 14.2.3.2.6 in all subcontracts with Subcontractors, so that such provisions will be binding upon each such Subcontractor.

### **14.3 PREVAILING WAGE RATES**

14.3.1 For purposes of this Article 14.3, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.3.2 Contractor shall comply and shall ensure that all Subcontractors comply with prevailing wage law pursuant to the State of California Labor Code, including but not limited to Section 1720 et seq. of the State

of California Labor Code. Compliance with these sections is required by this Contract. The Work under this Contract is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations.

14.3.3 The State of California Department of Industrial Relations has ascertained the general prevailing per diem wage rates in the locality in which the Work is to be performed for each craft, classification, or type of worker required to perform the Work. A copy of the general prevailing per diem wage rates will be on file at University's principal facility office and will be made available to any interested party upon request. Contractor shall post a copy of the general prevailing per diem wage rates as well as job site notices as prescribed by regulation at the job site. By this reference, such schedule is made part of the Contract Documents. Contractor shall pay not less than the prevailing wage rates, as specified in the schedule and any amendments thereto, to all workers employed by Contractor in the execution of the Work. Contractor shall cause all subcontracts to include the provision that all Subcontractors shall pay not less than the prevailing rates to all workers employed by such Subcontractors in the execution of the Work. Contractor shall forfeit to University, as a penalty, not more than \$200 for each calendar day or portion thereof for each worker that is paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for any portion of the Work done by Contractor or any Subcontractor. The amount of this penalty shall be determined pursuant to applicable law. Such forfeiture amounts may be deducted from the Contract Sum or sought directly from the surety under its Performance Bond if there are insufficient funds remaining in the Contract Sum. Contractor shall also pay to any worker who was paid less than the prevailing wage rate for the work or craft for which the worker was employed for any portion of the Work, for each day, or portion thereof, for which the worker was paid less than the specified prevailing per diem wage rate, an amount equal to the difference between the specified prevailing per diem wage rate and the amount which was paid to the worker. Review of any civil wage and penalty assessment shall be made pursuant to section 1742 of the California Labor Code.

#### **14.4 PAYROLL RECORDS**

14.4.1 For purposes of this Article 14.4, the term Subcontractor shall not include suppliers, manufacturers, or distributors.

14.4.2 Contractor and all Subcontractors shall keep an accurate payroll record, showing the name, address, social security number, job classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyworker, apprentice, worker, or other employee employed in connection with the Work. All payroll records shall be certified as being true and correct by Contractor or Subcontractors keeping such records; and the payroll records shall be available for inspection at all reasonable hours at the principal office of Contractor on the following basis:

- .1 A certified copy of an employee's payroll record shall be made available for inspection or furnished to such employee or the employee's authorized representative on request.
- .2 A certified copy of all payroll records shall be made available for inspection upon request to University, the State of California Division of Labor Standards Enforcement, and the Division of Apprenticeship Standards of the State of California Division of Industrial Relations.
- .3 A certified copy of all payroll records shall be made available upon request by the public for inspection or copies thereof made; provided, however, that the request by the public shall be made to either University, the Division of Apprenticeship Standards, or the Division of Labor Standards Enforcement. The public shall not be given access to such records at the principal offices of Contractor or Subcontractors. Any copy of the records made available for inspection as copies and furnished upon request to the public or any public agency by University shall be marked or obliterated in such a manner as to prevent disclosure of an individual's name, address, and social security number. The name and address of Contractor awarded the Contract or performing the Contract shall not be marked or obliterated.

14.4.3 Contractor shall file a certified copy of the payroll records with the entity that requested the records within 10 days after receipt of a written request. Contractor shall inform University of the location of such payroll records for the Project, including the street address, city, and county; and Contractor shall, within 5

working days, provide notice of change of location of such records. In the event of noncompliance with the requirements of this Article 14.4 or with the State of California Labor Code Section 1776, Contractor shall have 10 days in which to comply following receipt of notice specifying in what respects Contractor must comply. Should noncompliance still be evident after the 10 day period, Contractor shall forfeit to University, as a penalty, \$100 for each day, or portion thereof, for each worker, until strict compliance is accomplished. Such forfeiture amounts may be deducted from the Contract Sum.

#### **14.5 APPRENTICES**

14.5.1 For purposes of this Article 14.5, the term Subcontractor shall not include suppliers, manufacturers, and distributors.

14.5.2 Only apprentices, as defined in the State of California Labor Code Section 3077, who are in training under apprenticeship standards and written apprentice agreements under Chapter 4, Division 3, of the State of California Labor Code, are eligible to be employed by Contractor and Subcontractors as apprentices. The employment and training of each apprentice shall be in accordance with the provisions of the apprenticeship standards and written apprentice agreements under which the apprentice is training and in accordance with prevailing wage law pursuant to the Labor Code, including but not limited to Section 1777.5. The Contractor bears responsibility for compliance with this section for all apprenticeable occupations.

14.5.3 Every apprentice shall be paid the standard wage to apprentices, under the regulations of the craft or trade at which the apprentice is employed, and shall be employed only at the Work in the craft or trade to which the apprentice is indentured.

14.5.4 When Contractor or Subcontractors employ workers in any apprenticeship craft or trade on the Work, Contractor or Subcontractors shall 1) send contract award information to the applicable joint apprenticeship committee that can supply apprentices to the site of the public work and 2) apply to the joint apprenticeship committee, which administers the apprenticeship standards of the craft or trade in the area of the Project site, for a certificate approving Contractor or Subcontractors under the apprenticeship standards for the employment and training of apprentices in the area of the Project site. The committee will issue a certificate fixing the number of apprentices or the ratio of apprentices to journeypersons who shall be employed in the craft or trade on the Work. The ratio will not exceed that stipulated in the apprenticeship standards under which the joint apprenticeship committee operates; but in no case shall the ratio be less than 1 hour of apprentice work for every 5 hours of journeyperson work, except as permitted by law. Contractor or Subcontractors shall, upon the issuance of the approval certificate in each such craft or trade, employ the number of apprentices or the ratio of apprentices to journeypersons fixed in the certificate issued by the joint apprenticeship committee or present an exemption certificate issued by the Division of Apprenticeship Standards.

14.5.5 "Apprenticeship craft or trade," as used in this Article 14.5, shall mean a craft or trade determined as an apprenticeship occupation in accordance with rules and regulations prescribed by the Apprenticeship Council.

14.5.6 If Contractor or Subcontractors employ journeymen or apprentices in any apprenticeship craft or trade in the area of the Project site, and there exists a fund for assisting to allay the cost of the apprenticeship program in the trade or craft, to which fund or funds other contractors in the area of the Project site are contributing, Contractor and Subcontractors shall contribute to the fund or funds in each craft or trade in which they employ journeymen or apprentices on the Work in the same amount or upon the same basis and in the same manner done by the other contractors. Contractor may include the amount of such contributions in computing its bid for the Contract; but if Contractor fails to do so, it shall not be entitled to any additional compensation therefor from University.

14.5.7 In the event Contractor willfully fails to comply with this Article 14.5, it will be considered in violation of the requirements of the Contract.

14.5.8 Nothing contained herein shall be considered or interpreted as prohibiting or preventing the hiring by Contractor or Subcontractors of journeyman trainees who may receive on-the-job training to enable them to achieve journeyman status in any craft or trade under standards other than those set forth for apprentices.



#### **14.6 WORK DAY**

14.6.1 Contractor shall not permit any worker to labor more than 8 hours during any 1 day or more than 40 hours during any 1 calendar week, except as permitted by law and in such cases only upon such conditions as are provided by law. Contractor shall forfeit to University, as a penalty, \$25 for each worker employed in the execution of this Contract by Contractor, or any Subcontractor, for each day during which such worker is required or permitted to work more than 8 hours in any 1 day and 40 hours in any 1 calendar week in violation of the terms of this Article 14.6 or in violation of the provisions of any law of the State of California. Such forfeiture amounts may be deducted from the Contract Sum. Contractor and each Subcontractor shall keep, or cause to be kept, an accurate record showing the actual hours worked each day and each calendar week by each worker employed on the Project, which record shall be kept open at all reasonable hours to the inspection of University, its officers and agents, and to the inspection of the appropriate enforcement agency of the State of California.

### **ARTICLE 15 MISCELLANEOUS PROVISIONS**

#### **15.1 GOVERNING LAW**

15.1.1 The Contract shall be governed by the law of the State of California.

#### **15.2 SUCCESSORS AND ASSIGNS**

15.2.1 University and Contractor respectively bind themselves and their successors, permitted assigns, and legal representatives to the other party and to the successors, permitted assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party to the Contract shall assign the Contract, in whole or in part, without prior written consent of the other party. Notwithstanding any such assignment, each of the original contracting parties shall remain legally responsible for all of its obligations under the Contract.

#### **15.3 RIGHTS AND REMEDIES**

15.3.1 All University's rights and remedies under the Contract Documents will be cumulative and in addition to and not in limitation of all other rights and remedies of University under the Contract Documents or otherwise available at law or in equity.

15.3.2 No action or failure to act by University or University's Representative will constitute a waiver of a right afforded them under the Contract, nor will such action or failure to act constitute approval of or acquiescence in a condition or breach thereunder, except as may be specifically agreed in writing. No waiver by University or University's Representative of any condition, breach or default will constitute a waiver of any other condition, breach or default; nor will any such waiver constitute a continuing waiver.

15.3.3 No provision contained in the Contract Documents shall create or give to third parties any claim or right of action against University, University's Representative, or Contractor.

#### **15.4 SURVIVAL**

15.4.1 The provisions of the Contract which by their nature survive termination of the Contract or Final Completion, including all warranties, indemnities, payment obligations, and University's right to audit Contractor's books and records, shall remain in full force and effect after Final Completion or any termination of the Contract.

#### **15.5 COMPLETE AGREEMENT**

15.5.1 The Contract Documents constitute the full and complete understanding of the parties and supersede any previous agreements or understandings, oral or written, with respect to the subject matter hereof. The Contract may be modified only by a written instrument signed by both parties or as provided in Article 7.

#### **15.6 SEVERABILITY OF PROVISIONS**

15.6.1 If any one or more of the provisions contained in the Contract Documents should be invalid, illegal, or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein shall not in any way be affected or impaired thereby.

## **15.7 UNIVERSITY'S RIGHT TO AUDIT**

15.7.1 University and entities and agencies designated by University will have access to and the right to audit and the right to copy at University's cost all of Contractor's books, records, contracts, correspondence, instructions, drawings, receipts, vouchers, purchase orders, and memoranda relating to the Work. Contractor shall preserve all such records and other items during the performance of the Contract and for a period of at least 3 years after Final Completion.

## **15.8 METHODS OF DELIVERY FOR SPECIFIED DOCUMENTS**

15.8.1 The following documents must be delivered in a manner specified in Article 15.8.2:

- .1 Contractor Notices of election to litigate or arbitrate;
- .2 Written demand for an informal conference to meet and confer pursuant to Article 4.5;
- .3 University's written statement identifying remaining disputes following informal conference pursuant to Article 4.6;
- .4 Written demand for non-binding mediation pursuant to Article 4.6;
- .5 Contractor claims pursuant to Article 4.3;
- .6 Contractor notices of conditions pursuant to Articles 3.17, 3.18, or 3.19;
- .7 University's notices of Contractor's failure to perform and/or correct defective work pursuant to Articles 4.1.6, 12.2 and 13.2.3;
- .8 University's notice to stop work pursuant to Article 2.3.1;
- .9 Notices of termination or suspension pursuant to Article 13.

15.8.2 Delivery methods for documents specified in Article 15.8.1:

- .1 By personal delivery.
- .2 Sent by facsimile copy where receipt is confirmed.
- .3 Sent by Express Mail, or another method of delivery providing for overnight delivery where receipt is confirmed.
- .4 Sent by registered or certified mail, postage prepaid, return receipt requested.

15.8.3 The documents identified in Article 15.8.1 shall only be effective if delivered in the manner specified in Article 15.8.2. Subject to the forgoing, such documents shall be deemed given and received upon actual receipt in the case of all except registered or certified mail; and in the case of registered or certified mail, on the date shown on the return receipt or the date delivery during normal business hours was attempted. Delivery of the specified documents shall be made at the respective street addresses set forth in the Agreement. Such street addresses may be changed by notice given in accordance with this Article 15.8.

## **15.9 TIME OF THE ESSENCE**

15.9.1 Time limits stated in the Contract Documents are of the essence of the Contract.

## **15.10 MUTUAL DUTY TO MITIGATE**

15.10.1 University and Contractor shall use all reasonable and economically practicable efforts to mitigate delays and damages to the Project and to one another with respect to the Project, regardless of the cause of such delay or damage.

## **15.11 UC FAIR WAGE**

Contractor shall pay all persons providing construction services and/or any labor on site, including any

University location, no less than the UC Fair Wage (defined as \$13 per hour as of 10/1/15, \$14 per hour as of 10/1/16, and \$15 per hour as of 10/1/17) and shall comply with all applicable federal, state and local working condition requirements.



**SUPPLEMENTARY CONDITIONS**

**1. MODIFICATION OF GENERAL CONDITIONS, ARTICLE 11 – INSURANCE AND BONDS**

Contractor shall furnish and maintain insurance in the amounts below.

The insurance required by 11.1.2.1 and 11.1.2.2 shall be (i) issued by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's) or (ii) guaranteed, under terms consented to by the University (such consent to not be unreasonably withheld), by companies with a Best rating of A- or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's). Such insurance shall be written for not less than the following:

Minimum Requirement

11.1.2.1	Commercial General Liability Insurance-Limits of Liability	
	Each Occurrence-Combined Single Limit for Bodily Injury and Property	<u>\$1,000,000.00</u>
	Products-Completed Operations Aggregate	<u>\$2,000,000.00</u>
	Personal and Advertising Injury	<u>\$1,000,000.00</u>
	General Aggregate	<u>\$2,000,000.00</u>
11.1.2.2	Business Automobile Liability Insurance-Limits of Liability	
	Each Accident-Combined Single Limit for Bodily Injury and Property Damage	<u>\$1,000,000.00</u>

Insurance required by Paragraph 11.1.2.3 shall be issued by companies (i) that have a Best rating of B+ or better, and a financial classification of VIII or better (or an equivalent rating by Standard & Poor or Moody's); or (ii) that are acceptable to the University. Such insurance shall be written for not less than the following:

11.1.2.3	WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY –	Minimum Requirement
	Worker's Compensation:	(as required by Federal and State of California law)
	Employer's Liability:	
	Each Employee	\$1,000,000
	Each Accident	\$1,000,000
	Policy Limit	\$1,000,000

**{#}. MODIFICATION OF ARTICLE 8 – CONTRACT TIME**

Rainy weather in excess of the following number of days will be granted a Contract Time extension pursuant to Article 8.4 of the General Conditions: **0 Days**

## **6. MODIFICATION OF GENERAL CONDITIONS ARTICLE 15 – MISCELLANEOUS PROVISIONS**

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same Agreement. The counterparts of this Agreement may be executed via a University approved digital signature process and shall have the same force and effect as the use of a manual signature. The University reserves the right to reject any digital signature that cannot be positively verified by the University system as an authentic digital signature.

## **EXHIBITS**

### TABLE OF CONTENTS

Application for Payment

Certificate of Insurance

Certificate of Substantial Completion

Change Order

Change Order Request (with Cost Proposal Summary)

Claim Certification - General Contractor

Claim Certification - Subcontractor

Conditional Waiver and Release on Final Payment

Conditional Waiver and Release on Progress Payment

Escrow Agreement for Deposit of Securities In Lieu of Retention and Deposit of Retention

Field Order

Final Distribution of Contract Dollars

Final Inspection Acceptance

Payment Bond

Performance Bond

Report of Subcontractor Information

Selection of Retention Options

Self-Certification Form

Submittal Schedule

Substitution of Subcontractor – Indemnity Agreement and Consent

Summary of Builder's Risk Insurance Policy

Unconditional Waiver and Release on Final Payment

Unconditional Waiver and Release on Progress Payment



## APPLICATION FOR PAYMENT

Application No. \_\_\_\_\_ Period From: \_\_\_\_\_ To: \_\_\_\_\_

Application Date: \_\_\_\_\_ Contract Date: \_\_\_\_\_

To **University:** THE REGENTS OF THE UNIVERSITY OF CALIFORNIA,  
 University of California, Riverside, and University's Representative

From Contractor: \_\_\_\_\_

Address: \_\_\_\_\_  
 \_\_\_\_\_

CHANGE ORDER SUMMARY:

	<u>Additions</u>	<u>Deductions</u>
Change Orders approved in previous months:	Total: _____	_____
Change Orders approved this month:		
Number:      Date Approved:		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
	Total: _____	_____
	\$-	\$-

NET CHANGE BY CHANGE ORDERS: \$-

Application is made for payment under the Contract as shown below and in Schedule 1 attached hereto:

1. ORIGINAL CONTRACT SUM	
2. NET CHANGE BY CHANGE ORDERS	\$-
3. CONTRACT SUM TO DATE (Line 1 ± Line 2)	\$-
4. TOTAL AMOUNT COMPLETED TO DATE (Column E on Schedule 1)	_____
5. RETENTION: _____ % of Completed Work (Column H on Schedule 1)*	_____
a. Current Value of Securities Deposited in Escrow	_____
b. Current Value of Retention Deposited in Escrow	_____
c. Retention Held by University	_____
Current Retention Value (a + b + c)	\$-
6. TOTAL EARNED LESS RETENTION (Line 4 less Line 5)	\$-
7. TOTAL AMOUNT PREVIOUSLY PAID	_____
8. CURRENT PAYMENT DUE (Line 6 less Line 7)	\$-
9. BALANCE TO FINISH, PLUS RETENTION (Line 3 less Line 6)	\$-

\*Pursuant to Article 9.2.2 of the General Conditions.

The undersigned Contractor hereby represents and warrants to University that all Work, for which Certificates For Payment have previously been issued and payment received from University, is free and clear of all claims, stop notices, security interests, and encumbrances in favor of Contractor, any Subcontractor, and any other persons or firms entitled to make claims by reason of having provided labor, materials, or equipment related to the Work.

The following Schedules are attached and incorporated herein, and made a part of this Application For Payment:

- Schedule 1 Cost Breakdown Schedule
- Schedule 2 Certification of Current Market Value of Securities in Escrow in Lieu of Retention
- Schedule 3 List of Subcontractors
- Schedule 4 Declaration of Releases of Claims

**Contractor:** \_\_\_\_\_

By: \_\_\_\_\_  
(Signature & Date)

\_\_\_\_\_  
(Print Name & Title)

**DECLARATION**

I, \_\_\_\_\_, hereby declare that I am the  
(Print Name)

\_\_\_\_\_ of Contractor submitting this Application For  
(Title)

Payment; that I am duly authorized to execute and deliver this Application For Payment on behalf of Contractor; and that all information set forth in this Application For Payment and all Schedules attached hereto are true, accurate, and complete as of its date.

I declare, under penalty of perjury, that the foregoing is true and correct and that this declaration was subscribed at \_\_\_\_\_, \_\_\_\_\_,  
(City) (County)

State of \_\_\_\_\_ on \_\_\_\_\_.  
(Date)

\_\_\_\_\_  
(Signature & Date)

\_\_\_\_\_  
(Print Name & Title)





Project Name: Lothian Dining Patio

Project Number: 957431

Contract Number: 957431-IF-2018-131

**SCHEDULE 2**  
**CERTIFICATION OF CURRENT MARKET VALUE**  
**OF SECURITIES IN ESCROW IN LIEU OF RETENTION**  
**TO**  
**APPLICATION FOR PAYMENT**

Application No. \_\_\_\_\_ Period From: \_\_\_\_\_ To: \_\_\_\_\_

Application Date: \_\_\_\_\_ Contract Date: \_\_\_\_\_

As of \_\_\_\_\_ (not earlier than 5 days prior to the date of the Application For Payment  
(Date)  
of which this Certification is a part), the aggregate market value of securities on deposit in Escrow

Account No. \_\_\_\_\_ with \_\_\_\_\_  
(Escrow Agent)

is \_\_\_\_\_ Dollars (\$ \_\_\_\_\_).

\_\_\_\_\_  
(Escrow Agent)

\_\_\_\_\_  
(Contractor)

By: \_\_\_\_\_  
(Sign & Date)

By: \_\_\_\_\_  
(Sign & Date)

\_\_\_\_\_  
(Print Name & Title)

\_\_\_\_\_  
(Print Name & Title)

NOTE: Notary acknowledgment for Contractor and Escrow Agent must be attached.







## CERTIFICATE OF SUBSTANTIAL COMPLETION

Contractor: \_\_\_\_\_

Date of Issuance: \_\_\_\_\_

The Work has been reviewed and the date of Substantial Completion is hereby established as of the date of issuance above.

A Certificate of Occupancy has been issued by the University's Building Official **Name, Title on Date.**

A punch list of items to be completed or corrected is included herein. The failure to include any items on such list does not alter the responsibility of Contractor to complete all of the Work in accordance with the Contract Documents.

In accordance with the Contract Documents, Contractor is notified as follows:

1. Without limitation of Contractor's obligation to fully complete the Work within the Contract Time, Contractor shall complete or correct the Work on the list of items ("Punch List") attached hereto within \_\_\_\_\_ days from the date of Substantial Completion.
2. University will be responsible for **INSERT "NONE" OR STATE ANY UNIVERSITY RESPONSIBILITIES AFTER SUBSTANTIAL COMPLETION: security, maintenance, utilities (e.g. water, sewer, electrical, gas, etc.)**
3. Contractor shall be responsible for all Contract requirements except items or responsibilities of University set forth in Paragraph 2 above.
4. List of items to be completed or corrected: **INSERT "NONE" or "SEE ATTACHMENT: LIST OF ITEMS TO BE COMPLETED OR CORRECTED."**

### UNIVERSITY'S REPRESENTATIVE

### UNIVERSITY:

By: The Regents of the University of California  
University of California, Riverside

\_\_\_\_\_  
(Signature & Date)

Scott Donnell  
Senior Project Manager  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

\_\_\_\_\_  
(Signature & Date)

Blythe R. Wilson, Architect  
Director of Project Management  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

cc: Office of Risk Management

## **PUNCH LIST OF ITEMS TO BE COMPLETED OR CORRECTED**

ATTACHMENT TO CERTIFICATE OF SUBSTANTIAL COMPLETION ISSUED

Contractor:

**CHANGE ORDER**

Contract Date: \_\_\_\_\_

Change Order No.: \_\_\_\_\_

Date Issued: \_\_\_\_\_

To Contractor: \_\_\_\_\_

Attn: \_\_\_\_\_

Address: \_\_\_\_\_

DESCRIPTION OF CHANGE: (Reference attachments)	Contract Sum Adjustment	Contract Time Adjustment
1. _____		
2. _____		

<input type="checkbox"/> Description of Change continued on Page 2. Subtotal from Page 2:	<b>\$0.00</b>	<b>0</b>
---	---------------	----------

Adjustment of Contract Sum:

Original Contract Sum:	_____
Prior Adjustments:	_____
Contract Sum before this Change:	\$- _____
Adjustment for this Change:	\$- _____
Revised Contract Sum:	\$- _____

Adjustment of Contract Time:

Original Contract Time:	0	(Days)
Prior Adjustments:	0	(Days)
Contract Time before this Change:	0	(Days)
Adjustment for this Change:	0	(Days)
Revised Contract Time:	0	(Days)

Start Date:	_____
Original Final Completion Date:	#####
Revised Final Completion Date:	#####

**Contractor waives any claim for further adjustments of the Contract Sum and the Contract Time related to the above described change in the Work.**

**Accepted:**

By: Contractor

\_\_\_\_\_  
(Signature & Date)

\_\_\_\_\_  
(Print Name & Title)

**Recommended:**

By: University's Representative

\_\_\_\_\_  
(Signature & Date)  
Scott Donnell  
Senior Project Manager  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

**Funds Sufficient:**

By: Financial Administrative Officer

\_\_\_\_\_  
(Signature & Date)  
Susan McFadden  
Senior Financial Analyst  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

**Approved:**

University: The Regents of the University of California

\_\_\_\_\_  
(Signature & Date)  
Blythe R. Wilson, Architect  
Director of Project Management  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

Account No.: \_\_\_\_\_  
Fund: \_\_\_\_\_  
Cost Center: \_\_\_\_\_

Activity Code: \_\_\_\_\_  
Function: \_\_\_\_\_  
Project Code: \_\_\_\_\_



**CHANGE ORDER**

Contract Date: \_\_\_\_\_

Change Order No.: \_\_\_\_\_

(Page 2)

**DESCRIPTION OF CHANGE - CONTINUED**

		Contract Sum Adjustment	Contract Time Adjustment
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

**Subtotals:** \$0.00 0

**CLAIM CERTIFICATION - GENERAL CONTRACTOR**

Pursuant to Article 4.3.3 of the General Conditions, I certify as follows:

1. The Claim to which this certification is attached is made in good faith.
2. Amounts claimed for costs, expenses and damages incurred by Contractor are accurate and complete. Supporting data for amounts incurred by Contractor is accurate and complete. Any such supporting data, including any such new amounts, submitted after the execution of this certification, will be accurate and complete.
3. To the best of my knowledge and belief, amounts claimed, and supporting data submitted by Contractor on behalf of any and all subcontractors or suppliers, of all tiers, or any person or entity under Contractor, are accurate and complete. Contractor will not submit, after the date of execution of this certification, any such supporting data, including any such new amounts that, to the best of my knowledge and belief, is not accurate and complete.
4. The amount requested accurately reflects the adjustment of the Contract Sum for which the Contractor believes the University is liable.
5. Attached hereto is a certification that has been executed by each Subcontractor claiming not less than 5% of the total monetary amount sought by the claim to which this certification is attached.
6. I am duly authorized to certify the Claim on behalf of the Contractor.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration was executed at \_\_\_\_\_ ,  
(Name of City if within a City, otherwise, Name of County)  
in the State of \_\_\_\_\_ , on \_\_\_\_\_ .  
(Name of State) (Date)

\_\_\_\_\_  
(Name of Contractor)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Print Name & Title)

**CLAIM CERTIFICATION - SUBCONTRACTOR**

Pursuant to Article 4.3.3 of the General Conditions, I certify as follows:

1. The portion of the Claim made on behalf of the Subcontractor to which this certification is attached is made in good faith.
2. Amounts claimed for costs, expenses and damages incurred by the Subcontractor are accurate and complete. Supporting data for amounts incurred by the Subcontractor is accurate and complete. Any such supporting data, including any such new amounts, submitted to Contractor after the execution of this certification, will be accurate and complete.
3. To the best of my knowledge and belief, amounts claimed, and supporting data submitted to Contractor by the Subcontractor on behalf of any and all subcontractors or suppliers to Subcontractor, of all tiers, or any person or entity under Subcontractor, are accurate and complete. Subcontractor will not submit, after the date of execution of this certification, any such supporting data, including any such new amounts that, to the best of my knowledge and belief, is not accurate and complete.
4. The amount requested accurately reflects the amount for which the Subcontractor believes the University is liable to Contractor.
5. I am duly authorized to certify the Claim on behalf of the Subcontractor.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration was executed at \_\_\_\_\_ ,  
(Name of City if within a City, otherwise, Name of County)  
in the State of \_\_\_\_\_ , on \_\_\_\_\_ .  
(Name of State) (Date)

\_\_\_\_\_  
(Name of Subcontractor)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Print Name & Title)





# CERTIFICATE OF LIABILITY INSURANCE

(for non-UCIP Construction Projects and Consultant/Design Contracts)

DATE (MM/DD/YYYY)
-------------------

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2"><b>CONTACT NAME:</b></td> </tr> <tr> <td><b>PHONE (A/C, No, Ext):</b></td> <td><b>FAX (A/C, No):</b></td> </tr> <tr> <td colspan="2"><b>E-MAIL ADDRESS:</b></td> </tr> <tr> <td style="text-align: center;"><b>INSURER(S) AFFORDING COVERAGE</b></td> <td style="text-align: center;"><b>NAIC #</b></td> </tr> <tr> <td>INSURER A :</td> <td></td> </tr> <tr> <td>INSURER B :</td> <td></td> </tr> <tr> <td>INSURER C :</td> <td></td> </tr> <tr> <td>INSURER D :</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </table>	<b>CONTACT NAME:</b>		<b>PHONE (A/C, No, Ext):</b>	<b>FAX (A/C, No):</b>	<b>E-MAIL ADDRESS:</b>		<b>INSURER(S) AFFORDING COVERAGE</b>	<b>NAIC #</b>	INSURER A :		INSURER B :		INSURER C :		INSURER D :		INSURER E :		INSURER F :	
<b>CONTACT NAME:</b>																					
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INSURER C :																					
INSURER D :																					
INSURER E :																					
INSURER F :																					
<b>INSURED</b>																					

**COVERAGES      CERTIFICATE NUMBER:      REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR <hr/> <small>GENL</small> AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						
	<input type="checkbox"/> <b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> <small>Y/N</small> (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			N/A			<input type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTH-ER
	<input type="checkbox"/> <b>PROFESSIONAL LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE						

Special Provisions:

- The Regents of the University of California, The University of California, University, and each of their Representatives, consultants, officers, agents, employees, and each of their Representative's consultants, are included as additional insureds on the general liability policy as required by contract and pursuant to additional insured endorsement CG2010 (11/85) or a combination of both CG 2010 (10/01 or 07/04) and CG 2037 (10/01 or 07/04) but only in connection with **Physics 2000 Renewal, Project No. 957443, Contract No. 957443-LF-2021-26.**
- The General Liability coverage contains a Severability of Interest provision and shall be primary insurance as respects The Regents of the University of California, its officers, agents and employees. Any insurance or self-insurance maintained by The Regents of the University of California shall be excess of and non-contributory with this insurance.

**CERTIFICATE HOLDER: The Regents of the University of California**

Forward to: UCR CAPITAL PROGRAMS PLANNING, DESIGN & CONSTRUCTION, ATTN: CONTRACTS 1223 UNIVERSITY AVENUE, SUITE 240 RIVERSIDE, CA 92507	<p><b>SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.</b></p> <p>AUTHORIZED REPRESENTATIVE</p>
--	---

**CONDITIONAL WAIVER AND RELEASE ON  
FINAL PAYMENT**

**NOTICE:**

THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

**Identifying Information:**

Name of Claimant: \_\_\_\_\_  
Name of Customer: \_\_\_\_\_  
Job Location: Physics 2000 Renewal, Project No. 957443  
University of California, Riverside, City of Riverside, County of Riverside  
Owner: The Regents of the University of California

**Conditional Waiver and Release:**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is

Maker of Check: \_\_\_\_\_  
Amount of Check: \$ \_\_\_\_\_  
Check Payable to: \_\_\_\_\_

**Exceptions:**

This document does not affect any of the following: Disputed claims for extras in the amount of:

\$ \_\_\_\_\_ .

**Signature:**

Claimant's Signature & Date: \_\_\_\_\_

Claimant's Name & Title: \_\_\_\_\_

Prime Contractor's Application for Payment # \_\_\_\_\_

**CONDITIONAL WAIVER AND RELEASE ON  
PROGRESS PAYMENT**

**NOTICE:**

THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

**Identifying Information:**

Name of Claimant: \_\_\_\_\_

Name of Customer: \_\_\_\_\_

Job Location: **Physics 2000 Renewal, Project No. 957443**

**University of California, Riverside, City of Riverside, County of Riverside**

Owner: **The Regents of the University of California**

Through Date: \_\_\_\_\_

**Conditional Waiver and Release:**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: \_\_\_\_\_

Amount of Check: \$ \_\_\_\_\_

Check Payable to: \_\_\_\_\_

**Exceptions:**

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of Waiver and Release: \_\_\_\_\_

Amount(s) of Unpaid Progress Payment(s): \$ \_\_\_\_\_

- (4) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

**Signature:**

Claimant's Signature & Date: \_\_\_\_\_

Claimant's Name & Title: \_\_\_\_\_

Prime Contractor's Application for Payment # \_\_\_\_\_



## CHANGE ORDER REQUEST

Date: \_\_\_\_\_

Change Order Request (COR) No. \_\_\_\_\_

**Scope of Change:**

**Instructions:**

1. Complete this form by providing (a) all information required above, (b) the amount and justification based upon the Contract Schedule for any proposed adjustment of Contract Time, (c) the proposed adjustment of Contract Sum, (d) the attached "Cost Proposal Summary," and (e) the attached form entitled, "Supporting Documentation for the Cost Proposal Summary."
2. Attach the form entitled "Supporting Documentation for the Cost Proposal Summary" for Contractor and each Subcontractor involved in the Extra Work. Each such form shall be completed and signed by Contractor or Subcontractor actually performing the Work Activity identified on the form. Attach supporting data to each such form to substantiate the individually listed costs. The costs provided on these forms shall be used to substantiate additional costs shown on the Cost Proposal Summary.
3. The Contractor Fee shall be computed on the Cost of Extra Work of Contractor and each Subcontractor involved in the Extra Work; and shall constitute full compensation for all costs and expenses related to the subject change and not listed in the "Supporting Documentation for the Cost Proposal Summary," including overhead and profit.
4. Refer to Article 7.3 of the General Conditions for the method of computing the Contractor Fee.

Adjustment of the Contract Time (Include justification based upon the Contract Schedule): \_\_\_\_\_  
Refer to Article 8 of the General Conditions. (Days)

Adjustment of the Contract Sum (Total from Line 18, Col. 4 of Cost Proposal Summary): \$ \_\_\_\_\_  
Refer to Article 7 of the General Conditions.

**Submitted: CONTRACTOR**

**Received: UNIVERSITY'S REPRESENTATIVE**

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Signature & Date)

\_\_\_\_\_  
(Print Name & Title)

\_\_\_\_\_  
(Signature & Date)

**Scott Donnell**  
Senior Project Manager  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

cc: Executive Director, Architects & Engineers, Capital Programs

## COST PROPOSAL SUMMARY

Contractor: \_\_\_\_\_ COR No. \_\_\_\_\_

		(1) Contractor	(2) 1st Tier Subs	(3) 2nd & Lower Tier Subs	(4) Total
ACTUAL COSTS	1. Straight Time Wages/Salaries-Labor				-
	2. Fringe Benefits and Payroll Taxes-Labor				-
	3. Overtime Wages/Salaries-Labor				-
	4. Fringe Benefits & Payroll Taxes-Overtime				-
	5. Materials & Cnsumable Items				-
	6. Sales Taxes (On Line 5)				-
	7. Rental Charges				-
	8. Royalties				-
	9. Permits				-
	10. Total Direct Expense (Sum of Lines 1-9)	\$-	\$-	\$-	\$-
	11. Insurance & Bonds (up to 2% of Line 10)	-	-	-	-
CONTRACTOR FEE	12. Sub-Sub (15% of Line 10, Col. 3)			-	-
	13. Subcontractor (5% of Line 10, Col. 3)		-		-
	14. Subcontractor (15% of Line 10, Col. 2)		-		-
	15. Contractor (5% of Line 10, Col. 2 & 3)	-			-
	16. Contractor (15% of Line 10, Col. 1)	-			-
	17. Contractor Fee (Sum of Lines 12-16)	\$-	\$-	\$-	\$-
TOTAL	18. Sum of Lines 10, 11, & 17	\$-	\$-	\$-	\$-

Actual Costs are taken from Line 12 of the attached forms entitled, "Supporting Documentation For the Cost Proposal Summary" for Contractor and each Subcontractor involved in the Extra Work.

**SUPPORTING DOCUMENTATION FOR THE COST PROPOSAL SUMMARY**

Supporting Documentation

From: \_\_\_\_\_ COR No. \_\_\_\_\_  
 (Contractor/Subcontractor Name)

Work Activity: \_\_\_\_\_

<b>COST ITEM</b>	<b>DESCRIPTION</b>	<b>COST<sup>(1)</sup></b>
ACTUAL COSTS	1. Straight Time Wages/Salaries-Labor	
	2. Fringe Benefits & Payroll Taxes-Labor: ___% of Line 1	
	3. Overtime Wages/Salaries-Labor (Attach University's Representative's written authorization.)	
	4. Fringe Benefits & Payroll Taxes-Overtime: ___% of Line 3	
	5. Materials & Consumable Items	
	6. Sales Taxes: ___% of Line 5	
	7. Rental Charges (Attach CalTrans' Schedule.)	
	8. Royalties	
	9. Permits	
	10. Total Direct Expense (Sum of Lines 1-9)	\$-
	11. Insurance & Bonds ___% of Line 10 (up to 2% of Line 10)	-
<b>TOTAL</b>	12. Sum of Lines 10 & 11	\$-

**Prepared By:**<sup>(2)</sup>

**CONTRACTOR:**<sup>(3)</sup>

\_\_\_\_\_  
 (Company Name)

\_\_\_\_\_  
 (Company Name)

\_\_\_\_\_  
 (Signature & Date)

\_\_\_\_\_  
 (Signature & Date)

\_\_\_\_\_  
 (Print Name & Title)

\_\_\_\_\_  
 (Print Name & Title)

**Notes:**

- (1) This form shall be prepared and signed by Contractor or Subcontractor actually performing the Work Activity indicated above.
- (2) If this form is signed by a Subcontractor, it shall be reviewed and signed by Contractor certifying the accuracy of the information.



RETURN THIS AGREEMENT SIGNED BY CONTRACTOR AND ESCROW AGENT TO:  
UNIVERSITY OF CALIFORNIA, RIVERSIDE  
Planning, Design & Construction  
1223 University Ave, Suite 240  
Riverside, CA 92521  
USE THIS ADDRESS FOR ALL CORRESPONDENCE

Escrow Account No.: \_\_\_\_\_

**ESCROW AGREEMENT FOR  
DEPOSIT OF SECURITIES IN LIEU OF RETENTION  
AND  
DEPOSIT OF RETENTION**

This Escrow Agreement is made as of \_\_\_\_\_, and entered into by and between  
(Date)  
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, hereinafter called "University," and

\_\_\_\_\_ ,

whose address is \_\_\_\_\_ ,

hereinafter called "Contractor," and \_\_\_\_\_ ,

a state or federally chartered bank in the state of California, whose address is

\_\_\_\_\_ ,

hereinafter called "Escrow Agent."

For consideration hereinafter set forth, University, Contractor, and Escrow Agent agree as follows:

(1) Contractor has the option to deposit securities with Escrow Agent as a substitute for retention required to be withheld by University pursuant to the Contract Documents, hereinafter referred to as "Contract," entered into between University and Contractor for the Project titled

Physics 2000 Renewal \_\_\_\_\_ ,

Project Number **957443** \_\_\_\_\_ , in the amount of \$ \_\_\_\_\_ ,

dated \_\_\_\_\_ . Alternatively, on written request of Contractor, University shall deposit retention directly with Escrow Agent. Contractor and its surety shall be at risk for failure of the Escrow Agent selected. When Contractor deposits the securities as a substitute for retention, Escrow Agent shall notify University within 5 days after the deposit. At all times, Contractor shall have on deposit securities the market value of which is at least equal to the cash amount then required to be withheld as retention under the terms of the Contract. Securities shall be held in the name of The Regents of the University of California, Riverside; and Contractor shall be designated as the beneficial owner.

(2) Escrow Agent shall review the market value of securities deposited in escrow under this Escrow Agreement as often as conditions of the securities market warrant, but in no case less than once per month. Escrow Agent shall promptly notify University and Contractor of the market value of the deposited securities if such market value is less than the total amount of retention required to be withheld under the terms of the Contract. Contractor shall promptly deposit additional securities so that the current market value of the total of

all deposited securities shall be at least equal to the total required amount of retention. Escrow Agent shall, within 5 days after University's request, provide a statement to University of the current market value of all securities deposited under this Escrow Agreement as of a date not earlier than 5 days prior to such request. The provisions of this Paragraph 2 shall not apply to securities consisting of monetary deposits as allowed by Paragraph 7 held by a bank as Escrow Agent, provided the bank provides monthly statements reflecting the status of the monetary deposits held by the bank to University and Contractor.

(3) Contractor shall not use any or all of the securities deposited in lieu of retention under this Escrow Agreement for any other obligations, including deposits in lieu of retention for other contracts. Contractor represents, covenants and warrants that all deposited securities shall be lien free when tendered to the Escrow Agents and shall remain lien free during their retention by the Escrow Agent.

(4) University shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to the Contract provision, provided that Escrow Agent holds securities in the form and amount specified herein.

(5) Prior to Contractor's submission of each Application For Payment, Escrow Agent shall issue a current statement of (a) the value of the securities currently being deposited in lieu of retention and (b) the current value of all securities being held in escrow pursuant to this Escrow Agreement. Such statement shall be no more than 5 days old at the time of submission, shall be notarized or have a guarantee of signature, and shall be submitted to Contractor with a copy to University under separate cover. Contractor shall attach such original statement to each Application For Payment. The provisions of this Paragraph 5 shall not apply to securities consisting of monetary deposits as allowed by Paragraph 7 held by a bank as Escrow Agent, provided the bank provides monthly statements reflecting the status of the monetary deposits held by the bank to University and Contractor.

(6) If, at the request of Contractor, University deposits retention directly with Escrow Agent, Escrow Agent shall hold such retention for the benefit of Contractor until such time as the escrow created under the Contract is terminated. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when University deposits retention directly with Escrow Agent.

(7) University will allow Contractor to deposit the following securities in lieu of retention and direct the investment of the retention deposits into any of the following which at the time of payment are legal investments under the laws of the State of California:

- a. Direct obligations of the United States of America (including obligations issued or held in book-entry form on the books of the Department of the Treasury of the United States of America or any Federal Reserve Bank), or obligations the timely payment of the principal of and interest on which are fully guaranteed by the United States of America, or tax-exempt obligations which are rated in the highest rating category of a nationally recognized bond rating agency.
- b. Obligations, debentures, notes or other evidence of indebtedness issued or guaranteed by any of the following: Banks for Cooperatives, Federal Intermediate Credit Banks, Federal Home Loan Bank System, Export-Import Bank of the United States, Federal Financing Bank, Federal Land Banks, Federal Farm Credits, Government National Mortgage Association, Farmer's Home Administration, Federal Home Loan Mortgage Corporation, or Federal Housing Administration.
- c. Bonds of the State of California or those for which the faith and credit of the State of California are pledged for the payment of principal and interest.
- d. Interest-bearing bankers acceptances and demand or time deposits (including certificates of deposit) in banks, provided such deposits are either (1) secured at all times, in the manner and to the extent provided by law, by collateral security described in clauses a or b of this Paragraph 7 continuously having a market value at least equal to the amount so invested so long as such underlying obligations or securities are in the possession of the Securities Investors Protection

Corporation, (2) in banks having a combined capital and surplus of at least One Hundred Million Dollars, or (3) fully insured by the Federal Deposit Insurance Corporation.

- e. Taxable government money market portfolios restricted to obligations with maturities of one (1) year or less, issued or guaranteed as to payment of principal and interest by the full faith and credit of the United States of America.
- f. Commercial paper rated in the highest rating category of a nationally recognized rating agency, and issued by corporations organized and operating within the United States of America and having total assets in excess of Five Hundred Million Dollars.

(8) Contractor shall be responsible for paying all fees, costs, and expenses incurred by Escrow Agent in administering the escrow account. These expenses and payment terms shall be determined by Contractor and Escrow Agent. All fees, costs, and expenses of this Escrow Agreement and any transactions carried out hereunder shall be billed by Escrow Agent to Contractor. In the event that any fees, costs, or expenses shall remain unpaid in excess of 30 days from the date due, Escrow Agent may withhold such unpaid amount from any income distributable to Contractor, but shall not withhold such unpaid amount from any income distributable to University.

(9) Interest earned on the securities or the money market accounts held in escrow and all interest earned on the interest shall be for the sole account of Contractor and shall be held in escrow. Interest may be withdrawn by Contractor from time to time, without notice to University, only to the extent that the total amount held in escrow meets or exceeds the required amount of retention.

(10) Except as provided in Paragraph 9, Contractor shall have the right to withdraw all or any part of the escrow account only by written notice to Escrow Agent accompanied by written authorization from University to Escrow Agent stating that University consents to the withdrawal of the amount sought to be withdrawn by Contractor. University shall not be obligated to consent to any withdrawal to the extent of stop notice claims which cannot be satisfied from other funds then due and payable to Contractor.

(11) University shall have the right to draw upon the securities, any interest earned on the securities, and any interest earned on the interest in the event of default by Contractor. Upon 7 days written notice to Escrow Agent from University, with a copy to Contractor, Escrow Agent shall immediately convert the securities, any interest earned on the securities, and all interest earned on the interest to cash and shall distribute the cash as instructed by University. Escrow Agent shall have no duty to determine whether a default has occurred and may rely solely upon the written notice of such default from University.

(12) Upon receipt of written notification from University certifying that final payment is due under the Contract, Escrow Agent shall release to Contractor the amount, if any, by which the value of all securities and interest on deposit less escrow fees and charges of the escrow account exceeds 125% of all stop notice claims on file. Escrow Agent shall pay the remaining amount to University or as directed by University. The escrow shall be closed immediately upon disbursement of all monies and securities on deposit and payment of fees and charges.

(13) Escrow Agent shall rely upon the written notifications from University and Contractor pursuant to this Escrow Agreement; and University and Contractor shall hold Escrow Agent harmless from Escrow Agent's release, conversion, and disbursement of the securities and interest as set forth herein.

(14) Escrow Agent shall have the right to terminate this Escrow Agreement upon 30 days notice to all parties hereunder. Upon receipt of such notice, University and Contractor shall appoint a successor Escrow Agent in writing and deliver written notice of such appointment to Escrow Agent. Thereupon, Escrow Agent shall deliver all assets in its custody to such successor Escrow Agent and all responsibility of Escrow Agent under this Escrow Agreement shall terminate; provided, however, if Contractor and University fail to appoint a successor Escrow Agent on or before the end of the 30 day notice period, then Escrow Agent is authorized and instructed to return all assets, documents, and other items in its custody to University and this Escrow Agreement shall be terminated without further instruction.



(15) The duties and responsibilities of Escrow Agent shall be limited to those expressly set forth in this Escrow Agreement; provided, however, that, with Escrow Agent's written consent, the duties and responsibilities in this Escrow Agreement may be amended at any time or times by an instrument in writing signed by all parties.

(16) Whenever Contractor tenders securities to be deposited in lieu of retention, an authorized representative of the Contractor shall declare under penalty of perjury that the securities are lien free and shall remain lien free during their retention by the Escrow Agent. The declaration shall be in the following form:

"The undersigned, on behalf of \_\_\_\_\_ whose address is

(Name of Contractor)

\_\_\_\_\_,

(Street Address, City, State & Zip Code)

represents, covenants and warrants that the securities tendered herewith are lien free and shall remain lien free during their retention by the Escrow Agent.

I, \_\_\_\_\_, hereby declare that I am the

(Name)

\_\_\_\_\_ of \_\_\_\_\_,

(Title)

(Name of Contractor)

that I am duly authorized to make this representation, and that I declare under perjury under the laws of the State of California that the foregoing is true and correct."

\_\_\_\_\_  
 (Signature) \_\_\_\_\_ (Date)

(17) The names of the persons authorized to give written notice or to receive written notice on behalf of University and on behalf of Contractor in connection with this Escrow Agreement, and exemplars of their respective signatures, are as set forth below. Such names may be changed by written notice to the other parties.

**On behalf of University:**

**On behalf of Contractor:**

1. \_\_\_\_\_  
 (Signature)  
**Blythe R. Wilson, Architect**  
**Director of Project Management**  
**Planning, Design & Construction**  
 \_\_\_\_\_  
 (Print Name & Title)

\_\_\_\_\_ **951.827.1485** \_\_\_\_\_  
 (Telephone Number)

2. \_\_\_\_\_  
 (Signature)  
**Bobbi McCracken**  
**Associate Vice Chancellor and Controller**  
**Business and Financial Services**  
 \_\_\_\_\_  
 (Print Name & Title)

\_\_\_\_\_ **951.827.3303** \_\_\_\_\_  
 (Telephone Number)

1. \_\_\_\_\_  
 (Signature)  
 \_\_\_\_\_  
 (Print Name & Title)

\_\_\_\_\_ (Telephone Number)

2. \_\_\_\_\_  
 (Signature)  
 \_\_\_\_\_  
 (Print Name & Title)

\_\_\_\_\_ (Telephone Number)

Contractor, Escrow Agent, and University hereby agree to the covenants contained herein.

IN WITNESS WHEREOF, Contractor, Escrow Agent, and University have executed this Escrow Agreement, the day and year first written above.

**University:**

**Contractor:**

By: \_\_\_\_\_  
(Signature)  
Blythe R. Wilson, Architect  
Director of Project Management  
Planning, Design & Construction  
\_\_\_\_\_  
(Print Name & Title)

951.827.1485  
\_\_\_\_\_  
(Telephone Number)

By: \_\_\_\_\_  
(Signature)  
Bobbi McCracken  
Associate Vice Chancellor and Controller  
Business and Financial Services  
\_\_\_\_\_  
(Print Name & Title)

951.827.3303  
\_\_\_\_\_  
(Telephone Number)

By: \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Print Name & Title)

\_\_\_\_\_  
(Telephone Number)

By: \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Print Name & Title)

\_\_\_\_\_  
(Telephone Number)

**Escrow Agent:**

By: \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Print Name & Title)  
\_\_\_\_\_  
(Telephone Number)

### FINAL INSPECTION ACCEPTANCE

Contract Date: \_\_\_\_\_ Final Inspection Date: \_\_\_\_\_

To Contractor: \_\_\_\_\_

Attn: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

The above Project was inspected and accepted as of the above Final Inspection Date. No outstanding work remains to be performed. All required submittals have been received. All training has been performed pursuant to the Contract.

The following Change Orders for time and/or money ONLY remain unexecuted:

**Upon receipt of this executed document for Final Inspection Acceptance, Contracts Administration will file a Notice of Completion with the county recorder's office. This action terminates the construction contract for this Project.**

**By: Inspector**

**By: Design Professional**

\_\_\_\_\_  
(Signature & Date)

\_\_\_\_\_  
(Signature & Date)

Charles Blumer  
Senior Construction Inspector  
Planning, Design & Construction

\_\_\_\_\_  
(Print Name & Title)

**By: University's Representative**

**By: University's Responsible Administrator**

\_\_\_\_\_  
(Signature & Date)

\_\_\_\_\_  
(Signature & Date)

Scott Donnell  
Senior Project Manager  
Planning, Design & Construction

\_\_\_\_\_  
(Print Name & Title)

Blythe R. Wilson, Architect  
Director of Project Management  
Planning, Design & Construction



## FINAL DISTRIBUTION OF CONTRACT DOLLARS

Completed By: \_\_\_\_\_ Date: \_\_\_\_\_  
(Signature) (Printed Name) (Title)

Provide the following information for each contracting party including the prime Contractor and each subcontractor/subconsultant regardless of tier.\* Attach additional sheets if necessary. Sheet No. \_\_\_\_\_ of \_\_\_\_\_

1	2	3	4	5	6					7a	7b	7c
Full Name of Business	Street Address City, State & Zip Code	Telephone # & Fax #	Contact Name	Type of Owner- ship	Business Categories (Check all that apply [X])					Portion of the Work	Amount \$	Percent %
					SBE	DVBE	DBE	WBE	N/A			
Prime:												
Sub:												
Sub:												
Sub:												
<b>Total Contract Amount: \$</b> _____			<b>Column 5 – Type of</b>		<b>Column 6 – Business Categories</b>					<b>Subtotals</b>		
			C = Corporation		SBE = Small Business Enterprise							
			JV = Joint Venture		DVBE = Disabled Veteran Business Enterprise							
			P = Partnership		DBE = Disadvantaged Business Enterprise							
			SP = Sole Proprietorship		WBE = Women-Owned Business Enterprise							
O = Other		N/A = Not Applicable										

\*Regardless of tier, a completed Self-Certification form must be submitted for the prime Contractor and each subcontractor/subconsultant shown on this Exhibit.

\*\*If a prime Contractor, refer to the Report of Subcontractor Information for license and other information.

## FIELD ORDER

Contract Date: \_\_\_\_\_

Field Order No. \_\_\_\_\_

To Contractor: \_\_\_\_\_

Attn: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_

	Description of Work	Estimated Adjustment, Contract Sum	Estimated Adjustment, Contract Time
1.			
2.			
3.			

**By University's Representative:**

\_\_\_\_\_  
(Signature & Date)  
**Scott Donnell**  
 Senior Project Manager  
 Planning, Design & Construction  
 \_\_\_\_\_  
(Print Name & Title)

**NOTE:** If the work described above constitutes a change, this Field Order will be superseded by a Change Order that will include the scope of the change in the Work and any actual adjustments of the Contract Sum and the Contract Time.

**cc: Director of Project Management, Planning, Design & Construction**

Bond No. \_\_\_\_\_

**PERFORMANCE BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The Regents of the University of California ("The Regents") has awarded to \_\_\_\_\_ as Principal a contract dated the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, (the "Contract"), which Contract is by this reference made a part hereof, for the work described as follows:

Project Name: Physics 2000 Renewal  
Project No. 957443, Contract No. 957443-LF-2021-26

AND WHEREAS, Principal is required to furnish a bond in connection with the Contract, guaranteeing the faithful performance thereof;

NOW, THEREFORE, we, the undersigned Principal and \_\_\_\_\_ as Surety are held and firmly bound unto The Regents in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), to be paid to The Regents or its successors and assigns; for which payment, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by The Regents, shall promptly and faithfully perform the covenants, conditions, and agreements of the Contract during the original term and any extensions thereof as may be granted by The Regents, with or without notice to Surety, and during the period of any guarantees or warranties required under the Contract, and shall also promptly and faithfully perform all the covenants, conditions, and agreements of any alteration of the Contract made as therein provided, notice of which alterations to Surety being hereby waived, on Principal's part to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify, defend, protect, and hold harmless The Regents as stipulated in the Contract, then this obligation shall become and be null and void; otherwise it shall be and remain in full force and effect.

No extension of time, change, alteration, modification, or addition to the Contract, or of the work required thereunder, shall release or exonerate Surety on this bond or in any way affect the obligation of this bond; and Surety does hereby waive notice of any such extension of time, change, alteration, modification, or addition.

Whenever Principal shall be and declared by The Regents to be in default under the Contract, Surety shall promptly remedy the default, or shall promptly:

1. Undertake through its agents or independent contractors, reasonably acceptable to The Regents, to complete the Contract in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract, including without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages, or, at Surety's election, or, if required by The Regents,



2. Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and, upon determination by The Regents of the lowest responsible bidder, arrange for a contract between such bidder and The Regents and make available as work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Sum, and to pay and perform all obligations of Principal under the Contract, including, without limitation, all obligations with respect to warranties, guarantees, and the payment of liquidated damages; but, in any event, Surety's total obligations hereunder shall not exceed the amount set forth in the third paragraph hereof. The term "balance of the Contract Sum," as used in this paragraph, shall mean the total amount payable by The Regents to the Principal under the Contract and any amendments thereto, less the amount paid by The Regents to Principal.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing The Regents' rights against the others.

No right of action shall accrue on this bond to or for the use of any person or corporation other than The Regents or its successors or assigns.

Surety may join in any arbitration proceedings brought under the Contract and shall be bound by any arbitration award.

In the event suit is brought upon this bond by The Regents, Surety shall pay reasonable attorney's fees and costs incurred by The Regents in such suit.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_ .

**PRINCIPAL:**

**SURETY:**

\_\_\_\_\_  
 (Name of Company)

\_\_\_\_\_  
 (Name of Company)

By: \_\_\_\_\_  
 (Signature)

By: \_\_\_\_\_  
 (Signature)

\_\_\_\_\_  
 (Print Name)

\_\_\_\_\_  
 (Print Name)

\_\_\_\_\_  
 (Title)

\_\_\_\_\_  
 (Title)

**Address for Notices:**

\_\_\_\_\_  
 (Street Address)

\_\_\_\_\_  
 (City, State & Zip Code)

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.

Bond No. \_\_\_\_\_

**PAYMENT BOND**

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, The Regents of the University of California ("The Regents") has awarded to \_\_\_\_\_ as Principal a contract dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, (the "Contract") for the work described as follows:

Project Name: Physics 2000 Renewal  
Project No. 957443, Contract No. 957443-LF-2021-26

AND WHEREAS, the Principal is required to furnish a bond in connection with the Contract, to secure the payment of claims of laborers, mechanics, material suppliers, and other persons as provided by law;

NOW, THEREFORE, we, the undersigned Principal and \_\_\_\_\_ as Surety, are held and firmly bound unto The Regents in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), for which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that if Principal, or its heirs, executors, administrators, successors, or assigns approved by The Regents, or its subcontractors shall fail to pay any of the persons named in State of California Civil Code Section 9100, or amounts due under the State of California Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the State of California Employment Development Department from the wages of employees of Principal and subcontractors pursuant to Section 13020 of the State of California Unemployment Insurance Code with respect to such work and labor, that Surety will pay for the same in an amount not exceeding the sum specified in this bond, otherwise the above obligation shall become and be null and void.

This bond shall inure to the benefit of any of the persons named in State of California Civil Code Section 9100 as to give a right of action to such persons or their assigns in any suit brought upon this bond.

Surety, for value received, hereby expressly agrees that no extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder, shall in any way affect the obligation of this bond; and it does hereby waive notice of any such extension of time, change, modification, alteration, or addition to the undertakings, covenants, terms, conditions, and agreements of the Contract, or to the work to be performed thereunder.

Surety's obligations hereunder are independent of the obligations of any other surety for the payment of claims of laborers, mechanics, material suppliers, and other persons in connection with the Contract; and suit may be brought against Surety and such other sureties, jointly and severally, or against any one or more of them, or against less than all of them without impairing The Regents' rights against the other.

In the event suit is brought upon this bond, the parties not prevailing in such suit shall pay reasonable attorneys' fees and costs incurred by the prevailing parties in such suit.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_ .

**PRINCIPAL:**

**SURETY:**

\_\_\_\_\_  
(Name of Company)

\_\_\_\_\_  
(Name of Company)

By: \_\_\_\_\_  
(Signature)

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Title)

**Address for Notices:**

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(City, State & Zip Code)

NOTE: Notary acknowledgement for Surety and Surety's Power of Attorney must be attached.



## REPORT OF SUBCONTRACTOR/SUBCONSULTANT INFORMATION

(NOTE: THIS EXHIBIT IS NOT TO BE SUBMITTED WITH BID)

Completed By: \_\_\_\_\_ (Signature) \_\_\_\_\_ (Print Name) \_\_\_\_\_ (Title) Date: \_\_\_\_\_

Provide the following information for each contracting party including the prime Contractor and each subcontractor regardless of tier\*.

Sheet No. \_\_\_\_\_ of \_\_\_\_\_

Attach additional sheets if necessary.

1	2	3	4	5	6					7a	7b	8	
Full Name of Business	Street Address City, State & Zip Code	Telephone # & Fax #	Contact Name	Type of Owner- ship	Business Categories* (Check all that apply [X])					Portion of the Work	Amount \$	License Information**	
					SBE	DVBE	DBE	WBE	N/A			License Classification	License #
Prime:													
Sub:													
Sub:													
Sub:													
<b>Column 5 – Type of Ownership</b>					<b>Column 6 – Business Categories</b>								
					C = Corporation					SBE = Small Business Enterprise			
					JV = Joint Venture					DVBE = Disabled Veteran Business Enterprise			
					P = Partnership					DBE = Disadvantaged Business Enterprise			
					SP = Sole Proprietorship					WBE = Women-Owned Business Enterprise			
					O = Other					N/A = Not Applicable			

\*Regardless of tier, a completed Self-Certification form must be submitted for the prime Contractor and each subcontractor shown on this Exhibit.

\*\*List only those license classifications and numbers relevant to this Project.

**SELECTION OF RETENTION OPTIONS**

I (we): \_\_\_\_\_  
(Contractor)

SELECT OPTION 1 \_\_\_\_\_ Initial and date here  
 University will withhold retention. for OPTION 1

OR SELECT OPTION 2 \_\_\_\_\_ Initial and date here  
 herewith elect to substitute securities in the form of: for OPTION 2

\_\_\_\_\_ (Type of Security)  
 in lieu of retention being withheld by University for the  
 above-referenced project.

OR SELECT OPTION 3 \_\_\_\_\_ Initial and date here  
 herewith elect to have retention on the above- for OPTION 3  
 referenced project paid directly into the Escrow  
 Account.

\_\_\_\_\_ (Type of Security to be Purchased)  
 An Escrow Account will be opened with: \_\_\_\_\_  
(Name of state or federally chartered bank in California)

whose address is: \_\_\_\_\_  
(Street)  
 \_\_\_\_\_  
(City, County)  
 \_\_\_\_\_  
(State, Zip Code)

On Behalf of Contractor\*:

On Behalf of University:  
 Acknowledged and Approved

By: \_\_\_\_\_  
(Signature)

\_\_\_\_\_ (Print Name & Title)

By: \_\_\_\_\_  
(Signature)

**Blythe R. Wilson, Architect**  
**Director of Project Management**  
**Planning, Design & Construction**  
 \_\_\_\_\_  
(Print Name & Title)

\* Signature shall be by the authorized party who signs the Escrow Agreement for Deposit of Securities in Lieu of Retention and Deposit of Retention ("Escrow Agreement").

Note: If a completed and signed Escrow Agreement is not submitted with this form, University will not allow deposit of securities in lieu of retention.

## SELF-CERTIFICATION

For the Contractor and each subcontractor/subconsultant, the following must be completed.

Indicate all Business category(ies) that apply by initialing next to the applicable category(ies):

\_\_\_\_\_  
(Initial, if applicable) **Small Business Enterprise (SBE)** - an independently owned and operated concern certified, or certifiable, as small business by the Federal Small Business Administration (SBA). (Size standards by Standard Industrial Classification codes required by the Federal Acquisition Regulations, Section 19.102, may be found at <http://www.sba.gov/content/table-small-business-size-standards>.) The eligibility requirements for California contracting purposes is on the [Department of General Services website](http://www.dgs.ca.gov/pd/Programs/OSDS/SBEeligibilityBenefits.aspx) at <http://www.dgs.ca.gov/pd/Programs/OSDS/SBEeligibilityBenefits.aspx>. The University may rely on written representation by the vendors regarding their status.

\_\_\_\_\_  
(Initial, if applicable) **Disabled Veteran Business Enterprise (DVBE)** - a business that is at least 51% owned by one or more disabled veterans or, in the case of any publicly owned business, at least 51% of the stock of which is owned by such individuals and whose management and daily business operations are controlled by one or more of such individuals. A Disabled Veteran is a veteran of the military, naval, or air service of the United States with a service connected disability who is a resident of the State of California. To qualify as a veteran with a service connected disability, the person must be currently declared by the United States Veterans Administration to be 10% or more disabled as a result of service in the armed forces.

\_\_\_\_\_  
(Initial, if applicable) **Disadvantaged Business Enterprise (DBE)** - a business concern that is at least 51% owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly owned business, at least 51% of the stock of which is owned by such individuals and whose management and daily business operations are controlled by one or more of such individuals. Socially disadvantaged individuals are those who have been subjected to racial or ethnic prejudice or cultural bias because of their identity as members of a group without regard to their individual qualities. Economically disadvantaged individuals are those socially disadvantaged individuals whose ability to compete in the free private enterprise system has been impaired due to diminished capital and credit opportunities as compared to others in the same business area who are not socially disadvantaged. Business owners who certify that they are members of named groups (Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Asian-Indian Americans) are to be considered socially and economically disadvantaged.

\_\_\_\_\_  
(Initial, if applicable) **Women-Owned Business Enterprise (WBE)** - a business that is at least 51% owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

\_\_\_\_\_  
(Initial, if applicable) **None of the above categories apply.**



I hereby certify under penalty of perjury under the laws of the State of California that I have read this certification and know the contents thereof, and that the business category indicated above reflects the true and correct status of the business in accordance with Federal Small Business Administration criteria and Federal Acquisition Regulations, FAR 19 pertaining to small, disadvantaged, women-owned, and disabled veteran business enterprises. I understand that falsely certifying the status of this business, obstructing, impeding or otherwise inhibiting any University of California official who is attempting to verify the information on this form may result in suspension from participation in University of California business contracts for a period up to five (5) years and the imposition of any civil penalties allowed by law.

INFORMATION FURNISHED BY: \_\_\_\_\_  
(Print Name of Owner and/or Principal)

\_\_\_\_\_  
(Name of Business or Firm)

a \_\_\_\_\_  
(Insert type of business e.g. corporation, sole proprietorship, partnership, etc.)

By: \_\_\_\_\_  
(Print Name) (Title)

\_\_\_\_\_  
(Signature) (Date)

**PRIVACY NOTICE**

The State of California Information Practices Act of 1977 (effective July 1, 1978) requires the University of California to provide the following information to individuals who are asked to supply personal information about themselves. Information furnished on the Self-Certification form may, in some cases, identify personal information of an individual.

- The University of California, Riverside, is requesting the information contained in this form and the accompanying Report of Subcontractor Information.
- The Small Business Outreach Program Manager at the University of California, Riverside, is responsible for maintaining the requested information. The contact information for the Small Business Outreach Program Manager may be found at: <http://www.ucop.edu/procurement-services/files/sbdmgr.xlsx>.
- The maintenance of information is authorized in part by Public Contract Code section 10500.5.
- Furnishing the information requested on this form is mandatory. If SBE, DBE, WBE and/or DVBE status is applicable, furnishing such information is mandatory.
- Failure to provide the information may be a violation of bidding procedures and/or breach of the contract and the University may pursue any and all remedies permitted by the provisions of the Contract Documents.
- The information on this form is collected for monitoring and reporting purposes in accordance with state law and University policy.
- The individual may access information contained in this form and related forms by contacting the Small Business Outreach Program Manager(s).

## SUBMITTAL SCHEDULE

Contract Date: \_\_\_\_\_

Subcontractor: \_\_\_\_\_

Specification Section: \_\_\_\_\_

Work Activity: \_\_\_\_\_

Event	Scheduled Completion Date	Actual Completion Date	Calendar Days Required to Complete
1. Received by Contractor and Time for Checking			
2. First Delivered to University's Representative and Time for Checking			
3. Return to Contractor			
4. Corrections Completed and Time for Corrections			
5. Next Delivered (1 <sup>st</sup> Resubmission) to University's Representative and Time for Checking			
6. Return to Contractor			
7. Approval for Job Information			
8. Approval for Fabrication and Time for Fabrication			
9. Fabrication Completed			
10. Shipping Date and Time In Route			
11. Delivery to Job			

\*Contractor must revise Submittal Schedule to reflect number of resubmissions.

### SUBSTITUTION OF SUBCONTRACTOR - INDEMNITY AGREEMENT and CONSENT

WHEREAS, on **Date**, **The Regents of the University of California** (University) and \_\_\_\_\_ (Contractor)

\_\_\_\_\_ (Full Company Name & Address of Prime Contractor)  
entered into an Agreement (Contract Number **957443-LF-2021-26**) for the construction of **Physics 2000 renewal, Project No. 957443**, University of California, Riverside (Project); and

WHEREAS, Contractor's Bid, which was accepted by University for said Project, listed **Name of Listed Sub** as Subcontractor for the **work activity** work called for by the Bidding Documents and Contract Documents; and

WHEREAS, Contractor has represented and does hereby represent to University that **Name of Listed Sub** has **reasons for substitution**;

In consideration of the consent of University to the substitution of:

\_\_\_\_\_, for  
(Full Company Name & Address of **Substitute** Subcontractor)

**Name of Listed Sub**, as  
(Full Company Name of **Listed** Subcontractor)

Subcontractor to provide the **work activity** work called for in the Bidding Documents and Contract Documents for the Project, Contractor does hereby agree to indemnify the University and hold it harmless from any and all claims, expenses, losses or liabilities arising out of said substitution of subcontractor or said consent thereto, and to defend at Contractor's expense any and all claims, protests, suits, actions or other proceedings in connection therewith; provided, however, that the University shall be given prompt notice of all such proceedings and it shall be entitled, if it so desires, to participate in the response to or defense of any such proceedings. If any such proceedings causes or results in a delay in the completion of said Project, the loss to the University for such delay shall be deemed to be the amount determined by applying the liquidated damages provisions of said Agreement for the period of such delay.

IN WITNESS WHEREOF, this Indemnity Agreement has been executed on \_\_\_\_\_, (Date)  
at \_\_\_\_\_, California.  
(Location: City & County)

**CONTRACTOR:**

By: \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Typed or Printed Name & Title)

### CONSENT TO SUBSTITUTION OF SUBCONTRACTOR

In consideration of the indemnification of University by Contractor, above, University agrees and does hereby consent to the substitution of:

\_\_\_\_\_, for  
(Full Company Name & Address of **Substitute** Subcontractor)

**Name of Listed Sub**, as  
(Full Company Name of **Listed** Subcontractor)

Subcontractor to provide the **work activity** work called for in the Bidding Documents and Contract Documents for the above named Project.

IN WITNESS WHEREOF, University and Contractor have executed this Consent to Substitution of Subcontractor as of the above date.

**CONTRACTOR:**

By: \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Typed or Printed Name & Title)

**UNIVERSITY:**

By: \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Typed or Printed Name & Title)



**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

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*This document summarizes the Builder's Risk policy and is not intended to reflect all the terms, conditions, or exclusions of such policy as of the effective date of coverage. This document is not an insurance policy and does not amend, alter or extend the coverage afforded by the listed policy. The insurance afforded by the policy is subject to all the terms, exclusions and conditions of such policy.*

*Some Projects may be excluded and/or must be underwritten separately any may be subject to different rates, deductibles, and terms and conditions. (See page 13) Therefore, this document should be used as a guideline only.*

**INSURANCE COMPANY:** Allianz Global Risks U.S. Insurance Company

**BEST'S RATING:** A+

**NAMED INSURED:** The Regents of the University of California

**INSURING AGREEMENT**

This Policy, subject to the Limit of Liability and the terms, conditions, and limitations contained herein or endorsed hereon, insures against all risks of direct physical loss of or direct physical damage to Insured Property while at the construction site, stored off-site, or in the course of transit within the Territorial Limits specified in the Schedule during the Period of Insurance of each Insured Project.

**LIMITS OF LIABILITY**

**SCHEDULE OF LIMITS**

This Company shall not be liable for more than the Limit of Liability as stated on the Certificate of Insurance in any one Occurrence for any one Insured Project, subject to the following limits and sublimits:

**MASTER POLICY LIMITS**

\$150,000,000 per project, per occurrence  
\$ 25,000,000 per project, Joisted Masonry

**NOTE:** *This Limit of Liability will correspond with the Total Estimated Construction Cost as indicated on the original Builder's Risk Insurance Application. If the construction costs should increase, the Limit of Liability can be subsequently increased once prior notice has been given by the University's Representative to Aon Risk Insurance Services West, Inc..*

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

**SUBLIMITS:**

1. \$5,000,000 for **Wood Frame Construction**
2. \$100,000 for **Pollution Cleanup Expenses**
3. 15% of the declared estimated Total Project Value, subject to a maximum of \$25,000,000 for **Demolition and Increased Cost of Construction**
4. 25% of the adjusted property damage loss, subject to a maximum of \$2,500,000 for **Expediting Expense/Extra Expense**
5. 10% of the declared estimated Total Project Value, subject to a maximum of \$10,000,000 for **Insured Property while Stored Off-site**
6. 10% of the declared estimated Total Project Value, subject to a maximum of \$10,000,000 for **Insured Property while in the Course of Inland Transit**
7. 25% of the declared estimated Total Project Value, subject to a maximum of \$25,000,000 for **Debris Removal**
8. \$500,000 for **Plans, Blueprints and Specifications**
9. \$500,000 for **Trees, Grass, Shrubbery, Seed and Plants**
10. 33% of the declared estimated Total Project Value subject to a maximum of \$50,000,000 for **Water Damage**. (Each Insured Project is also subject to a \$50,000,000 Annual Aggregate for Water Damage.)
11. 15% of the adjusted property damage loss, subject to a maximum of \$10,000,000 for **Green/LEED Rating System**
12. 10% of the adjusted property damage loss, subject to a maximum of \$50,000 for **Mold/Fungi**
13. 5% of the declared estimated Total Project Value, subject to a maximum of \$10,000,000 for additional **Architects, Engineering and Professional Fees**
14. \$100,000 for **Claims Preparation Expenses**
15. \$500,000 for **Fire Department Service Charges**

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

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**TERMS AND CONDITIONS**

**NAMED INSURED**

The Regents of the University of California and all affiliated and subsidiary companies, corporations, ventures, partnerships or other organizations, all owned, controlled or managed by the Named Insured and all as now exist or may hereafter be constituted or acquired.

**ADDITIONAL INSUREDS**

General Contractors and subcontractors of every tier to the extent required by any contract or subcontract for an Insured Project, and then only as their respective interests may appear, any individual(s) or entity(ies) specified in such contract or subcontract, are recognized as Additional Insureds hereunder. As respects architects, engineers, manufacturers and suppliers, the foregoing is limited to their site activities only.

**ATTACHMENT/TERMINATION**

Insurance hereunder applies to all projects specifically declared under the Master Policy in a Quarterly Report Endorsement or in a Project Declaration Endorsement, where the project is scheduled to begin during the term of the Master Policy. The Master Policy term commences on September 1, 2011 at 12:01AM and ends on September 1, 2014 at 12:01AM.

Coverage for each Insured Project declared under the Master Policy will go into effect and continue in full force and effect during the Certificate Period specified in the project's Certificate of Insurance.

**NOTIFICATION OF COVERAGE/TERMINATION:** *The Certificate Period will correspond with the Estimated Dates of Commencement and Completion of Work as indicated on the original Builder's Risk Insurance Application. If construction is not completed on time and coverage beyond the Estimated Date of Completion of Work is required, prior notification must be given by the University Representative to Aon Insurance Services West, Inc.*

**DEDUCTIBLES**

\$25,000 for **All Other Perils** for Projects **over** \$2,500,000 at the time of the loss  
**except** Water Damage  
\$10,000 for **All Other Perils** for Projects **under** \$2,500,000 at the time of the loss  
**except** Water Damage  
\$100,000 for **Water Damage** for **all** projects

**NOTE:** *The contractor shall be responsible for the deductibles.*



**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

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**EXCLUSIONS**

**PROPERTY EXCLUDED**

This Policy does not insure:

1. Land, but this exclusion does not apply to excavation and grading as long as the cost of the excavation and grading is included in the Limit of Liability as stated in the Certificate of Insurance.
2. Contractor's plant and equipment, machinery, tools, or property of similar nature not destined to become a permanent part of the Insured Project but this exclusion shall not apply to formwork, fences, shoring, falsework and temporary buildings as long as the value of these items are included in the estimated Limit of Liability as stated in the Certificate of Insurance.
3. Automobiles or other vehicles, watercraft or aircraft.
4. Water.
5. Accounts, bills, currency, deeds, securities, books, records, manuscripts, other similar papers, or data processing media.
6. Existing buildings or structures or any other existing property.
7. Owner supplied material, equipment, machinery and supplies, unless the value of such is included in the Limit of Liability as stated in the Certificate of Insurance.
8. Transmission and/or distribution lines; including wires, cables, poles, towers and all equipment attached thereto beyond 1,000 feet from the perimeter of the project site.
9. Partially or completely excavated or open trench, pipeline or workface, at any one time beyond 1,000 feet in length.

**EXCLUDED CAUSES OF LOSS**

1. Loss or damage caused by, or resulting from, wear and tear, moth, vermin, termites or other insects, inherent vice, latent defect, gradual deterioration, wet or dry rot and rust, corrosion, erosion or normal settling, shrinkage, and/or expansion of buildings and/or foundations.
2. Any loss of use or occupancy or consequential loss of any nature howsoever caused.
3. Liquidated damages and/or penalties for delay or detention in connection with guarantees of performance or efficiency.
4. Hostile or warlike action.
5. Nuclear reaction, nuclear radiation, or radioactive contamination.

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

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6. Any cost or expenses incurred to test for, monitor, or assess the existence, concentration or effects of Fungi.
7. Loss or damage caused by or resulting from infidelity or dishonesty on the part of the Insured and/or any employee of the Insured; inventory shortage or unexplained disappearance.
8. Loss or damage caused by or resulting from frost, falling ice, or freezing, unless resulting directly from damage caused by fire, lightning, explosion, windstorm, riot, riot attending a strike, civil commotion, aircraft, vehicles, or smoke.
9. Loss or damage caused by or resulting from the enforcement of any ordinance or law, or any order of governmental or municipal authority; by suspension, lapse, termination and/or cancellation of any license, lease, or permit, or any injunction or process of any court, unless otherwise endorsed herein.
10. Loss or damage caused by, resulting from, contributed to or made worse by actual, alleged, or threatened release, discharge, escape or dispersal of Contaminants and/or Pollutants.
11. Loss or damage to Insured Property while aboard any aircraft or watercraft.
12. The cost of making good faulty or defective workmanship, material, construction, designs, plans and/or specifications unless direct physical loss or direct physical damage not otherwise excluded under this policy ensues and then this Policy will cover such ensuing loss or damage only.
13. Loss, damage, corruption, destruction, distortion, interruption, disruption, erasure, deletion, alteration, loss of use, reduction in functionality, loss of access to, denial of access to or breakdown of Electronic Data from any cause whatsoever.
14. Loss or damage to Used Equipment caused by mechanical and/or electrical breakdown.
15. Loss or damage directly or indirectly caused by, resulting from, contributed to, or aggravated by Land Movement.
16. Loss or damage directly or indirectly caused by, resulting from, contributed to, or aggravated by Flood.
17. Loss or damage covered under any guarantee or warranty, expressed or implied, by any manufacturer or supplier whether or not such manufacturer or supplier is an Insured under this policy.
18. Terrorism.
19. Loss or damage arising out of the performance of the professional activities of any consulting engineer, architect, or designer, or any person employed by them or any others whose acts they are legally liable for whether or not named as an Insured under this Policy.

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

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**SELECTED EXTENSIONS OF COVERAGE**

**1. EXPEDITING/EXTRA EXPENSES**

Subject to the stated sublimit, this Policy is extended to cover extra charges for overtime, night work, work on public holidays, the extra cost of rental construction equipment, express freight, including air freight all incurred solely:

- A. to facilitate the repair or replacement of the Insured Property which has sustained physical loss or physical damage from a peril insured, or;
- B. which are necessary to return the work on the Insured Property to the same schedule actually being observed immediately prior to the sustaining of physical loss or physical damage from a peril insured.

This Policy does not cover charges incurred to expedite work on parts of the Insured Property which have not sustained physical loss or physical damage.

**2. DEMOLITION AND INCREASED COST OF CONSTRUCTION**

- A. Subject to the stated sublimit, in the event of direct physical loss and/or direct physical damage by perils insured under this Policy, the Company shall also pay:
  - (i) The increased cost to repair, replace or re-erect the Insured Property caused by the enforcement of any building, zoning or land use ordinance or law in force at the time of loss. If the Insured Property is replaced, it must be intended for similar occupancy of the current Insured Property, unless otherwise required by zoning or land use ordinance or law.
  - (ii) The cost to demolish and clear the construction site of undamaged parts of the Insured Property caused by the enforcement of any building, zoning or land use law in force at the time of the loss.
- B. In no event, however, shall the Company be liable for costs associated with the enforcement of any ordinance or law which requires any Insured or others to test for, monitor, clean up, remove, contain, treat, detoxify, or neutralize, or in any way respond to or assess the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkali, toxic chemicals, liquids or gasses, waste materials or other irritants, any Contaminants and/or Pollutants.
- C. The Company shall not pay for the increased cost of construction until the Insured Property is actually repaired, replaced, or re-erected at the same construction site or elsewhere and as soon as reasonably possible after the loss or damage, not to exceed thirty (30) months.



**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

D. In no event, however, shall the Company pay more:

- (i) If the Insured Property is repaired, replaced or re-erected at the same construction site than the amount the insured actually spends to:
  - a) Demolish and clear the construction site; and
  - b) Repair, replace or re-erect the Insured Property but not for more than property of like height, floor area and style at the same construction site.
- (ii) If the Insured Property is not repaired, replaced, or re-erected at the same construction site than:
  - a) The amount the Insured actually spends to demolish and clear the construction site; and
  - b) The cost to replace, at the same construction site, the damaged or destroyed Insured Property with other property;
    - 1) of like kind and quality;
    - 2) of like height, floor area and style; and
    - 3) used for the same purpose.
- (iii) Than the stated sublimit of Demolition and Increased Cost of Construction.

**3. FIRE DEPARTMENT SERVICE CHARGES**

Subject to the stated sublimit, when property insured is destroyed or damaged by a peril insured, this Policy shall also pay for the cost of fire department service charges for which the Insured is liable, provided they are assumed by contract or written agreement prior to a loss or they are required by a local ordinance.

**4. PLANS, BLUEPRINTS, AND SPECIFICATIONS**

Subject to the stated sublimit, in the event of direct physical loss or direct physical damage to plans, blueprints or specifications by perils insured under this policy, this insurance shall also pay the costs of mechanical reproduction from originals stored off-site for plans, blueprints or specifications.

**5. TREES, GRASS, SHRUBBERY, SEED AND PLANTS**

Subject to the stated sublimit, this policy is extended to insure direct physical loss or direct physical damage to trees, grass, shrubbery, seed and plants caused by or resulting from fire, lightning, windstorm, hail, explosion, smoke, collision by aircraft or vehicle, riot, riot attending a strike or civil commotion, vandalism or malicious mischief.

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

**6. DEBRIS REMOVAL**

Subject to the stated sublimit, in the event of direct physical loss or physical damage to Insured Property by perils insured under this policy, this insurance shall also pay the cost of removal of material and debris being a part of the Insured Property located at the construction site and the cost to demolish and clear the construction site of undamaged parts caused by the enforcement of any building, zoning or land use law in force at the time of the loss.

This Policy also covers cost or expense to:

- A. Extract Contaminants and/or Pollutants from the debris; or
- B. Extract Contaminants and/or Pollutants from land and/or water; or
- C. Remove, restore, or replace land and/or water made necessary due to the presence of Contaminants and/or Pollutants; or
- D. Remove or transport any property, material, or debris to a site for storage or decontamination required because the property, material, or debris is affected by Contaminants and/or Pollutants, whether or not such removal, transport, or decontamination is required by law or regulation.
- E. This sub-clause (Items A - D above), is subject to a sublimit for **Pollution Cleanup Expenses**.

It is a condition precedent to recovery under this clause, that the Company shall have paid, or agreed to pay for direct physical loss or direct physical damage to the Insured Property and that the Insured shall give written notice to the Company of intent to claim for cost of removal of debris or the cost of cleanup no later than (12) twelve months after the date the original physical loss or physical damage occurred.

**7. ARCHITECT, ENGINEERING AND PROFESSIONAL FEES**

Subject to the stated sublimit, Architect, Engineering and Professional Fees shall mean the additional architectural and engineering expenses, excluding any costs for redesign or betterment, or owner's consultant service expenses, or owner's legal, appraisal, title and/or inspection fees incurred to facilitate repair or replacement of the Insured Property which has sustained physical loss or physical damage from an insured peril.

**8. GREEN/LEED**

Subject to the stated sublimit, in the event of a direct physical loss or direct physical damage not otherwise excluded in the policy to Insured Property by perils insured under the policy the Insurer shall also pay the reasonable additional cost, if any, incurred by the Insured to repair or replace such damaged or destroyed Insured Property in a manner and with products or materials of otherwise equivalent quality and function that meet the requirements of the LEED Rating System.

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

Coverage under this extension applies only if the Insured Project has been registered with the US Green Building Council during the Period of Insurance specified on the Certificate of Builder's Risk Insurance and prior to any loss, and only to the initial and intended building certification level that has been registered with the US Green Building Council, in accordance with the criteria outlined in order to comply with the requirements of the LEED Rating System existing at the time of the loss or damage to the Insured Project, which upon completion will undergo the process of being certified by the US Green Building Council.

The following exclusions and limitations apply to this coverage extension:

No coverage is provided under this extension:

- A. If no such products or materials exist at the time of the loss or damage; or
- B. If the Insured does not repair or replace the damaged or destroyed Insured Property.

In no event will the policy pay more than the lesser of the:

- A. The cost to repair; or
- B. The cost to replace;

the damaged Insured Property in a manner and with products or materials of otherwise equivalent quality and function that meet the requirements of the LEED Rating System existing at the time of the loss or damage.

No coverage is provided under this extension of coverage for any of the following items:

- A. Re-registering the Insured project with the US Green Building Council.
- B. Failure to meet the registered LEED Building Rating certification level.
- C. Land and land values.
- D. Any additional cost incurred to comply with any law or ordinance.
- E. Personal property of others in the Insured's care, custody or control.
- F. Raw materials, stock-in-process and finished goods.
- G. Motor vehicles.
- H. Property located outside the Territorial Limits of the policy.

**9. CLAIMS PREPARATIONS EXPENSE**

Subject to the stated sublimit, this policy is extended to include reasonable expenses incurred by the Insured, or by the Insured's representatives for preparing the details of a claim resulting from a loss which would be payable under this policy. However, the Company shall not be liable for expenses incurred by the Insured in utilizing or retaining the services of attorneys, insurance agents or brokers; or any subsidiary, related or associated entities either partially or wholly owned by an attorney or public adjuster.



**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

**10. MOLD/FUNGI**

Subject to the stated sublimit, in the event of direct physical loss or direct physical damage to Insured Property by perils insured under the policy, the insurance shall also pay, subject to the Limit of Liability and the terms, conditions, and limitations of this policy, the cost to clean up or remove Mold/Fungi from Insured Property located at the construction site.

Notwithstanding any terms or conditions, this policy does not insure any cost or expense incurred to test for, monitor, or assess the existence, concentration or effects of Mold/Fungi.

**SELECTED GENERAL CONDITIONS**

**1. REQUIREMENTS IN CASE OF LOSS**

In the event of loss or damage to Insured Property the Insured shall:

- A. Give immediate notice to the insurance company;
- B. Protect the Insured Property from further loss or damage;
- C. Within ninety (90) days from the date of discovery of the loss or damage, the Named Insured shall render a statement to the Insurer signed and sworn to by the Named Insured stating the knowledge and belief of the Insured as to the time and cause of the loss or damage and the interest of the Insured and all others in the Insured Property;
- D. Exhibit to any person designated by the Insurer all that remains of the Insured Property.
- E. Coordinate and cooperate with investigation and/or inspection of property and provide documentation as requested by the insurance adjuster. Do NOT destroy or salvage damaged property unless authorized to do so by the insurance adjuster.
- F. Submit to examinations under oath by any person named by the Insurer and produce for examination all writings, books of account, bills, invoices and other vouchers, or certified copies thereof if originals be lost, at such reasonable time and place as may be designated by the Insurer or its representative, and permit extracts and copies thereof to be made. No such examination under oath or examination of books or documents shall be deemed to be a waiver of any defense which the Insurer might otherwise have with respect to any loss or claim; but all such examinations and acts shall be deemed to have been made or done without prejudice to the Company's liability.
- G. Subject to the Limit of Liability and the terms, conditions, and limitations of the policy, all adjusted losses shall be paid or made good to the Named Insured within sixty (60) days after presentation and acceptance of the satisfactory proof of interest and loss to the Insurer. No amount shall be paid on an adjusted loss or made good if the Insured has collected the same from others.

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

**2. VALUATION**

Subject to the Limit of Liability, sublimits or Aggregate Limit of Liability, the Insurer shall not be liable beyond the cost to repair, replace, or re-erect the Insured Property at the time and place of loss, with materials of like kind and quality, less the cost of betterment, salvage, or other recovery including contractors reasonable profit and overhead in the proportion as that included in the original contract documents, or 15% profit and overhead, whichever is lesser. If the Insured Property is not replaced, then the loss shall be settled on the Actual Cash Value basis with proper deduction for depreciation, salvage or other recovery and exclusive of profit and overhead.

**3. PROTECTION OF PROPERTY**

In the case of direct physical loss or direct physical damage to Insured Property by perils insured under the policy, it shall be lawful and necessary for the Insured, his or their factors, servants, or assigns, to sue, labor, and travel for in and about the defense, safeguard, and recovery of the Insured Property, or any part thereof, without prejudice to this insurance, nor shall the acts of the Insured or Insurer, in recovering, saving, and preserving the Insured Property in case of loss be considered a waiver or an acceptance of abandonment. The expenses so incurred shall be borne by the Insured and the Insurer proportionately to the extent of their respective interests.

**4. OTHER INSURANCE**

This Policy shall not provide coverage to the extent of any other insurance, whether prior or subsequent hereto in date, and by whomsoever effected, directly or indirectly covering the same property against the same peril; and the Company shall be liable for direct physical loss or direct physical damage only for the excess value beyond the amount due from such other insurance, subject to the applicable Deductible.

**5. INSUREDS' REPRESENTATIVE**

The first Named Insured shall be the sole and irrevocable agent of each and every Insured for the purpose of:

- A. Payment of premium;
- B. Giving or receiving notice of cancellation;
- C. Requesting amendments to this policy and accepting amendments to the policy made by the Insurer.

**6. LOSS PAYABLE**

Loss, if any, shall be payable to the first Named Insured and/or its assigned designee.

**7. PARTIAL OCCUPANCY OR USE**

Notwithstanding anything to the contrary elsewhere in the policy, the Owner and/or tenants may occupy or use any completed or partially completed portion of the Insured Property, provided that the Insured warrants that all fire protection shall be in service and fully operational during such occupancy or use.

**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

**SELECTED DEFINITIONS**

The following terms have been defined in the Master Policy and will be applied in the interpretation of certain wording used herein or within the Master Policy.

**1. FLOOD:**

Flood shall mean the rising, overflowing or breaking of boundaries of rivers, lakes, streams, ponds or similar natural or man-made bodies of water, or from waves, tidal waves, tidal waters, wave wash, or spray from any of the foregoing, surface waters, rain accumulation run off, all whether driven by wind or not.

**2. CONTAMINANTS OR POLLUTANTS:**

Contaminants and/or Pollutants shall mean any material which after its release or discharge can cause or threaten damage to human health and/or human welfare, or causes or threatens damage, deterioration, loss of value, marketability and/or loss of use to Insured Property; including, but not limited to, bacteria, virus, or hazardous substances as listed in the Federal Water Pollution Control Act, Clean Air Act, Resource Conservation and Recovery Act of 1976, and/or Toxic Substances Control Act, or as designated by the U.S. Environmental Protection Agency.

**3. LAND MOVEMENT:**

Land Movement shall mean all land movement however caused, whether by natural event or man-made including but not limited to, earthquake, volcanic eruption, tsunami, subsidence, landslide, mudflow, or rockfall.

**4. OCCURRENCE:**

Occurrence shall mean any one loss, disaster, or casualty, or series of losses, disasters, or casualties arising out of one event. With respect to the perils of Water Damage, Flood, Land Movement, or riots, one event shall be construed to be all losses arising during a continuous period of seventy-two (72) hours.

The Insured may choose the time from which any such seventy-two (72) hour period shall be deemed to have commenced, provided it shall not be earlier than the time of the first loss sustained by the Insured during the Occurrence.

**5. WATER DAMAGE:**

All water damage excluding flood, however caused, whether by natural event or man-made, including but not limited to interior water damage, damage due to water from pipe breakage or sprinkler leakage, damage from rainfall and/or resulting runoff; all whether wind driven or not.



**THE REGENTS OF THE UNIVERSITY OF CALIFORNIA**  
**Master Builder's Risk Program**  
**Coverage Summary**

---

**PROJECTS EXCLUDED AND/OR MUST BE UNDERWRITTEN SEPARATELY. THESE PROJECTS MAY BE SUBJECT TO DIFFERENT RATES, DEDUCTIBLES, AND TERMS AND CONDITIONS.**

(A) Construction Cost exceeds:

- \$150 Million regardless of Construction Type
- \$5 Million for Wood Frame
- \$25 Million for Joisted Masonry
- \$50 Million for Structural Renovations

(B) Project involves:

- Construction occurring outside of the State of California
- Co-Generation Facility
- Stadium or arena
- Bridge
- Tunnel
- Excavations greater than 1,000 feet in length or 40 feet in depth
- Transmission and/or distribution lines extending greater than 1,000 feet in length from the perimeter project site including cable, telecom, wires, poles, towers, and electrical
- Directional Drilling
- Gas Turbine
- Power Plants
- Standalone Projects for Water or Sewer Pipelines, Cut and Cover, Open Trench, Utility Relocations, Central Utility Plants, Waste Water, or Water Treatment Facilities. Standalone projects means when the scope of work is not included in the estimated Construction Cost of a building project

(C) Project requires coverage for:

- Land Movement (e.g. Earthquake)
- Flood
- Terrorism
- Delay in Completion

**UNCONDITIONAL WAIVER AND RELEASE ON  
FINAL PAYMENT**

**NOTICE TO CLAIMANT:**

THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

**Identifying Information:**

Name of Claimant: \_\_\_\_\_  
Name of Customer: \_\_\_\_\_  
Job Location: **Physics 2000 Renewal, Project No. 957443**  
**University of California, Riverside, City of Riverside, County of Riverside**  
Owner: **The Regents of the University of California**

**Unconditional Waiver and Release:**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for all labor and service provided, and equipment and material delivered, to the customer on this job. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has been paid in full.

**Exceptions:**

This document does not affect the following: Disputed claims for extras in the amount of:  
\$ \_\_\_\_\_ .

**Signature:**

Claimant's Signature & Date: \_\_\_\_\_  
Claimant's Name & Title: \_\_\_\_\_

Prime Contractor's Application for Payment # \_\_\_\_\_

**UNCONDITIONAL WAIVER AND RELEASE ON  
PROGRESS PAYMENT**

**NOTICE TO CLAIMANT:**

UNCONDITIONAL WAIVER AND RELEASE ON PROGRESS PAYMENT NOTICE TO CLAIMANT: THIS DOCUMENT WAIVES AND RELEASES LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IF YOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE A CONDITIONAL WAIVER AND RELEASE FORM.

**Identifying Information:**

Name of Claimant: \_\_\_\_\_  
Name of Customer: \_\_\_\_\_  
Job Location: Physics 2000 Renewal, Project No. 957443  
University of California, Riverside, City of Riverside, County of Riverside  
Owner: The Regents of the University of California  
Through Date: \_\_\_\_\_

**Unconditional Waiver and Release:**

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. The claimant has received the following progress payment: \$ \_\_\_\_\_

**Exceptions:**

This document does not affect any of the following:

- (1) Retentions.
- (2) Extras for which the claimant has not received payment.
- (3) Contract rights, including (A) a right based on rescission, abandonment, or breach of contract, and (B) the right to recover compensation for work not compensated by the payment.

**Signature:**

Claimant's Signature & Date: \_\_\_\_\_

Claimant's Name & Title: \_\_\_\_\_

Prime Contractor's Application for Payment # \_\_\_\_\_



## LIST OF DRAWINGS

SHEET NO.	TITLE	DATE
G-001	TITLE SHEET	08/28/2020
G-002	PARTIAL SITE PLAN PROJECT LOCATION	08/28/2020
A-001	SITE PLAN DEMO & NOTES	08/28/2020
A-002	SITE PLANS SYMBOLS & NOTES	08/28/2020
A-003	1 <sup>ST</sup> FLOORPLAN DEMOLITION	08/28/2020
A-004	BASEMENT PLAN- DEMOLITION	08/28/2020
A-005	1 <sup>ST</sup> FLOOR CLG. PLAN - DEMO	08/28/2020
A-006	BASEMENT REF CLG. PLAN- DEMO	08/28/2020
A-007	1 <sup>ST</sup> FLOOR PLAN- REMODEL	08/28/2020
A-008	BASEMENT FLOOR PLAN- REMODELED	08/28/2020
A-009	1 <sup>ST</sup> FLOOR REF CEILING PLAN	08/28/2020
A-010	BASEMENT REF CLG. PLAN	08/28/2020
A-011	PARTIAL FLR. PLAN & DETAILS	08/28/2020
A-012	EXTERIOR ELEVATION	08/28/2020
A-013	EXT & INT ELEVATION	08/28/2020
A-014	INTERIOR ELEVATION	08/28/2020
A-015	PARTIAL BUILDING SECTION	08/28/2020
A-016	SECTION & DETAILS	08/28/2020
A-017	SECTION & DETAILS	08/28/2020
A-018	SECTION & DETAILS	08/28/2020
A-019	DETAILS	08/28/2020
A-020	DETAIL & SCHEDULE	08/28/2020
E-001	GENERAL NOTES & SYMBOL LIST	08/28/2020
E-002	PANELS & SINGLE LINE DIAGRAM	08/28/2020
E-003	ELECTRICAL DETAILS	08/28/2020
E-004	TITLE 24 COMPLIANCE FORMS	08/28/2020
E-005	TITLE 24 COMPLIANCE FORMS	08/28/2020
E-100	SITE PLAN	08/28/2020
E-101	1 <sup>ST</sup> FLOOR DEMO PLAN	08/28/2020
E-102	1 <sup>ST</sup> FLOOR DEMO LIGHTING PLAN	08/28/2020
E-201	1 <sup>ST</sup> FLOOR POWER PLAN	08/28/2020
E-202	1 <sup>ST</sup> FLOOR LIGHTING PLAN	08/28/2020
E.8	SEATING OPTION 1 OF 2	08/28/2020
E.8	SEATING OPTION 2 OF 2	08/28/2020

END OF LIST OF DRAWINGS



**IDAS**

3903 10TH STREET  
RIVERSIDE, CA 92501-3521  
TEL. (951) 342-3135  
FAX. (951) 342-3137

**INDEX**

- G-001 TITLE SHEET (THIS SHEET)
- G-002 PARTIAL CAMPUS SITE PLAN, PROJECT LOCATION
- A-001 (E) SITE PLAN - SELECTIVE DEMOLITION
- A-002 (N) SITE PLAN - REMODELED
- A-003 (E) 1st FLOOR PLAN - SELECTIVE DEMOLITION
- A-004 (E) BASEMENT PLAN - SELECTIVE DEMOLITION
- A-005 (E) 1st FLOOR REFLECTED CEILING PLAN  
SELECTIVE DEMOLITION
- A-006 (E) BASEMENT REFLECTED CEILING P  
SELECTIVE DEMOLITION
- A-007 (N) 1st FLOOR PLAN - REMODELED
- A-008 (N) BASEMENT PLAN - REMODELED
- A-009 (N) 1st FLOOR REFLECTED CEILING PLAN
- A-010 (N) BASEMENT REFLECTED CEILING PLAN
- A-011 PARTIAL FLOOR PLAN & DETAIL
- A-012 EXTERIOR ELEVATION
- A-013 EXTERIOR & INTERIOR ELEVATION
- A-014 INTERIOR ELEVATION
- A-015 PARTIAL BUILDING SECTION
- A-016 DETAIL
- A-017 DETAIL
- A-018 DETAIL
- A-019 DETAIL
- A-020 DETAIL & SCHEDULE

**STRUCTURAL**

**ABS CONSULTING**

300 COMMERCE DRIVE, SUITE 200  
IRVINE, CA 96602-1300  
TEL. (714) 734-4242  
FAX. (714) 734-4272

**INDEX**

(NONE - MERGED W/ ARCH. DWG.)

**MECH. & PLUMBING**

**(NONE)**

**INDEX**

(NONE - MERGED W/ ARCH. DWG.)

**ELECTRICAL**

**A&F ENGINEERING GROUP**

9320 BASELINE RD. SUITE C  
RANCHO CUCAMONGA, CA 91701

TEL. (909) 941-3008  
FAX (909) 941-8211

**INDEX**

- E-001 GENERAL NOTES & SYMBOL LIST
- E-002 PANELS & SINGLE LINE DIAGRAM
- E-003 ELECTRICAL DETAILS
- E-004 TITLE 24 COMPLIANCE FORMS
- E-005 TITLE 24 COMPLIANCE FORMS
- E-100 SITE PLAN
- E-101 1ST FLOOR DEMO PLAN
- E-102 1ST FLOOR DEMO LIGHTING PLAN
- E-201 1ST FLOOR POWER PLAN
- E-202 1ST FLOOR LIGHTING PLAN

**FURNITURE**

**KI**

1330 BELLEVUE STREET  
GREEN BAY, WI 54302

TEL. (800) 424-2432  
FAX (909) 941-8211

**INDEX**

- 1 SEATING OPTION 1
- 2 SEATING OPTION 2



UNIVERSITY OF CALIFORNIA RIVERSIDE

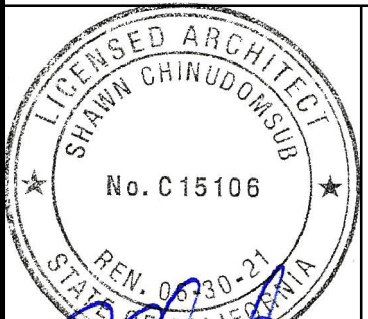
OFFICE OF ARCHITECTS & ENGINEERS

1223 UNIVERSITY AVENUE, SUITE 240  
RIVERSIDE, CA 92507  
TEL: (951) 827-4706 FAX: (951) 827-2402



Institutional Designs & Architectural Services  
3903 10th Street, Riverside, CA 92501-3521  
Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Date:



Architect's Stamp:

Consultants Stamp:

**CODES & REGULATIONS**

2019 CALIFORNIA BUILDING CODE (CBC) PART 2, VOLUMES 1 AND 2, TITLE 24 [BASED ON 2018 INTERNATIONAL BUILDING CODE]  
2019 CALIFORNIA ELECTRICAL CODE (CEC) PART 3, TITLE 24 [BASED ON 2017 NATIONAL ELECTRICAL CODE]  
2019 CALIFORNIA MECHANICAL CODE (CMC) PART 4, TITLE 24 [BASED ON 2018 UNIFORM MECHANICAL CODE]  
2019 CALIFORNIA PLUMBING CODE (CPC) PART 5, TITLE 24 [BASED ON 2018 UNIFORM PLUMBING CODE]  
2019 CALIFORNIA FIRE CODE (CFC) PART 9, TITLE 24 [BASED ON 2018 INTERNATIONAL FIRE CODE]  
2019 CALIFORNIA REFERENCED STANDARD CODE, PART 12, TITLE 24  
TITLE 19, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS  
PARTIAL LIST OF APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS  
NFPA 13, 2016 EDITION - INSTALLATION OF SPRINKLER SYSTEMS (AS AMENDED BY CSFM)  
NFPA 14, 2016 EDITION - INSTALLATION OF STANDPIPE AND HOSE SYSTEMS (AS AMENDED BY CSFM)  
NFPA 17A, 2017 EDITION - WET CHEMICAL EXTINGUISHING SYSTEMS  
NFPA 24, 2016 EDITION - INSTALLATION OF PRIVATE FIRE SERVICE MAINS (AS AMENDED BY CSFM)  
NFPA 25, (2013 CALIFORNIA EDITION, BASED ON NFPA 25, 2011 EDITION) - INSPECTION, TESTING & MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS  
NFPA 72, 2016 EDITION - NATIONAL FIRE ALARM AND SIGNALING CODE (AS AMENDED BY CSFM)  
NFPA 80, 2016 EDITION - FIRE DOORS AND OTHER OPENING PROTECTIVES  
REFER TO CBC CHAPTER 35 FOR ADDITIONAL STANDARDS NOT PROVIDED ON THIS LIST.

**EVALUATION REPORTS**

1. ALL POWER-ACTUATED FASTENERS (SHOT PINS) SHALL BE HILTI LOW VELOCITY X-U, CONFORMING TO ICC-ES ESR-2269.
2. ALL POWER-ACTUATED CEILING CLIP ASSEMBLIES SHALL BE HILTI X-CW U27, CONFORMING TO ICC-ES ESR-2892.
3. ALL EXPANSION ANCHORS IN CONCRETE SHALL BE HILTI KWIK BOLT TZ CONFORMING TO ICC-ES ESR 1917.
4. ALL EXPANSION ANCHORS IN CMU SHALL BE HILTI KWIK BOLT 3 CONFORMING TO ICC-ES ESR 1385.
5. ALL METAL STUDS SHALL CONFORM TO ICC-ES ER-3016 OR ER-3064P.
6. ALL SUSPENDED ACOUSTICAL CEILING GRIDS SHALL BE PER ICC-ES ESR 1289, ESR 1308 AND ESR 2681.

**FIRE DEPARTMENT NOTES**

1. PROVIDE FIRE ALARM MONITORING PLANS FOR APPROVAL UNDER SEPARATE PERMIT.
2. PROVIDE 2A-10:BC RATED FIRE EXTINGUISHER INSIDE PROJECT AREA AT ALL TIME..
3. FIRE EXTINGUISHERS SHALL BE PROVIDED PRIOR TO OCCUPANCY. FIRE EXTINGUISHERS SHALL BEAR A CALIFORNIA STATE FIRE MARSHAL'S SERVICE TAG; IT SHALL BE APPROPRIATELY RATED FOR THE HAZARD; SHALL BE MOUNTED SO THAT TOP OF THE EXTINGUISHERS IS NO HIGHER THAN FIVE (5) FEET; AND SHALL BE LOCATED SUCH THAT TRAVEL DISTANCE TO AN EXTINGUISHER DOES NOT EXCEED SEVENTY-FIVE (75) FEET.
4. OCCUPANT SHALL OBTAIN FIRE DEPARTMENT PERMITS AS REQUIRED BY U.F.C. ARTICLE 4 PRIOR TO OCCUPANCY OF BUILDING.
5. STORAGE, USE & DISPENSING OF MATERIALS SHALL COMPLY WITH TABLES 9-A, 9-B, 9-C, 9-D, 9-E OF THE UNIFORM BUILDING CODE & ARTICLES 79, 80 & 81 OF THE CALIFORNIA BUILDING CODE.

**BUILDING INFORMATION**

YEAR BUILT: 1963  
ARCHITECTS: MAYNARD LYNDON, FAIA  
OCCUPANCY TYPE: A-3  
PROJECT FLOOR AREA: 4,856 SF INTERIOR (NO INCREASE) 9,500 SF (MEZZANINE = 3,167 SF)  
CONSTRUCTION TYPE: EXISTING: 3-N (PER 2019 CBC) W/O AUTO SPRINKLERS

(PER CODE BASED ON CONSTRUCTION AND OCCUPANCY TYPE)

ACTUAL BUILDING AREA: 6,979 SF (MEZZANINE = 309 SF)  
ALLOWABLE AREA: 9,500 SF (MEZZANINE = 3,167 SF)  
ACTUAL HEIGHT: 41 FEET (FROM BASEMENT LEVEL)  
ALLOWABLE HEIGHT: 40 FEET  
NUMBER OF STORIES: 1 (W/ CATWALK & MEZZANINE)  
ALLOWABLE STORIES: 1

FIRE RESISTANCE-RATED CONSTRUCTION:

EXTERIOR WALL: NONCOMBUSTIBLE NO REQUIREMENTS (X>30')  
EXTERIOR BEARING WALL: NO REQUIREMENTS  
EXTERIOR NON-BEARING WALL: 1 HR (X<5')  
INTERIOR NON-BEARING WALL: NO REQUIREMENTS  
STRUCTURAL FRAME: NO REQUIREMENTS  
FLOOR AND FLOOR/CEILING: NO REQUIREMENTS  
ROOF AND ROOF/CEILING: NO REQUIREMENTS  
EXTERIOR DOORS AND WINDOWS: NO LIMIT (X>30')

FIRE WALL: 3 HR NO REQUIREMENTS WHEN FURNACE ROOM IS LESS THAN 400,000 BTU/HR AND LAUNDRY ROOM IS <100 SF  
FIRE BARRIER: NO REQUIREMENTS

FIRE PARTITION: NO REQUIREMENTS  
SMOKE BARRIER: NO REQUIREMENTS  
SMOKE PARTITION: NO REQUIREMENTS  
HORIZONTAL ASSEMBLIES: NO REQUIREMENTS  
OPENING PROTECTIVE: NO REQUIREMENTS  
DUCT AND AIR TRANSFER OPENINGS: NO REQUIREMENTS  
CONCEALED SPACES: FIRE BLOCKING: UNKNOWN DRAFTSTOPPING: NO REQUIREMENTS

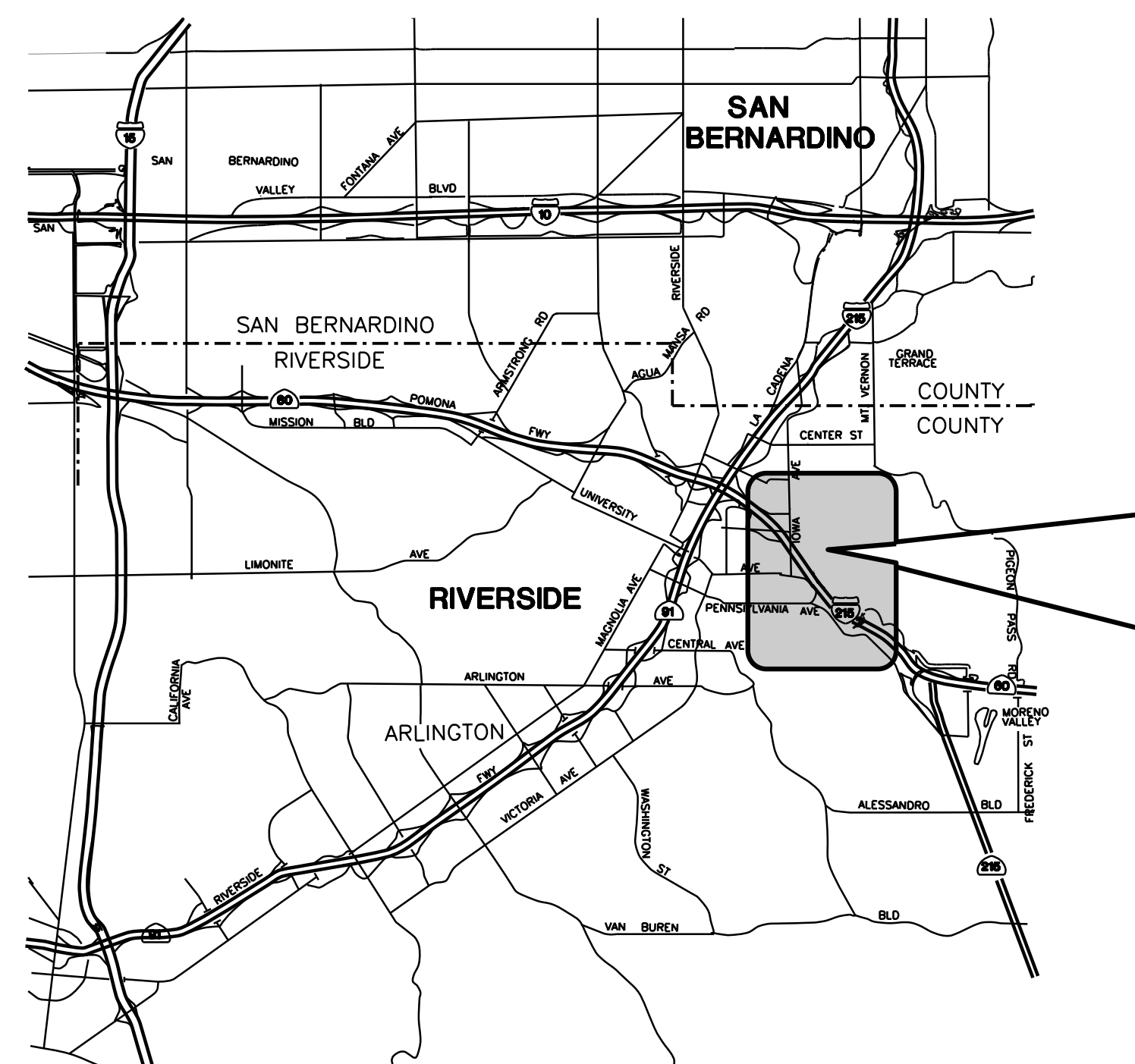
INTERIOR FINISH (W/O AUTOMATIC SPRINKLER SYSTEM):  
WALL: ROOM AND ENCLOSED SPACES: CLASS C  
FLOOR: CLASS II (MINIMUM CRITICAL RADIANT FLUX)

FIRE PROTECTION SYSTEM:  
AUTOMATIC SPRINKLER SYSTEM: NONE  
FIRE ALARM SYSTEM: A FIRE ALARM SYSTEM IN COMPLIANCE WITH THE CURRENT CODE NEEDS TO BE PROVIDED AND IS REQUIRED TO MEET THE UCR CAMPUS SYSTEM.

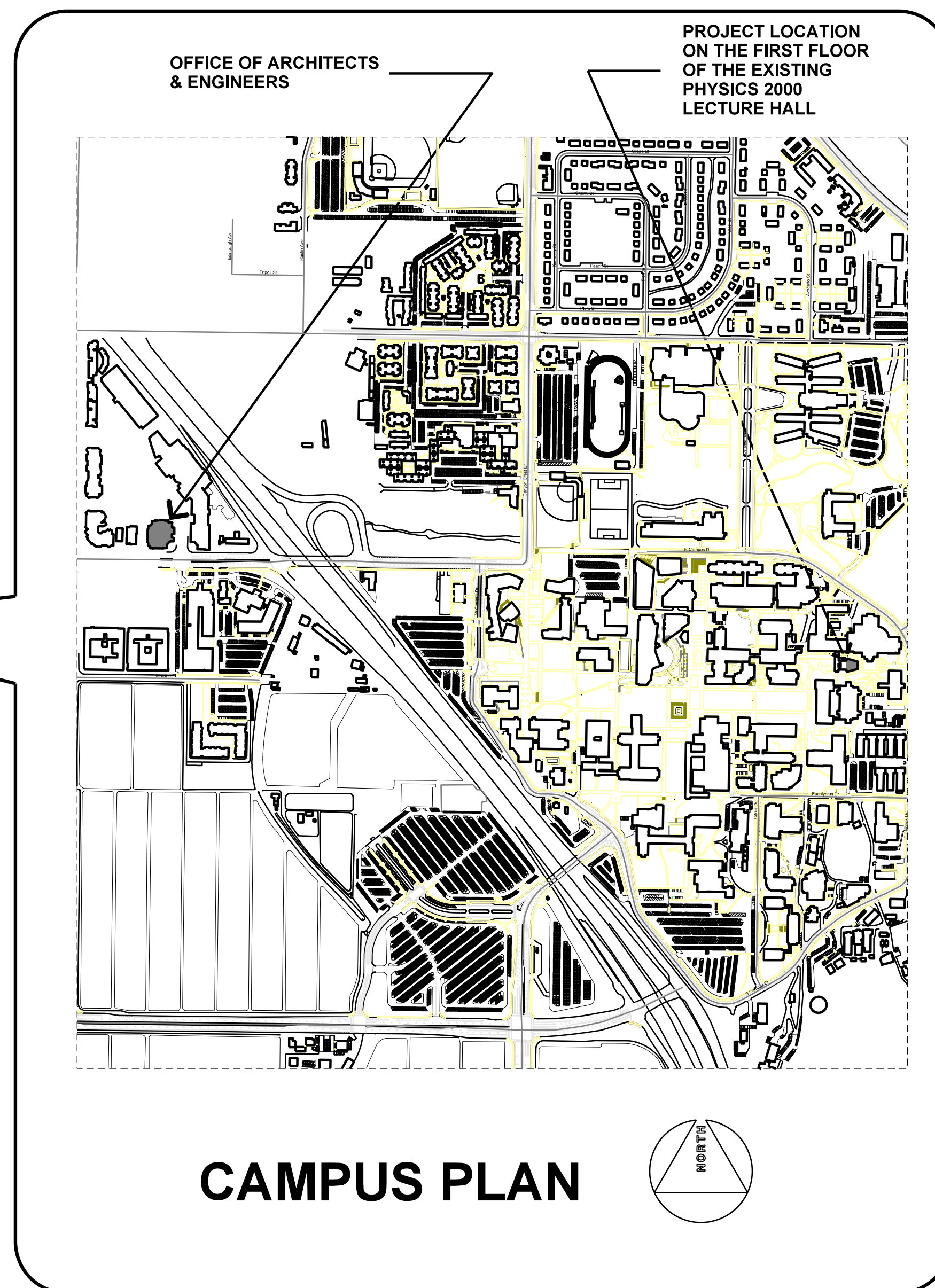
**PROJECT DESCRIPTION**

RENOVATION OF LECTURE HALL WITH STEPPED SEATING, FOYER, AND STOREFRONT ENTRANCE AT THE EXISTING SEMI-DETACHED PHYSICS 2000 BUILDING, IN THE MIDDLE OF UCR CAMPUS, FOR THE APPROXIMATE BUILDING AREAS OF 4,856 SQUARE FEET, AND ALSO INCLUDES EXTERIOR SITE IMPROVEMENT OF STAIRS, RAMPS, HANDRAILS, GUARDS, ETC., FOR THE APPROXIMATE AREA OF 1,515 SQUARE FEET, AS SHOWN ON THIS SET OF DRAWINGS.

THE SCOPE OF THIS PROJECT INCLUDES MINOR MECHANICAL WORK (SHOWN IN ARCHITECTURAL DRAWINGS). NO PLUMBING WORK.



**VICINITY MAP**



**CAMPUS PLAN**

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

**REVISIONS**

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager

SCOTT DONNEL

Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release
050 number		

Drawing Name  
TITLE SHEET

Sheet No.  
G-001  
OF





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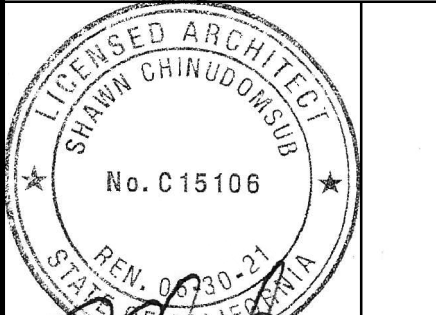
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Architect's Data:



Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

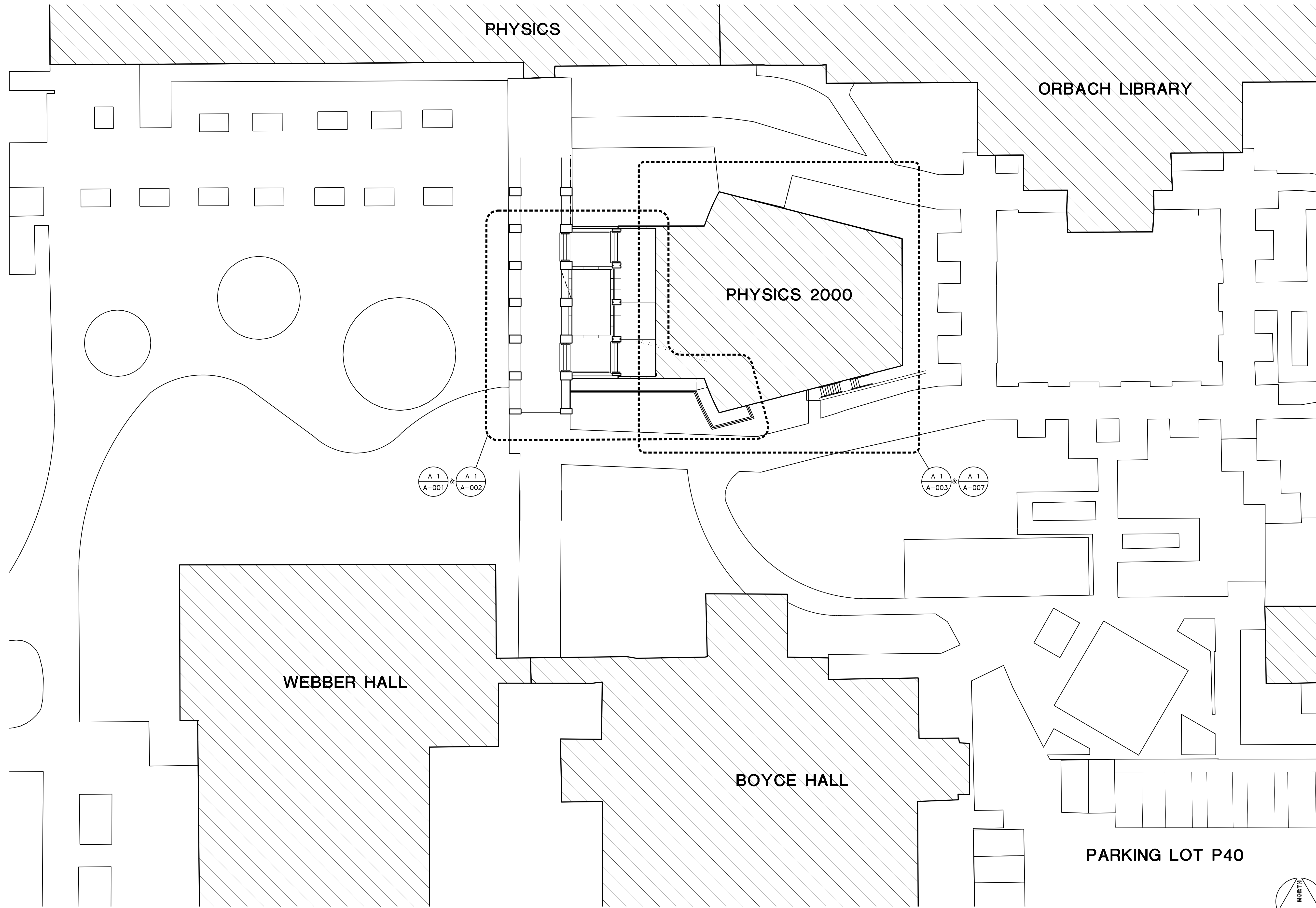
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Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager  
SCOTT DONNEL

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Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release 08/28/20
iso number		

Drawing Name  
PARTIAL SITE PLAN  
PROJECT LOCATION  
Sheet No.  
G-002  
of



A1 PARTIAL SITE PLAN - PROJECT LOCATION

1/16" = 1'-0"

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 Architect's Date: [Signature]  
 Consultants Stamp: [Stamp]

PROJECT TITLE  
**UCR  
 DMFI PROJECTS 2019  
 PHYSICS 2000 RENEWAL**  
 REBID AUGUST 2020

REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:  
 Project Title  
**UCR  
 DMFI PROJECTS 2019  
 PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	jd approval
Checked by	S.C.	sc approval
UCR project no.	957443	08/28/20
also number		release

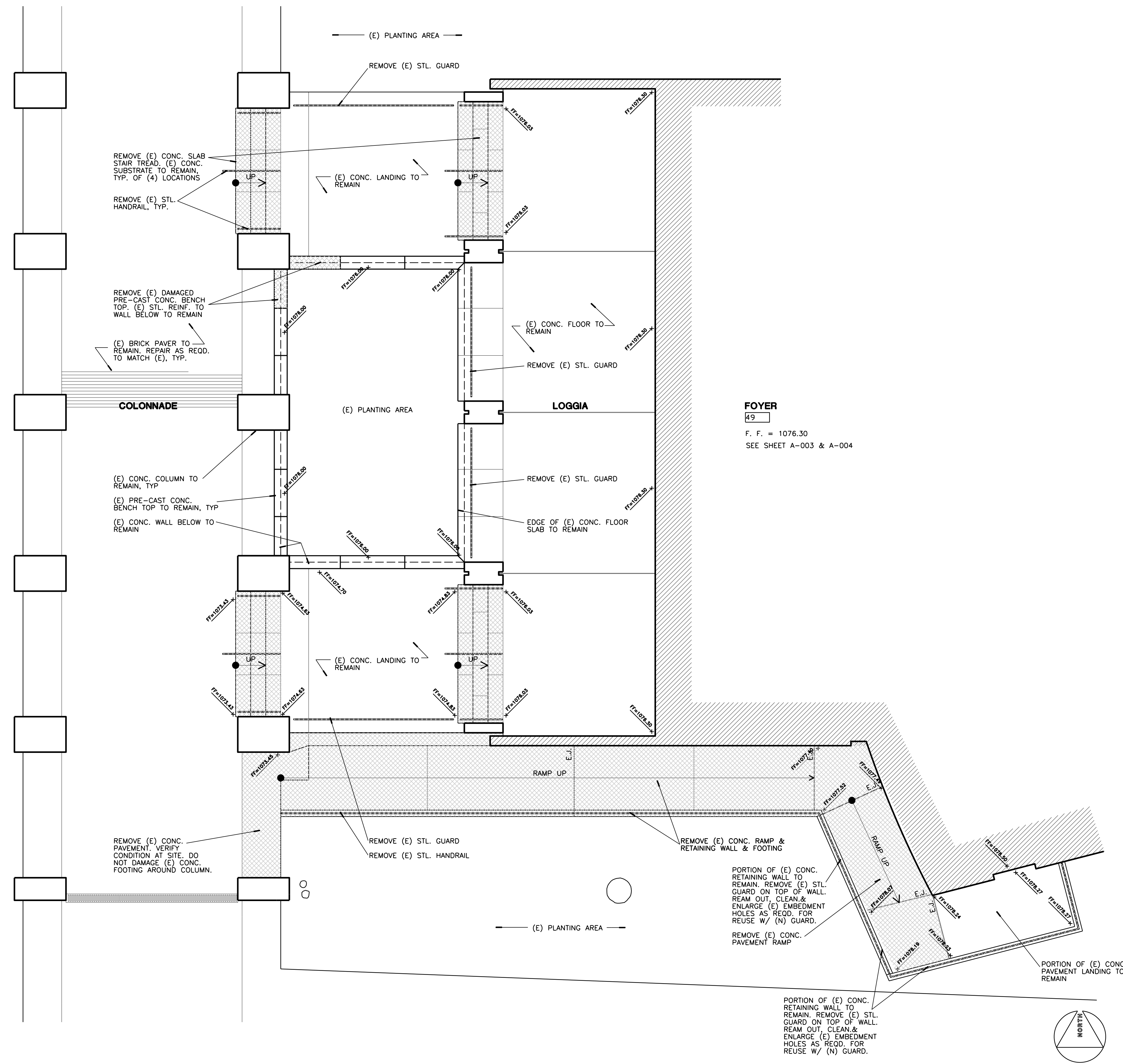
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**(E) SITE PLAN  
 DEMO. & NOTES**  
 Sheet No.  
**A-001  
 of**

GENERAL NOTES

- THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO AMEND THE BUILDING IN ACCORDANCE WITH CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS, SHOULD ANY CONDITIONS DEVELOP NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH SAID CODE, IMMEDIATELY NOTIFY OWNER AND ARCHITECT.
- ALL WORK, MATERIALS, TOOLS, EQUIPMENT AND METHODS SHALL BE IN COMPLIANCE WITH, OR MAY EXCEED, THE REQUIREMENTS OF THE APPLICABLE CODES AND ALL PERTINENT LOCAL ORDINANCES, WHERE THE CODES AND LOCAL ORDINANCES ARE IN CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
- WHEN INSTALLING DRILLED-IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING NON-REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF 1 INCH BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR AND/OR PIN.
- THE CONTRACTOR SHALL BEAR THE RISK OF CONCEALED OR UNKNOWN CONDITIONS, IF ANY, WHICH MAY BE ENCOUNTERED IN PERFORMING THE WORK; AND THAT THE CONTRACTOR'S BID WAS MADE WITH FULL KNOWLEDGE OF THIS RISK. THE CONTRACTOR UNDERSTANDS THAT CONCEALED OR UNKNOWN CONDITIONS SHALL NOT EXCUSE THE CONTRACTOR FROM THEIR OBLIGATION TO ACHIEVE FULL COMPLETION OF THE WORK WITHIN THE CONTRACT TIME, AND SHALL NOT ENTITLE THE CONTRACTOR TO AN ADJUSTMENT OF THE CONTRACT SUM.
- WHEN AN ALTERNATE METHOD OR SUBSTITUTION IS ACCEPTED BY OWNER AND ARCHITECT AS AN APPROVED EQUAL, THE CONTRACTOR SHALL ASSUME RESPONSIBILITIES FOR SUBSEQUENT CHANGES OR MODIFICATIONS AS THE RESULT OF THE SUBSTITUTION, INCLUDING THE COSTS FOR THE DESIGN AND ENGINEERING FEES AND THE APPROVAL PROCESS.
- THE CONTRACTOR SHALL ASSUME RESPONSIBILITIES FOR CORRECTIVE COSTS, INCLUDING DESIGN AND ENGINEERING FEES, PLAN CHECK AND APPROVAL FEES, FOR WORK FOUND TO BE NONCONFORMING TO THE CONSTRUCTION DOCUMENTS, UNLESS AGREED TO OTHERWISE BY OWNER AND ARCHITECT.
- REPAIR AND FINISH TO RESTORE THE ORIGINAL CONDITION OF ALL EXISTING COMPONENTS OF THE BUILDING, THAT ARE TO REMAIN, THAT ARE AFFECTED BY THE WORK PERFORMED UNDER THIS CONTRACT, TO THE SATISFACTION OF OWNER AND ARCHITECT, UNLESS DIRECTED OTHERWISE.
- TAKE MEASURES TO ACCOMPLISH THE WORK WITH MINIMAL INTERRUPTION TO NORMAL BUILDING PROCEDURES AND OPERATIONS. KEEP NOISE AND DUST DOWN TO AN ABSOLUTE MINIMUM.
- VERIFY ALL DIMENSIONS AND LOCATIONS OF ALL EXISTING WORK, UTILITIES AND EQUIPMENT. IMMEDIATELY NOTIFY ARCHITECT FOR CLARIFICATION WHEN ANY DISCREPANCIES ARE DISCOVERED BY SUBMITTING A WRITTEN REQUEST FOR INFORMATION. ALLOW A MINIMUM OF 72 HOURS FOR ARCHITECT TO RESPOND TO ANY REQUESTS FOR INFORMATION.
- MAKE NECESSARY PROVISIONS TO MAINTAIN THE INTEGRITY OF SYSTEMS PRIOR TO DEMOLITION AND CONSTRUCTION.
- ITEMS INDICATED TO BE REMOVED OR RELOCATED MAY NOT BE EXHAUSTIVE. DISPOSITION OF ANY ITEMS NOT SHOWN MUST BE VERIFIED WITH OWNER.
- UNLESS INDICATED OTHERWISE, ALL EXISTING BUILDING STRUCTURAL MEMBERS SHALL NOT BE MODIFIED.
- PROVIDE TEMPORARY PARTITIONS AND BARRICADES AS REQUIRED IN COMPLIANCE WITH C.F.C., PART 9 TITLE 24, CCR.
- UNLESS INDICATED OTHERWISE, ALL FINISH MATERIALS AND WORKMANSHIP SHALL MATCH EXISTING ADJACENT CONSTRUCTION THAT IS TO REMAIN.
- DO NOT SCALE THE DRAWINGS, UNLESS DIRECTED BY ARCHITECT.
- ALL DIMENSIONS SHOWN AT CENTER OF WALL REPRESENT CENTERLINE OF STUD. ALL DIMENSIONS SHOWN AT EDGE OF WALL ARE TO FACE OF FINISH, UNLESS NOTED OTHERWISE.
- ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TYPICAL CONSTRUCTION INDUSTRY STANDARDS. NOTIFY ARCHITECT IF CLARIFICATION IS NEEDED BEFORE PROCEEDING WITH THE PART OF WORK IN QUESTION.
- ALL EXISTING FIRE RESISTIVE ASSEMBLIES AND CONSTRUCTION, THAT ARE TO REMAIN, SHALL BE MAINTAINED. REPAIR AS REQUIRED TO MATCH EXISTING CONDITIONS, UNLESS OTHERWISE NOTED.
- ALL FIRE PENETRATIONS SHALL CONFORM TO 2000 UL FIRE RESISTANCE DIRECTORY. PROVIDE UL APPROVED NUMBER FOR ALL FIRESTOPPING MATERIALS, DEVICES AND SYSTEMS. ONE COPY OF UL FIRE RESISTANCE DIRECTORY SHALL BE ON THE JOB SITE AT ALL TIME.
- EXISTING FIRE PROTECTION SYSTEMS SHALL BE OPERATIONAL AT ALL TIMES DURING CONSTRUCTION.
- PROVIDE AND LOCATE BACKING PLATES BEHIND ALL WALL MOUNTED EQUIPMENT, CASEWORK, RAILINGS & ACCESSORIES TO ENSURE POSITIVE ATTACHMENT TO STRUCTURE.
- PROVIDE APPROPRIATE ACCESS PANELS REQUIRED TO MAINTAIN OR TO OPERATE UTILITY SYSTEMS. COORDINATE SIZE AND LOCATION OF ACCESS PANELS WITH THE OWNER.
- NOTIFY AND COORDINATE ANY SYSTEM SHUTDOWN WITH OWNER, WITH A MINIMUM OF 48 HOURS ADVANCE NOTICE.

DEMOLITION NOTES

- SHADED CROSS HATCH AREAS REPRESENT (E) ITEMS TO BE REMOVED.
- REMOVE SOIL, IRRIGATION & TREE IN (E) PLANTING AREA AS REQUIRED FOR (N) WORK. SAW CUT & REMOVE (E) CONC. BOTTOM SLAB, LINING MATERIAL, & MOSAIC FINISH BELOW GRADE. HIGH-PRESSURE WASH ALL SURFACES THAT WILL BECOME EXPOSED & GRIND SMOOTH ALL (E) CONC. SURFACES TO FLUSH & MATCH W/ (E) SURFACES THAT ARE TO REMAIN. VERIFY AT SITE.
- REMOVE (E) CONC. WORK AT (E) JOINT OR SCORELINES WHERE APPLICABLE. GRIND SMOOTH ALL OUTSIDE CORNERS OF CONC. AT CUT LINES THAT ARE TO REMAIN TO RID OF SHARP CORNERS, TYP.
- AT CONC. CUT LINES WHERE (E) REBAR BECOME EXPOSED, REMOVE (E) REBAR 1" BELOW FINISH SURFACE OF CONC. REPAIR CONC. FINISH SURFACES TO MATCH ADJACENT UNCUR SURFACE.
- SURFACE OF (E) BUILDING COMPONENT WHICH IS TO REMAIN THAT BECOMES EXPOSED DUE TO DEMOLITION OF ADJACENT WORK SHALL BE CLEANED, REPAIRED AS RECD. TO MATCH (E) REMAINING VISIBLE SURFACE.
- AT (E) STEEL RAILING, POSTS, CHAIR LEGS, BRACKETS, ANCHOR BOLTS, & MISC. ITEMS EMBEDDED INTO CONC., CUT THEM AT MIN. OF 1/2" BELOW FINISH SURFACE. PATCH HOLES AS RECD.. REPAIR SURFACE TO MATCH (E) CONDITION.



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**A1** (E) SITE PLAN - SELECTIVE DEMOLITION  
 1/4" = 1'-0"

**A5** NOTES

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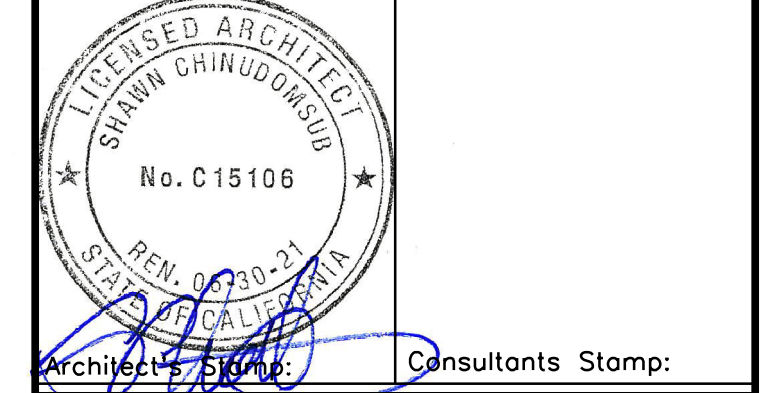




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PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:  
 Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

UCR project manager <b>SCOTT DONNEL</b>	
Scale AS NOTED	sd approval
Drawn by J.D.	dd approval
Checked by S.C.	cd approval
UCR project no. 957443	construction release 08/28/20
also number	

Drawing Name <b>(N) SITE PLAN</b> <b>SYMBOLS &amp; NOTES</b>	Sheet No. <b>A-002</b> of
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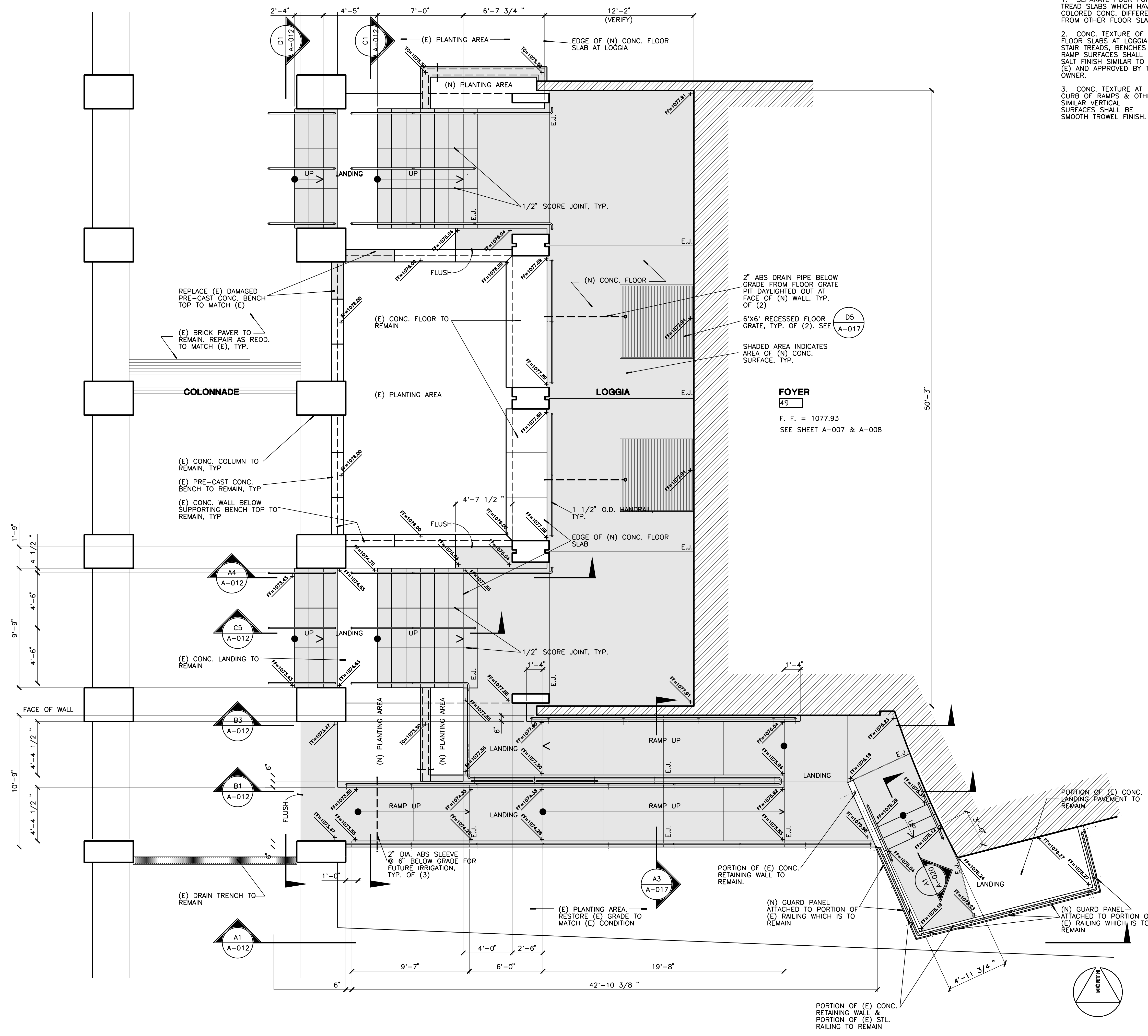
- EXTERIOR EXIT DISCHARGE**
- NORTH ARROW**  
 PLAN NORTH DIRECTION  
 TRUE NORTH MAY DIFFER AS SHOWN
- EXISTING WALL OR OTHER ITEMS TO BE REMOVED**  
 METAL STUD W/ GYP. BD. AT INT. WALLS, U.N.O.
- EXISTING WALL TO REMAIN**  
 METAL STUD W/ GYP. BD. AT INT. WALLS, U.N.O.
- NEW WALL TYPE**  
 NUMBER INSIDE THE BOX REPRESENTS WALL TYPE. SEE DETAIL.
- EXISTING CONC. WALL TO REMAIN**
- DETAIL CALL-OUT**  
 DETAIL IDENTIFICATION  
 SHEET WHERE DETAIL IS DRAWN.
- ELEVATION**  
 ELEVATION IDENTIFICATION  
 SHEET WHERE ELEVATION IS DRAWN.
- SECTION CUT**  
 SECTION IDENTIFICATION  
 SHEET WHERE SECTION IS DRAWN.
- REVISION**  
 CLOUD AROUND REVISION.
- GRID LINE**  
 VERTICAL LETTERS,  
 HORIZONTAL NUMBERS.
- MATCH LINE**  
 SHEET WHERE ROOF  
 WORK CONTINUES
- ROOM**  
**ROOM IDENTIFICATION**  
 ROOM NAME ON TOP,  
 ROOM NUMBER IN BOX
- CONTROL POINT**  
 OR WORK POINT OR  
 DATUM POINT
- DOOR IDENTIFICATION NUMBER**  
 LOCATION OF DOOR IDENTIFICATION SYMBOL  
 COINCIDES W/ SIDE OF REFERENCED ROOM.  
 (E) = EXISTING (R) = RELOCATE
- WINDOW IDENTIFICATION**
- EQUIPMENT IDENTIFICATION**

<b>C5</b>	<b>SYMBOLS</b>
NONE	

- OWNER-FURNISHED, CONTRACTOR-INSTALLED (O.F.C.I.)
- THE CONTRACTOR SHALL VERIFY EXACT SIZES AND SERVICES REQUIRED FOR EACH ITEM OF EQUIPMENT INDICATED ON THE DRAWINGS OR IN THE PROJECT MANUAL AS O.F.C.I. AND SHALL OBTAIN FROM THE OWNER ROUGH-IN DRAWINGS, DIAGRAMS, SETTING TEMPLATES, AND OTHER NECESSARY INFORMATION TO ASSURE PROPER MATING OF ASSEMBLIES. NOTIFY ARCHITECT FOR ANY VARIATIONS.
  - PROVIDE ALL MATERIAL AND APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION OF EACH UTILITY, WHETHER OR NOT ALL SUCH MATERIALS AND APPURTENANCES ARE SHOWN ON THE DRAWINGS OR DESCRIBED IN THE SPECIFICATIONS.
  - THE CONTRACTOR SHALL RECEIVE AT THE PROJECT SITE EACH ITEM OF EQUIPMENT FROM THE OWNER AND FROM THAT TIME ON, SHALL ASSUME FULL RESPONSIBILITY FOR THE ITEMS AND EQUIPMENT UNTIL ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.
  - THE CONTRACTOR SHALL GIVE THE OWNER 90 DAYS PRIOR NOTICE OF THE REQUIREMENT FOR DELIVERY TO THE SITE OF ALL O.F.C.I. EQUIPMENT.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR RECEIVING O.F.C.I. ITEMS AND EQUIPMENT AND SHALL UNCRATE, INSPECT AND NOTIFY THE OWNER IN WRITING WITHIN 2 DAYS OF RECEIVING SAID ITEMS OR EQUIPMENT OF THE ACCEPTANCE OR REJECTION OF THE ITEMS OR EQUIPMENT. THE OWNER, AFTER RECEIVING NOTICE, WILL TAKE APPROPRIATE ACTION TO HAVE THE ITEMS OR EQUIPMENT MADE ACCEPTABLE FOR THE CONTRACTOR'S USE. REJECTED ITEMS SHALL BE CAREFULLY STORED AND PROTECTED FROM DAMAGE BY THE CONTRACTOR UNTIL THE OWNER TAKES APPROPRIATE ACTION.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL PLACING, INSTALLATION, CONNECTION, START-UP, CHECKING, TESTING AND DEMONSTRATED SATISFACTORY OPERATION. THE OWNER WILL PROVIDE NAMES OF MANUFACTURER'S REPRESENTATIVES, WHO SHALL ASSIST THE CONTRACTOR IN CHECKING, TESTING AND DEMONSTRATING THE EQUIPMENT.
  - O.F.C.I. ITEMS:  
 A. METAL PERFORATED PANELS WITH POWDER COATED FINISH FOR MODESTY RAILINGS INSIDE LECTURE HALL 48.  
 (SUPPORT FRAMES & RAILINGS ARE INCLUDED IN THIS CONTRACT.)

- OWNER-FURNISHED, OWNER-INSTALLED WORK (O.F.O.I.)
- ITEMS SHOWN ON THE DRAWINGS AS O.F.O.I. SHALL BE FURNISHED BY THE OWNER & INSTALLED BY THE OWNER. WORK INDICATED AS O.F.O.I. WILL BE PERFORMED UNDER SEPARATE CONTRACT, EMPLOYED BY THE OWNER AT HIS DISCRETION. WHERE WORK OF THIS CONTRACT ADJOINS OR CONFLICTS WITH O.F.O.I. WORK, THE CONTRACTOR SHALL COOPERATE WITH THE OWNER & HIS/HER EMPLOYEES IN A MANNER WHICH WILL PROVIDE FOR A REASONABLE & ACCURATE COMPLETION OF THIS CONTRACT & WORK UNDER SEPARATE CONTRACT.
  - O.F.O.I. ITEMS:  
 A. SEATS & WORK SURFACES INSIDE LECTURE HALL 48. SEE FURNITURE DRAWINGS

- NOTE:
- SEPARATE POUR FOR TREAD SLABS WHICH HAVE COLORED CONC. DIFFERENT FROM OTHER FLOOR SLABS.
  - CONC. TEXTURE OF FLOOR SLABS AT LOGGIA, STAIR TREADS, BENCHES & RAMP SURFACES SHALL BE SALT FINISH SIMILAR TO (E) AND APPROVED BY THE OWNER.
  - CONC. TEXTURE AT CURB OF RAMPS & OTHER SIMILAR VERTICAL SURFACES SHALL BE SMOOTH TROWEL FINISH.



**A1** NEW SITE PLAN - REMODELED  
 1/4" = 1'-0"

**A5** O.F.C.I. & O.F.O.I. NOTES  
 NONE

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Architect's Data:


 LICENSED ARCHITECT  
 SHAWN GRINDGENS  
 No. C15106  
 STATE OF CALIFORNIA  
 ARCHITECT'S SIGNATURE: *[Signature]* Consultants Stamp:

PROJECT TITLE  
**UCR  
 DMFI PROJECTS 2019  
 PHYSICS 2000 RENEWAL**

REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
 UCR  
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 PHYSICS 2000 RENEWAL

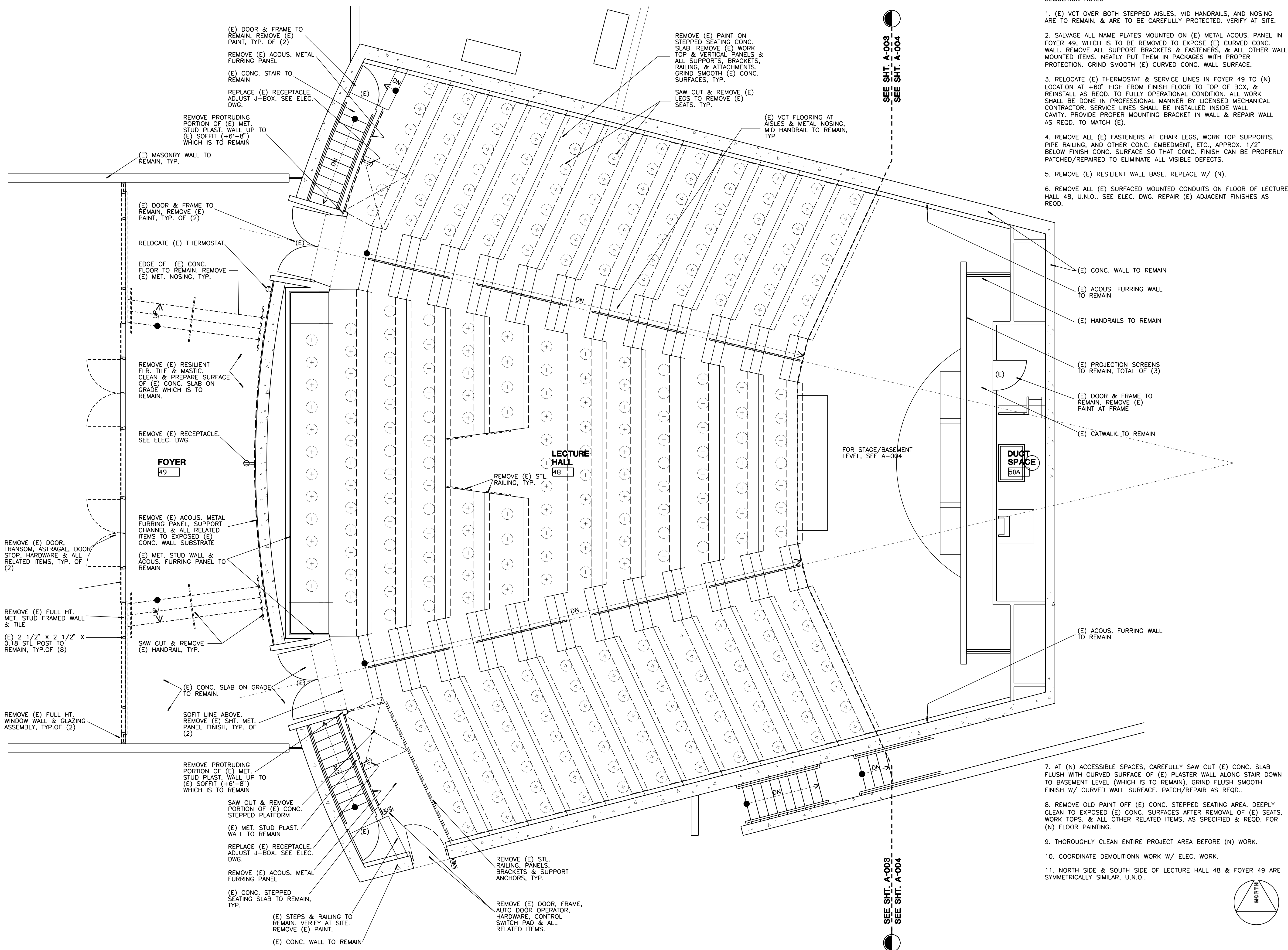
UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	dd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release
also number		

Drawing Name  
 (E) 1st FLR. PLAN - DEMOLITION

Sheet No.  
 A-003  
 of 07

- DEMOLITION NOTES
- (E) VCT OVER BOTH STEPPED AISLES, MID HANDRAILS, AND NOSING ARE TO REMAIN, & ARE TO BE CAREFULLY PROTECTED. VERIFY AT SITE.
  - SALVAGE ALL NAME PLATES MOUNTED ON (E) METAL ACOUS. PANEL IN FOYER 49, WHICH IS TO BE REMOVED TO EXPOSE (E) CURVED CONC. WALL. REMOVE ALL SUPPORT BRACKETS & FASTENERS, & ALL OTHER WALL MOUNTED ITEMS. NEATLY PUT THEM IN PACKAGES WITH PROPER PROTECTION. GRIND SMOOTH (E) CURVED CONC. WALL SURFACE.
  - RELOCATE (E) THERMOSTAT & SERVICE LINES IN FOYER 49 TO (N) LOCATION AT +60" HIGH FROM FINISH FLOOR TO TOP OF BOX, & REINSTALL AS REQD. TO FULLY OPERATIONAL CONDITION. ALL WORK SHALL BE DONE IN PROFESSIONAL MANNER BY LICENSED MECHANICAL CONTRACTOR. SERVICE LINES SHALL BE INSTALLED INSIDE WALL CAVITY. PROVIDE PROPER MOUNTING BRACKET IN WALL & REPAIR WALL AS REQD. TO MATCH (E).
  - REMOVE ALL (E) FASTENERS AT CHAIR LEGS, WORK TOP SUPPORTS, PIPE RAILING, AND OTHER CONC. EMBEDMENT, ETC., APPROX. 1/2" BELOW FINISH CONC. SURFACE SO THAT CONC. FINISH CAN BE PROPERLY PATCHED/REPAIRED TO ELIMINATE ALL VISIBLE DEFECTS.
  - REMOVE (E) RESILIENT WALL BASE. REPLACE W/ (N).
  - REMOVE ALL (E) SURFACED MOUNTED CONDUITS ON FLOOR OF LECTURE HALL 48, U.N.O.. SEE ELEC. DWG. REPAIR (E) ADJACENT FINISHES AS REQD.



SEE SHT. A-003  
 SEE SHT. A-004

SEE SHT. A-003  
 SEE SHT. A-004

**A1** (E) 1st FLOOR PLAN - DEMOLITION  
 1/4" = 1'-0"

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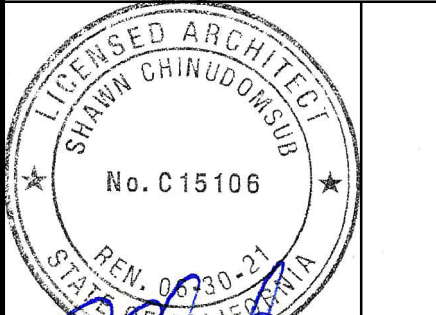
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RIVERSIDE, CA. 92507  
TEL: (951) 827-4706 FAX: (951) 827-2402



Institutional Designs & Architectural Services  
3803 10th Street, Riverside, CA. 92501-3521  
Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:



Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS

REV #	DESCRIPTION	DATE

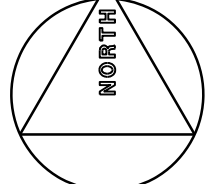
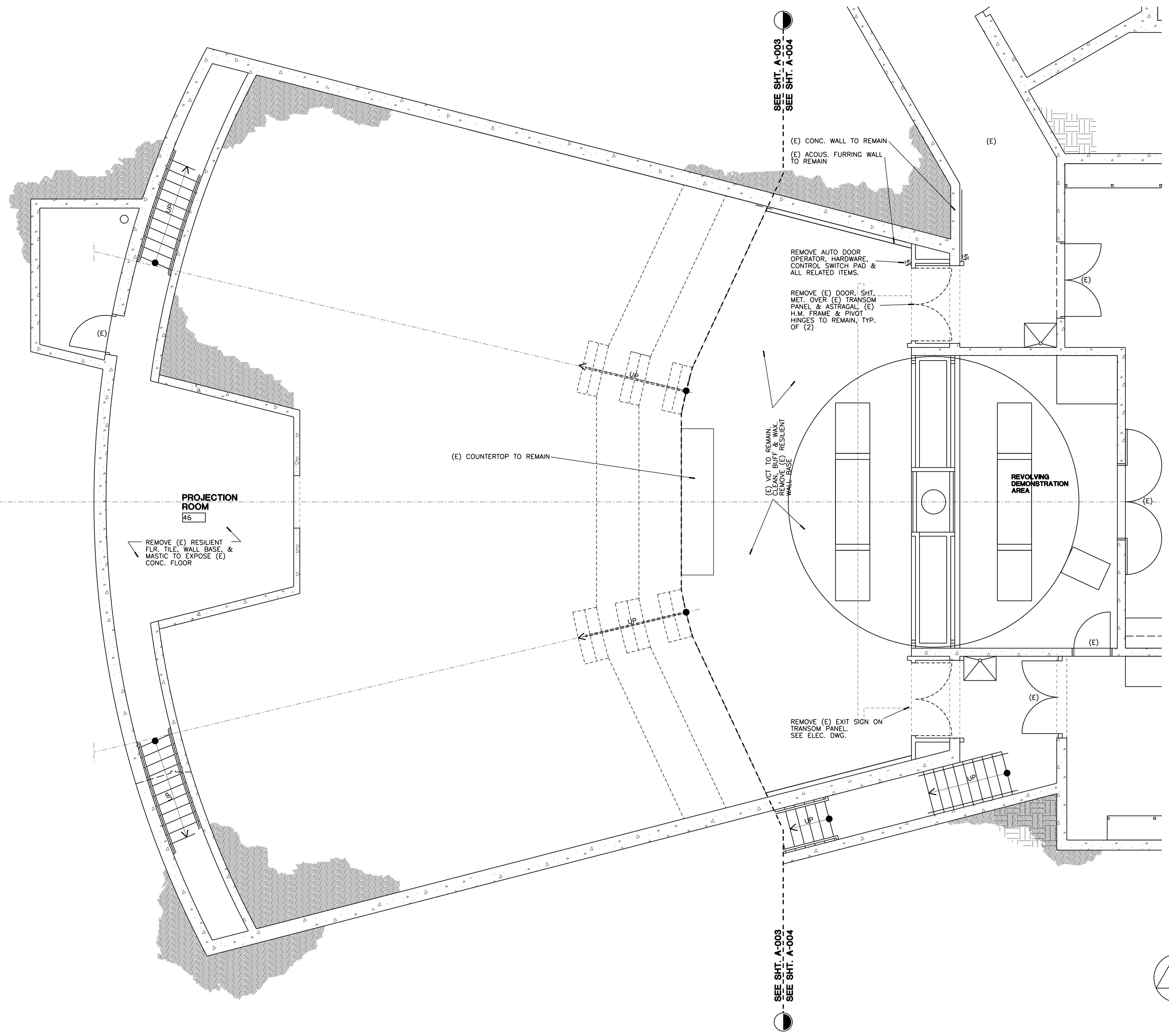
Consultants Data:

Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval 08/28/20
UCR project no.	957443	construction release
iso number		

Drawing Name  
**(E) BASEMENT PLAN - DEMOLITION**  
Sheet No.  
**A-004**  
of



**A1** (E) BASEMENT PLAN - DEMOLITION

1/4" = 1'-0"

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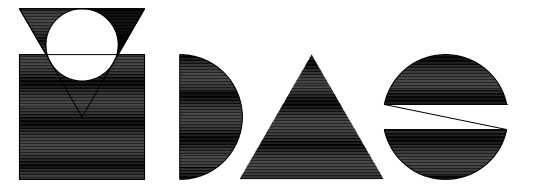




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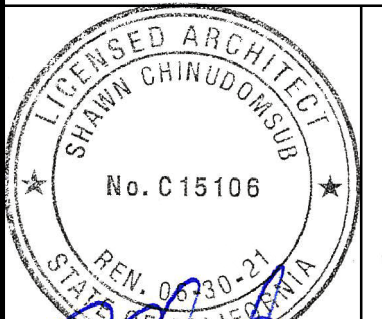
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Architect's Data:



Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

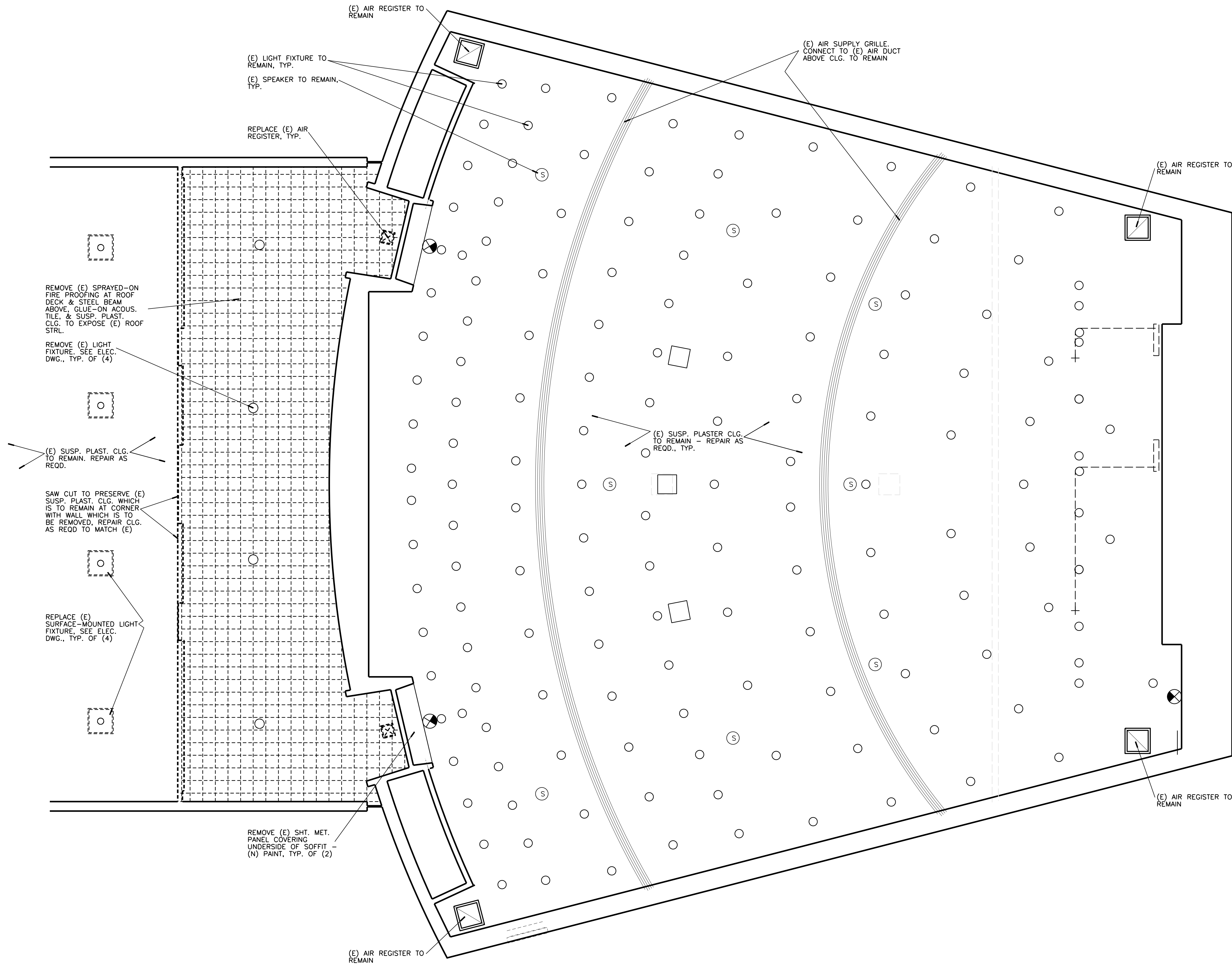
Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager  
SCOTT DONNEL

Scale	AS NOTED	sd approval
Drawn by	J.D.	dd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release
050 number		

Drawing Name  
(E) 1st FLR. REF. CLG. PLAN - DEMO  
Sheet No.  
A-005  
of



(E) AIR REGISTER TO REMAIN

(E) LIGHT FIXTURE TO REMAIN, TYP.

(E) SPEAKER TO REMAIN, TYP.

REPLACE (E) AIR REGISTER, TYP.

(E) AIR SUPPLY GRILLE. CONNECT TO (E) AIR DUCT ABOVE CLG. TO REMAIN

(E) AIR REGISTER TO REMAIN

REMOVE (E) SPRAYED-ON FIRE PROOFING AT ROOF DECK & STEEL BEAM ABOVE. GLUE-ON ACOUS. TILE, & SUSP. PLAST. CLG. TO EXPOSE (E) ROOF STRL.

REMOVE (E) LIGHT FIXTURE, SEE ELEC. DWG., TYP. OF (4)

(E) SUSP. PLAST. CLG. TO REMAIN, REPAIR AS REQD.

SAW CUT TO PRESERVE (E) SUSP. PLAST. CLG. WHICH IS TO REMAIN AT CORNER WITH WALL WHICH IS TO BE REMOVED. REPAIR CLG. AS REQD TO MATCH (E)

REPLACE (E) SURFACE-MOUNTED LIGHT FIXTURE, SEE ELEC. DWG., TYP. OF (4)

(E) SUSP. PLASTER CLG. TO REMAIN - REPAIR AS REQD., TYP.

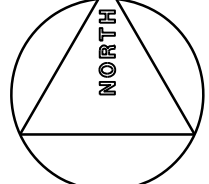
REMOVE (E) SHT. MET. PANEL COVERING UNDERSIDE OF SOFFIT - (N) PAINT, TYP. OF (2)

(E) AIR REGISTER TO REMAIN

(E) AIR REGISTER TO REMAIN

A1 (E) 1st FLOOR REFLECTED CEILING PLAN - DEMOLITION

1/4" = 1'-0"



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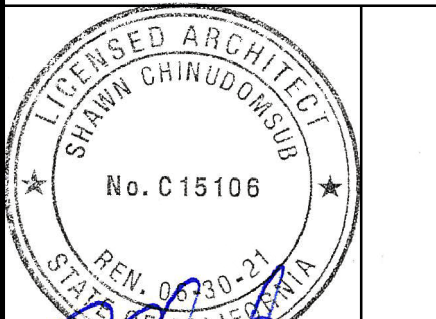
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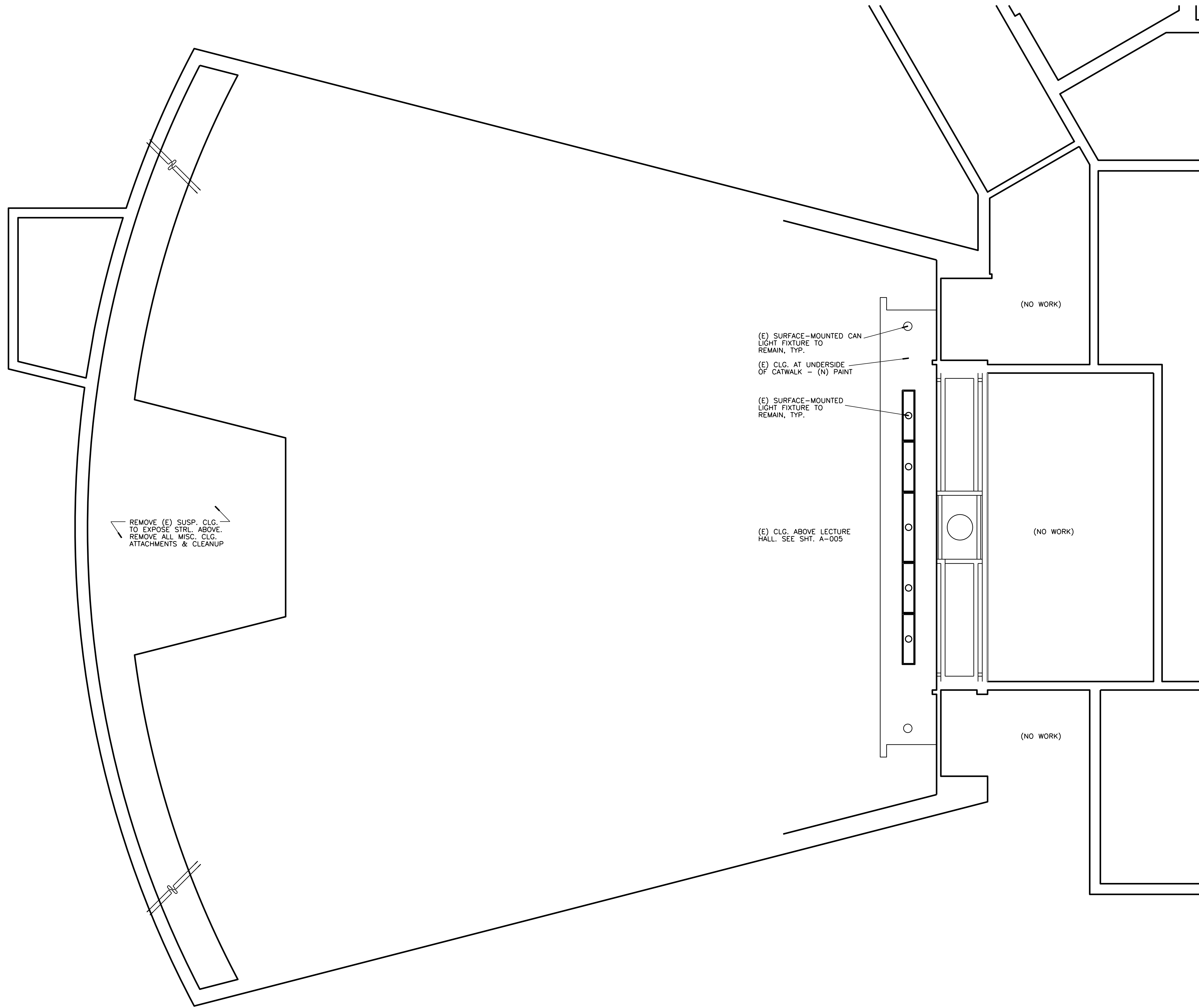


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Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:



Architect's Stamp: Consultants Stamp:



PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

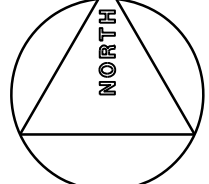
UCR project manager  
SCOTT DONNEL

Scale	AS NOTED	sd approval
Drawn by	J.D.	dd approval
Checked by	S.C.	cd approval
UCR project no.	957443	08/28/20
iso number		construction release

Drawing Name  
(E) BASEMENT REF. CLG. PLAN - DEMO  
Sheet No.  
A-006  
of

A1 (E) BASEMENT REFLECTED CEILING PLAN - DEMOLITION

1/4" = 1'-0"



319230PR

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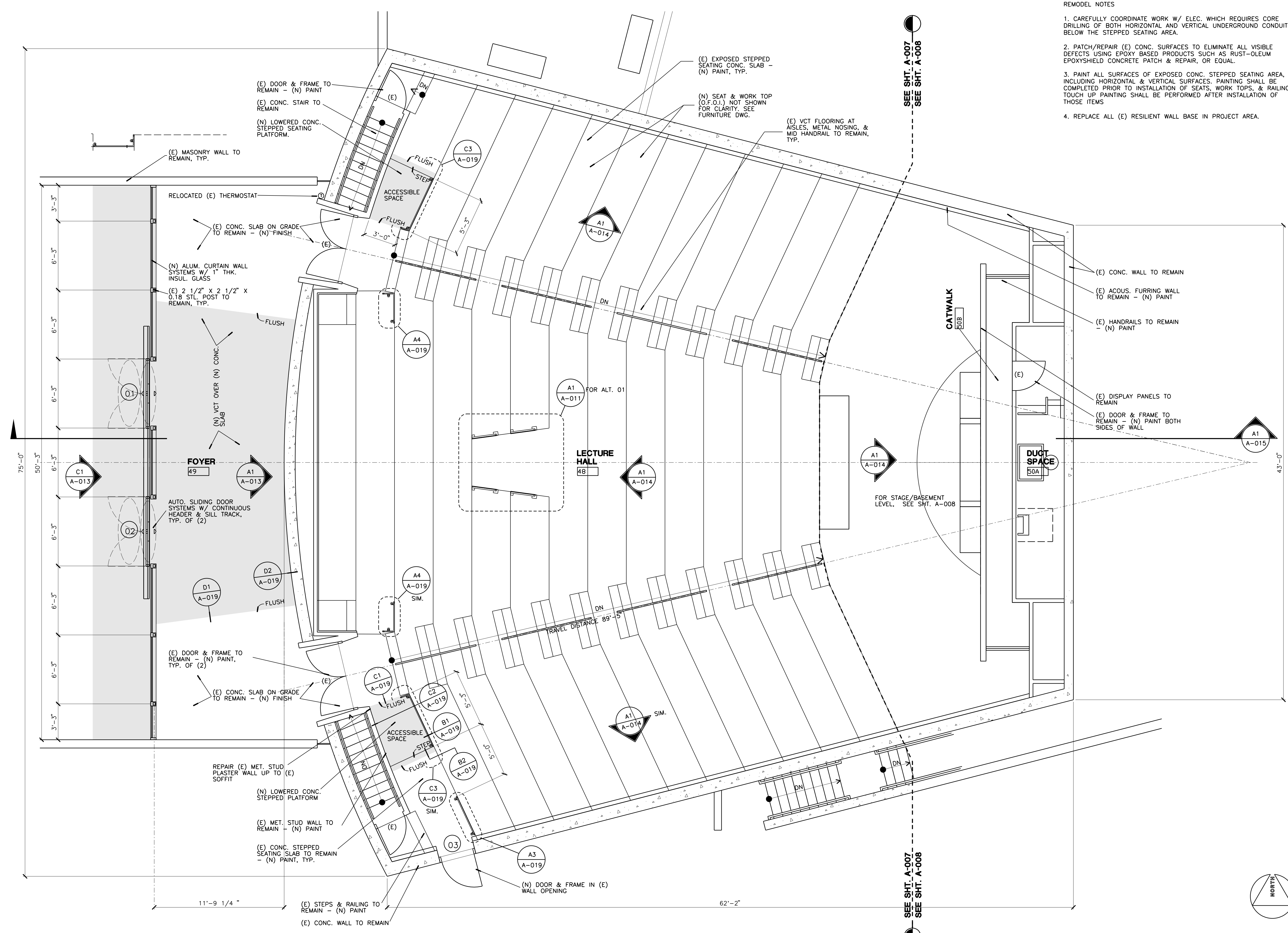
Architect's Data:



Architect's Stamp: Consultants Stamp:

REMODEL NOTES

- CAREFULLY COORDINATE WORK W/ ELEC. WHICH REQUIRES CORE DRILLING OF BOTH HORIZONTAL AND VERTICAL UNDERGROUND CONDUITS BELOW THE STEPPED SEATING AREA.
- PATCH/REPAIR (E) CONC. SURFACES TO ELIMINATE ALL VISIBLE DEFECTS USING EPOXY BASED PRODUCTS SUCH AS RUST-OLEUM EPOXYSHIELD CONCRETE PATCH & REPAIR, OR EQUAL.
- PAINT ALL SURFACES OF EXPOSED CONC. STEPPED SEATING AREA, INCLUDING HORIZONTAL & VERTICAL SURFACES. PAINTING SHALL BE COMPLETED PRIOR TO INSTALLATION OF SEATS, WORK TOPS, & RAILING. TOUCH UP PAINTING SHALL BE PERFORMED AFTER INSTALLATION OF THOSE ITEMS
- REPLACE ALL (E) RESILIENT WALL BASE IN PROJECT AREA.



PROJECT TITLE  
**UCR  
 DMFI PROJECTS 2019  
 PHYSICS 2000 RENEWAL**  
 REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title	UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL		
UCR project manager	SCOTT DONNEL		
Scale	AS NOTED	sd approval	
Drawn by	J.D.	dd approval	
Checked by	S.C.	cd approval	08/28/20
UCR project no.	957443	construction release	
also number			
Drawing Name	(N) 1st FLR. PLAN - REMODEL	Sheet No.	A-007 OF

**A1** (N) 1st FLOOR PLAN - REMODEL  
 1/4" = 1'-0"

ALUM. STOREFRONT SYSTEM WITH 1" THK. INSULATING GLASS

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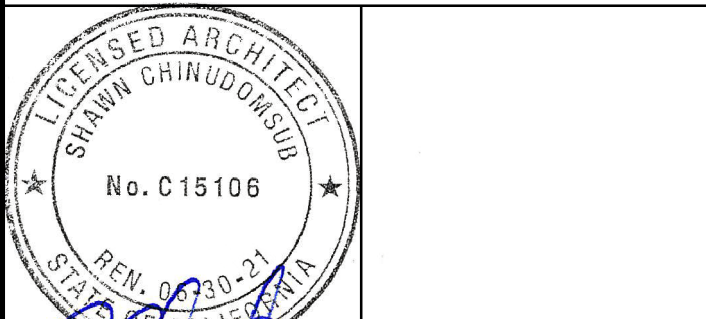
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Architect's Data:



Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS

REV #	DESCRIPTION	DATE

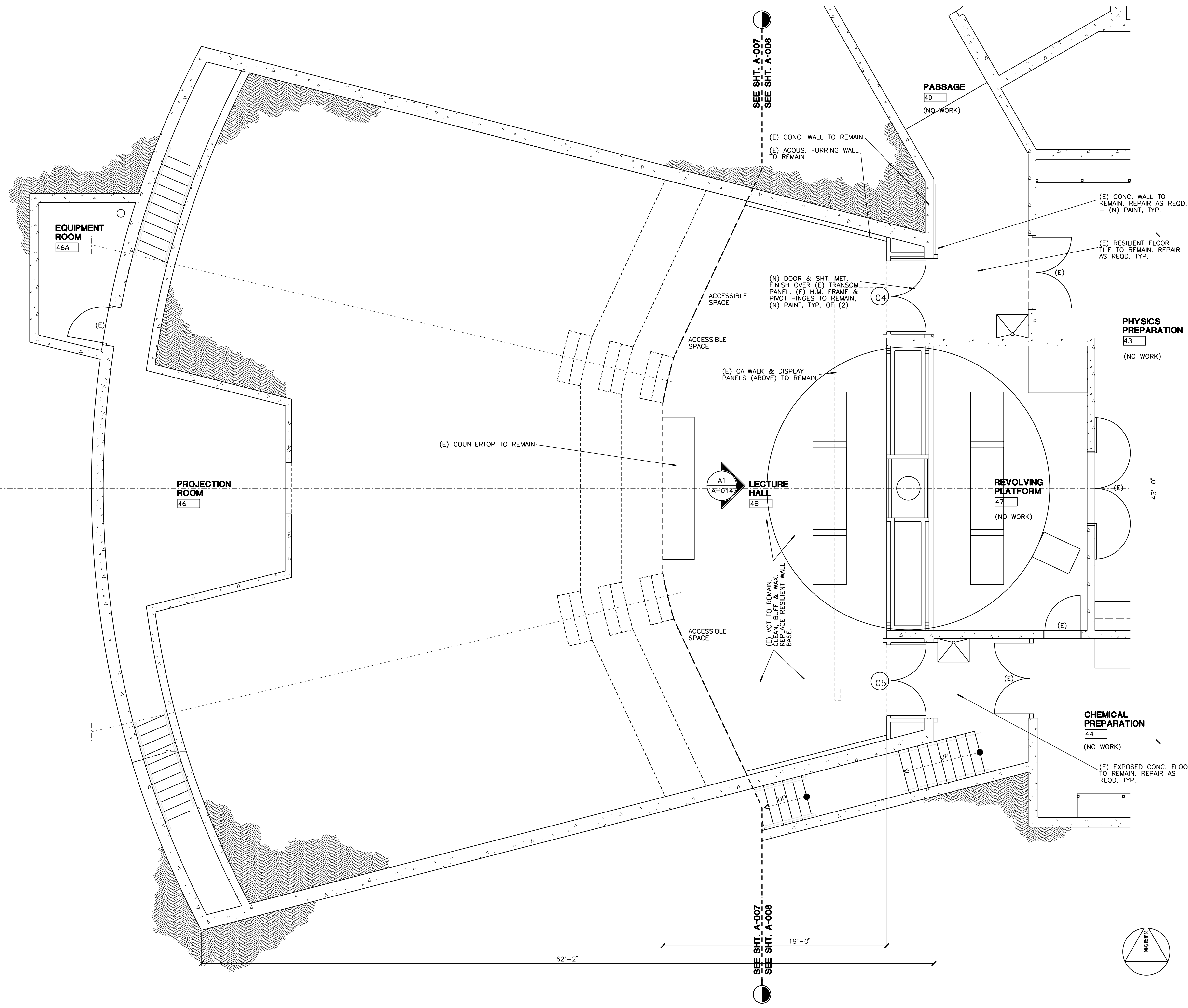
Consultants Data:

Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	dd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release
08/28/20		

Drawing Name  
**(N) BASEMENT FLR. PLAN - REMODELED**  
Sheet No.  
**A-008**  
of



**A1** (N) BASEMENT FLOOR PLAN - REMODELED

1/4" = 1'-0"

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UCR

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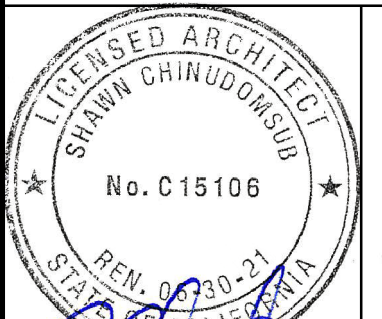
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Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

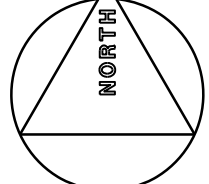
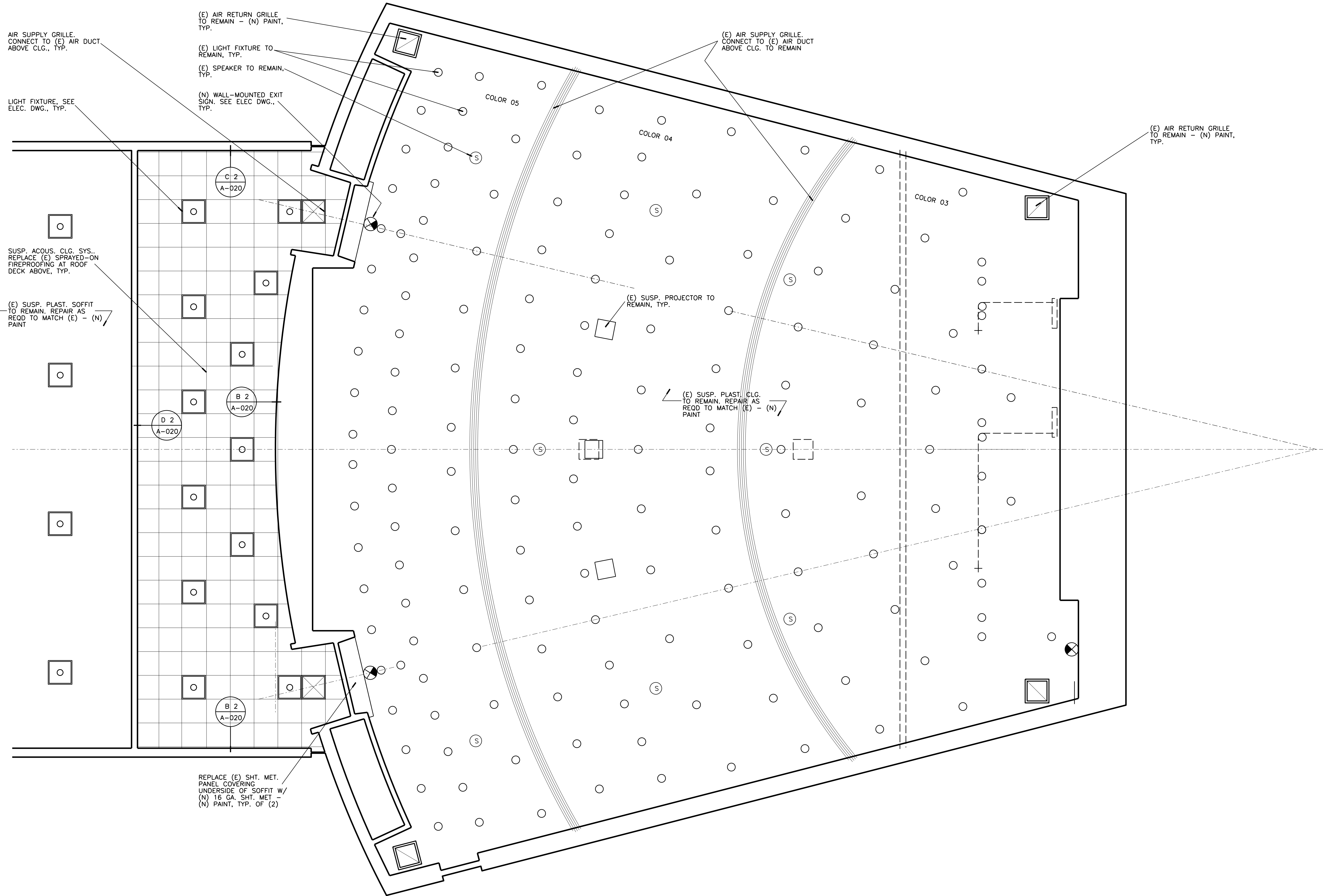
Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager  
SCOTT DONNEL

scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval 08/28/20
UCR project no.	957443	construction release
iso number		

Drawing Name  
(N) 1st FLR. REF. CEILING PLAN  
Sheet No.  
A-009  
of



A1 (N) 1st FLOOR REFLECTED CEILING PLAN

1/4" = 1'-0"

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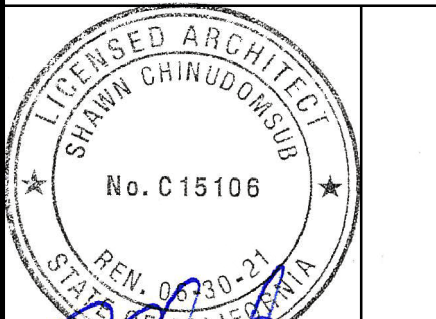
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Architect's Data:



Architect's Stamp:

Consultants Stamp:

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

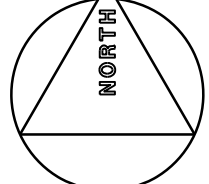
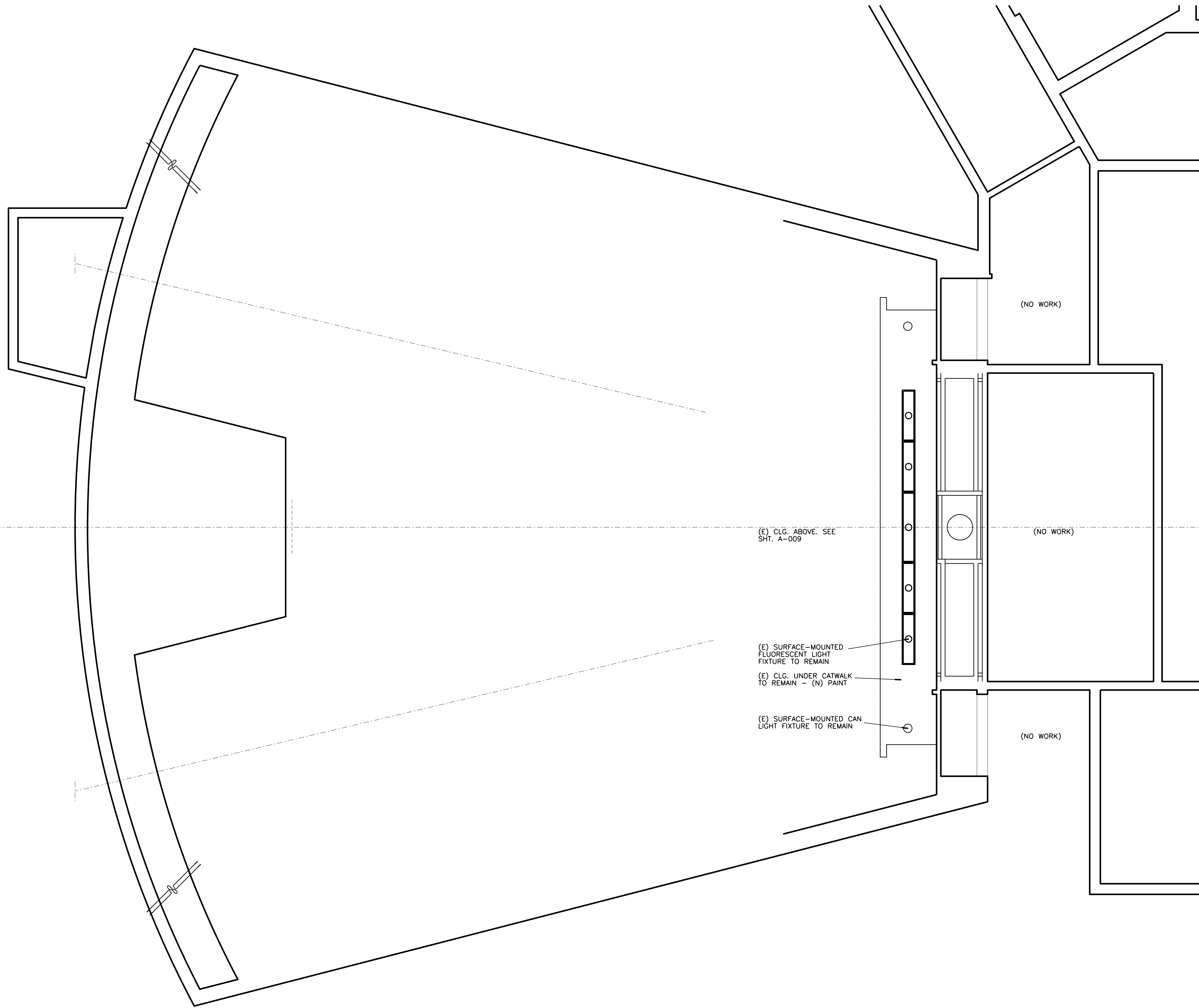
Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager  
SCOTT DONNEL

Scale	AS NOTED	sd approval
Drawn by	J.D.	dd approval
Checked by	S.C.	cd approval
UCR project no.	957443	08/28/20
iso number		construction release

Drawing Name  
(N) BASEMENT REF. CLG. PLAN  
Sheet No.  
A-010  
OF



A1 (N) BASEMENT REFLECTED CEILING PLAN

1/4" = 1'-0"

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REV #	DESCRIPTION	DATE

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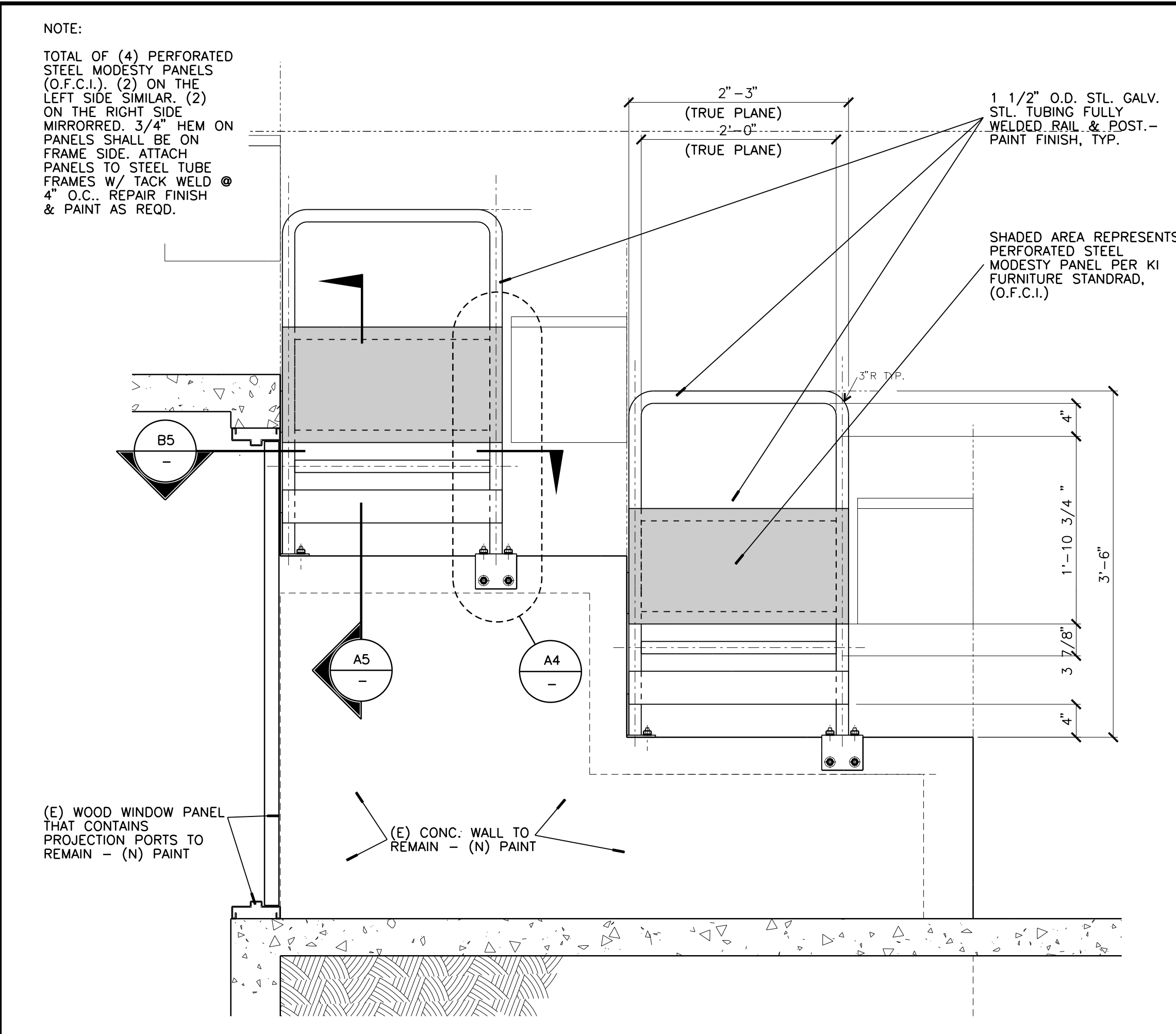
Project Title  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

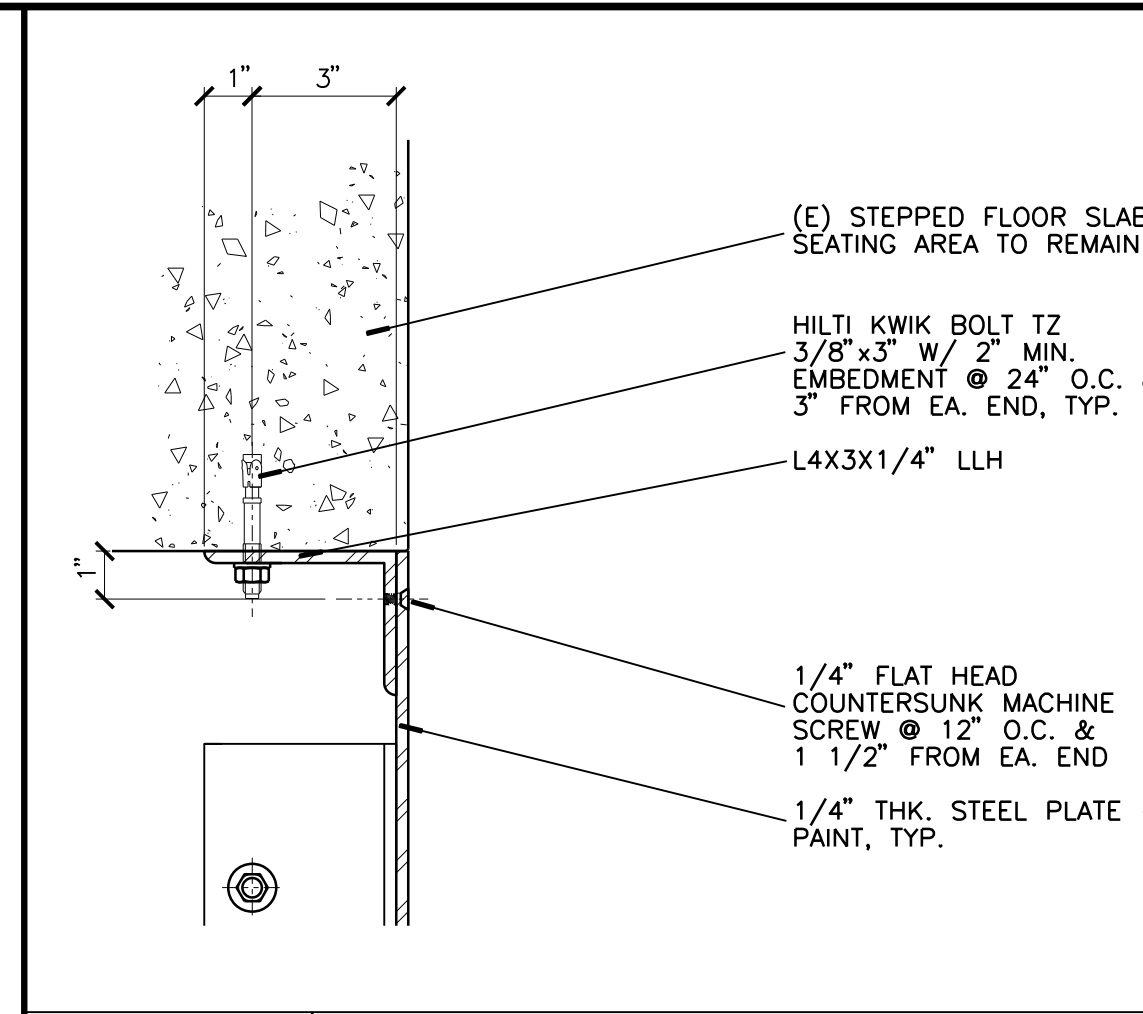
Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
UCR project no.	957443	08/28/20
iso number		release

Drawing Name  
**PARTIAL FLR. PLAN & DETAILS**

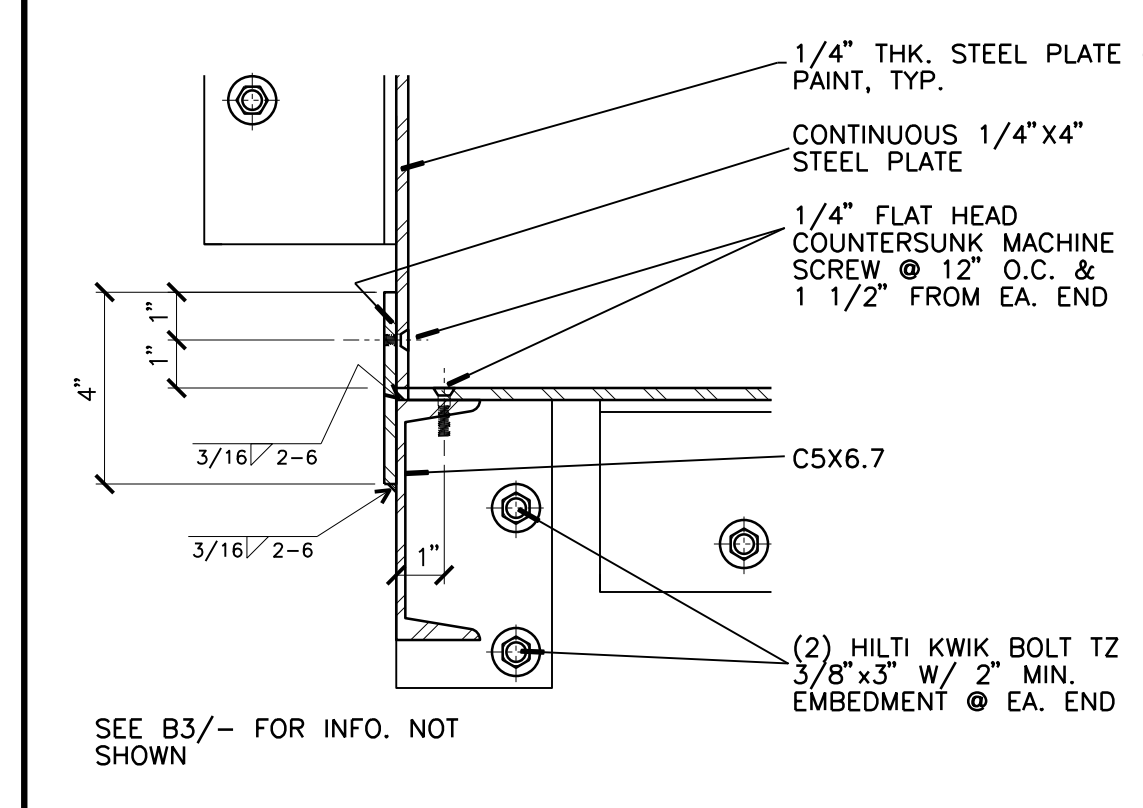
Sheet No.  
**A-011**  
 OF



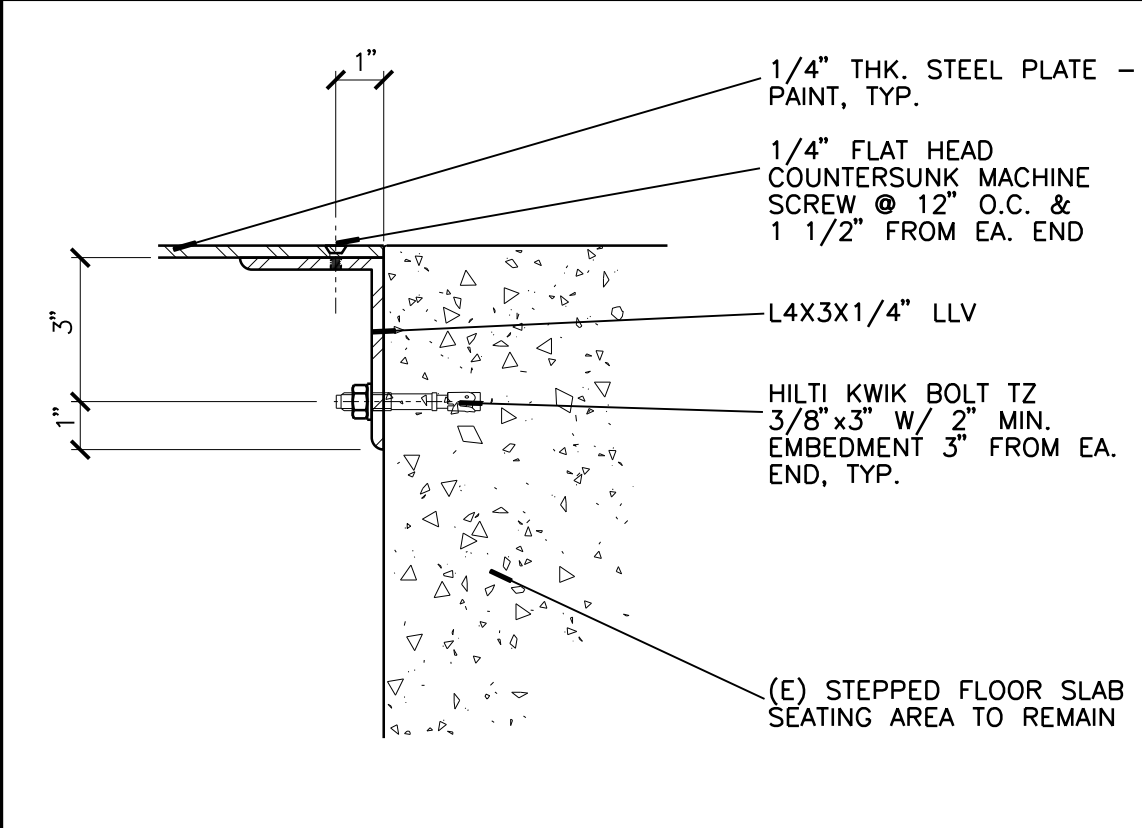
**C4** GUARDS AT (E) SPACE IN FRONT OF PROJECTION ROOM  
 1" = 1'-0" VERTICAL SECTION VIEW - NORTH/SOUTH ELEVATION SIMILAR



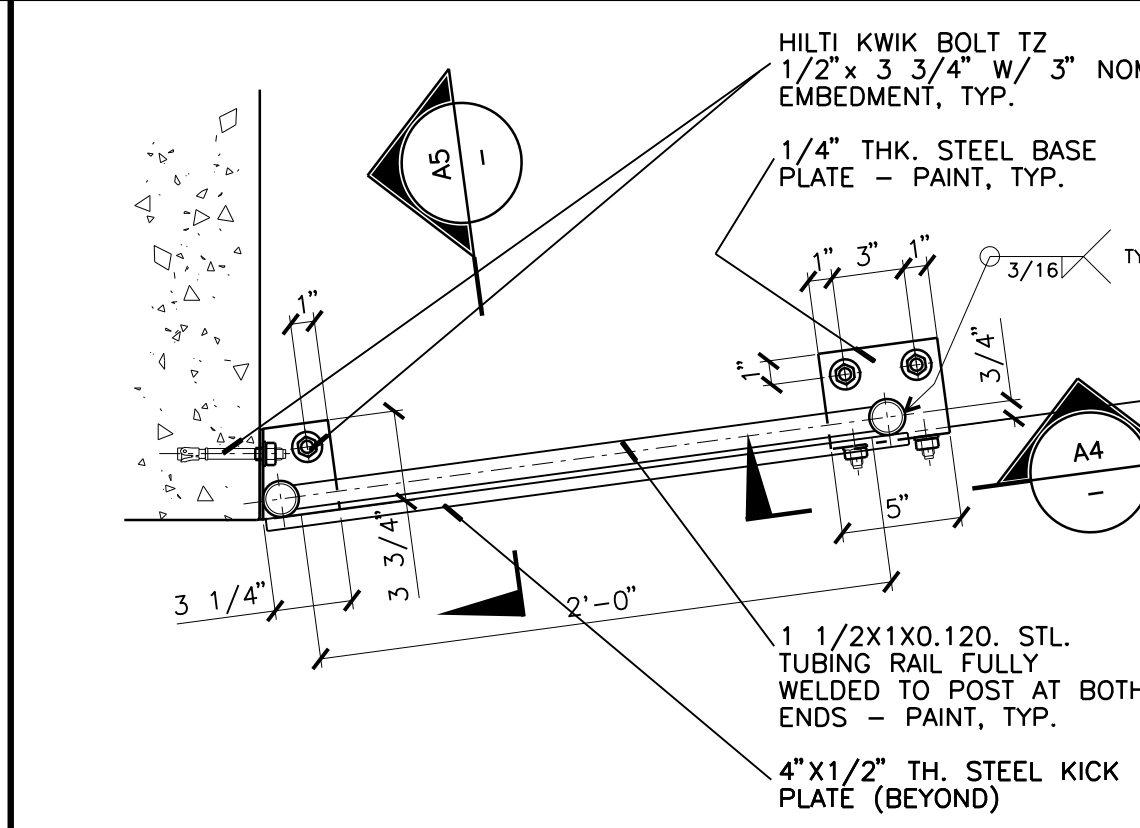
**D3** STEEL STEPPED FLOOR  
 3" = 1'-0" ALTERNATE 01



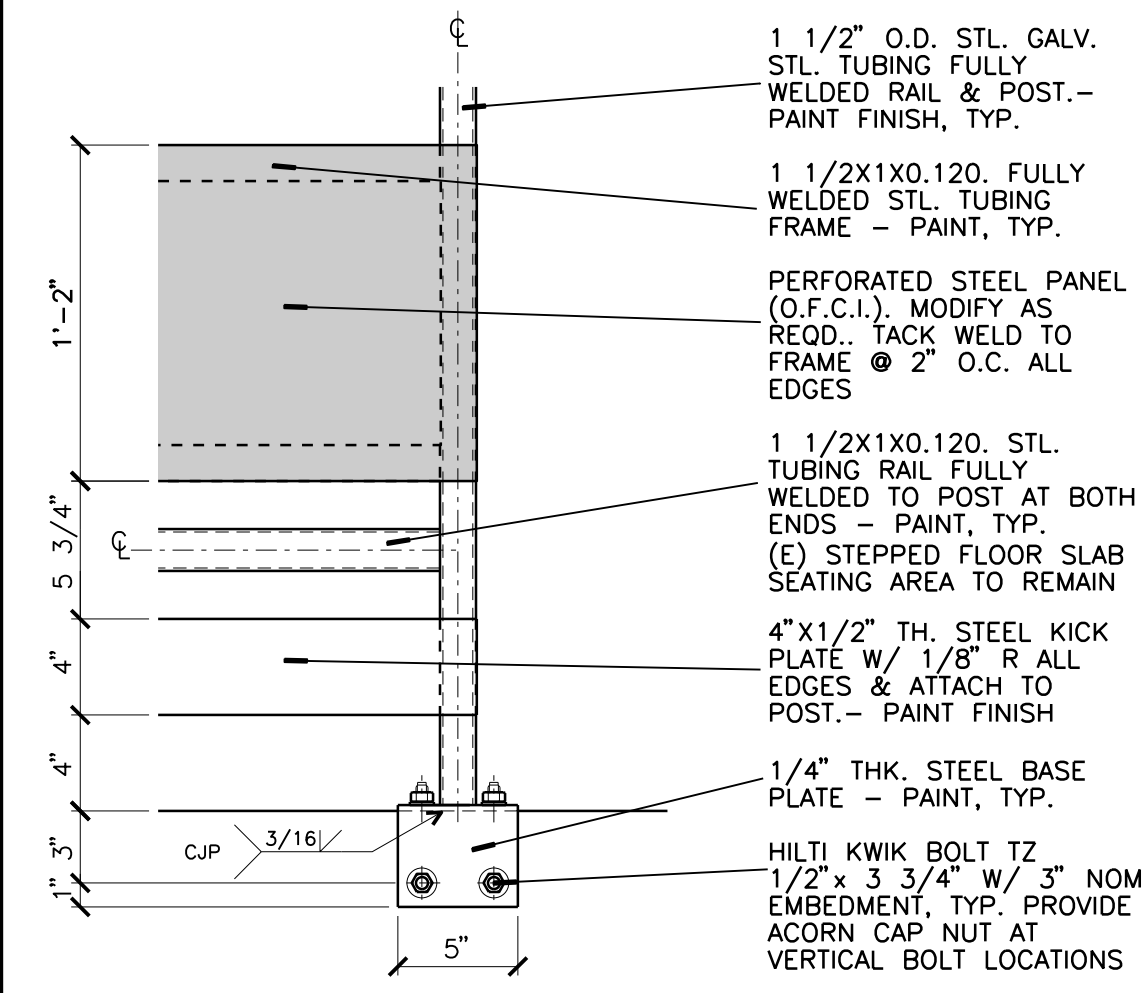
**C3** STEEL STEPPED FLOOR  
 3" = 1'-0" ALTERNATE 01



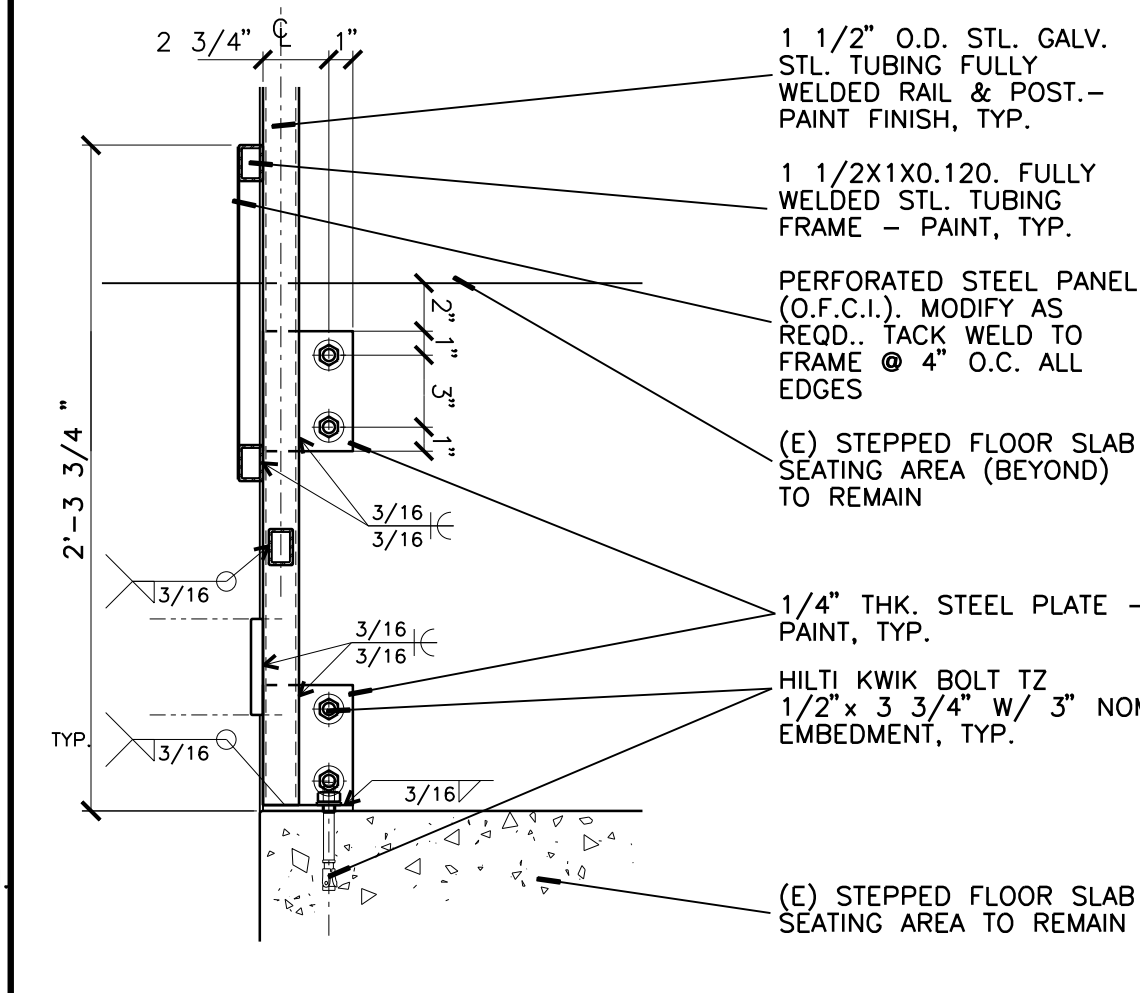
**B4** STEEL STEPPED FLOOR  
 3" = 1'-0" ALTERNATE 01



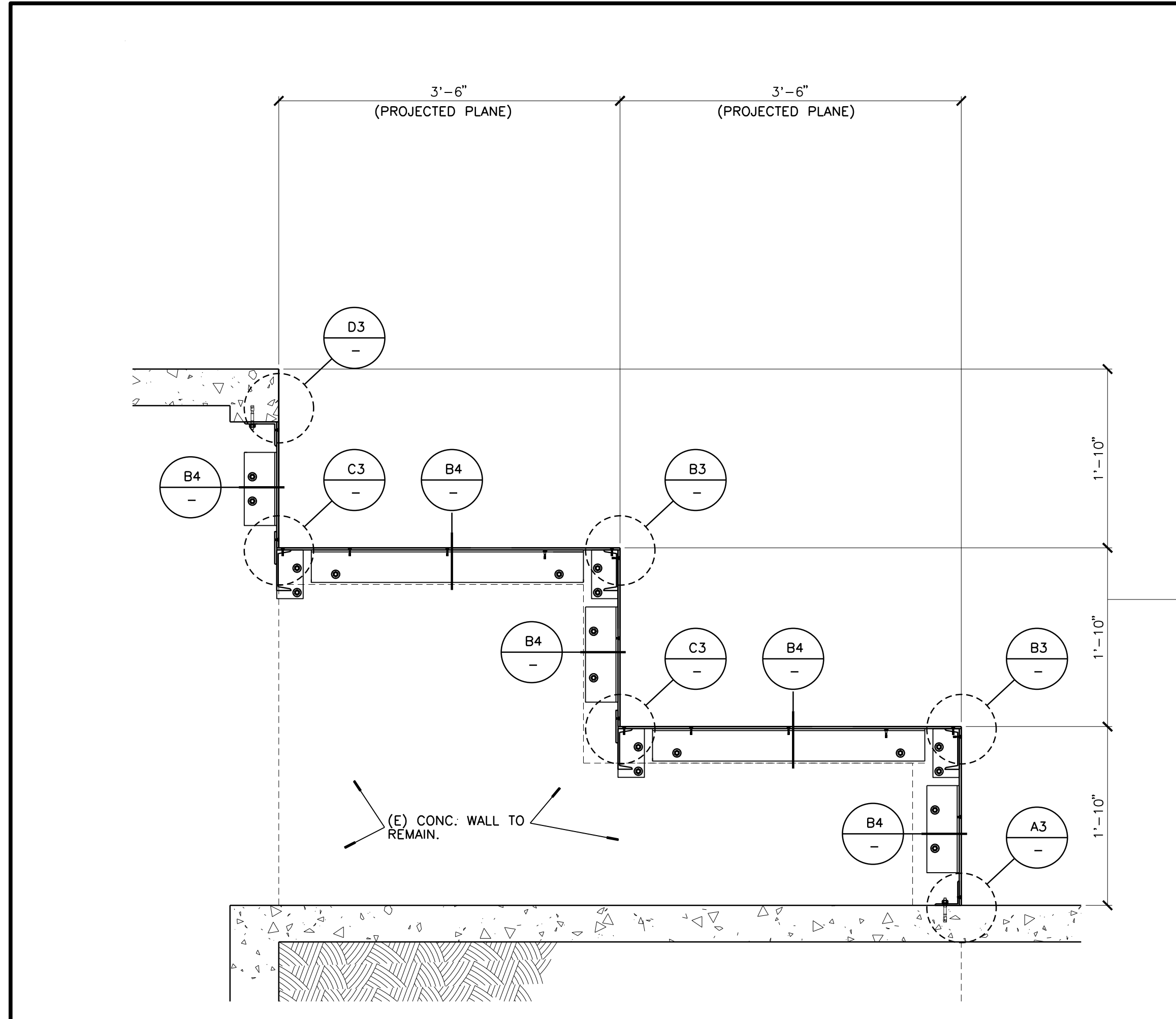
**B5** GUARDS MOUNTING PLATE  
 1 1/2" = 1'-0" VERTICAL SECTION VIEW



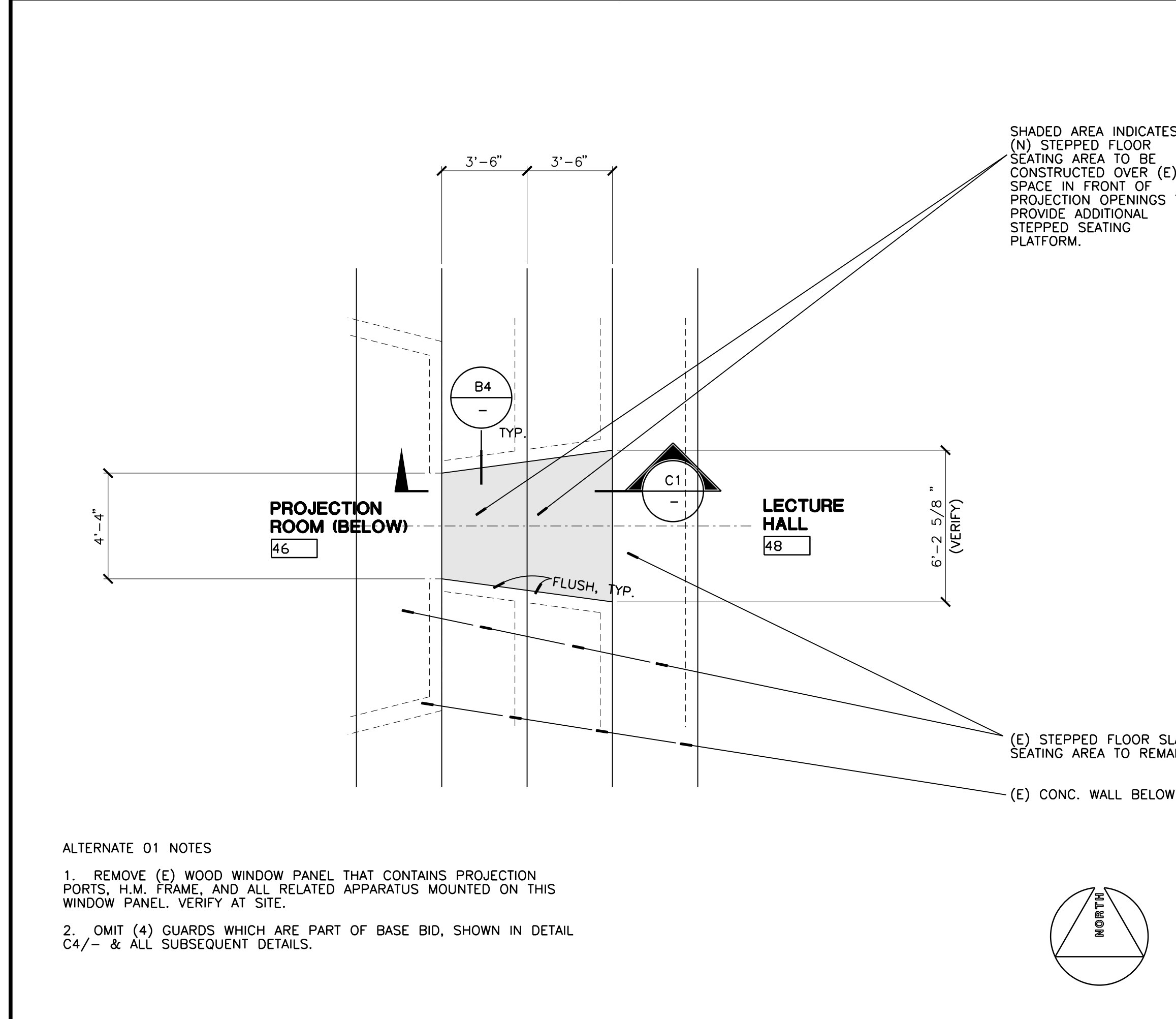
**A4** GUARDS MOUNTING PLATE  
 1 1/2" = 1'-0"



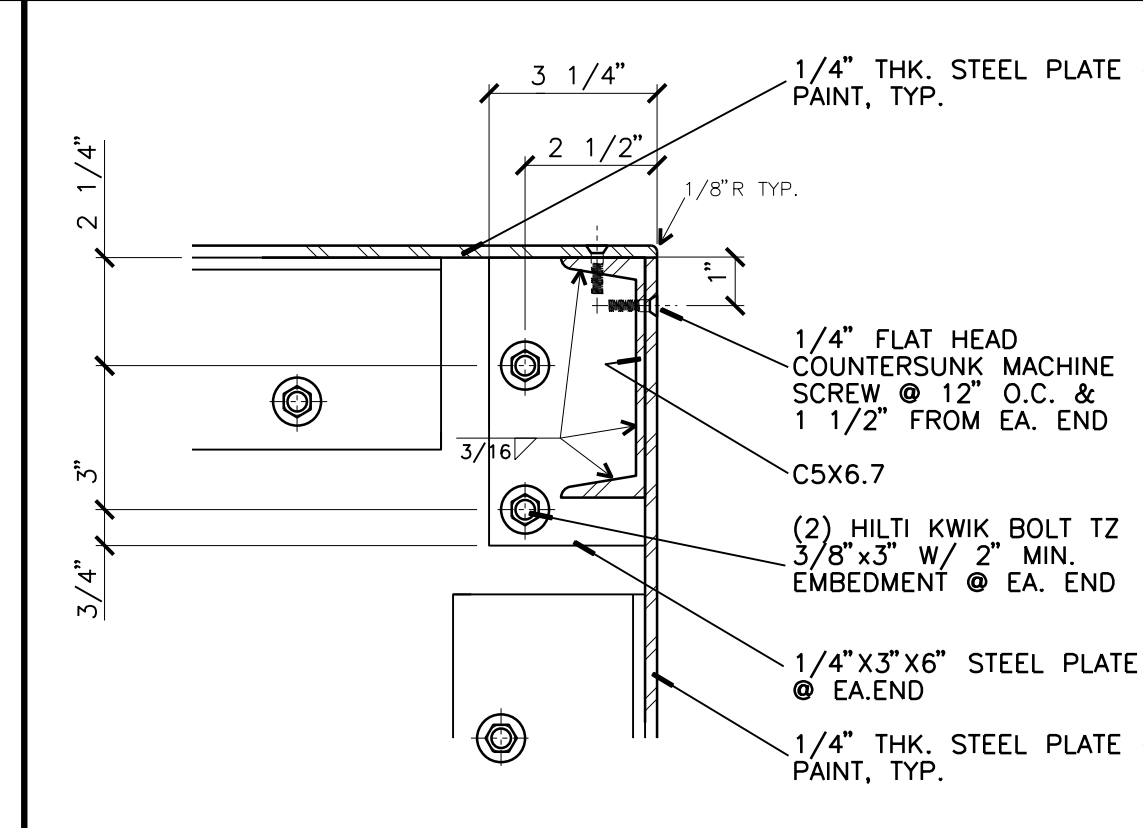
**A5** GUARDS MOUNTING PLATE  
 1 1/2" = 1'-0" HORIZONTAL SECTION VIEW



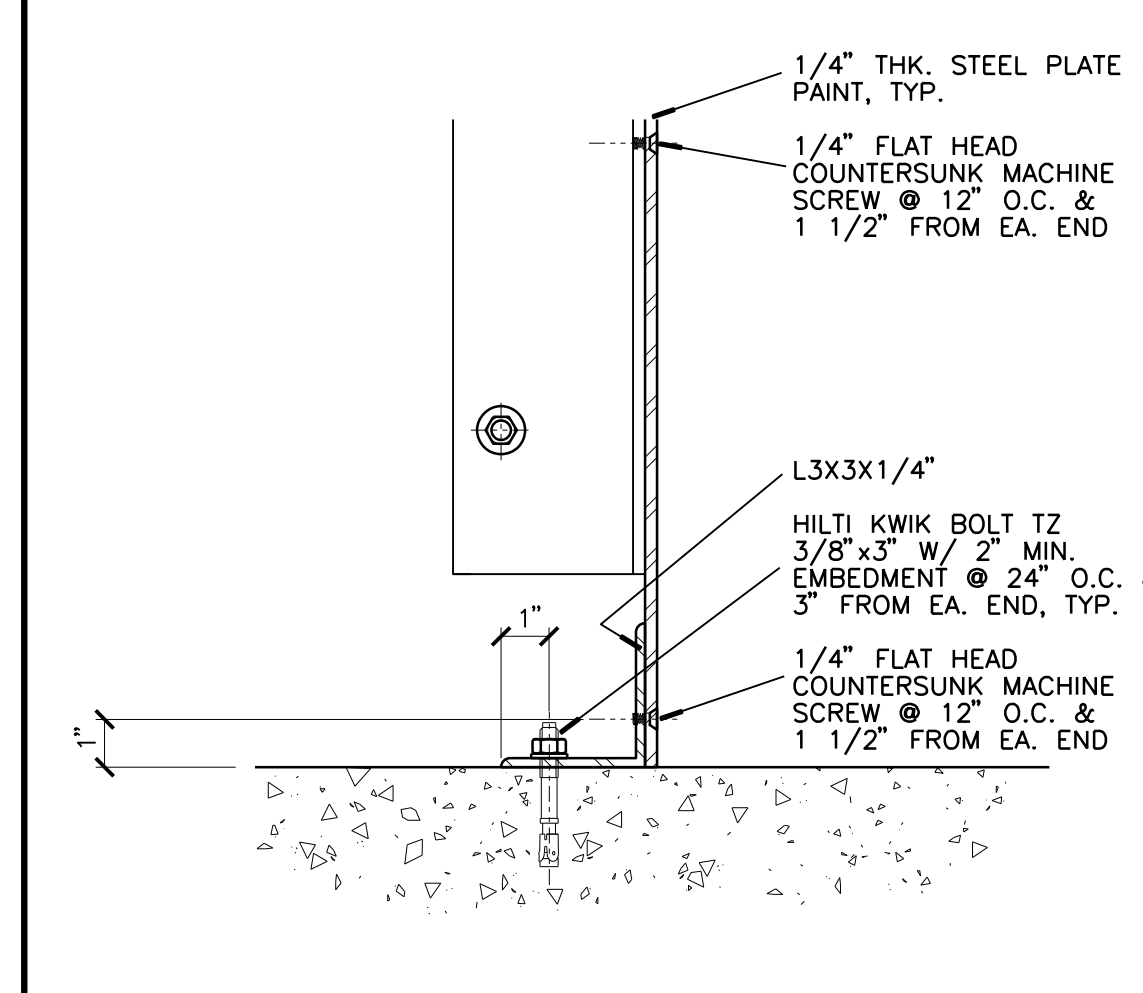
**C1** ADDITIONAL STEPPED SEATING FLO  
 1" = 1'-0" ALTERNATE 01 - VERTICAL SECTION VIEW - NORTH/SOUTH SIMILAR



**A1** PARTIAL 1ST FLOOR PLAN - ADDITIONAL STEPPED SEATING FLOOR  
 1/4" = 1'-0" ALTERNATE 01



**B3** STEEL STEPPED FLOOR  
 3" = 1'-0" ALTERNATE 01



**A3** STEEL STEPPED FLOOR  
 3" = 1'-0" ALTERNATE 01





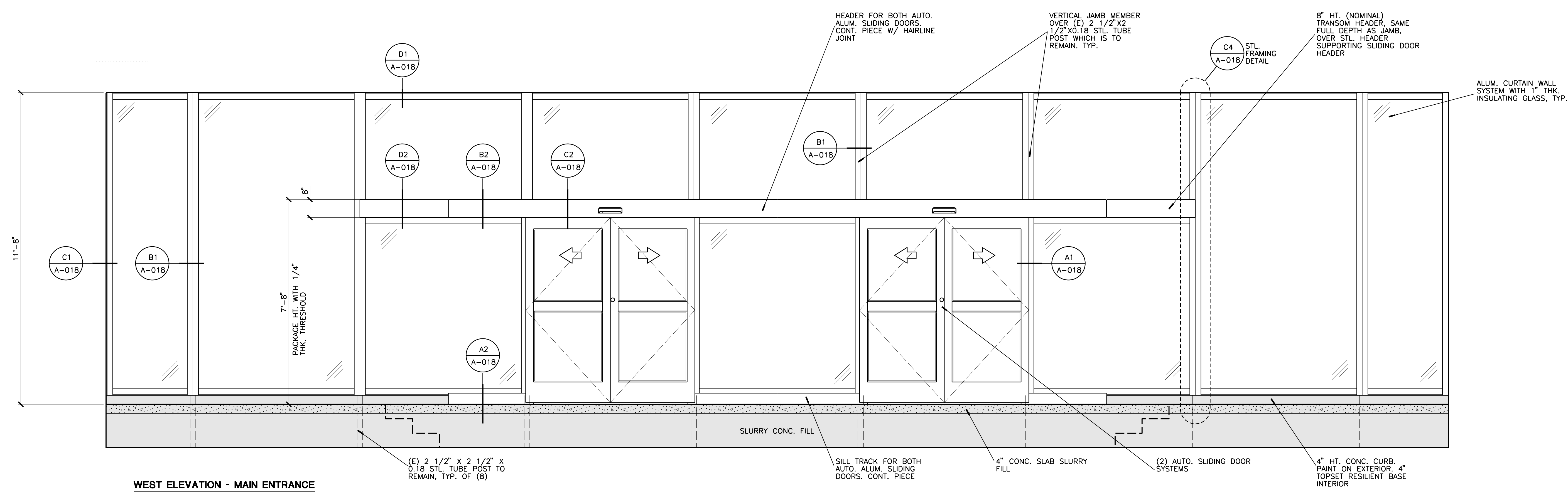




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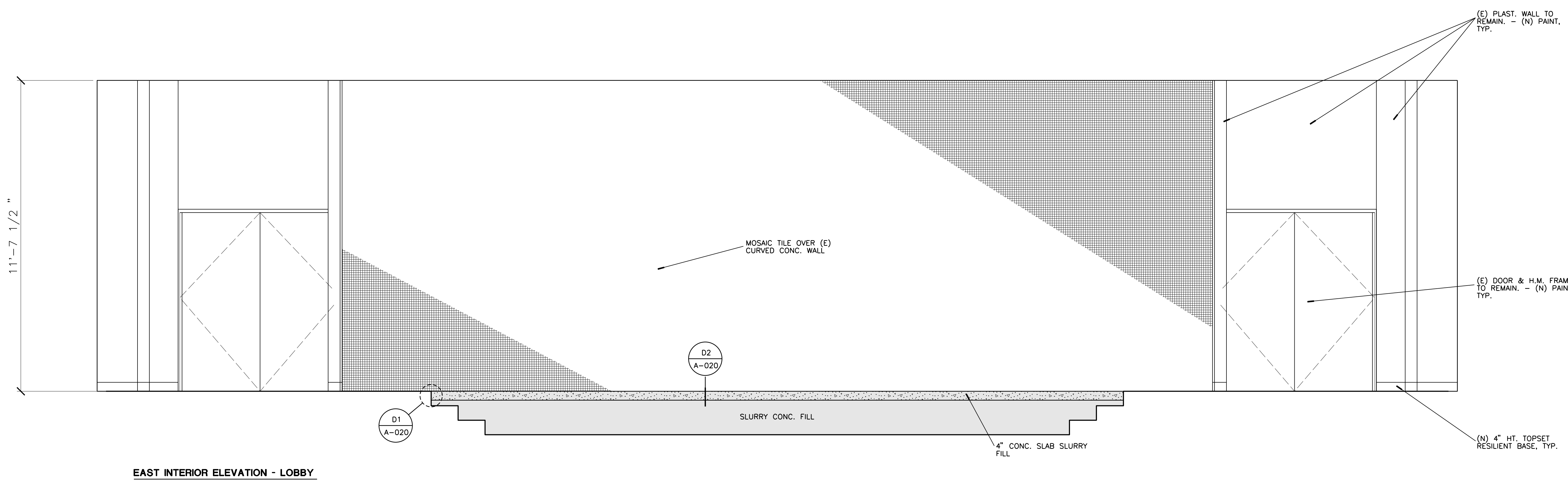


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 Architect's Data:  
 LICENSED ARCHITECT  
 SHAWN GRINDORNDORF  
 No. C15106  
 ARCHITECT'S SIGNATURE: [Signature]  
 CONSULTANTS STAMP: [Stamp]



WEST ELEVATION - MAIN ENTRANCE

**C1** EXTERIOR ELEVATION - FRONT ENTRANCE  
 1/2" = 1'-0"



EAST INTERIOR ELEVATION - LOBBY

**A1** INTERIOR ELEVATION - FOYER  
 1/2" = 1'-0"

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:	
Project Title	UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL
UCR project manager	SCOTT DONNEL
Scale	AS NOTED
Drawn by	J.D.
Checked by	S.C.
UCR project no.	957443
Sheet No.	A-013 OF

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319230P/2



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Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
**UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL**  
REBID AUGUST 2020

REVISIONS		
REV #	DESCRIPTION	DATE

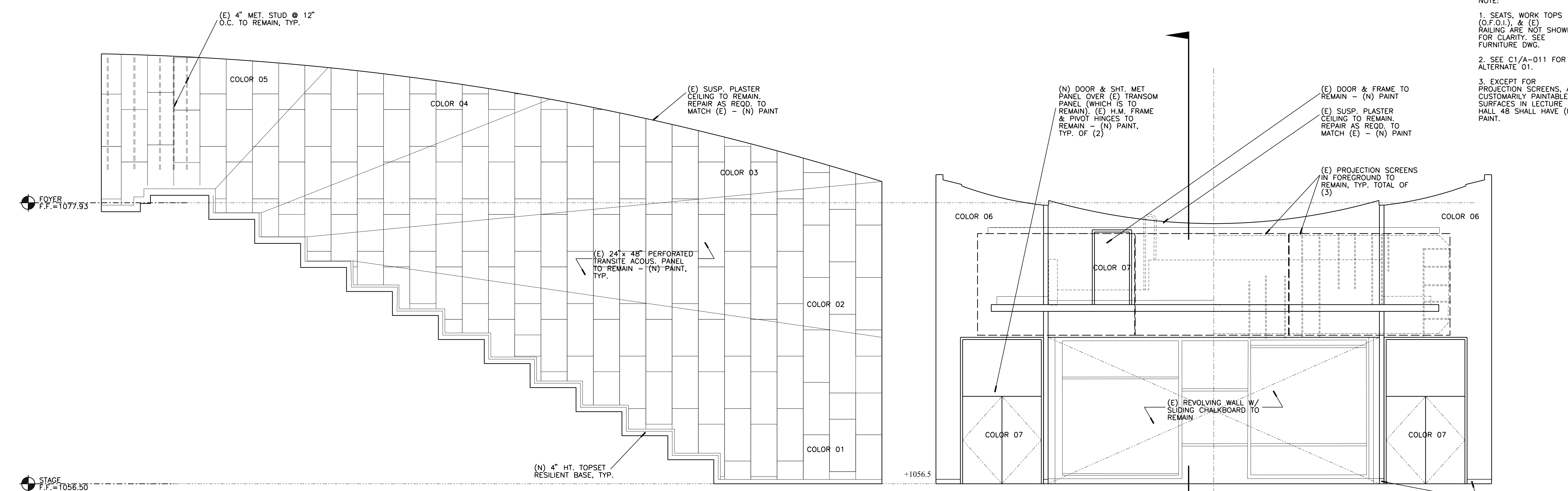
Consultants Data:

Project Title  
**UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL**

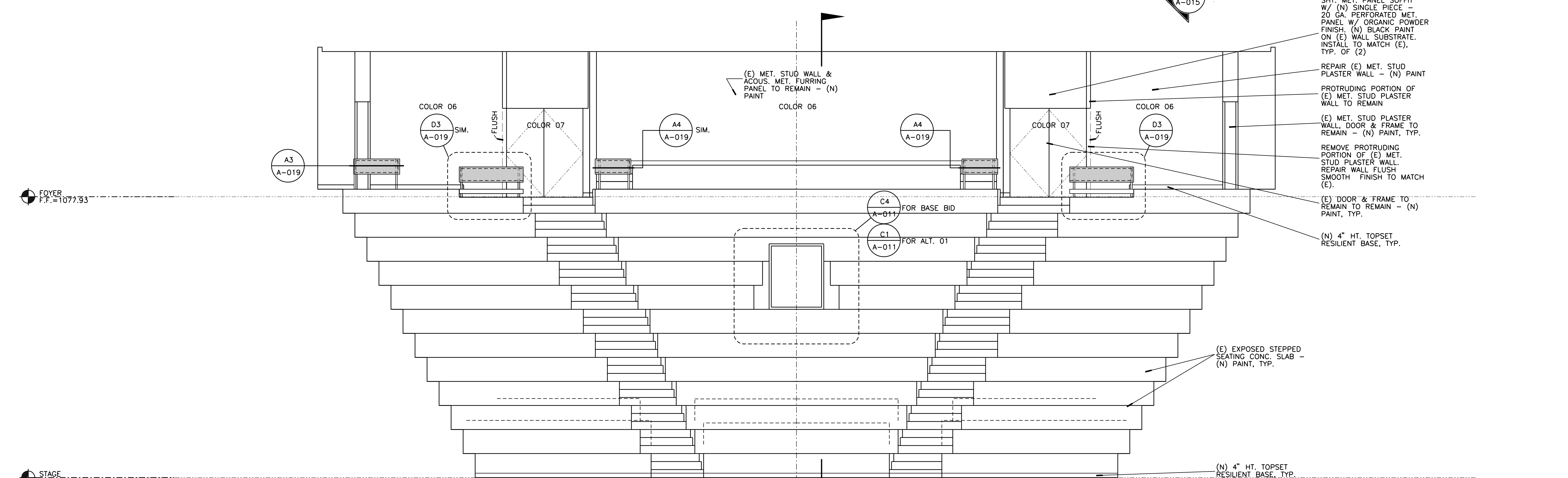
UCR project manager  
**SCOTT DONNEL**  
Scale AS NOTED  
Drawn by J.D.  
Checked by S.C.  
UCR project no. 957443  
Sheet No. A-014 OF

Drawing Name  
**INTERIOR ELEVATION**

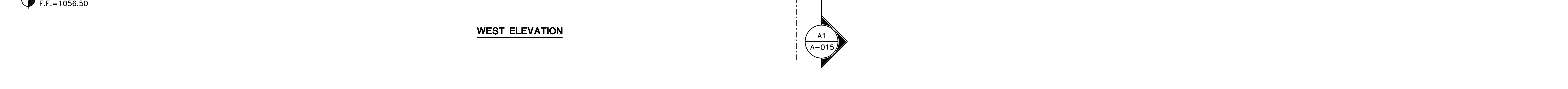
- NOTE:
- SEATS, WORK TOPS (O.F.O.I.), & (E) RAILING ARE NOT SHOWN FOR CLARITY. SEE FURNITURE DWG.
  - SEE C1/A-011 FOR ALTERNATE 01.
  - EXCEPT FOR PROJECTION SCREENS, ALL CUSTOMARILY PAINTABLE SURFACES IN LECTURE HALL 48 SHALL HAVE (N) PAINT.



**NORTH ELEVATION (SOUTH SIMILAR) EAST ELEVATION**



**WEST ELEVATION**



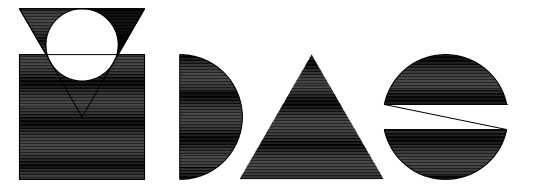




UNIVERSITY OF CALIFORNIA RIVERSIDE

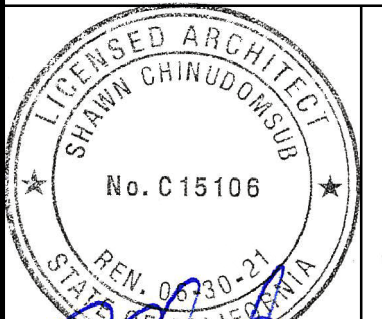
OFFICE OF ARCHITECTS & ENGINEERS

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RIVERSIDE, CA. 92507  
TEL: (951) 827-4706 FAX: (951) 827-2402



Institutional Designs & Architectural Services  
3803 10th Street, Riverside, CA 92501-3521  
Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:



Architect's Stamp:

Consultants Stamp:

PROJECT TITLE  
**UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL**  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
**UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL**

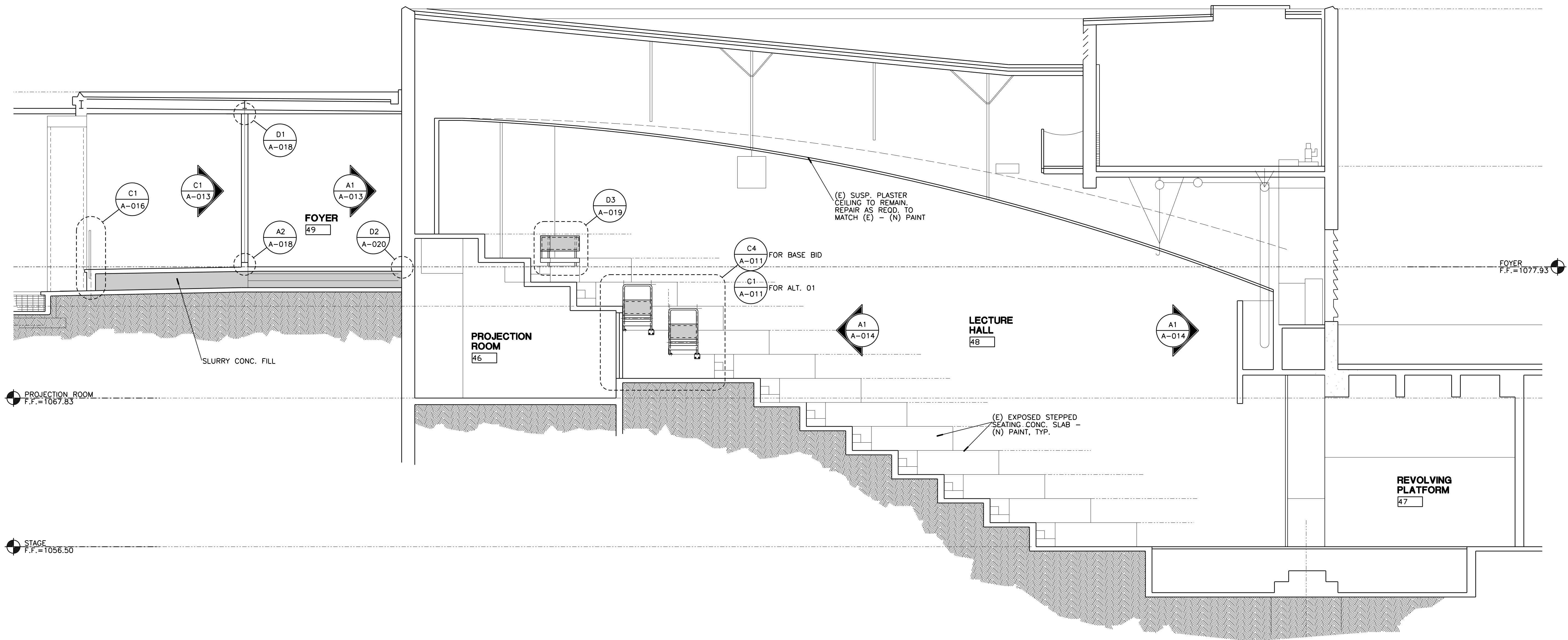
UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release 08/28/20
iso number		

Drawing Name  
**PARTIAL BUILDING SECTION**  
Sheet No.  
**A-015**  
OF

NOTE:

- SEATS, WORK TOPS (O.F.O.I.), & (E) RAILING ARE NOT SHOWN FOR CLARITY. SEE FURNITURE DWG.
- SEE C1/A-011 FOR ALTERNATE 01



**A1** PARTIAL BUILDING SECTION - LECTURE HALL & FOYER

1/4" = 1'-0"

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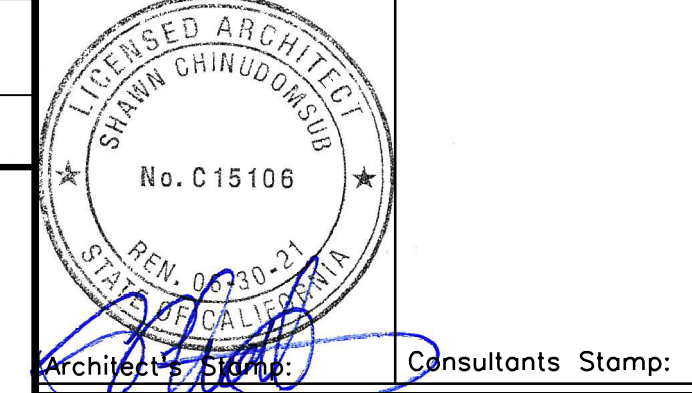




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3903 10th Street, Riverside, CA 92501-3521  
Tel: (951) 342-3135 Fax: (951) 342-3137



Architect's Date: \_\_\_\_\_ Consultants Stamp: \_\_\_\_\_

PROJECT TITLE  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**  
REBID AUGUST 2020

REVISIONS		
REV #	DESCRIPTION	DATE

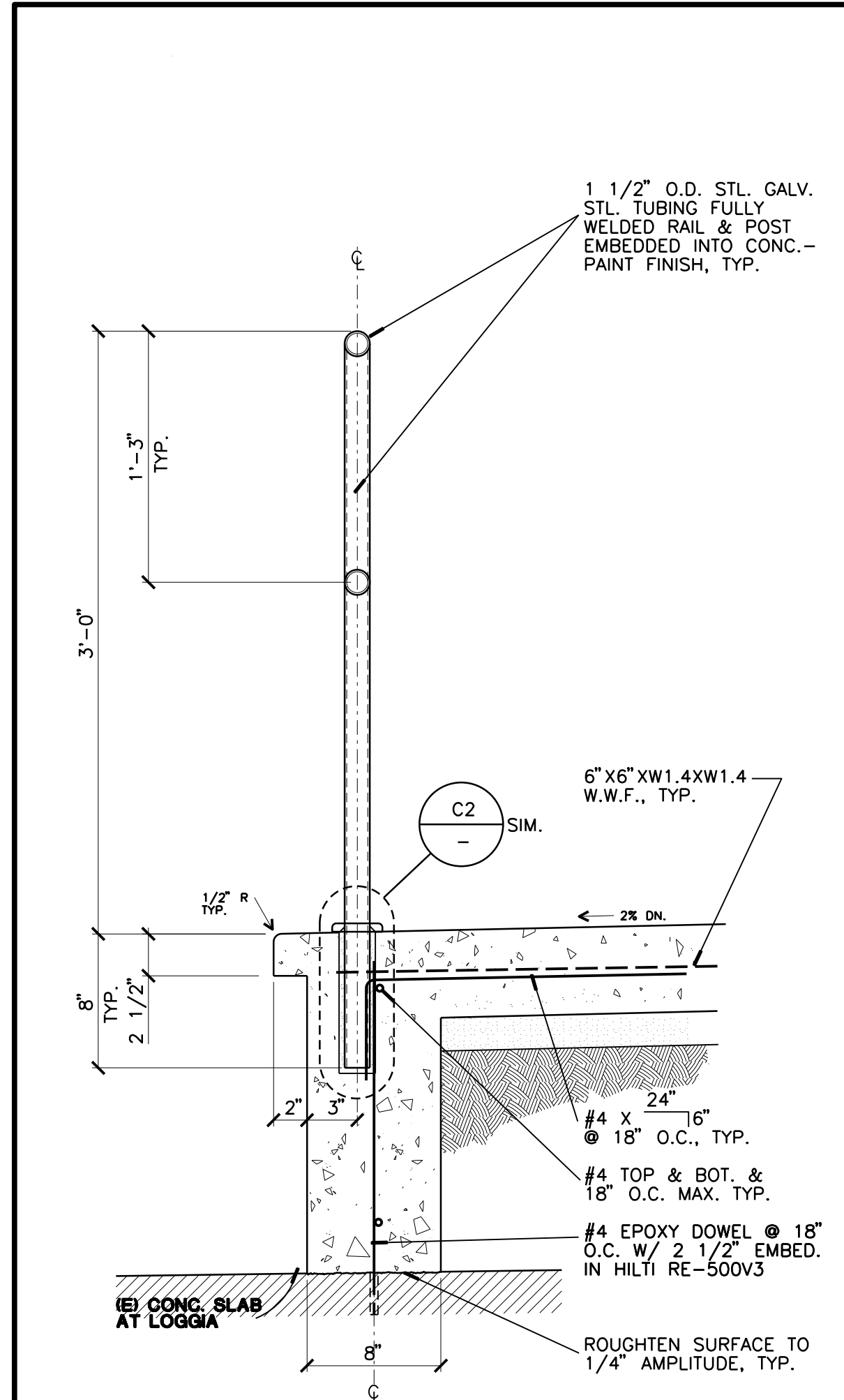
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Project Title  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

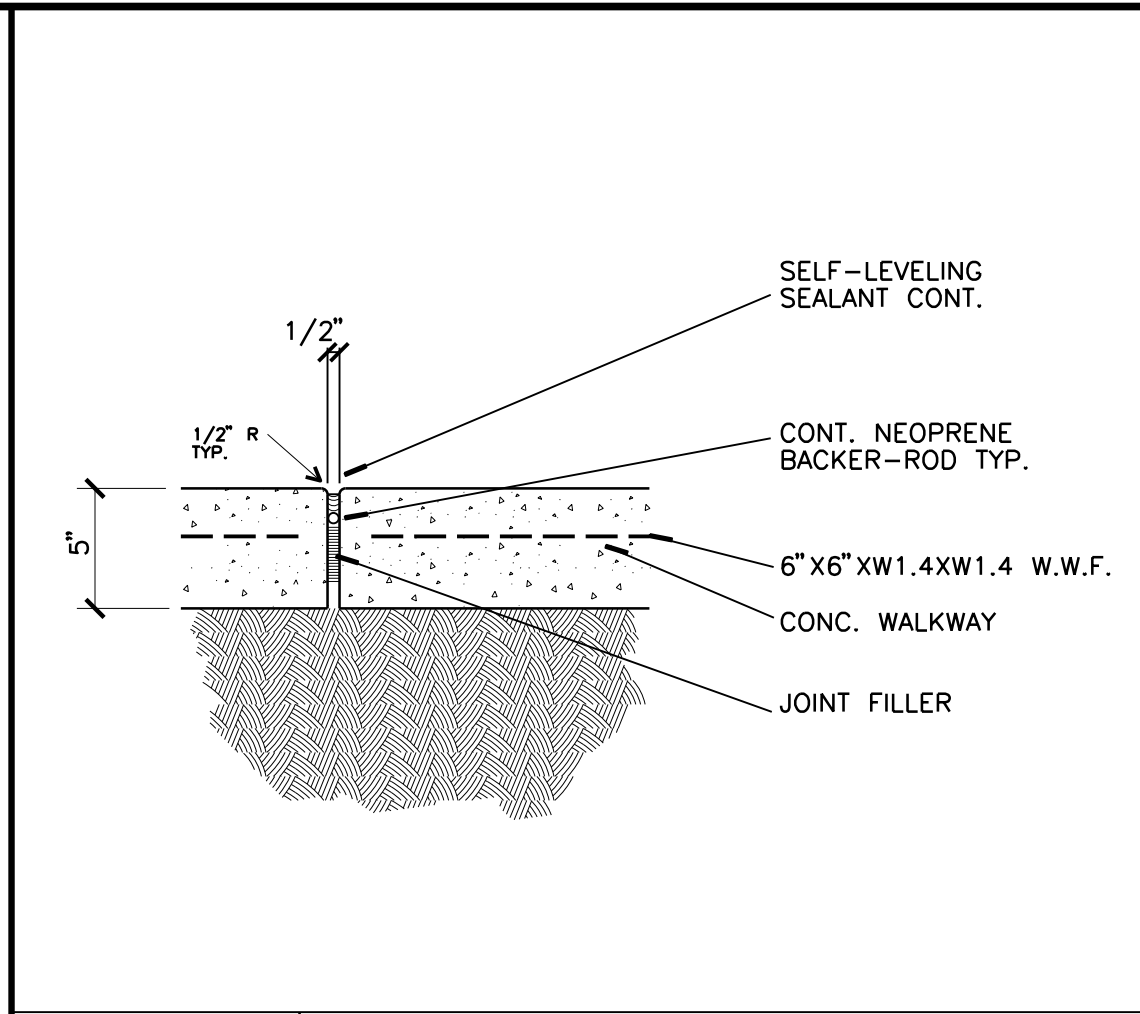
Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
UCR project no.	957443	construction release
also number		

Drawing Name  
**SECTION & DETAILS**

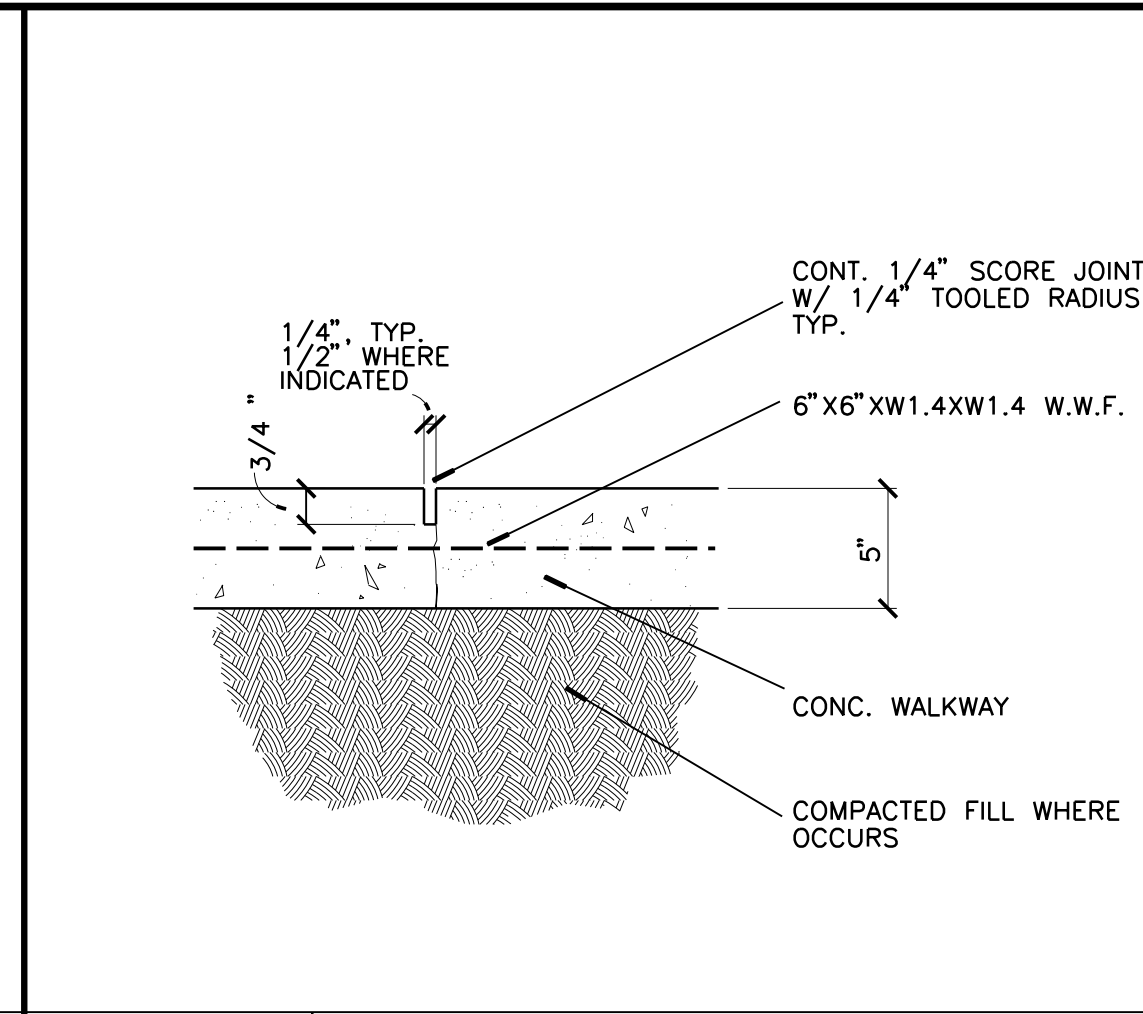
Sheet No.  
**A-016**  
OF



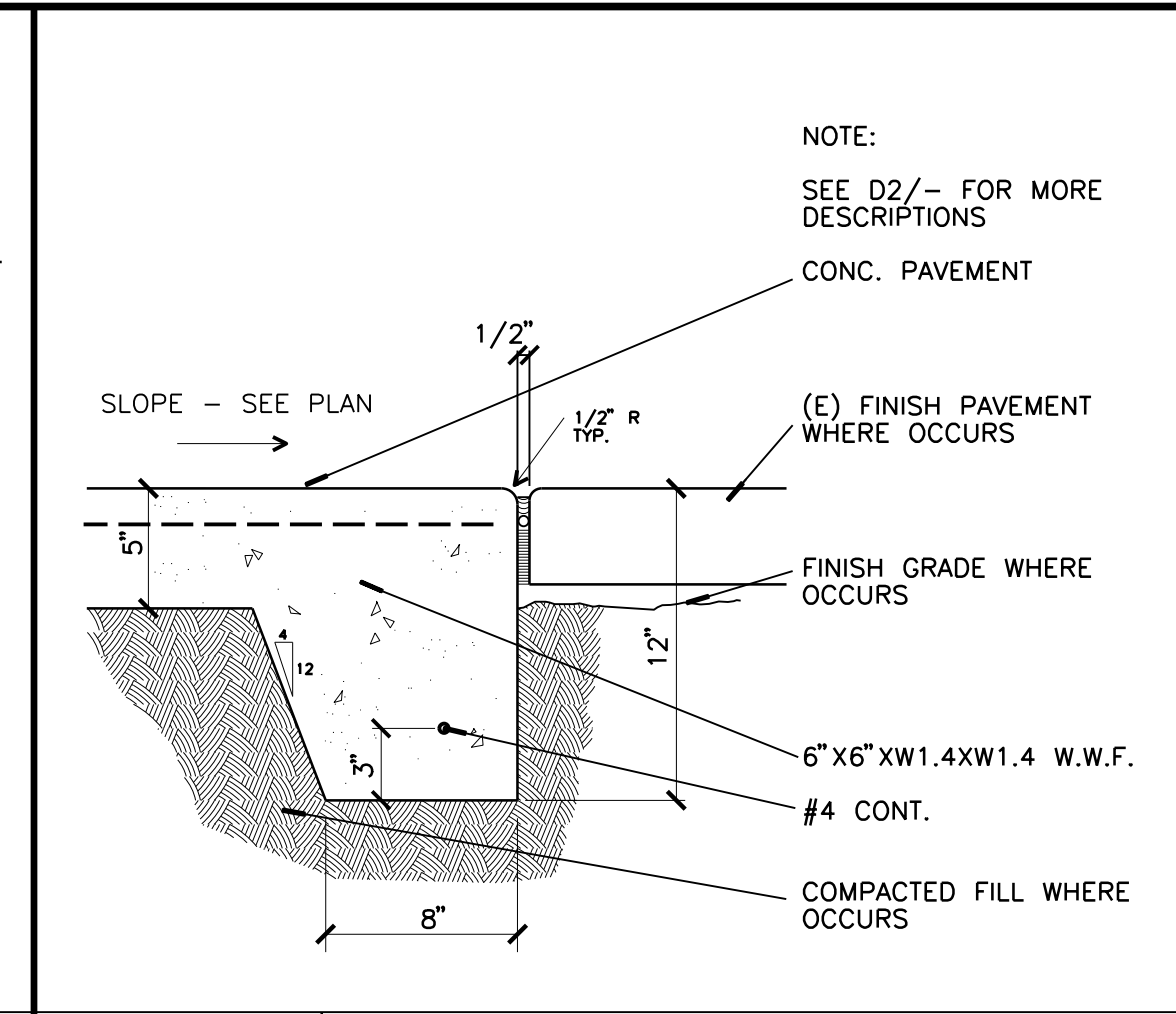
**C1** EDGE OF LOGGIA SLAB & RAILING  
1 1/2" = 1'-0"



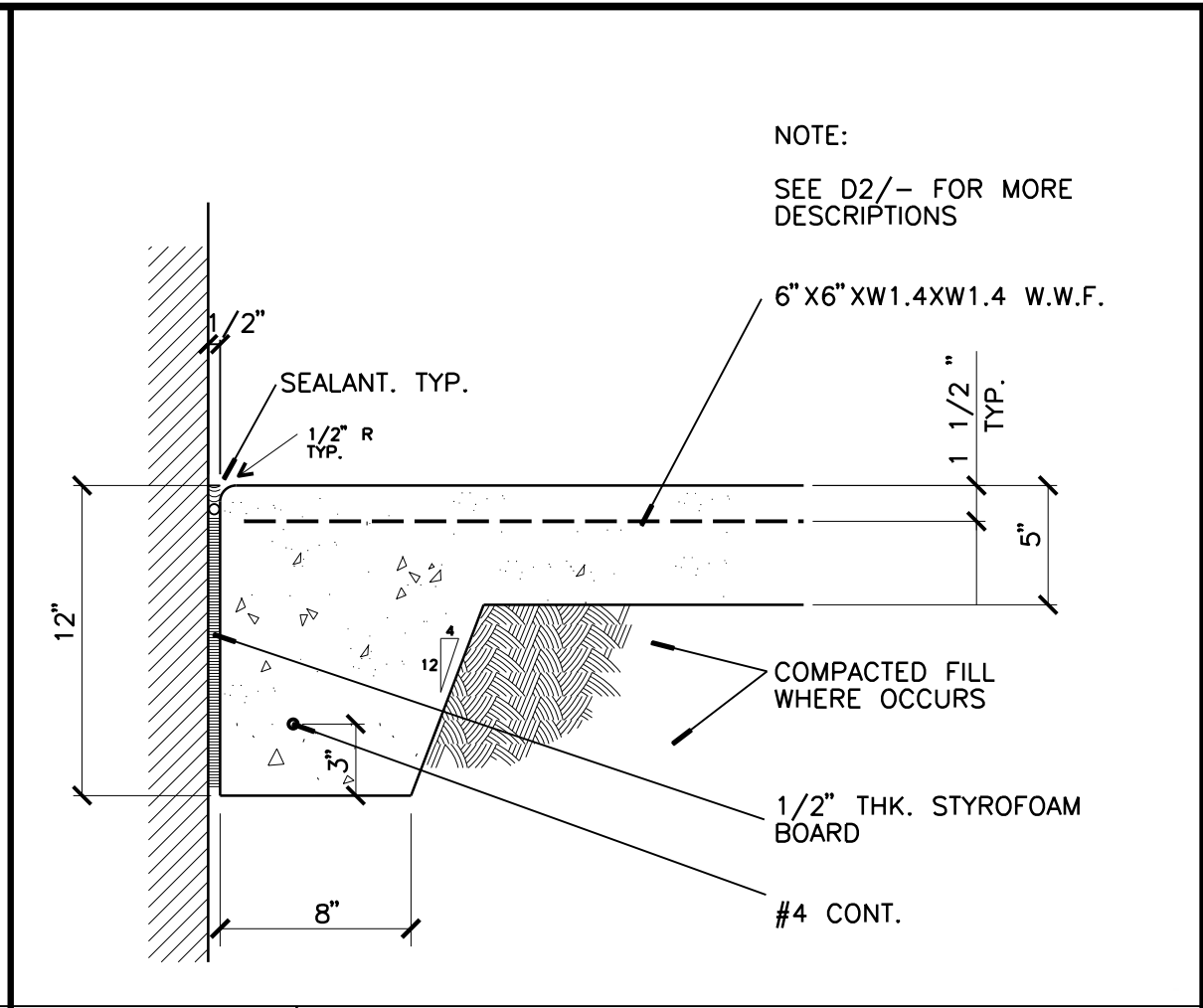
**D2** EXPANSION JOINT - TYPICAL  
1 1/2" = 1'-0"



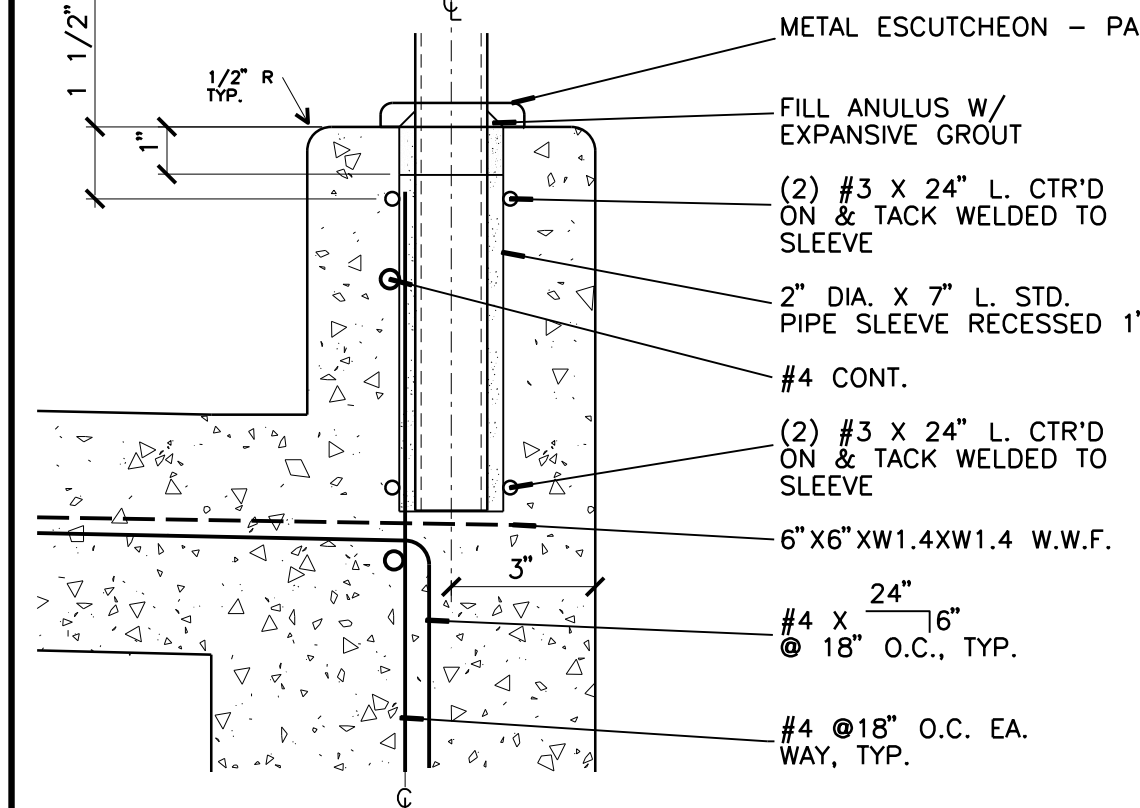
**D3** SCORED JOINT - TYPICAL  
1 1/2" = 1'-0"



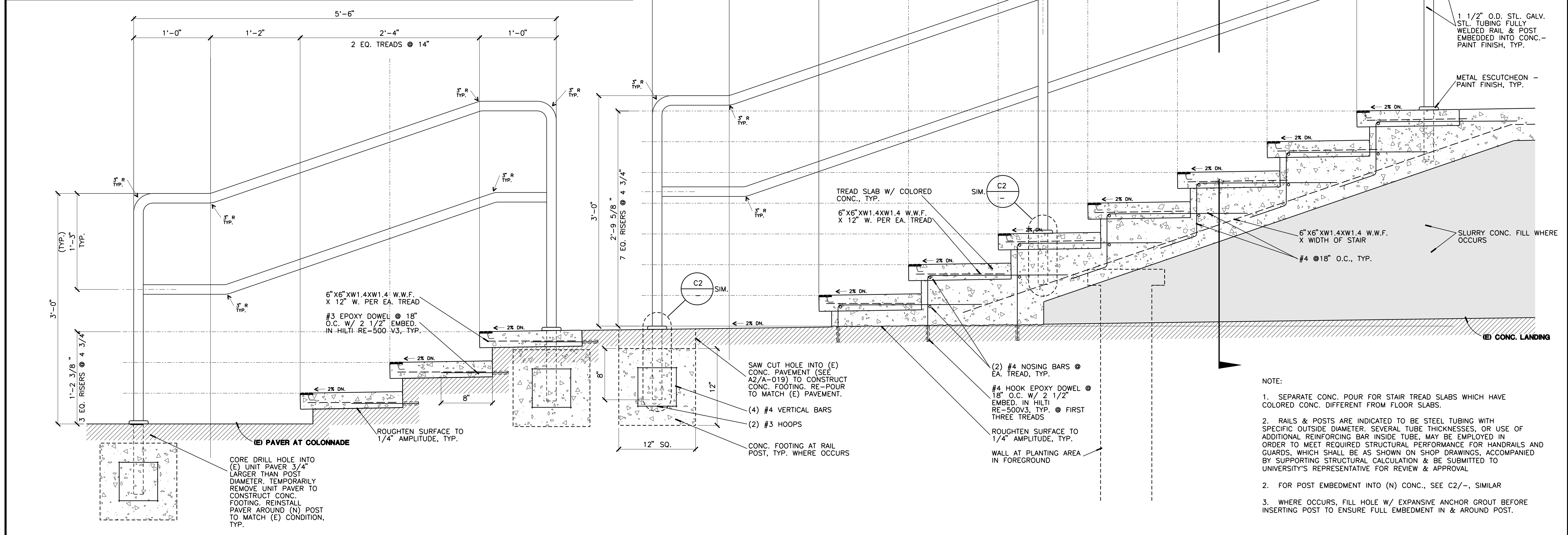
**D4** EDGE OF EXT. CONC. SLAB - TYP.  
1 1/2" = 1'-0"



**D5** EDGE OF EXT. CONC. SLAB AT WALL  
1 1/2" = 1'-0"



**C2** RAILING ANCHOR - TYPICAL  
3" = 1'-0"



**A1** CROSS SECTION OF EXTERIOR FRONT MAIN STAIRS - BOTH STAIRS SIMILAR  
1 1/2" = 1'-0"

- NOTE:
- SEPARATE CONC. POUR FOR STAIR TREAD SLABS WHICH HAVE COLORED CONC. DIFFERENT FROM FLOOR SLABS.
  - RAILS & POSTS ARE INDICATED TO BE STEEL TUBING WITH SPECIFIC OUTSIDE DIAMETER, SEVERAL TUBE THICKNESSES, OR USE OF ADDITIONAL REINFORCING BAR INSIDE TUBE. MAY BE EMPLOYED IN ORDER TO MEET REQUIRED STRUCTURAL PERFORMANCE FOR HANDRAILS AND GUARDS, WHICH SHALL BE AS SHOWN ON SHOP DRAWINGS, ACCOMPANIED BY SUPPORTING STRUCTURAL CALCULATION & BE SUBMITTED TO UNIVERSITY'S REPRESENTATIVE FOR REVIEW & APPROVAL.
  - WHERE OCCURS, FILL HOLE W/ EXPANSIVE ANCHOR GROUT BEFORE INSERTING POST TO ENSURE FULL EMBEDMENT IN & AROUND POST.

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RIVERSIDE, CA 92507  
TEL: (951) 827-4706 FAX: (951) 827-2402



Architect's Data:



Architect's Stamp: Consultants Stamp:

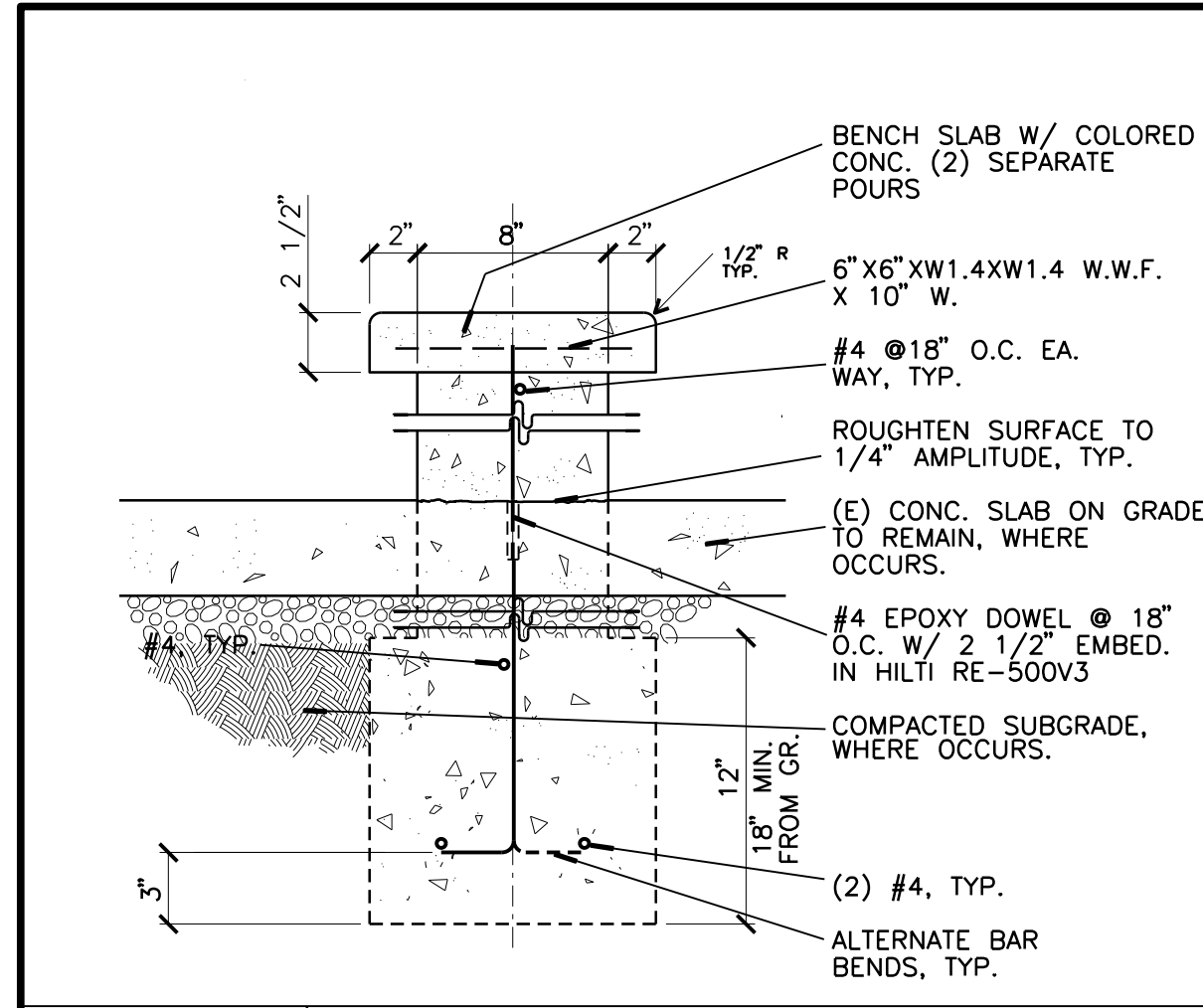
PROJECT TITLE  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**  
REBID AUGUST 2020

REVISIONS		
REV #	DESCRIPTION	DATE

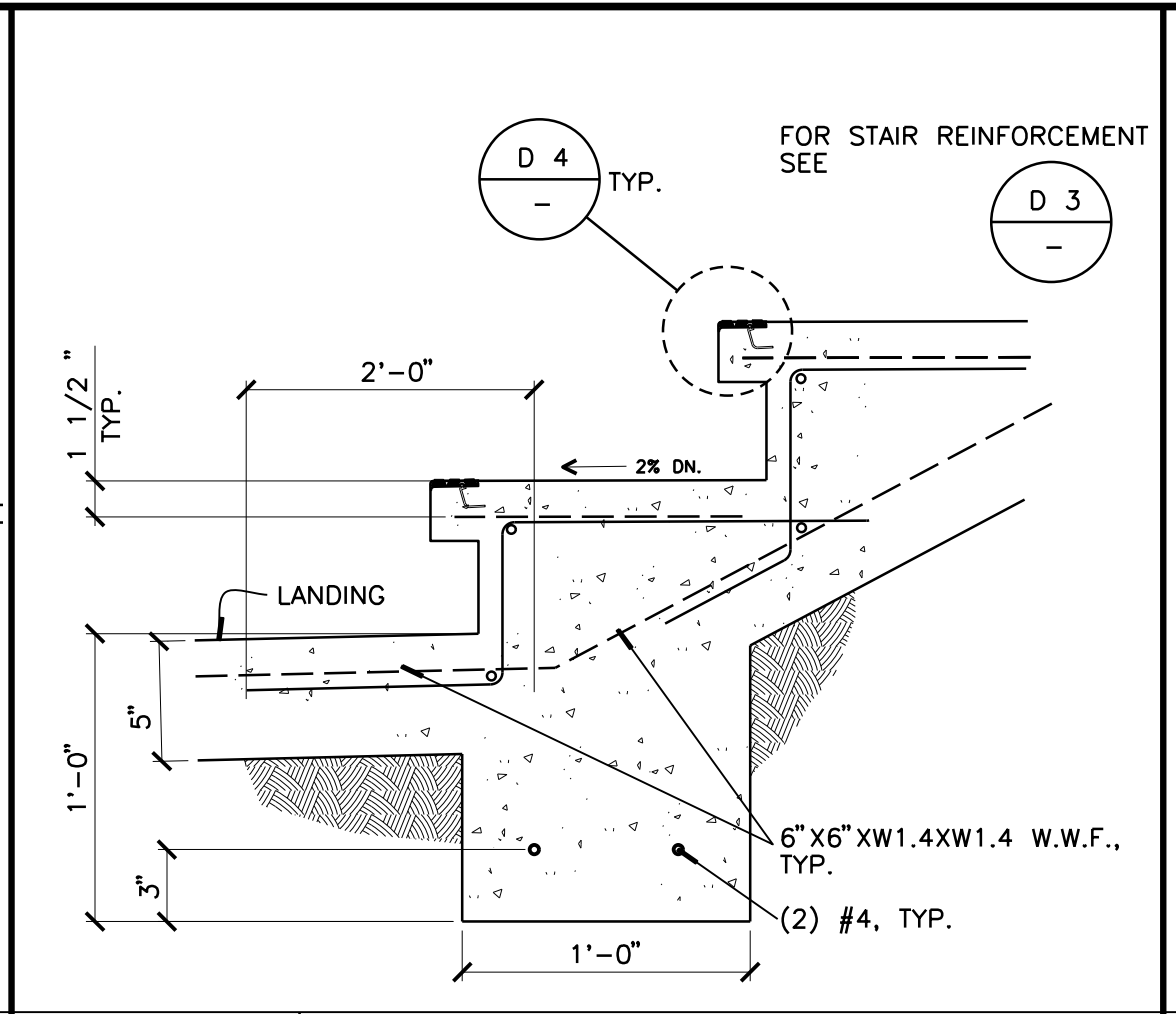
Consultants Data:  
Project Title  
UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL

UCR project manager <b>SCOTT DONNEL</b>	
Scale AS NOTED	sd approval
Drawn by J.D.	jd approval
Checked by S.C.	sc approval
UCR project no. 957443	08/28/20
also number	release

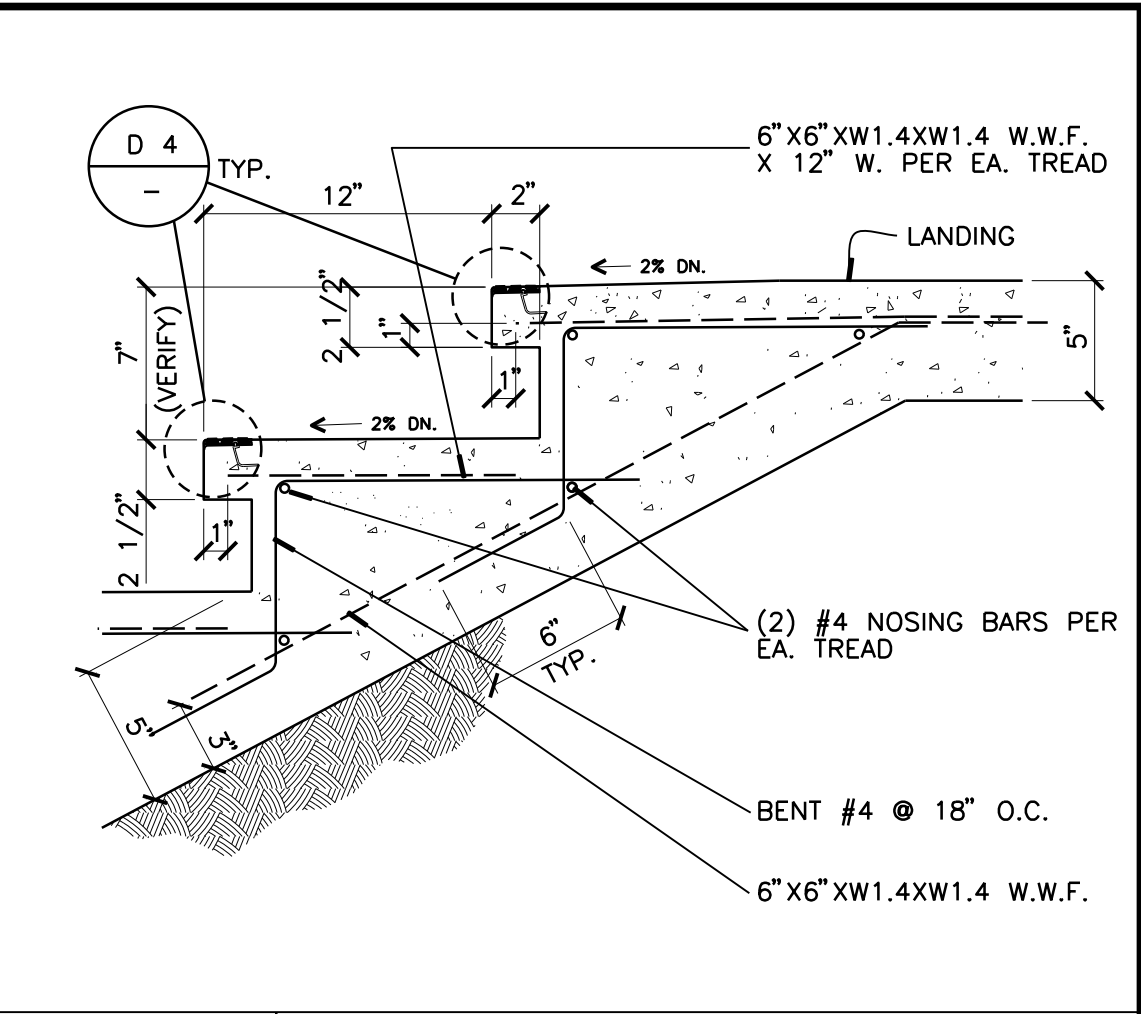
Drawing Name: SECTION & DETAILS  
Sheet No.: A-017 OF



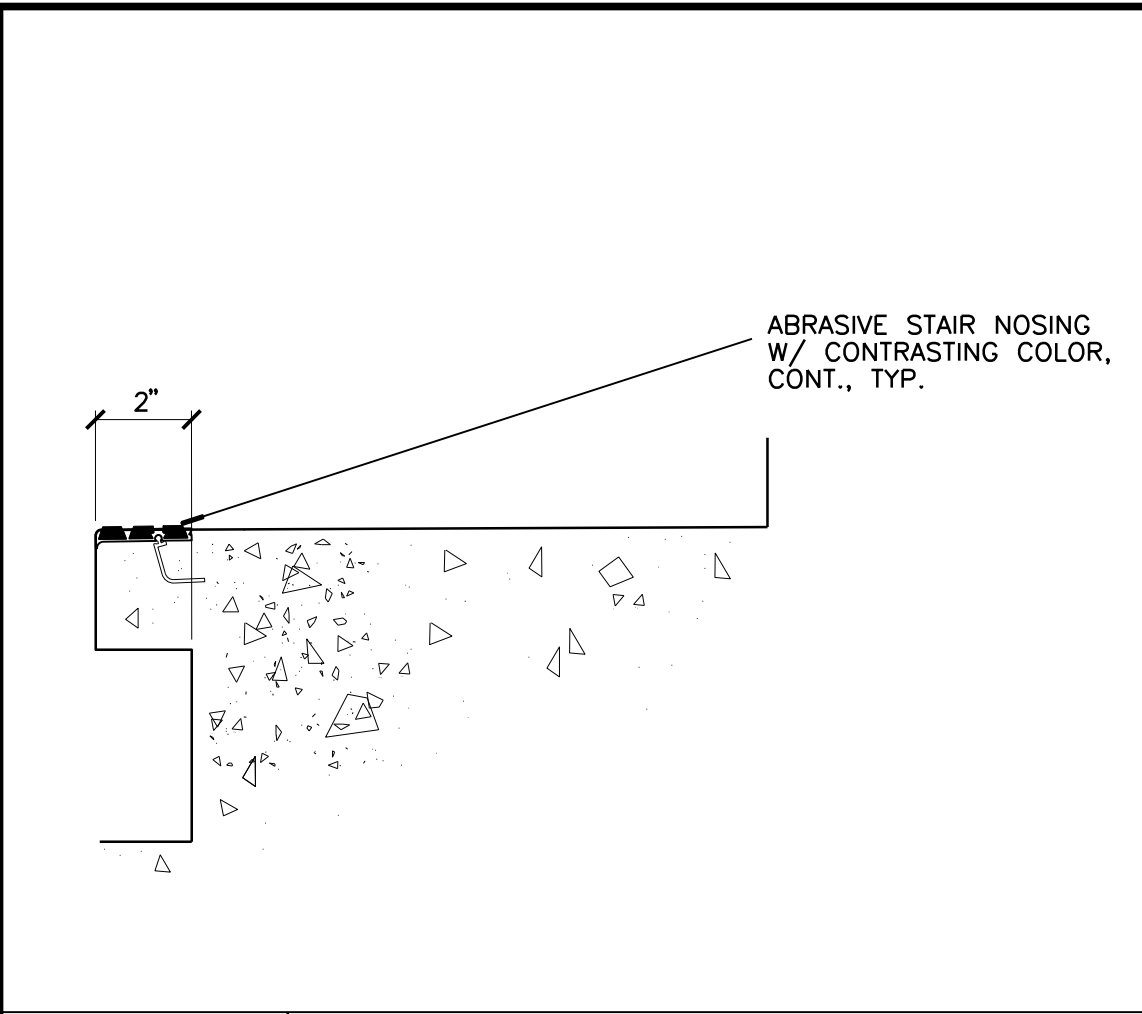
**D1 WALL AT PLANTER BOX**  
1 1/2" = 1'-0"



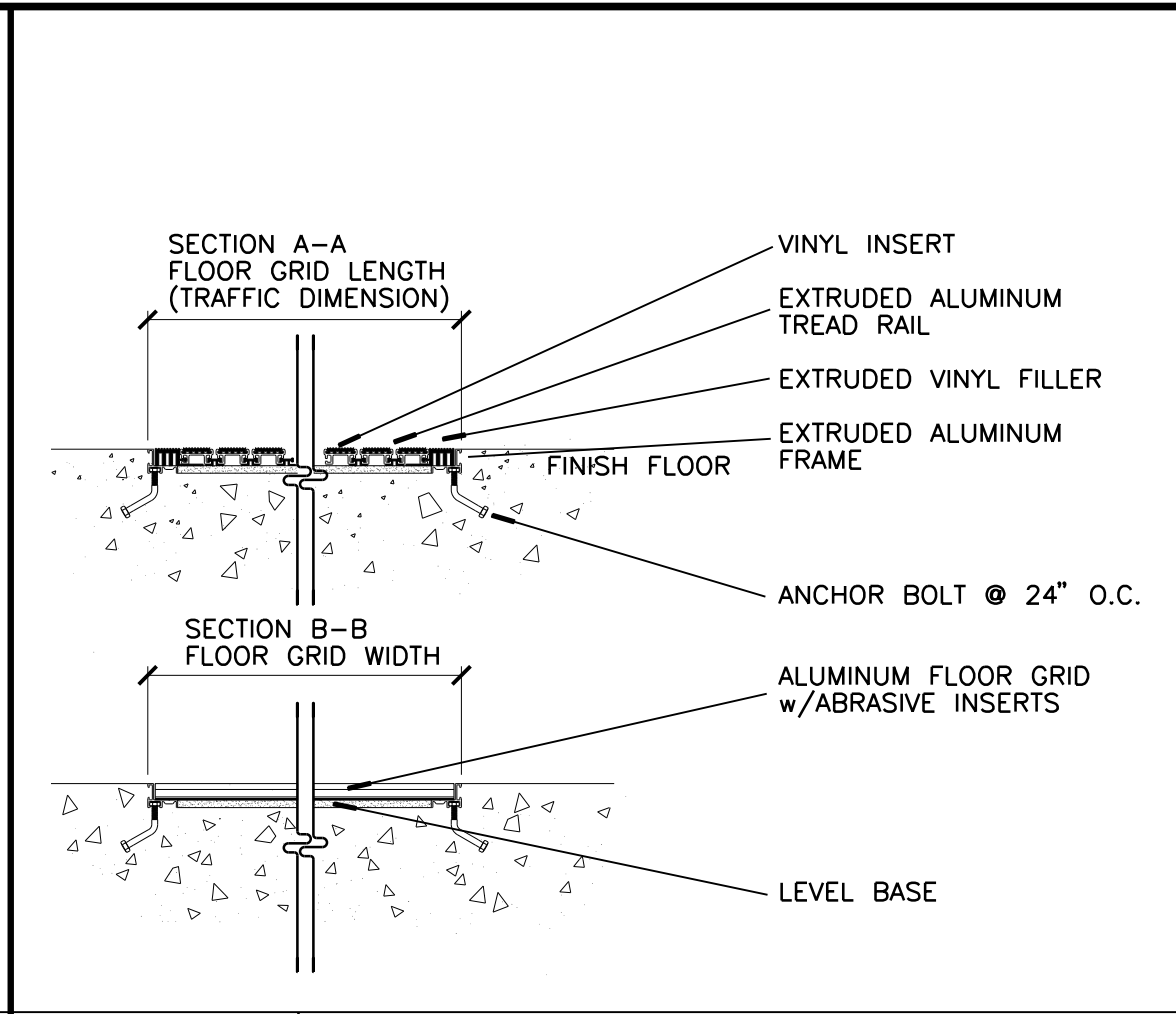
**D2 EXTERIOR STAIR**  
1 1/2" = 1'-0"



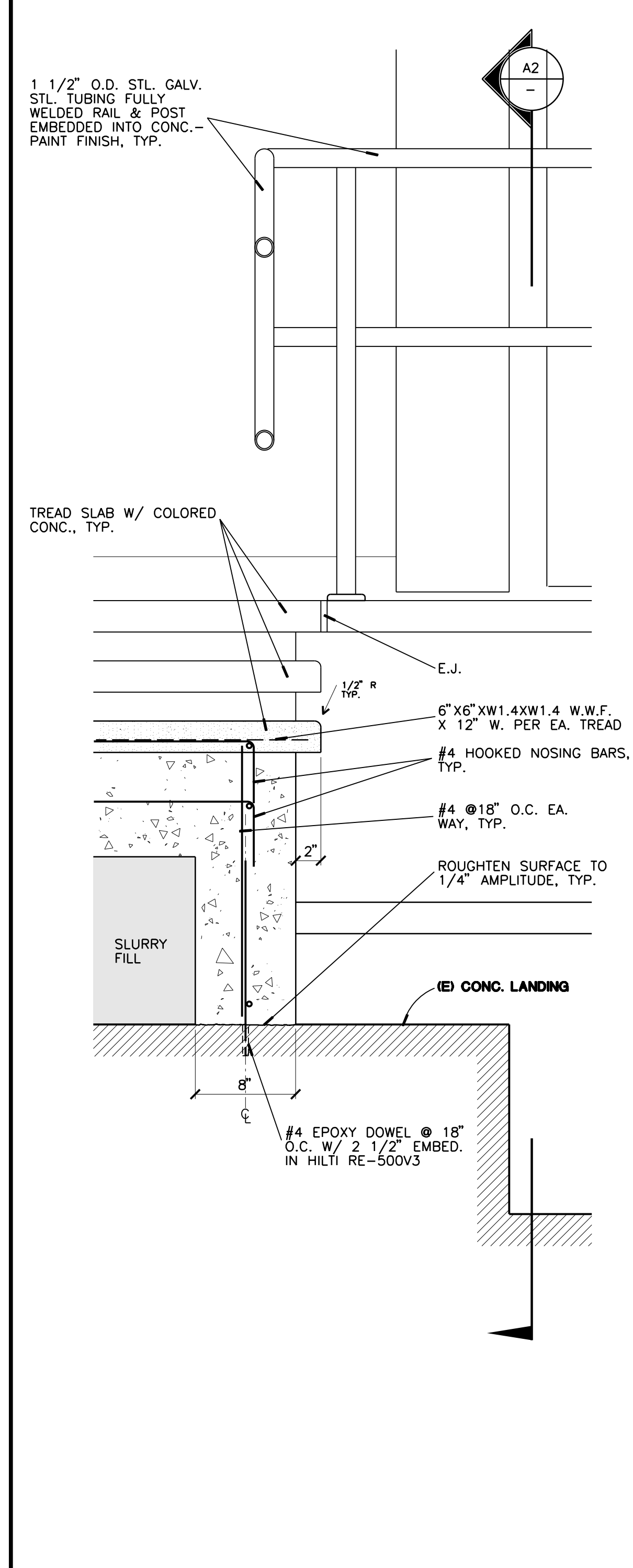
**D3 EXTERIOR STAIR**  
1 1/2" = 1'-0"



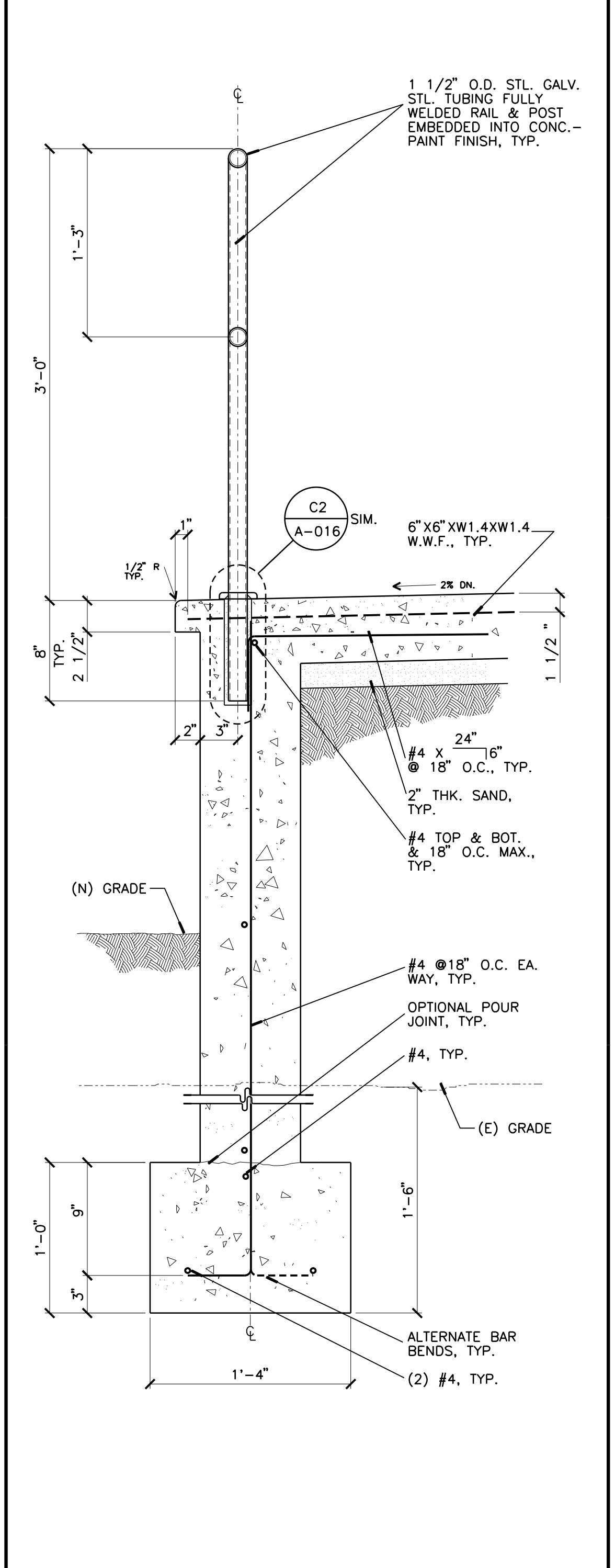
**D4 STAIR NOSING - TYP.**  
1 1/2" = 1'-0"



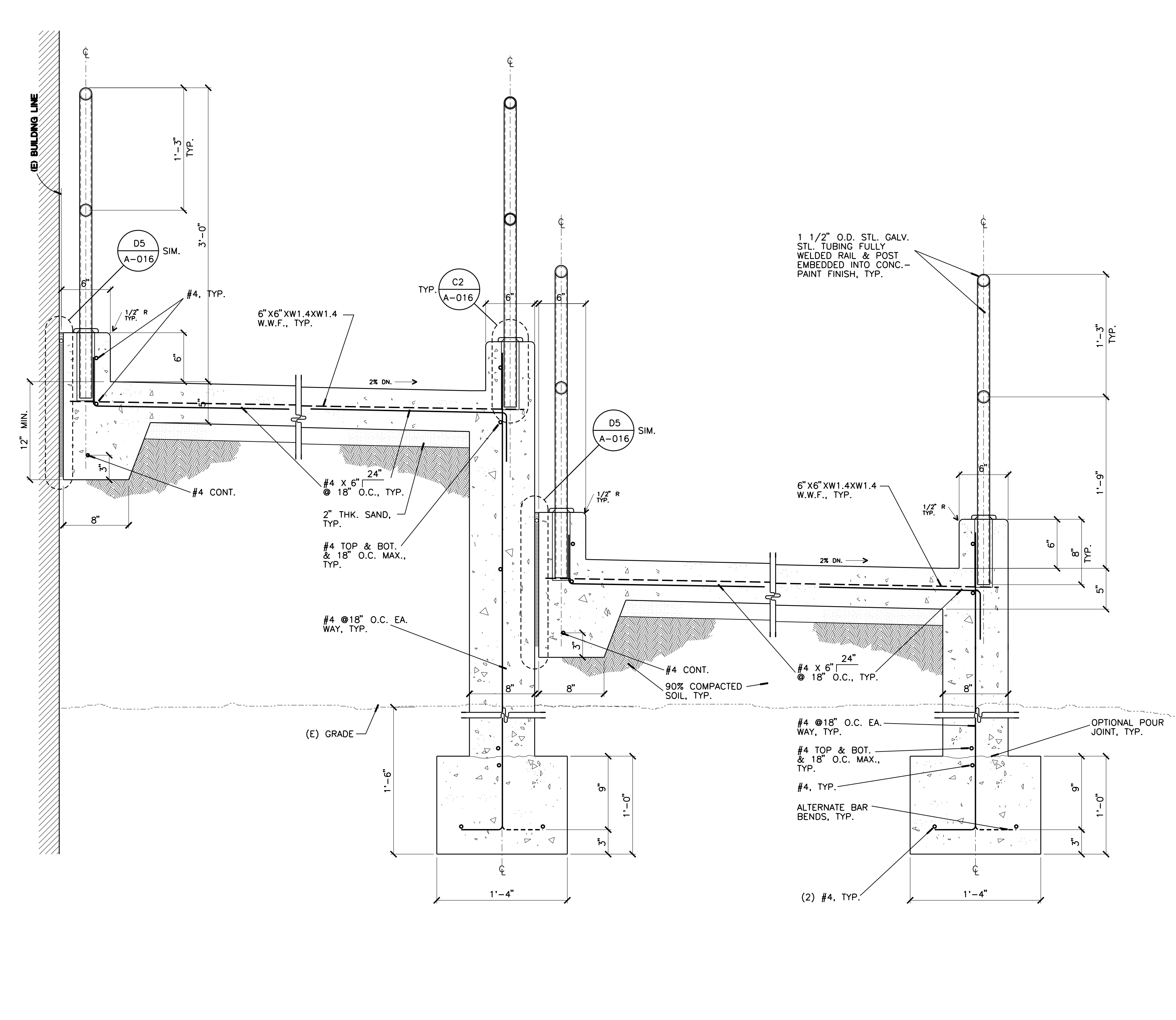
**D5 RECESSED FLOOR MAT**  
1 1/2" = 1'-0"



**A1 SECTION OF MAIN STAIRS**  
1 1/2" = 1'-0"



**A2 SECTION OF TOP LANDING AT RAMP**  
1 1/2" = 1'-0"



**A3 CROSS SECTION AT RAMP**  
1 1/2" = 1'-0"

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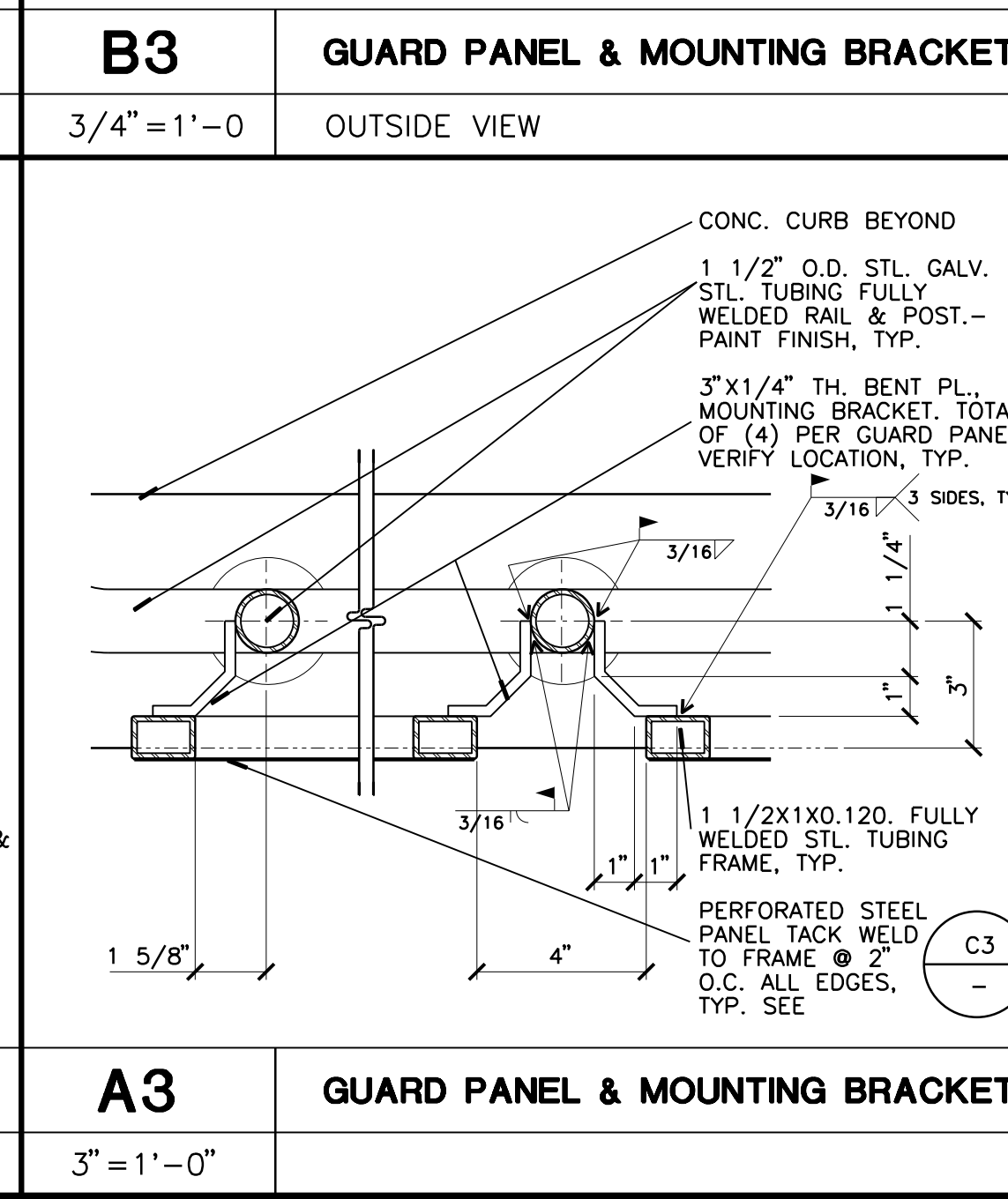
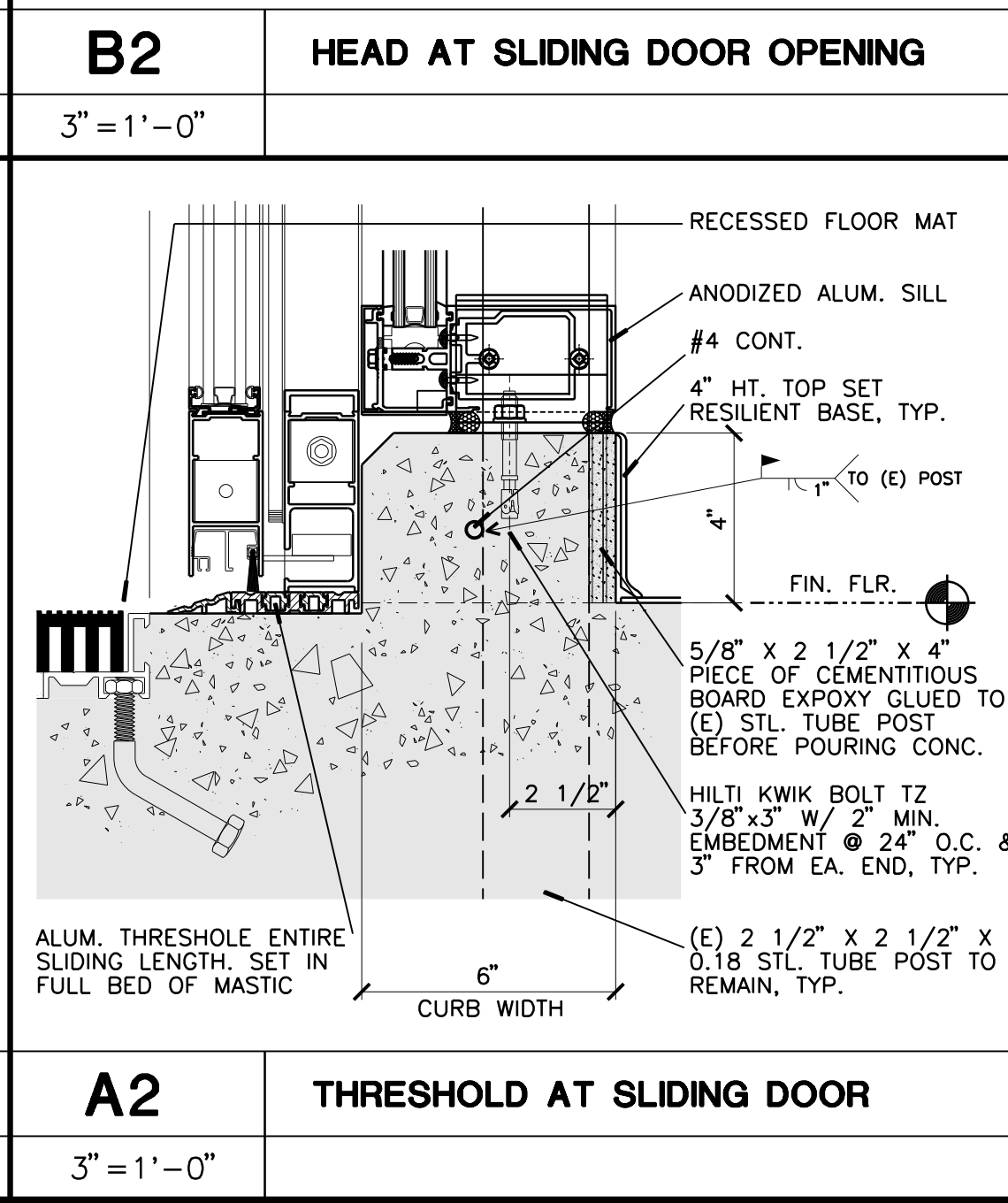
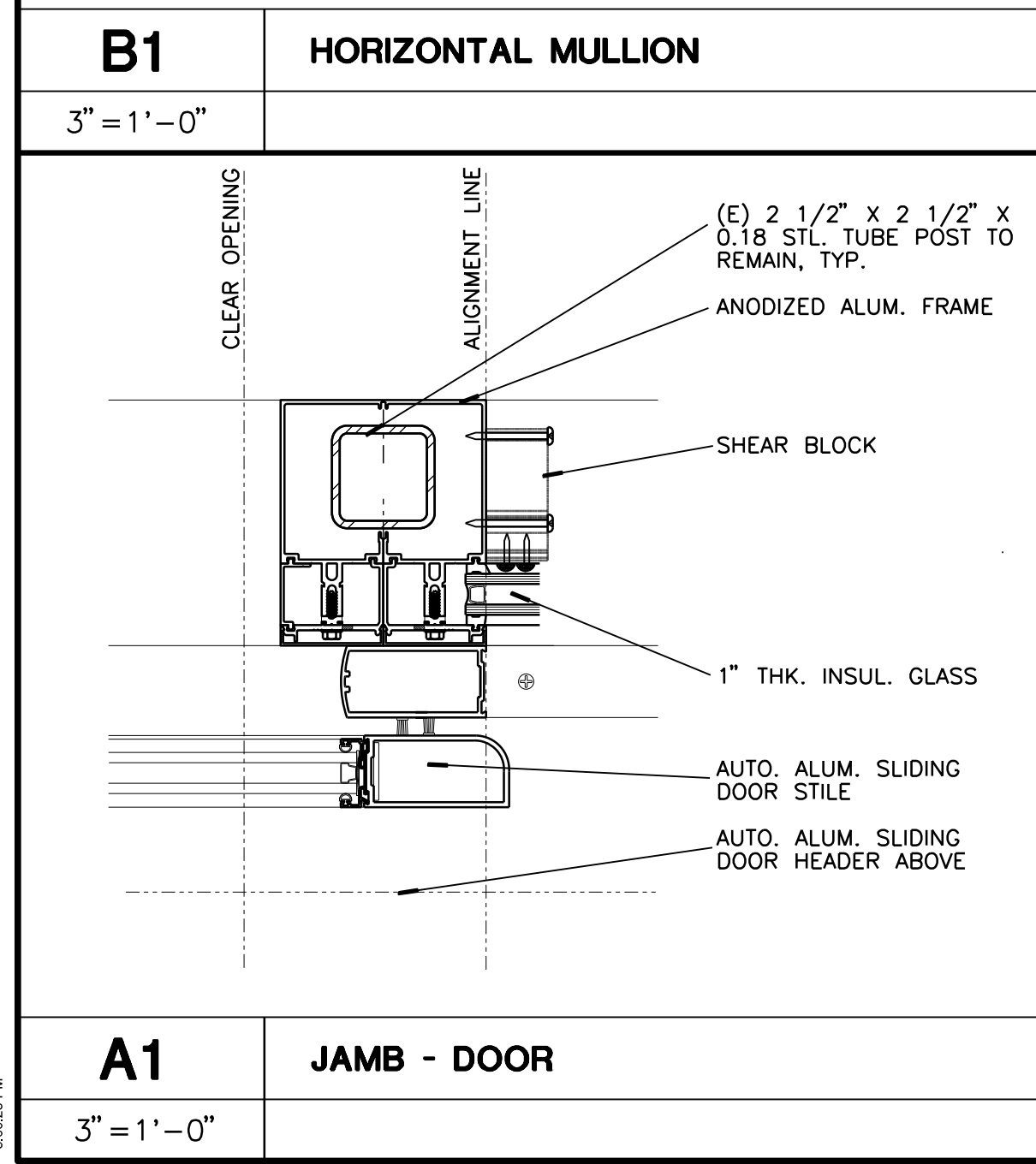
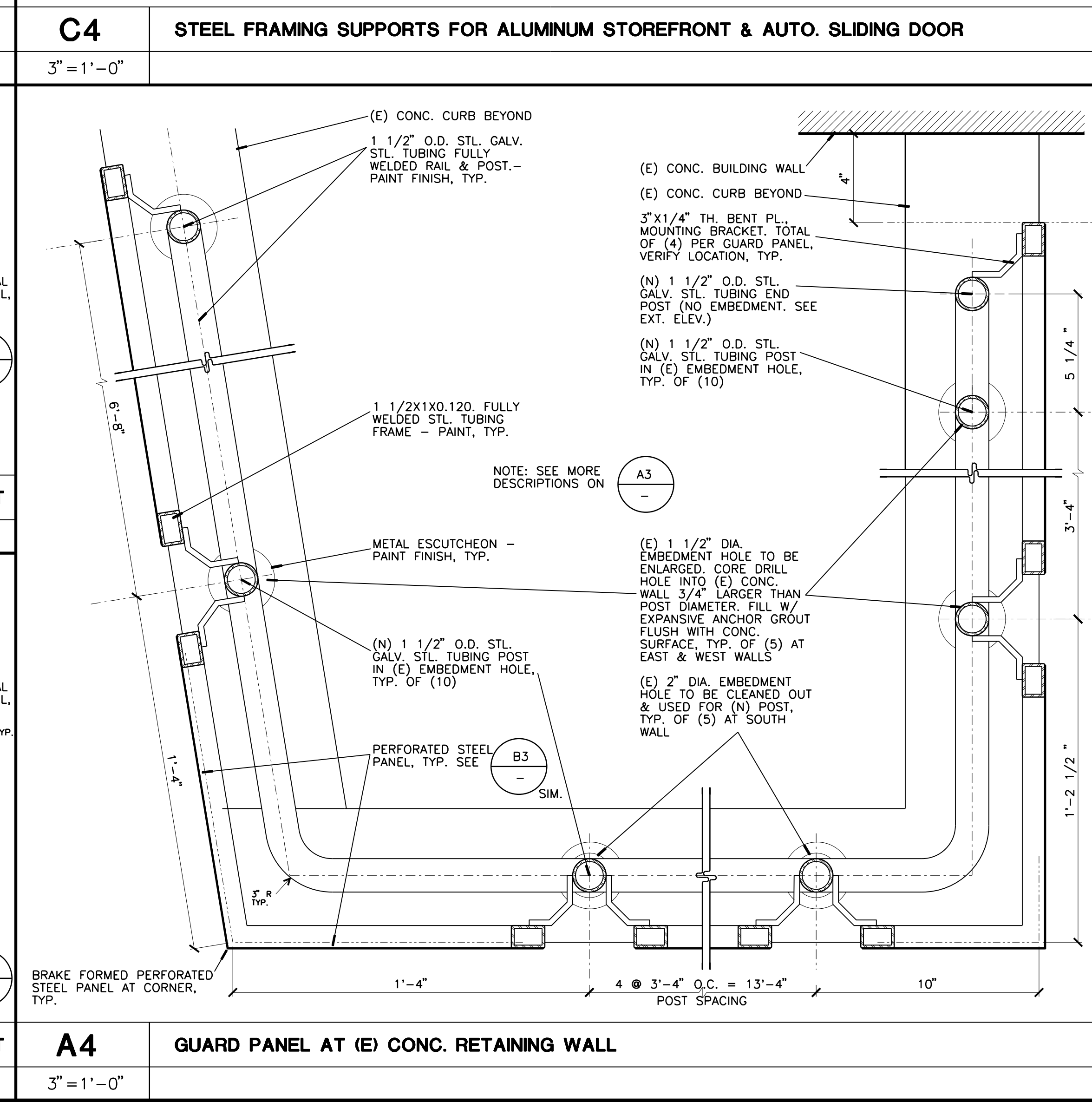
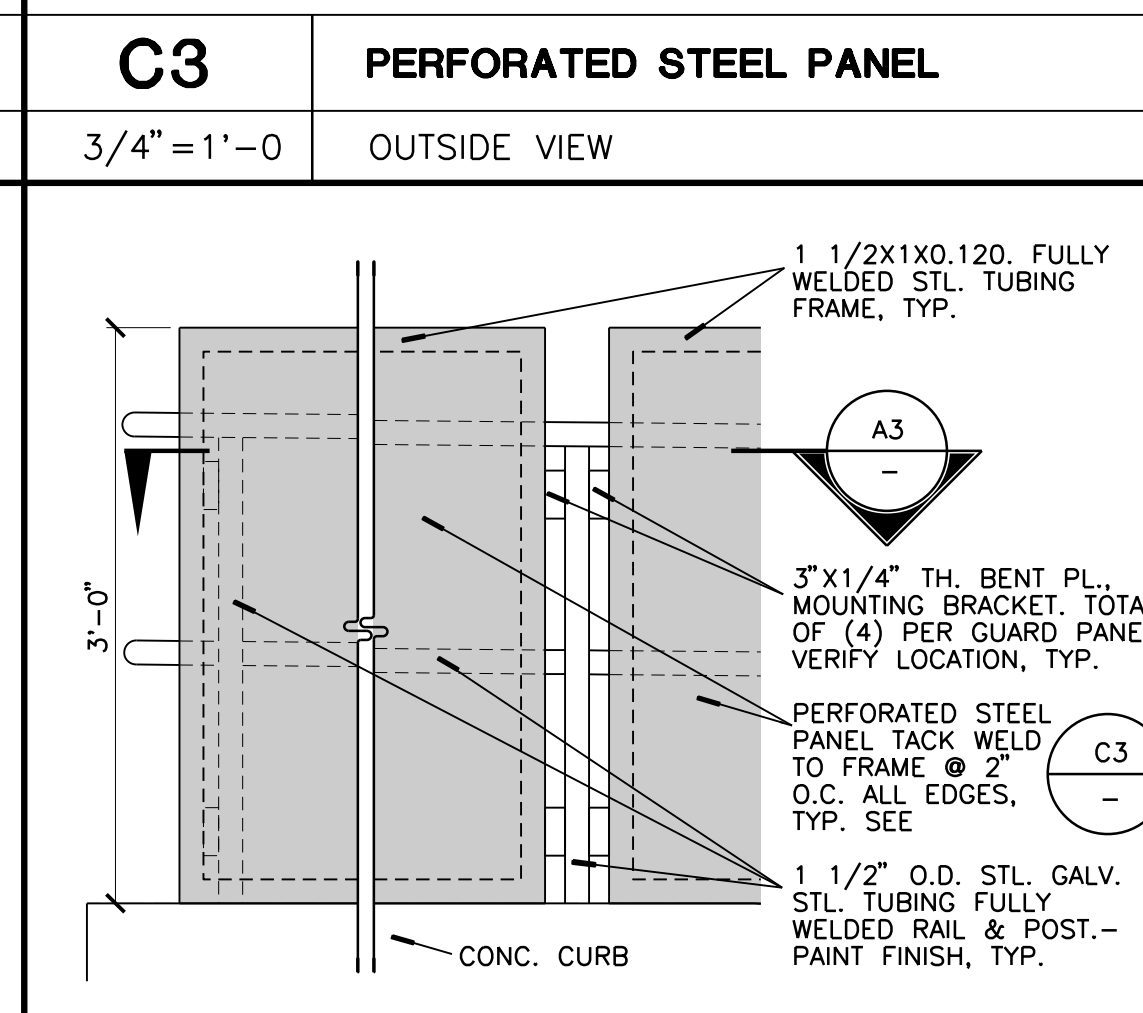
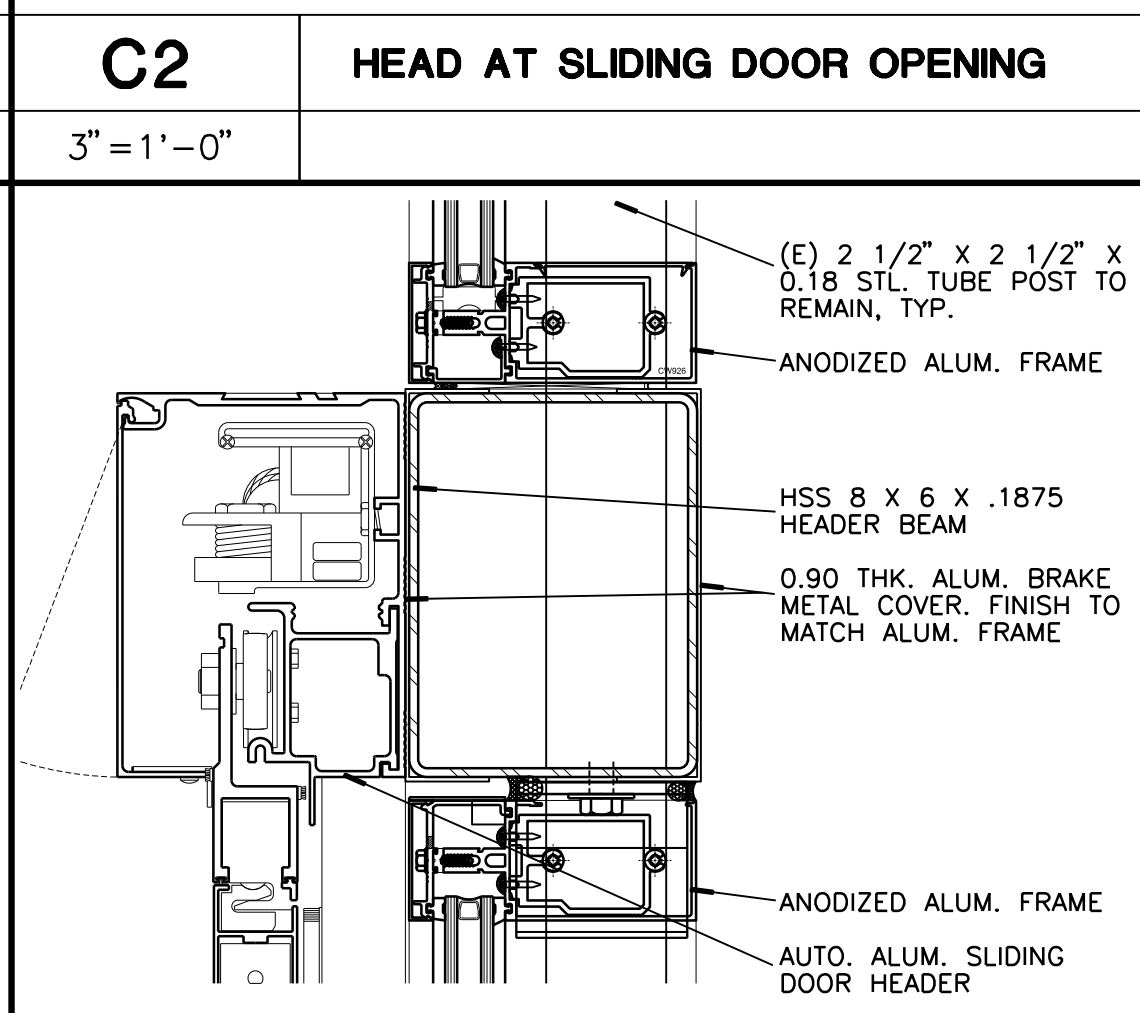
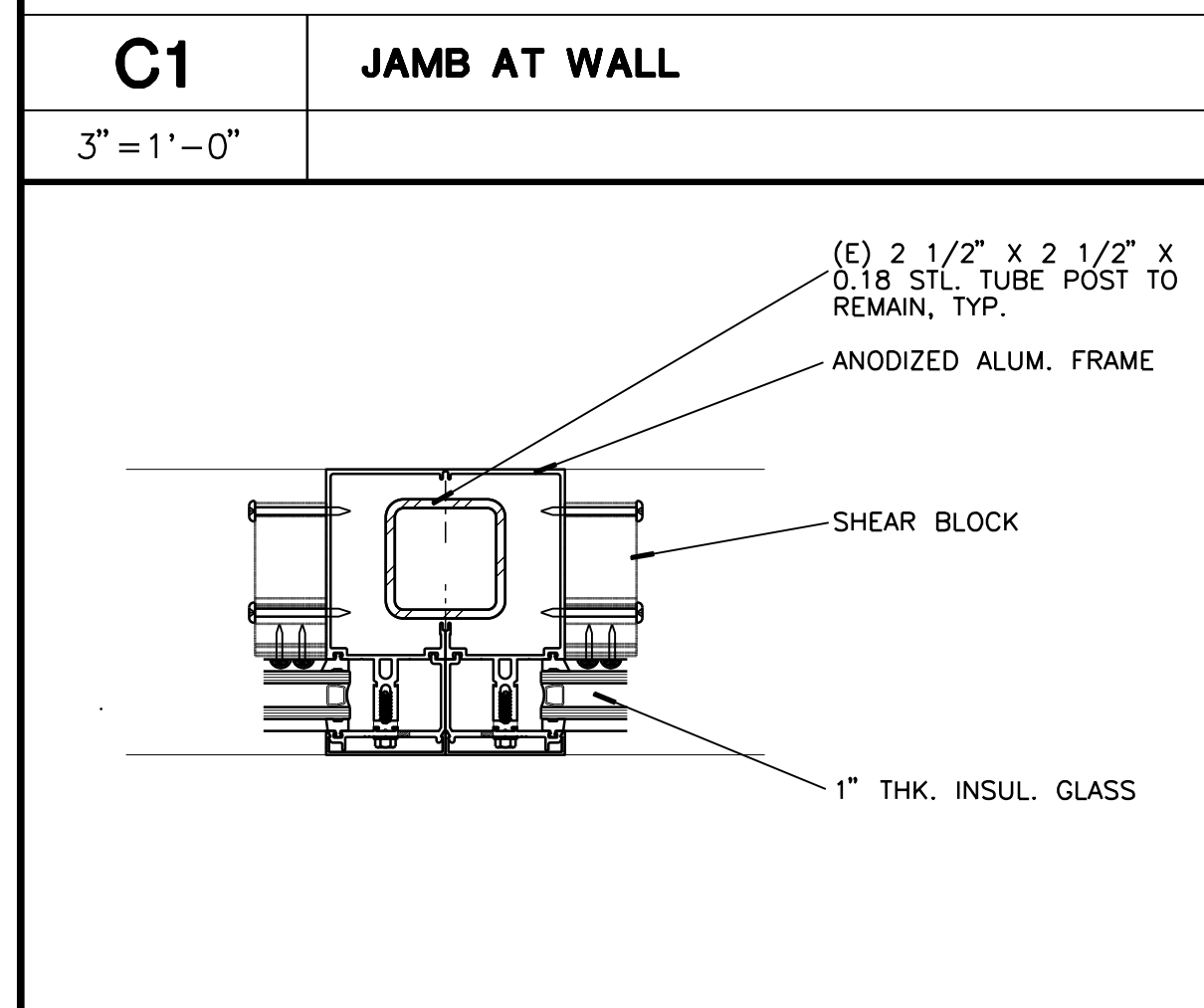
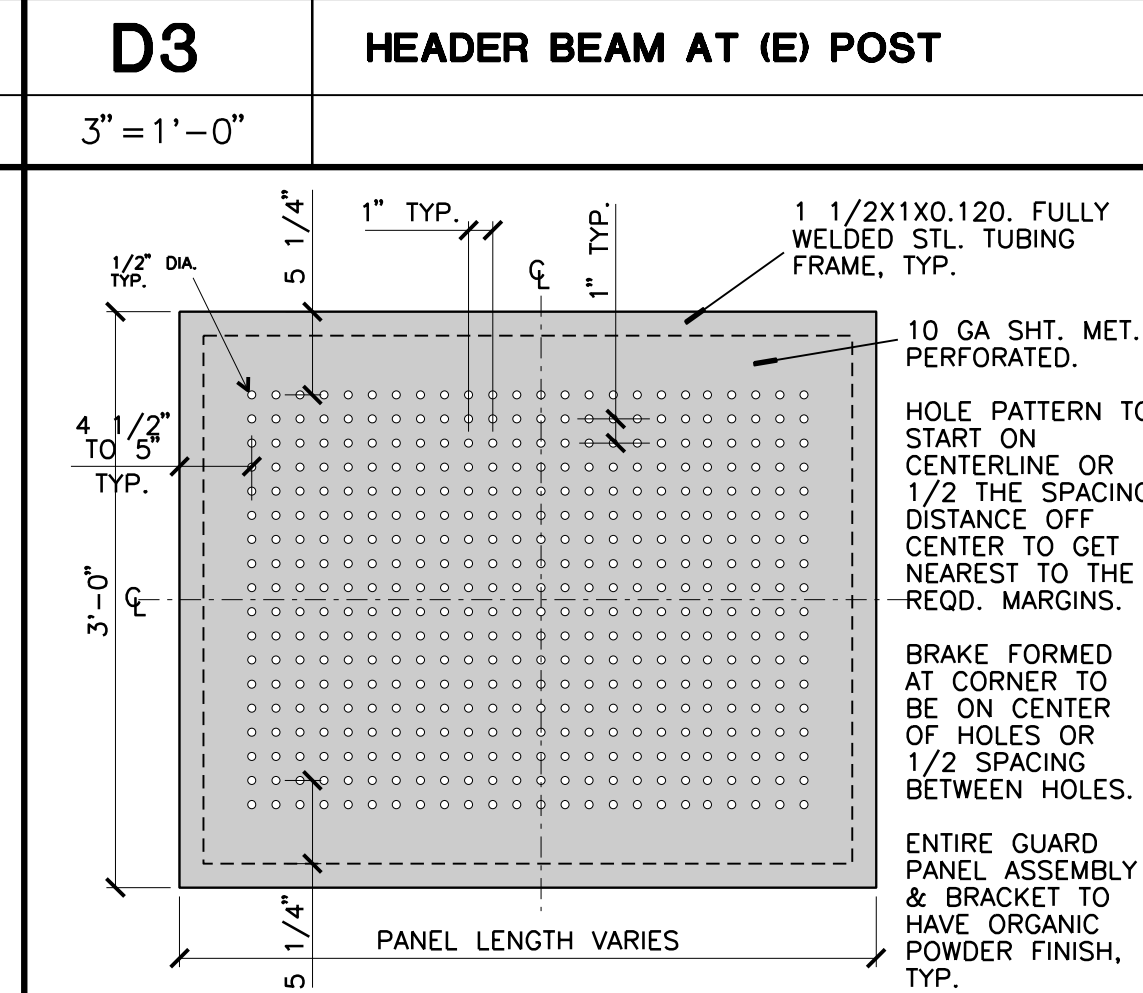
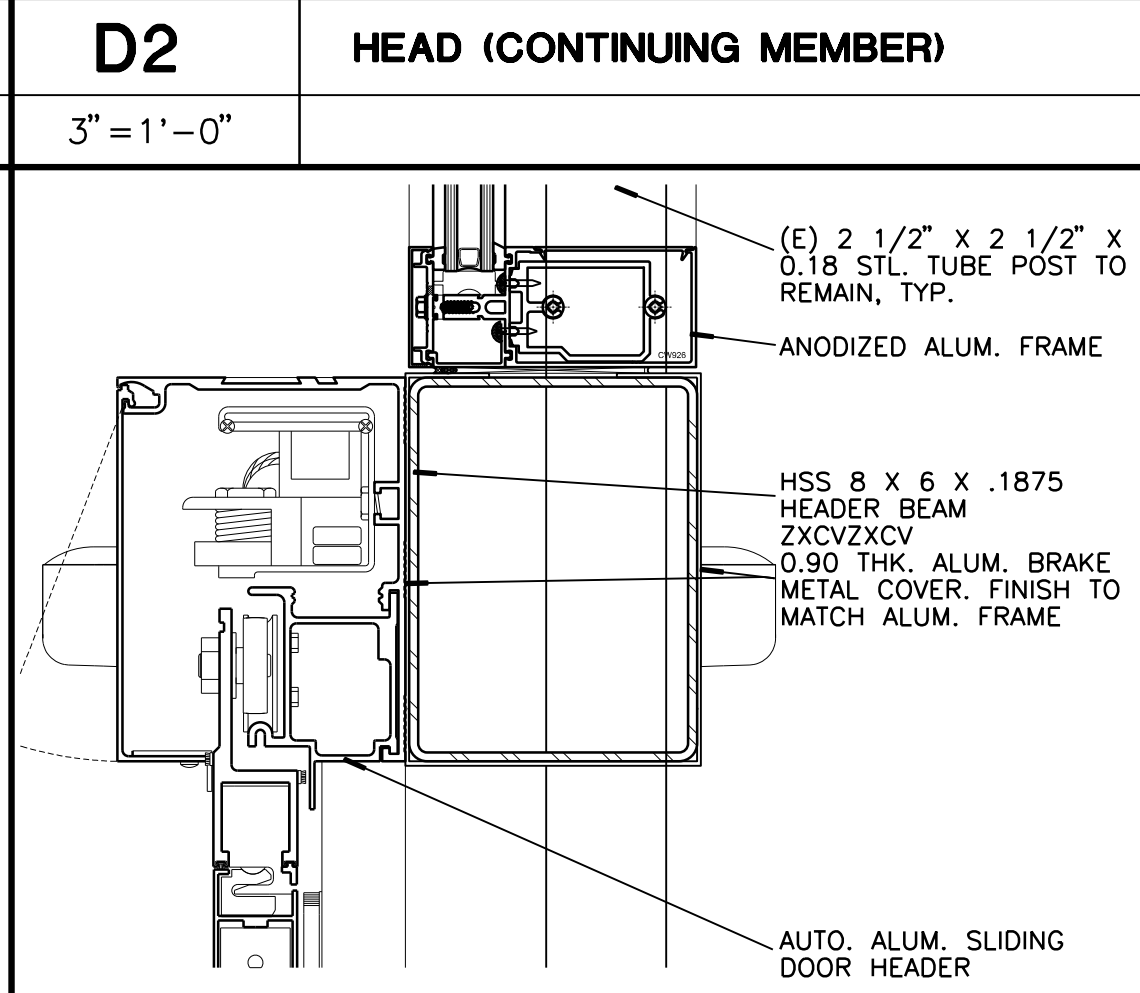
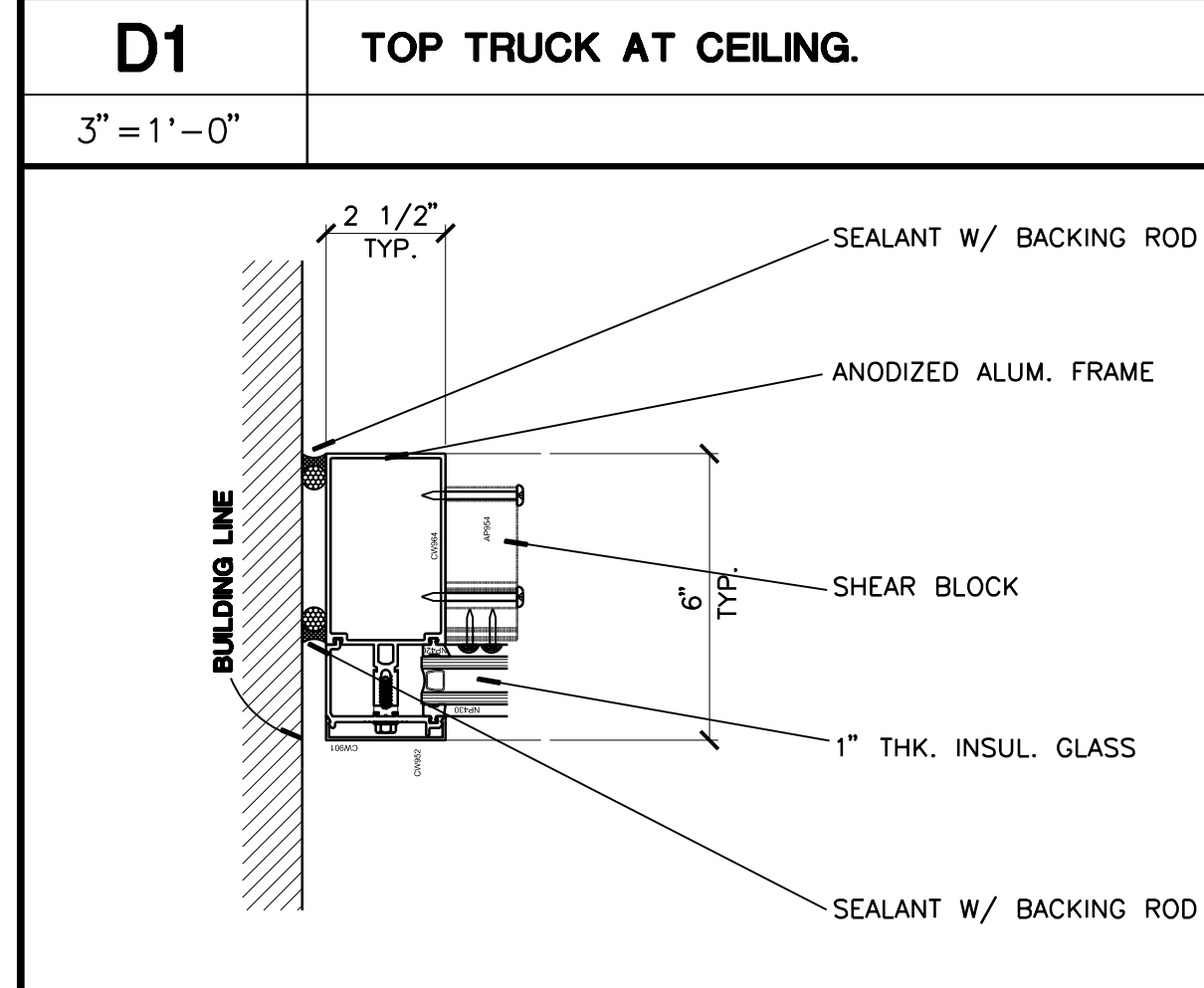
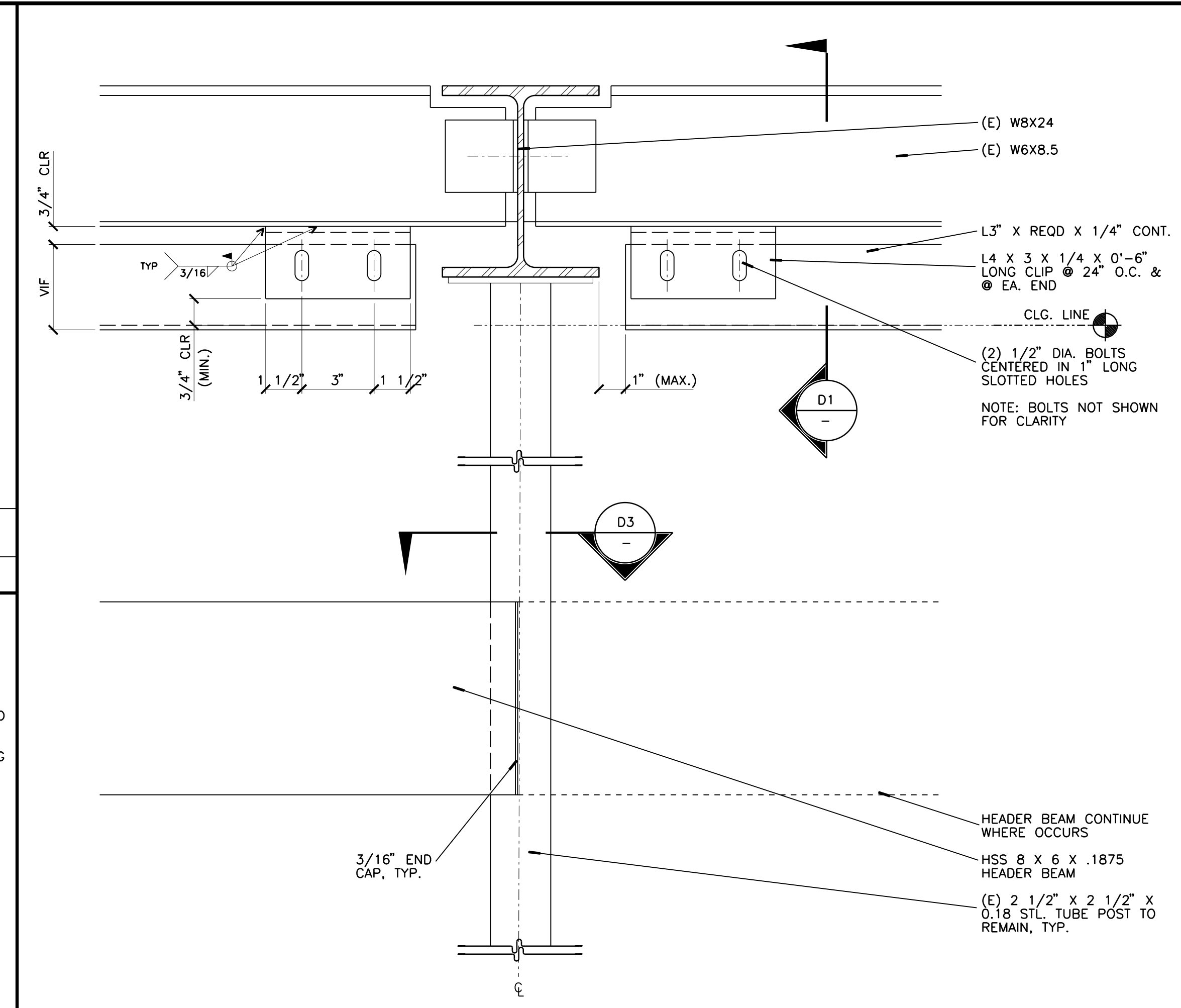
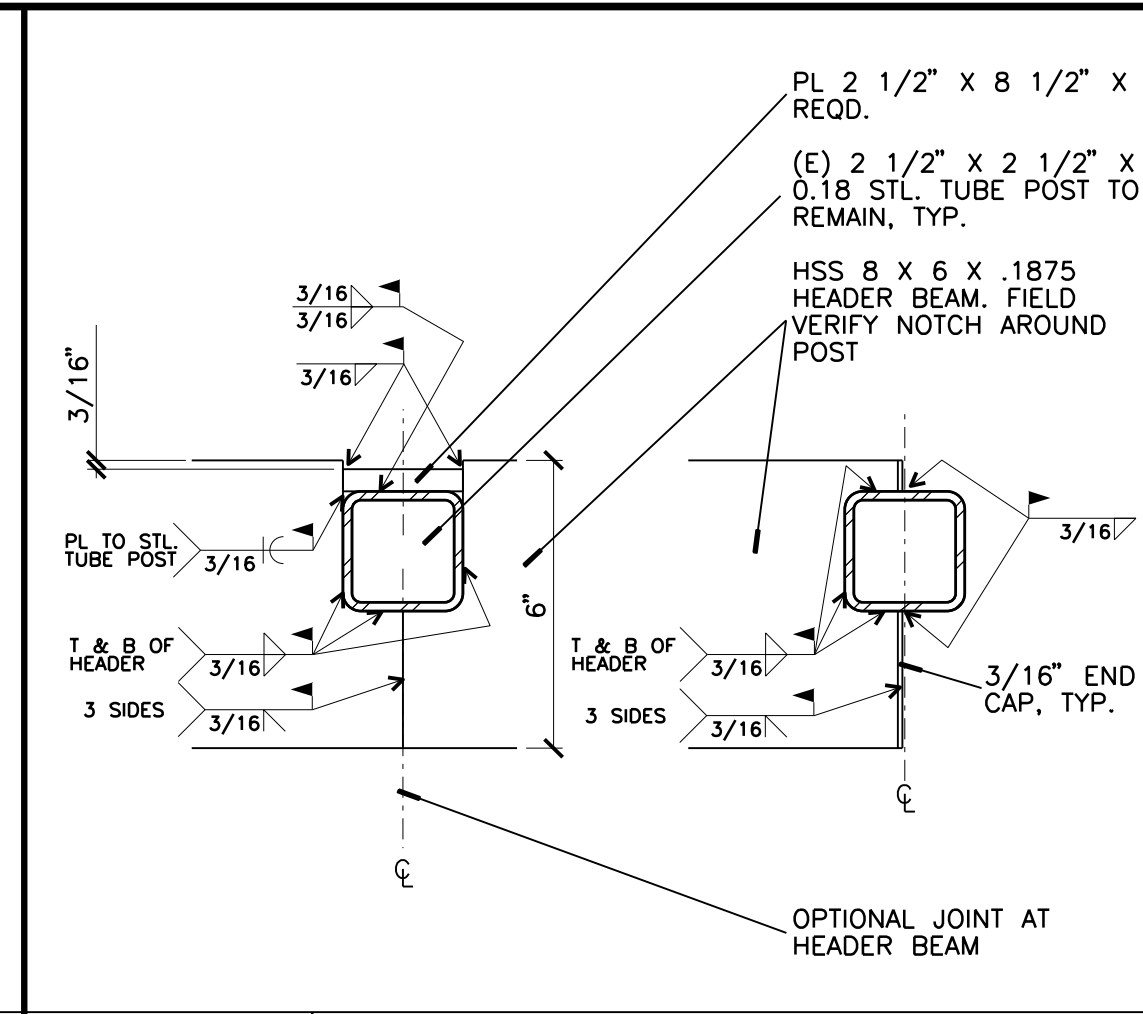
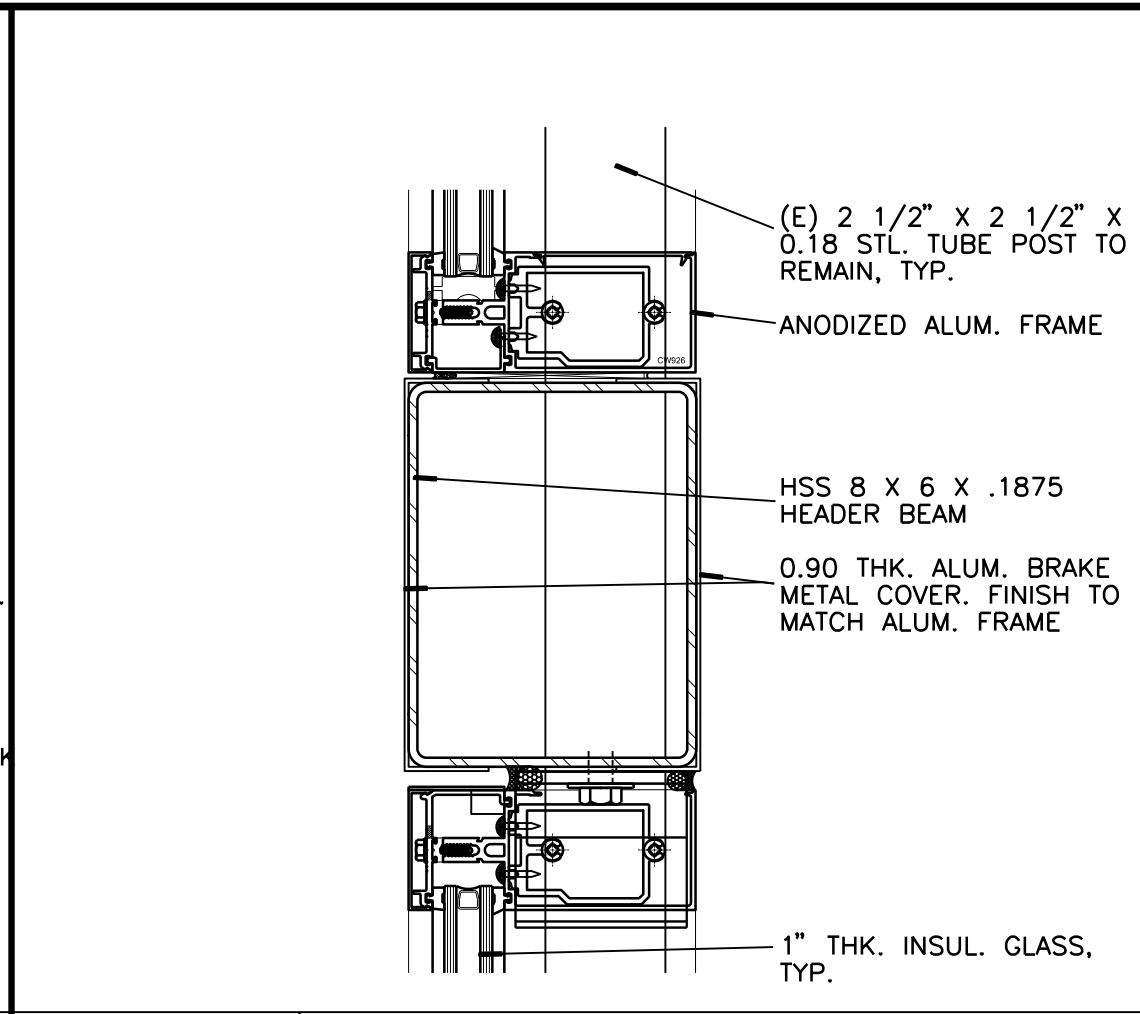
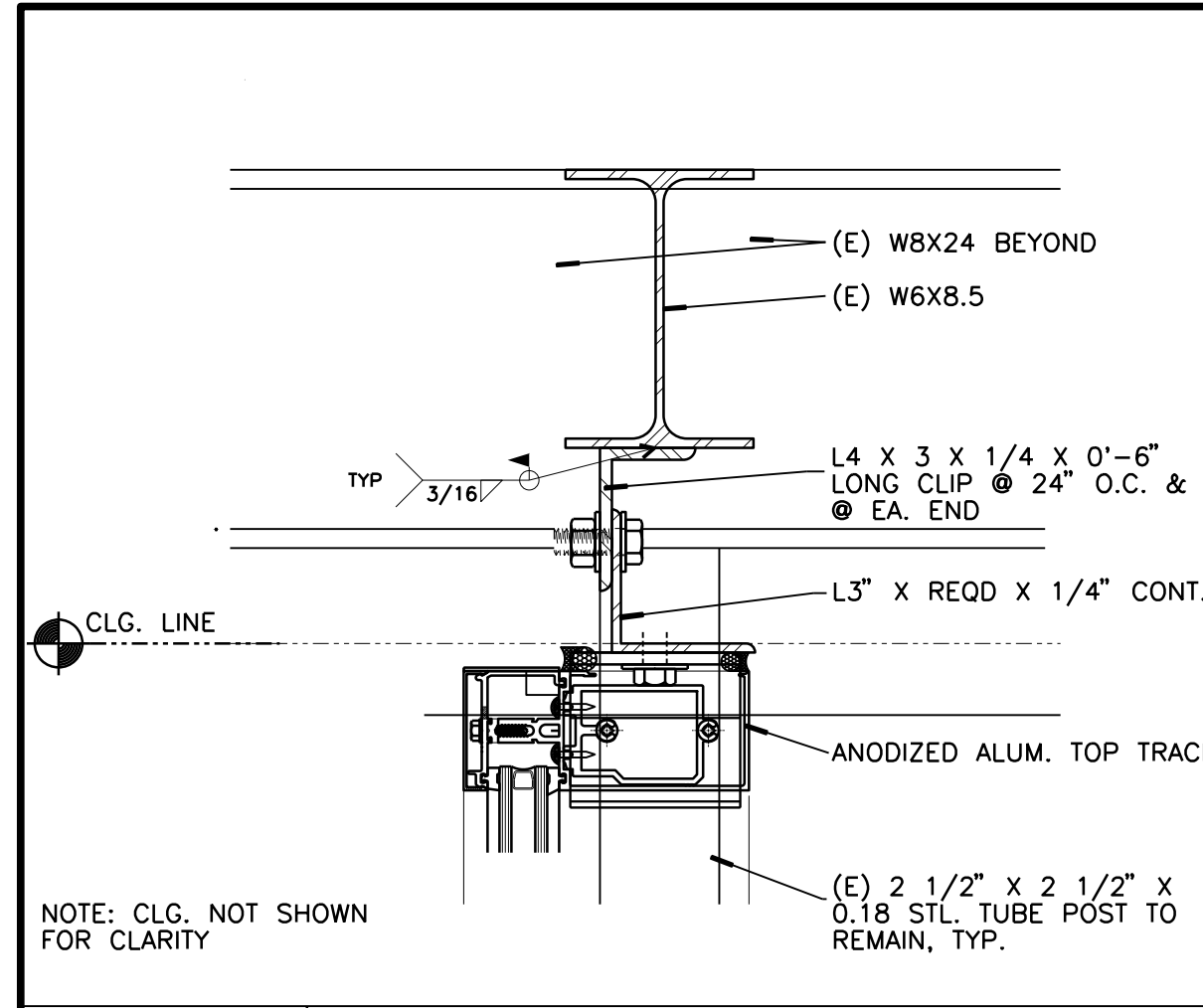


REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:

Project Title	UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL	
UCR project manager	SCOTT DONNEL	
Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
UCR project no.	957443	08/28/20
iso number		release

Drawing Name	SECTION & DETAILS	Sheet No.	A-018
			OF



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Architect's Data:  
 LICENSED ARCHITECT  
 SHAWN GRINDGARDSON  
 No. C15106  
 State of California  
 Architect's Stamp  
 Consultants Stamp

PROJECT TITLE  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**  
 REBID AUGUST 2020

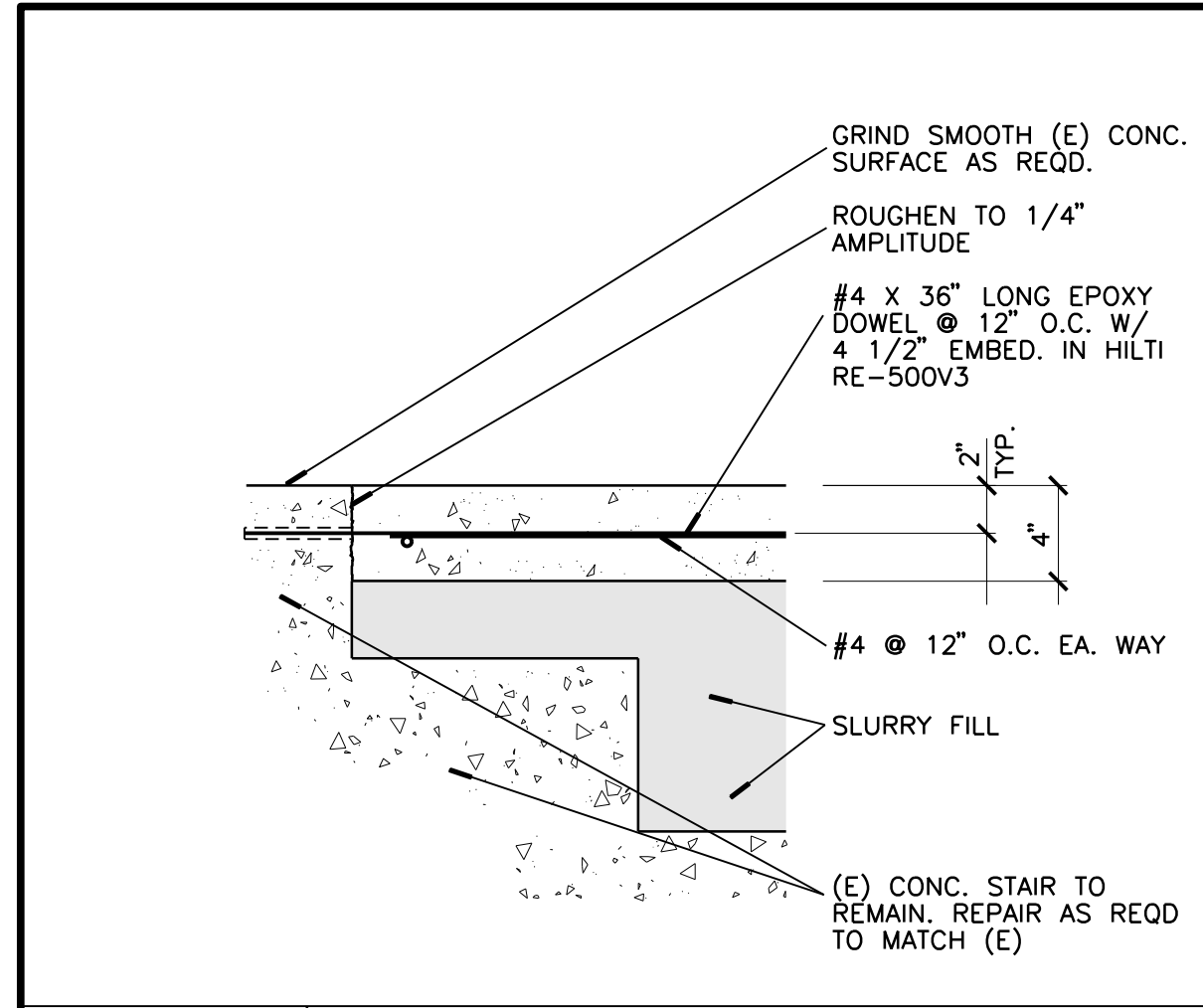
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 UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL

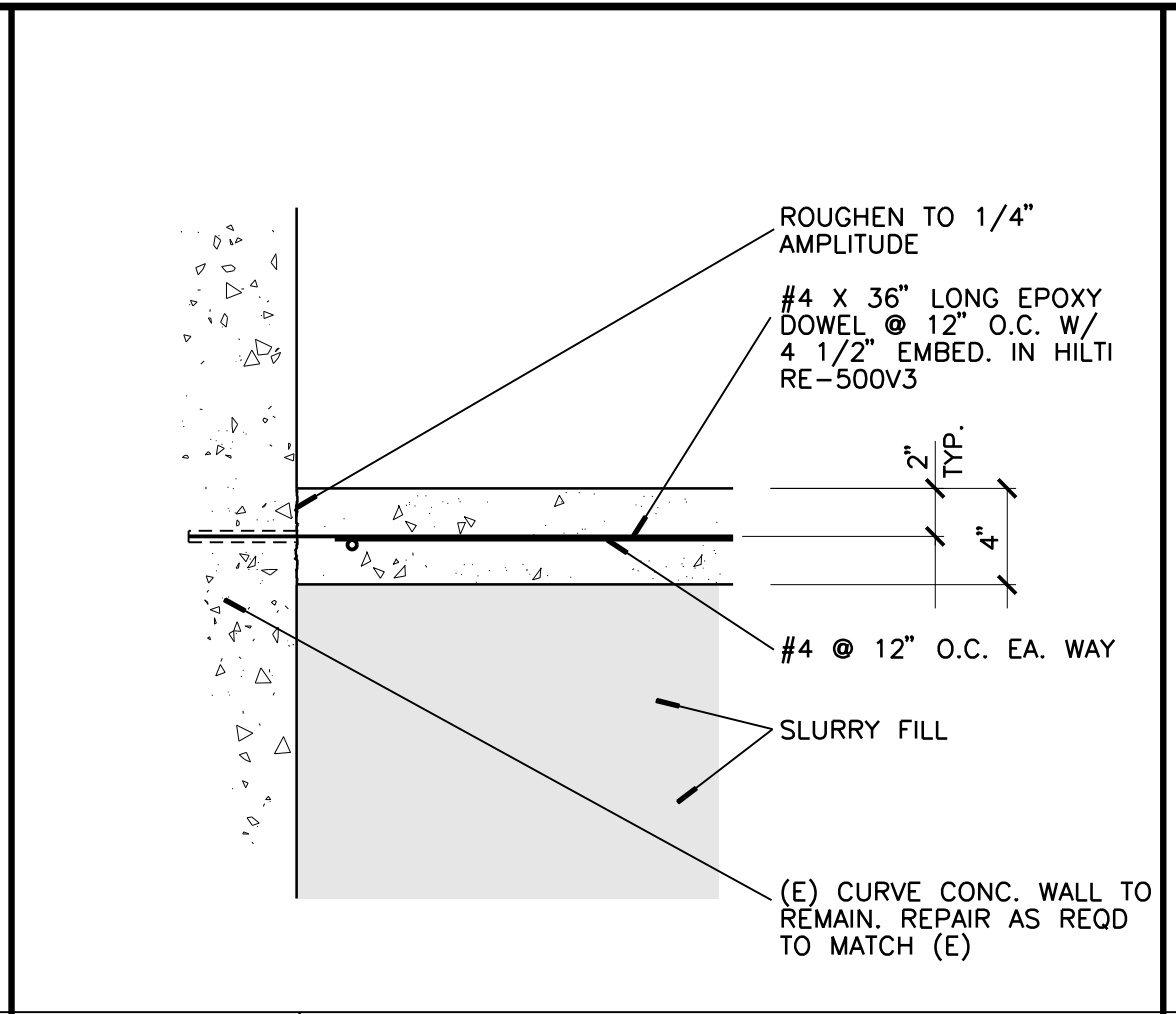
UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	S.C.	cd approval
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iso number		construction release

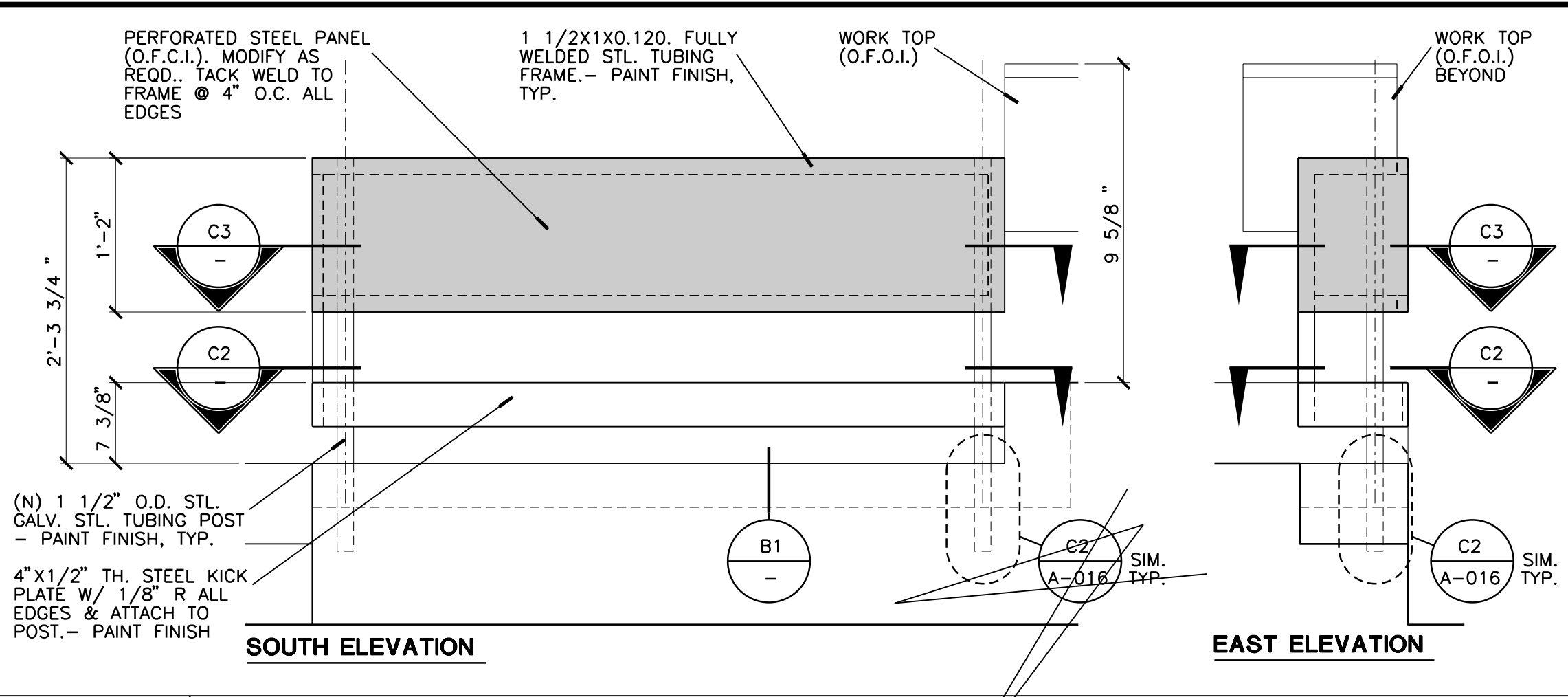
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**DETAILS**  
 Sheet No.  
**A-019**  
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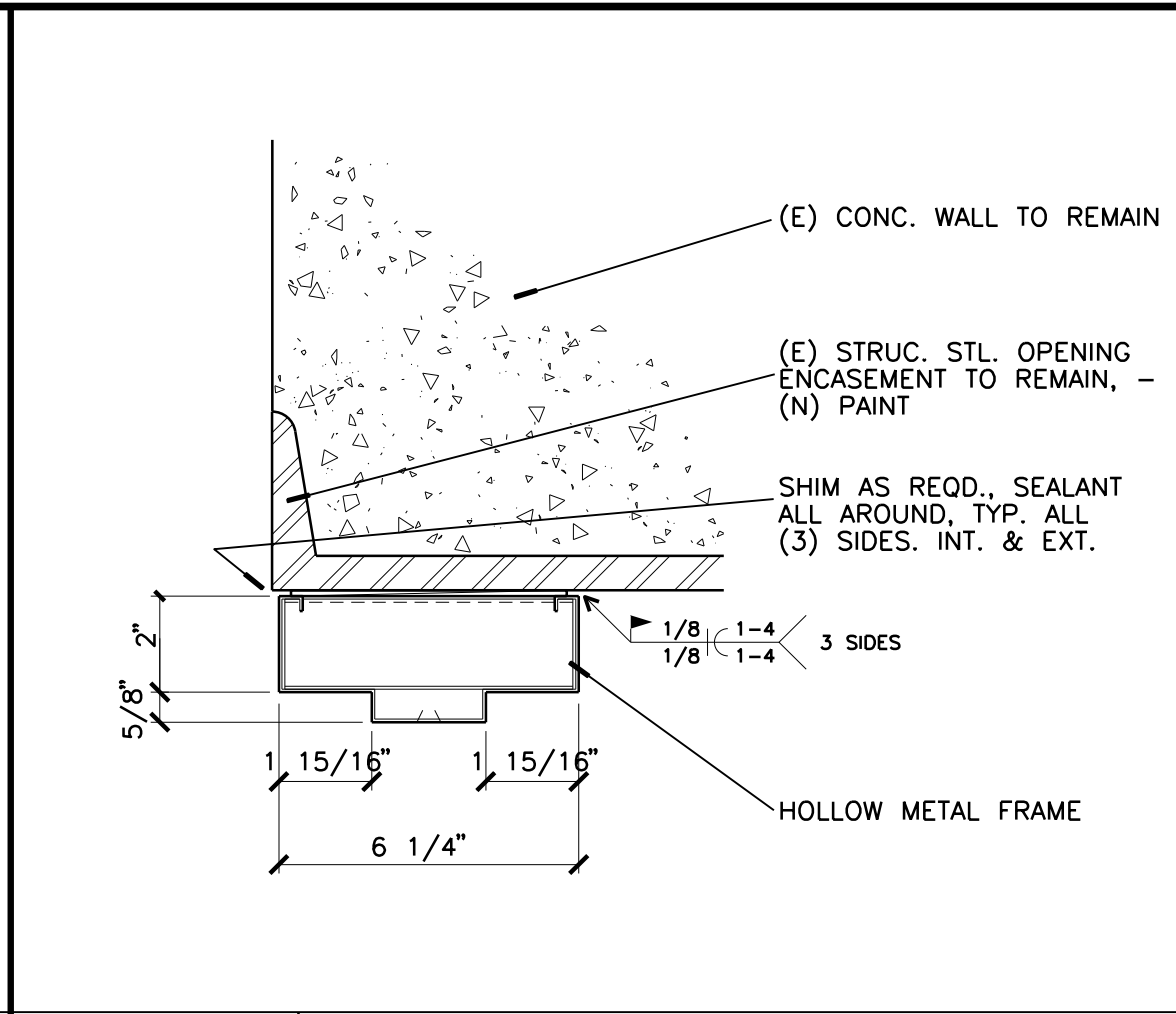
**D1** INTERIOR CONC. SLAB  
 1 1/2" = 1'-0"



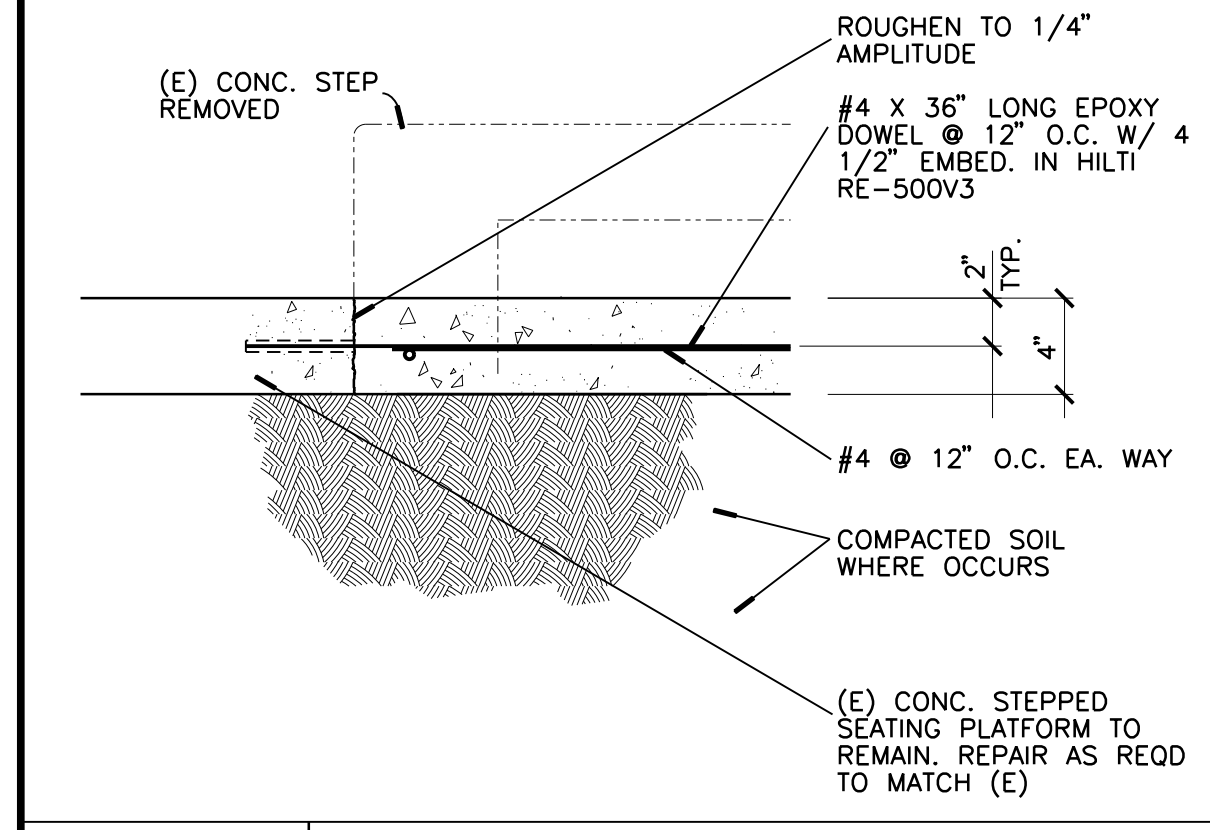
**D2** INTERIOR CONC. SLAB  
 1 1/2" = 1'-0"



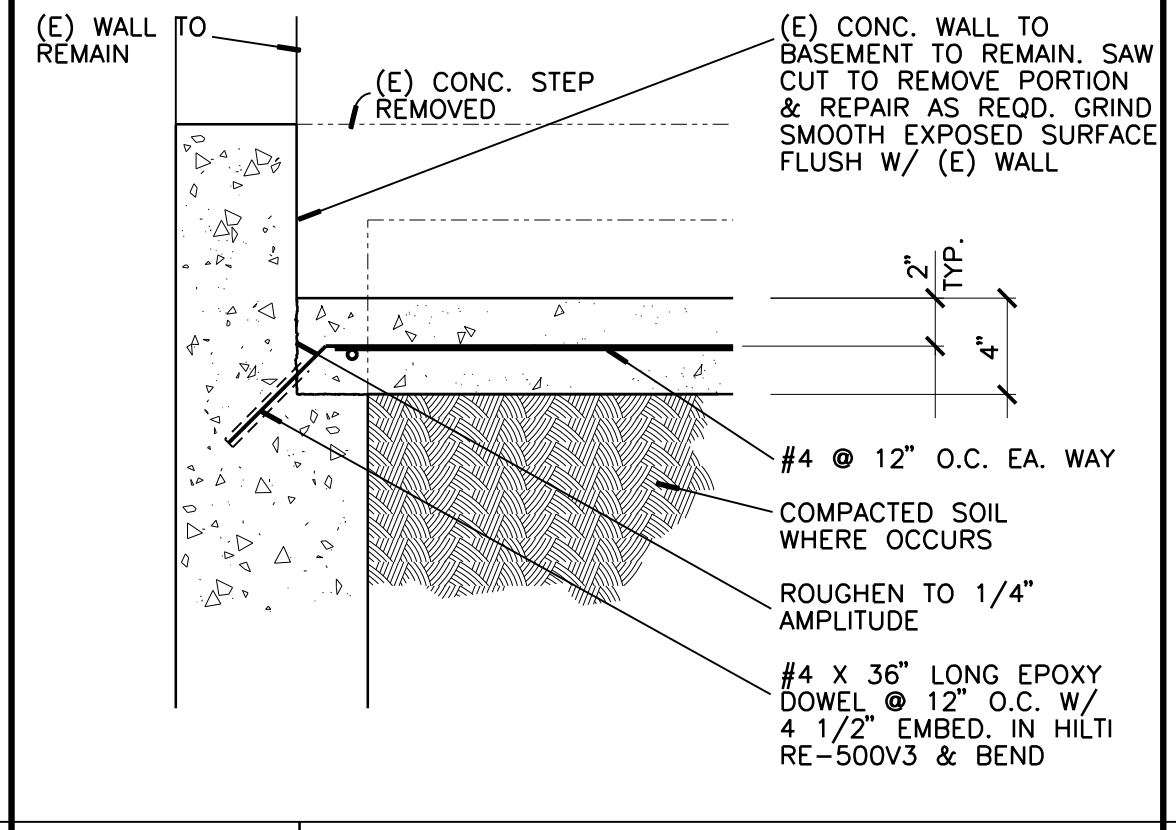
**D3** ACCESSIBLE SPACE RAILING & MODESTY PANEL  
 3/4" = 1'-0" FRONT & SIDE VIEW



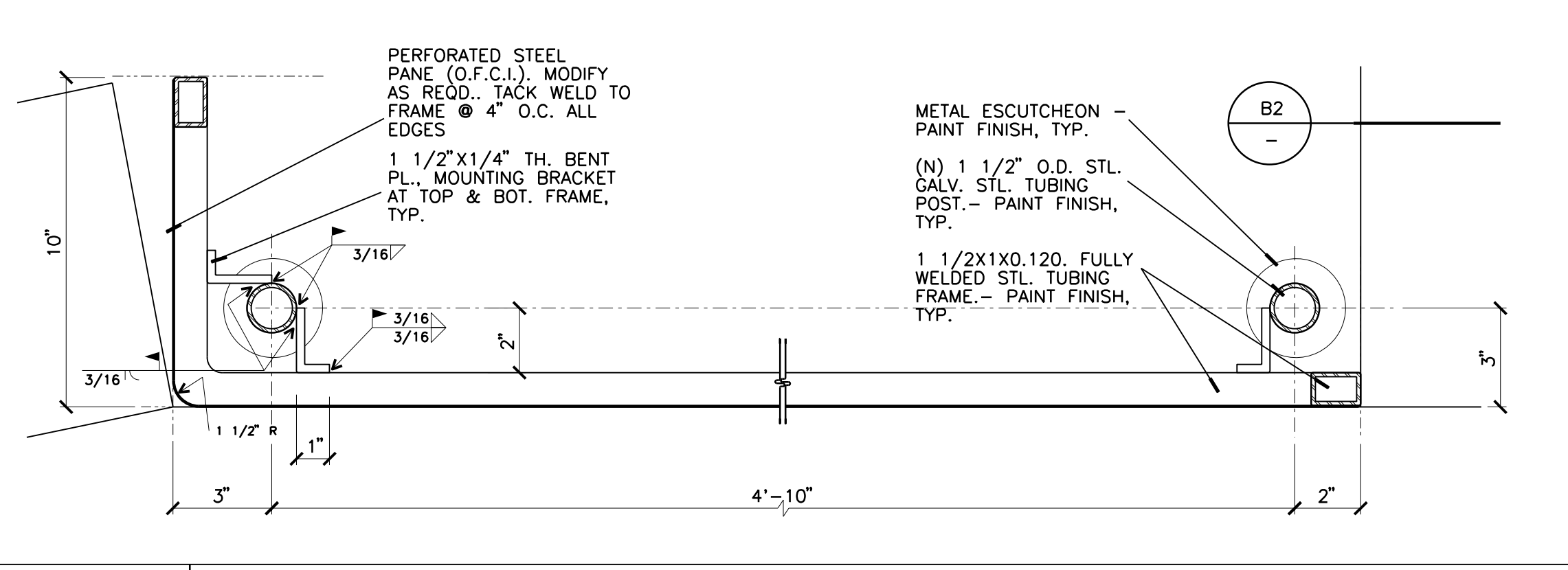
**D5** HEAD - JAMB SIMILAR  
 3" = 1'-0"



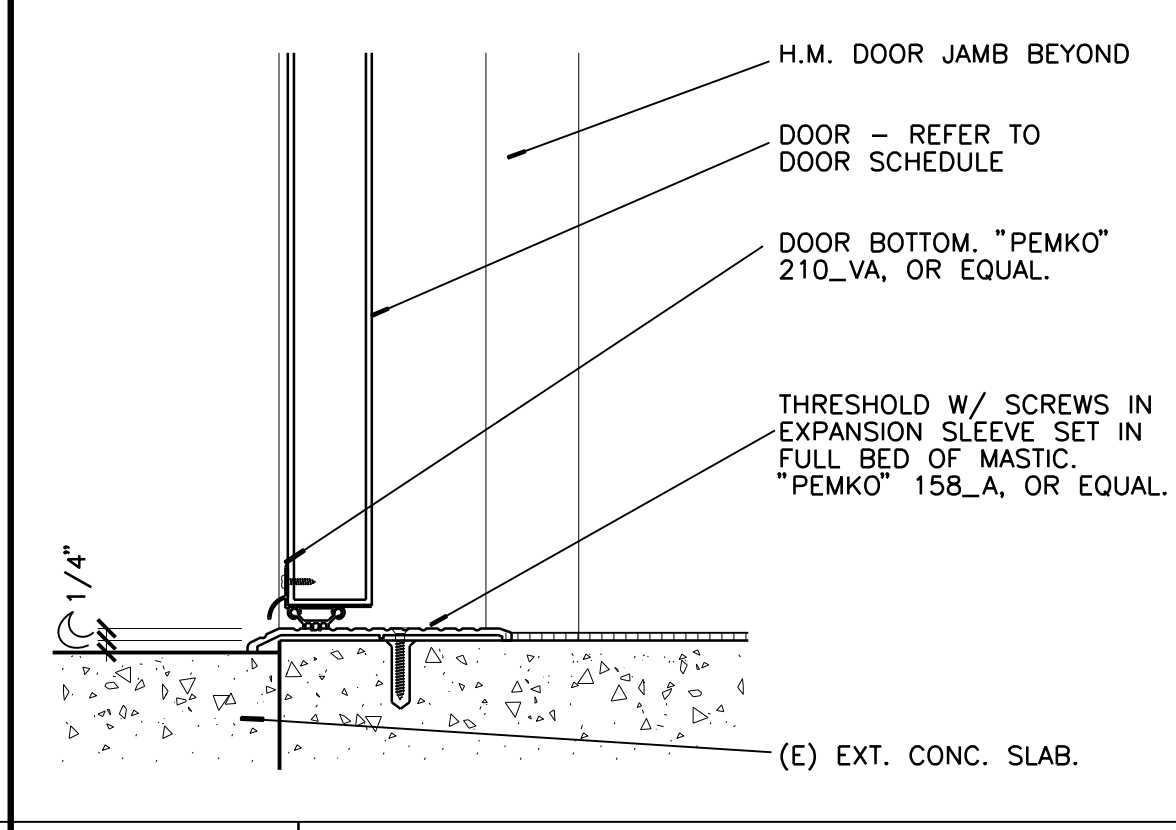
**C1** INTERIOR CONC. SLAB  
 1 1/2" = 1'-0"



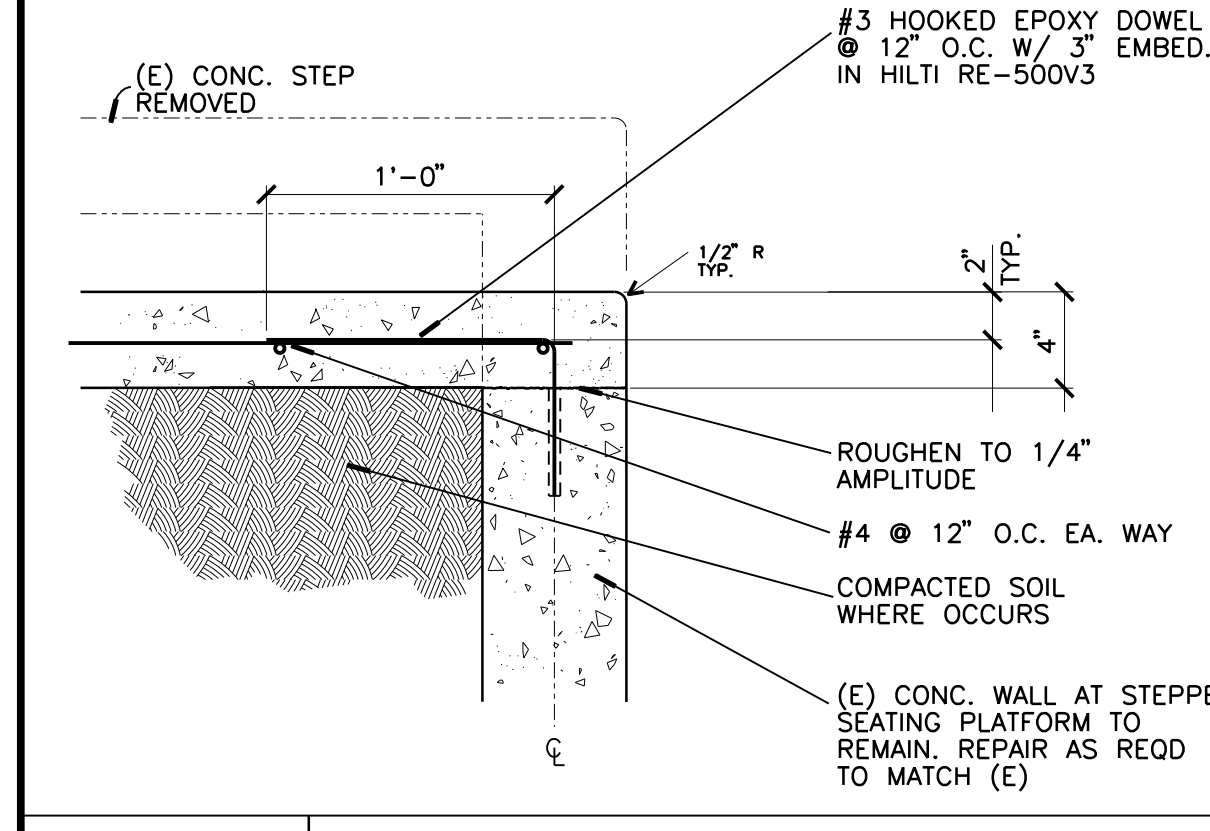
**C2** INTERIOR CONC. SLAB  
 1 1/2" = 1'-0"



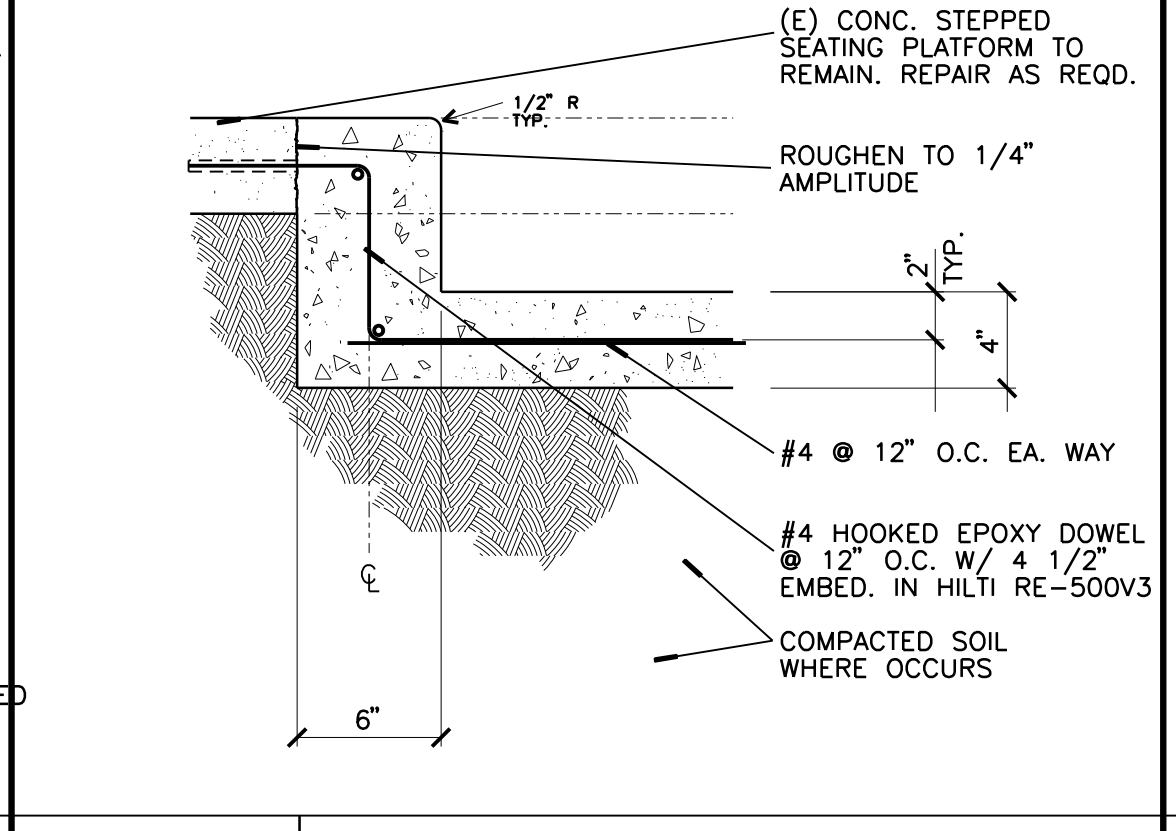
**C3** ACCESSIBLE SPACE RAILING & MODESTY PANEL  
 3" = 1'-0" HORIZONTAL SECTION



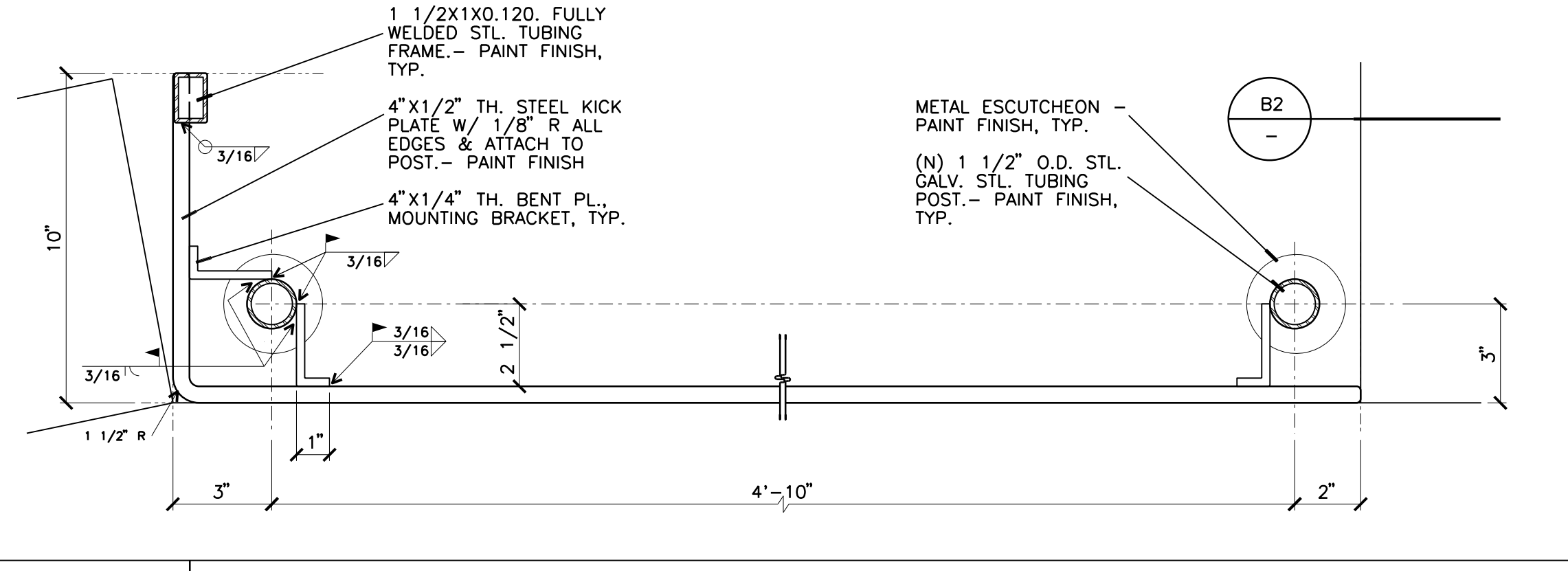
**C5** THRESHOLD - EXTERIOR  
 3" = 1'-0"



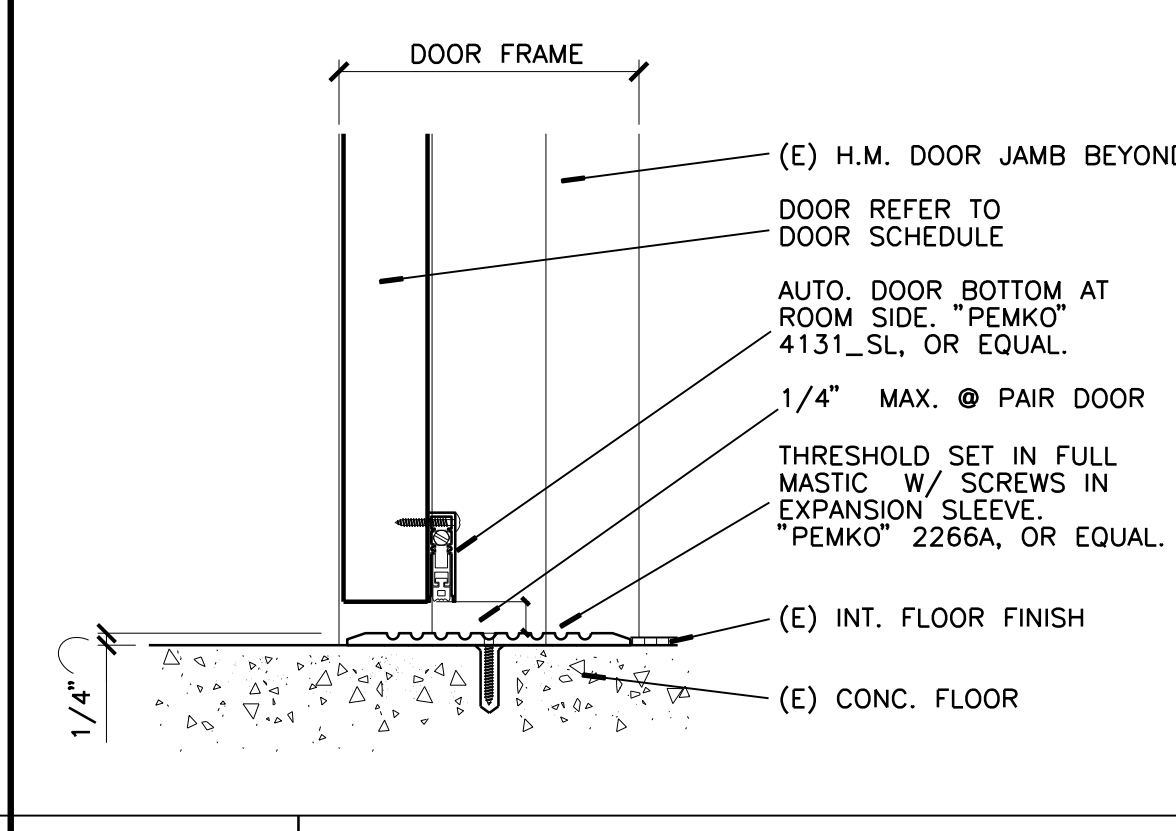
**B1** INTERIOR CONC. SLAB  
 1 1/2" = 1'-0"



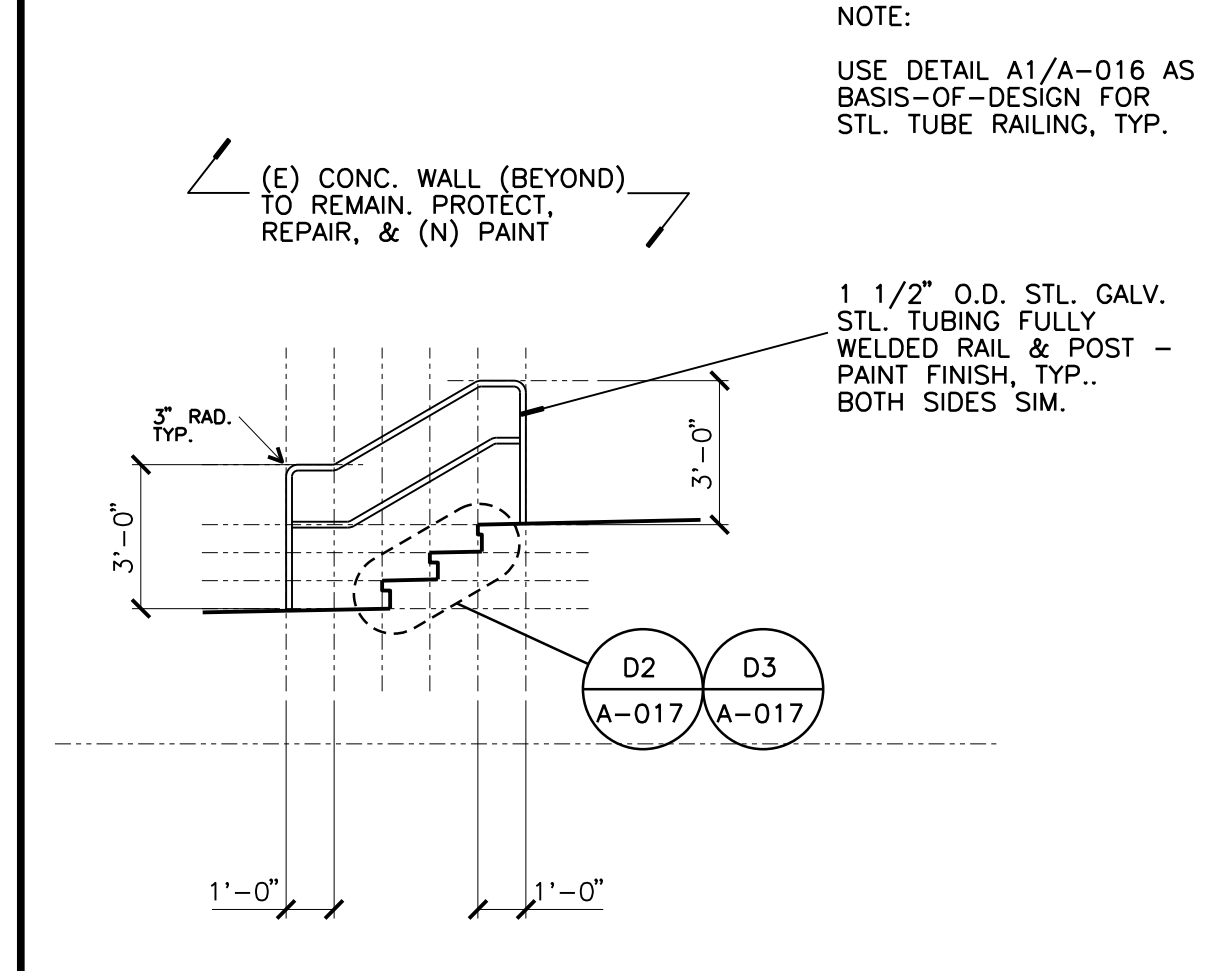
**B2** INTERIOR CONC. SLAB  
 1 1/2" = 1'-0"



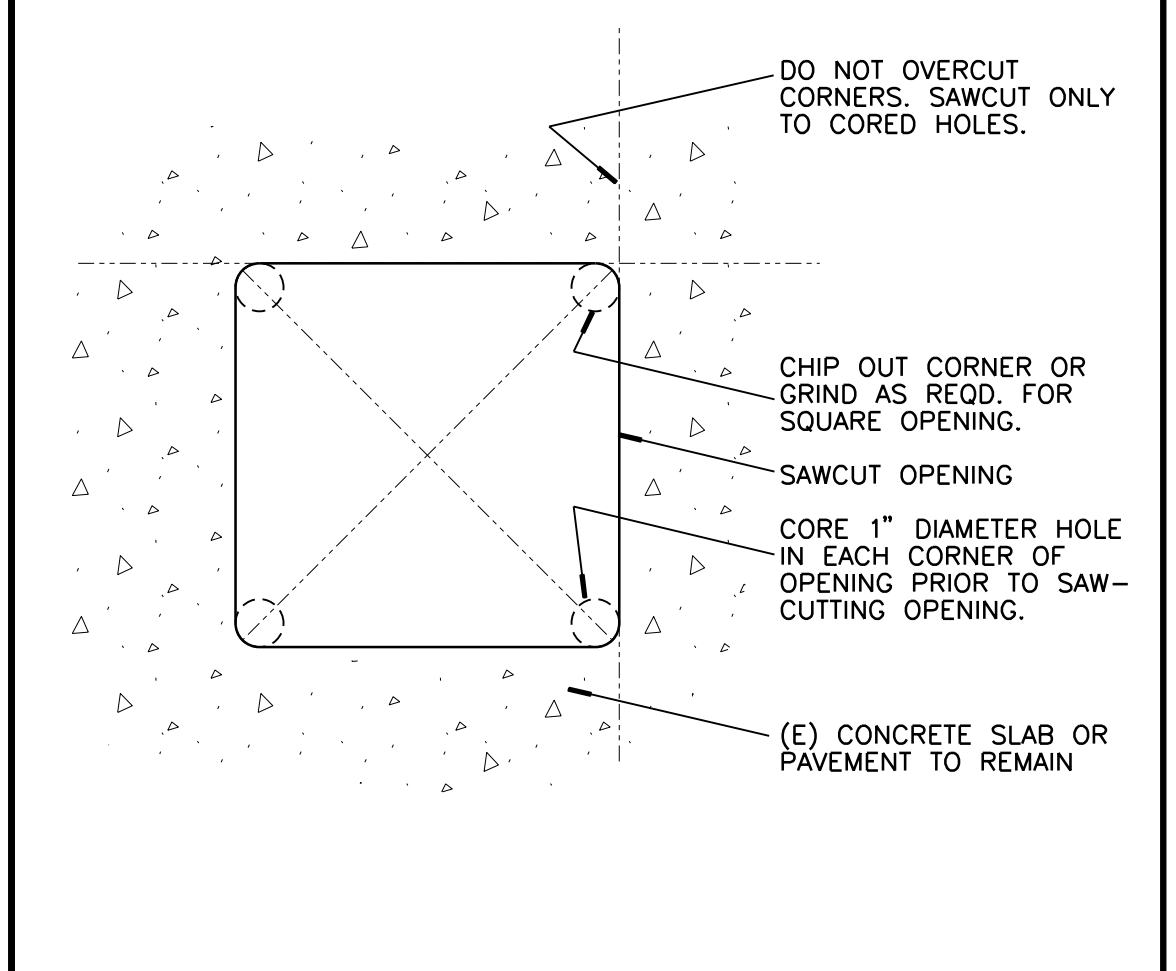
**B3** ACCESSIBLE SPACE RAILING & MODESTY PANEL  
 3" = 1'-0" HORIZONTAL SECTION



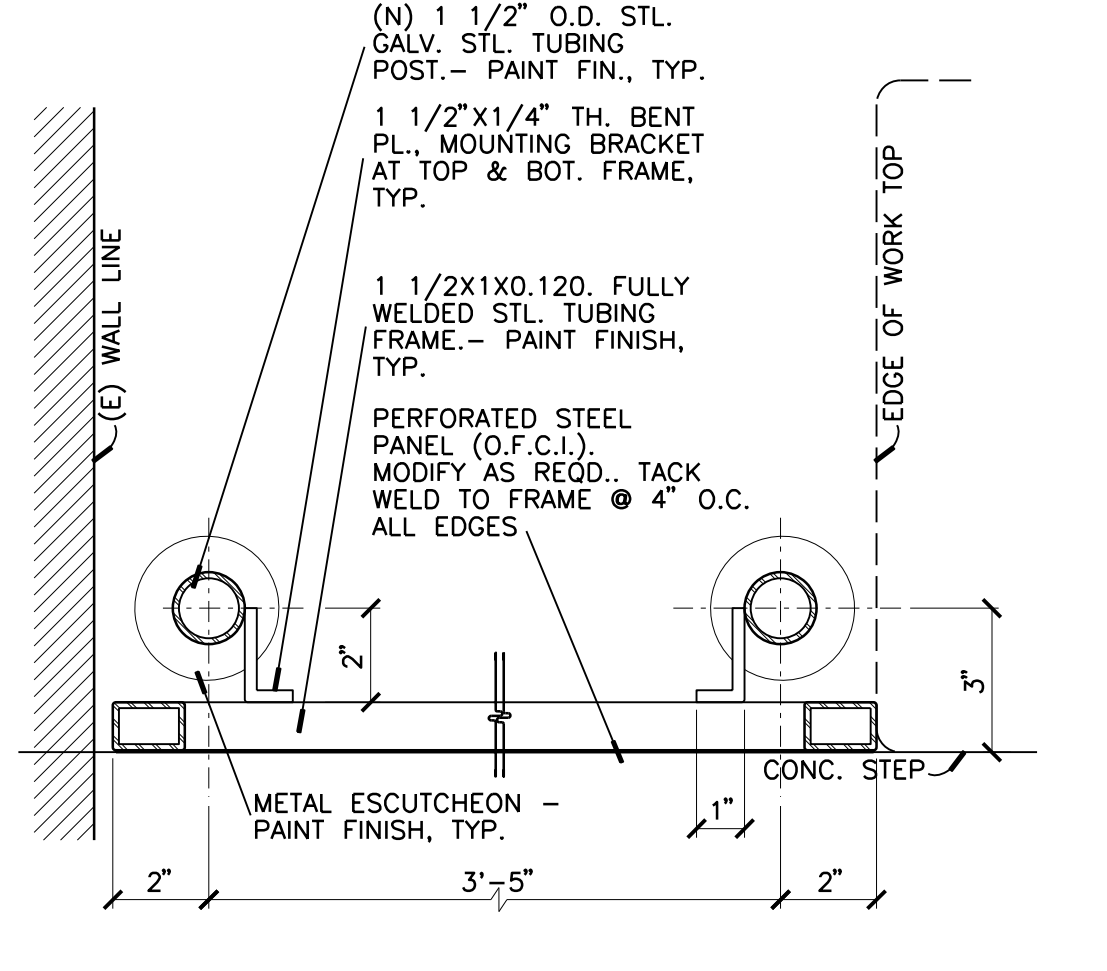
**B5** THRESHOLD - INTERIOR/EXTERIOR  
 3" = 1'-0"



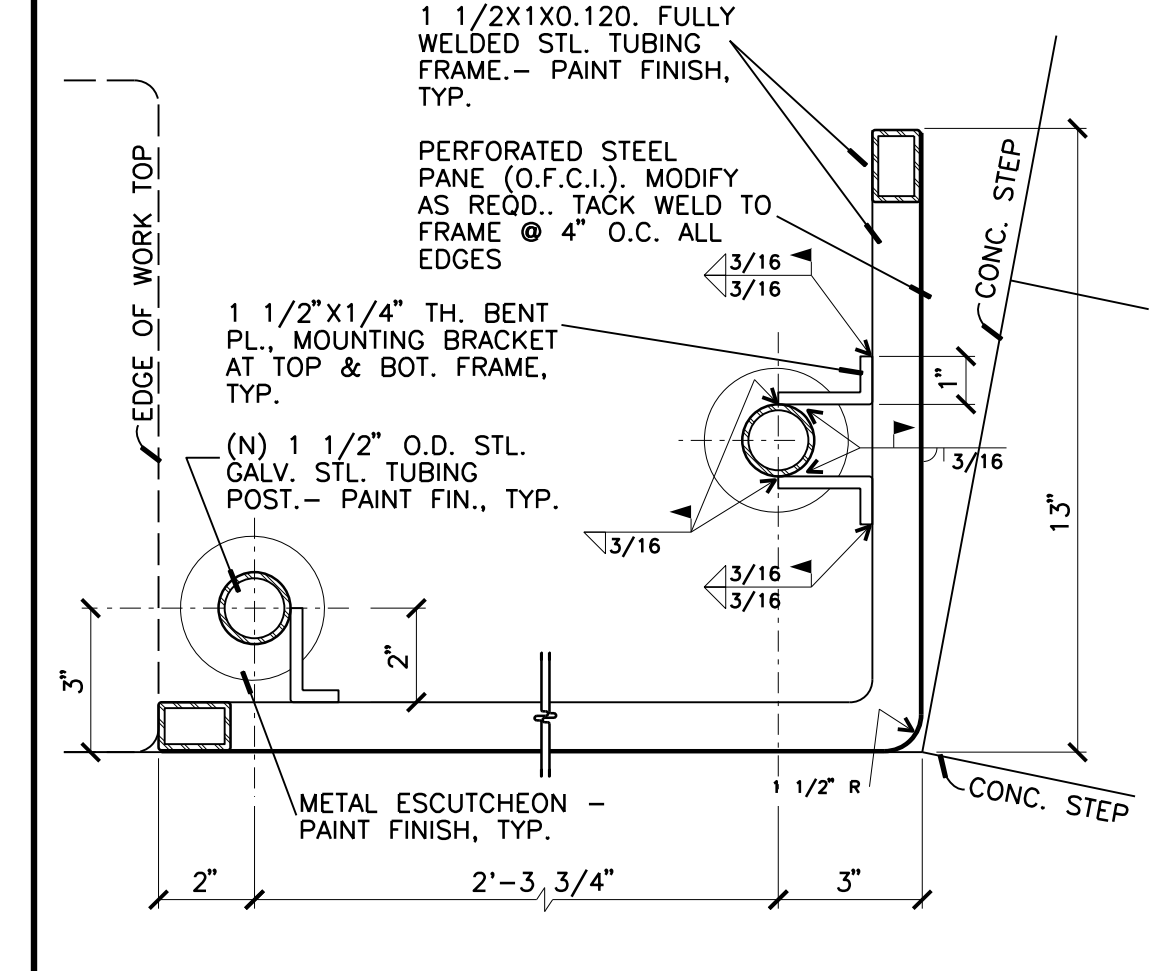
**A1** EXTERIOR ELEVATION  
 1/4" = 1'-0"



**A2** SAW CUT (E) CONC. - TYPICAL  
 NONE



**A3** RAILING & MODESTY PANEL  
 3" = 1'-0" HORIZONTAL SECTION



**A4** RAILING & MODESTY PANEL  
 3" = 1'-0" HORIZONTAL SECTION



**A5** (NOT USED)

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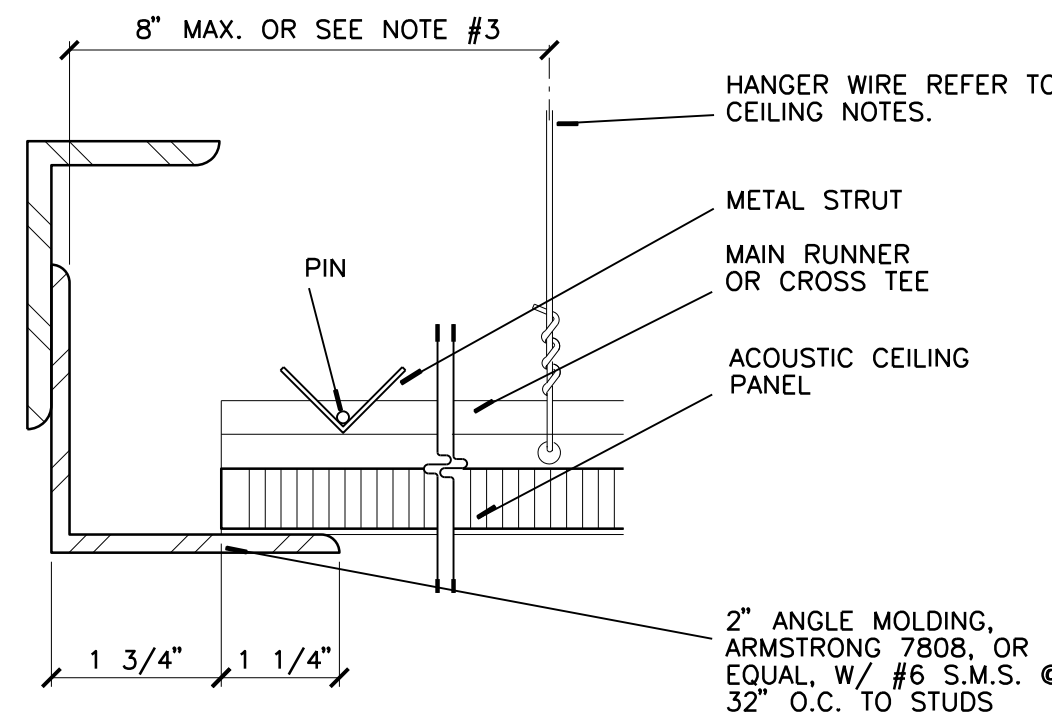
3/19/2020



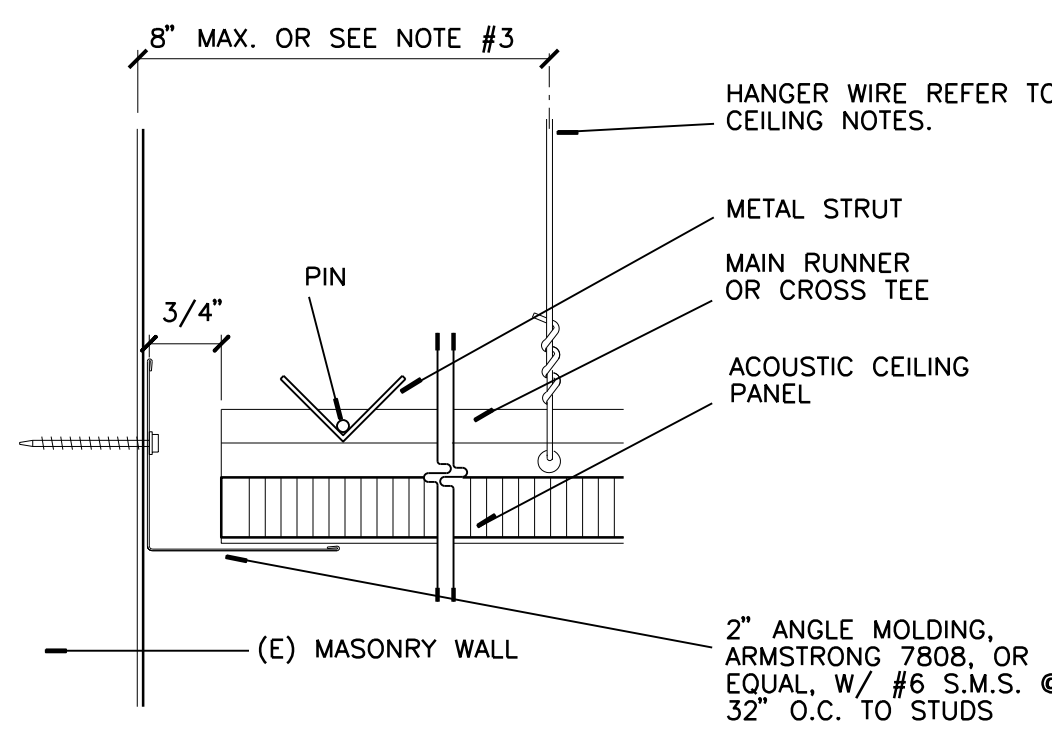
THE FOLLOWING NOTES APPLY TO CEILING SYSTEMS WHOSE TOTAL WEIGHT INCLUDING CEILING MOUNTED AIR TERMINALS, SERVICES AND LIGHT FIXTURES DOES NOT EXCEED FOUR (4) PSF.

- NO. 12 GAUGE WIRE SHALL BE 0.106 INCHES IN DIAMETER CONFORMING TO ASTM A641. NO. 12 GAUGE WIRE SHALL BE SOFT ANNEALED, GALVANIZED STEEL WIRE WITH A CLASS 1 COATING.
- NO. 12 GAUGE (MIN.) HANGER WIRES MAY BE USED FOR UP TO AND INCLUDING 4 FEET BY 4 FEET GRID SPACING AND SHALL BE ATTACHED TO MAIN RUNNERS.
- PROVIDE NO. 12 GAUGE HANGER WIRES AT THE ENDS OF ALL MAIN AND CROSS RUNNERS WITHIN EIGHT (8) INCHES OF THE SUPPORT OR WITHIN ONE-FOURTH (1/4) OF THE LENGTH OF THE END TEE, WHICHEVER IS LEAST. FOR THE PERIMETER OF THE CEILING AREA, PERIMETER WIRES ARE NOT REQUIRED WHEN THE LENGTH OF THE END TEE IS EIGHT (8) INCHES OR LESS.
- PROVIDE TRAPEZOIDAL OR OTHER SUPPLEMENTARY SUPPORT MEMBERS AT OBSTRUCTIONS TO TYPICAL HANGER SPACING. PROVIDE ADDITIONAL HANGERS, STRUTS OR BRACES AS REQUIRED AT ALL CEILING BREAKS, SOFFITS, OR DISCONTINUOUS AREAS. HANGER WIRES THAT ARE MORE THAN 1 (HORIZONTAL) IN 6 (VERTICAL) OUT OF PLUMB ARE TO HAVE COUNTER-SLOPING WIRES.
- CEILING GRID MEMBERS SHALL BE ATTACHED TO NOT MORE THAN TWO (2) ADJACENT WALLS. CEILING GRID MEMBERS SHOULD BE AT LEAST 3/4 INCH FREE OF OTHER WALLS. IF WALLS RUN DIAGONALLY TO CEILING GRID SYSTEM RUNNERS, ONE END OF MAIN AND CROSS RUNNERS SHOULD BE FREE, AND A MINIMUM OF 3/4 INCH CLEAR OF WALL.
- THE WIDTH OF THE PERIMETER SUPPORTING CLOSURE ANGLE SHALL BE NOT LESS THAN 2 INCHES.
- AT THE PERIMETER OF THE CEILING AREA WHERE MAIN OR CROSS RUNNERS ARE NOT CONNECTED TO THE ADJACENT WALL, PROVIDE INTERCONNECTION BETWEEN THE RUNNERS AT THE FREE END TO PREVENT LATERAL SPREADING. A METAL STRUT OR A NO. 16 GAUGE WIRE WITH A POSITIVE MECHANICAL CONNECTION TO THE RUNNER MAY BE USED, WHERE THE PERPENDICULAR DISTANCE FROM THE WALL TO THE FIRST PARALLEL RUNNER IS 12 INCHES OR LESS, THIS INTERLOCK IS NOT REQUIRED.
- EXPANSION JOINTS SHALL BE PROVIDED IN THE CEILING AT INTERSECTIONS OF CORRIDORS AND AT JUNCTIONS OF CORRIDORS WITH LOBBIES OR OTHER SIMILAR AREAS.
- PROVIDE LATERAL-FORCE BRACING ASSEMBLIES CONSISTING OF A COMPRESSION STRUT AND FOUR (4) NO. 12 GAUGE SPLAYED BRACING WIRES ORIENTED 90 DEGREES FROM EACH OTHER AT THE FOLLOWING SPACING:
  - PLACE SETS OF BRACING WIRES NOT MORE THAN 8 FEET BY 12 FEET ON CENTER.
  - PROVIDE BRACING WIRES AT LOCATIONS NOT MORE THAN ONE HALF (1/2) THE SPACING GIVEN IN (a) ABOVE IN EACH DIRECTION FROM EACH PERIMETER WALL AND AT THE EDGES OF ANY CHANGE IN ELEVATION OF THE CEILING. THE SLOPE OF BRACING WIRES SHALL NOT EXCEED 45 DEGREES FROM THE PLANE OF THE CEILING AND WIRES SHOULD BE TAUT WITHOUT CAUSING THE CEILING TO LIFT. SPLICES IN BRACING WIRES ARE NOT PERMITTED.
- COMPRESSION STRUTS SHALL NOT BE MORE THAN 1 (HORIZONTAL) IN 6 (VERTICAL) OUT OF PLUMB.
- SUSPENDED ACOUSTICAL CEILING SYSTEMS WITH A CEILING AREA OF 144 SQUARE FEET OR LESS, AND FIRE RATED SUSPENDED ACOUSTICAL CEILING SYSTEMS WITH A CEILING AREA OF 96 SQUARE FEET OR LESS, SURROUNDED BY WALLS WHICH CONNECT DIRECTLY TO THE STRUCTURE ABOVE OR WALLS INDEPENDENTLY BRACED ABOVE CEILING TO STRUCTURE ABOVE, DO NOT REQUIRE BRACING ASSEMBLIES WHEN ATTACHED TO TWO ADJACENT WALLS.
- FOR CEILING AREAS EXCEEDING 2500 SQUARE FEET A SEISMIC SEPARATION JOINT SHALL BE PROVIDED TO DIVIDE THE CEILING INTO AREAS NOT EXCEEDING 2500 SQUARE FEET. ALTERNATIVELY, STRUCTURAL ANALYSIS SHALL BE PERFORMED TO DEMONSTRATE COMPLIANCE WITH 2010 CBC SECTION 1615A.1.16.
- PENETRATIONS THROUGH THE CEILING FOR SPRINKLER HEADS AND OTHER SIMILAR DEVICES THAT ARE NOT INTEGRALLY TIED TO THE CEILING SYSTEM IN THE LATERAL DIRECTION SHALL HAVE A TWO (2) INCH OVERSIZED RING, SLEEVE OR ADAPTER THROUGH THE CEILING TILE TO ALLOW FREE MOVEMENT OF ONE (1) INCH IN ALL HORIZONTAL DIRECTIONS. ALTERNATIVELY, SWING JOINTS MAY BE PROVIDED PER 2010 CBC SECTION 1615A.1.16.
- FASTEN NO. 12 GAUGE HANGER WIRES WITH NOT LESS THAN THREE (3) TIGHT TURNS. FASTEN NO. 12 GAUGE BRACING WIRES WITH FOUR (4) TIGHT TURNS. MAKE ALL TIGHT TURNS WITHIN A DISTANCE OF 1-1/2 INCHES. HANGER OR BRACING WIRE ANCHORS TO THE STRUCTURE SHOULD BE INSTALLED IN SUCH A MANNER THAT THE DIRECTION OF THE ANCHOR ALIGNS AS CLOSELY AS POSSIBLE WITH THE DIRECTION OF THE WIRE.
 

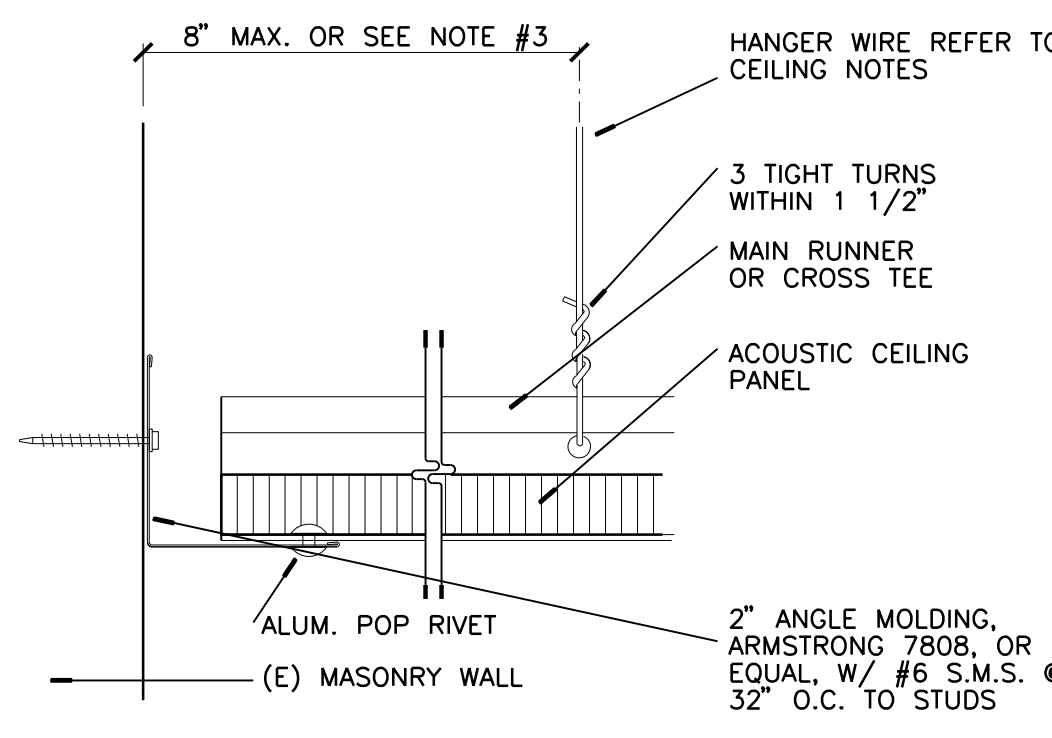
NOTE: WIRE TURNS MADE BY MACHINE WHERE BOTH STRANDS HAVE BEEN DEFORMED OR BENT IN WRAPPING CAN WAIVE THE 1-1/2 INCH REQUIREMENT, BUT THE NUMBER OF TURNS SHOULD BE MAINTAINED AND BE AS TIGHT AS POSSIBLE.
- SEPARATE ALL CEILING HANGER AND BRACING WIRES AT LEAST SIX (6) INCHES FROM ALL UNBRACED DUCTS, PIPES, CONDUIT, ETC.
- WHEN DRILLED-IN CONCRETE ANCHORS OR SHOT-IN ANCHORS ARE USED IN REINFORCED CONCRETE FOR HANGER WIRES, 1 OUT OF 10 WIRE/ANCHOR ASSEMBLIES MUST BE FIELD TESTED FOR 200 POUNDS OF TENSION. WHEN DRILLED-IN CONCRETE ANCHORS ARE USED FOR BRACING WIRES, 1 OUT OF 2 WIRE/ANCHOR ASSEMBLIES MUST BE FIELD TESTED FOR 440 POUNDS IN TENSION. SHOT-IN ANCHORS IN CONCRETE ARE NOT PERMITTED FOR BRACING WIRES.
- ATTACH ALL LIGHT FIXTURES AND CEILING MOUNTED AIR TERMINALS TO THE CEILING GRID RUNNERS TO RESIST A HORIZONTAL FORCE EQUAL TO THE WEIGHT OF THE FIXTURES. SCREWS OR APPROVED FASTENERS ARE REQUIRED.
- FLUSH OR RECESSED LIGHT FIXTURES AND AIR TERMINALS OR SERVICES WEIGHING LESS THAN 20 LBS. MAY BE SUPPORTED DIRECTLY ON THE RUNNERS OF HEAVY DUTY GRID SYSTEM BUT, IN ADDITION, THEY MUST HAVE A MINIMUM OF TWO NO. 12 GAUGE SLACK SAFETY WIRES ATTACHED TO THE FIXTURE AT DIAGONAL CORNERS AND ANCHORED TO THE STRUCTURE ABOVE. ALL 4 FEET BY 4 FEET LIGHT FIXTURES MUST HAVE SLACK SAFETY WIRES AT EACH CORNER.
  - ALL FLUSH OR RECESSED LIGHT FIXTURES WEIGHING 56 LBS. OR MORE AND MECHANICAL TERMINALS AND SERVICES, WEIGHING 20 LBS. OR MORE, MUST BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN FOUR (4) TAUT NO. 12 GAUGE WIRES, EACH ATTACHED TO THE FIXTURE AND TO THE STRUCTURE ABOVE.
  - THE FOUR (4) TAUT NO. 12 GAUGE WIRES INCLUDING THEIR ATTACHMENT TO THE STRUCTURE ABOVE MUST BE CAPABLE OF SUPPORTING FOUR (4) TIMES THE WEIGHT OF THE UNIT.
- SUPPORT SURFACE MOUNTED LIGHT FIXTURES BY AT LEAST TWO POSITIVE DEVICES WHICH SURROUND THE CEILING RUNNER AND WHICH ARE EACH SUPPORTED FROM THE STRUCTURE ABOVE BY A NO. 12 GAUGE WIRE. SPRING CLIPS OR CLAMPS THAT CONNECT ONLY TO THE RUNNER ARE NOT ACCEPTABLE.
  - PROVIDE ADDITIONAL SUPPORTS WHEN LIGHT FIXTURES ARE 8 FEET OR LONGER. MAXIMUM SPACING BETWEEN SUPPORTS SHALL NOT EXCEED 8 FEET.
- SUPPORT PENDANT MOUNTED LIGHT FIXTURES DIRECTLY FROM THE STRUCTURE ABOVE WITH HANGER WIRES OR CABLES PASSING THROUGH EACH PENDANT HANGER AND CAPABLE OF SUPPORTING TWO (2) TIMES THE WEIGHT OF THE FIXTURE. A BRACING ASSEMBLY PER FIGURE D3, IS REQUIRED WHERE THE PENDANT HANGER PENETRATES THE CEILING. SPECIAL DETAILS ARE REQUIRED TO ATTACH THE PENDANT HANGER TO THE BRACING ASSEMBLY TO TRANSMIT HORIZONTAL FORCES.
- CLASSIFICATION OF CEILING GRID: HEAVY DUTY
  - MANUFACTURER'S CATALOG NUMBER:
    - MAIN RUNNER: USG-DONN DX26, CHICAGO METALLIC 200 PER ICC-ES ESR 1289, ESR 1308 AND 2282.
    - CROSS RUNNER: USG-DONN DX424, CHICAGO METALLIC 1204 PER ICC-ES ESR 1289, ESR 1308 AND 2282.
    - RUNNER SPLICE: SEISMIC RESTRAINING CLIP SHALL BE PROVIDED AT ALL CROSS TEE INTERSECTIONS.



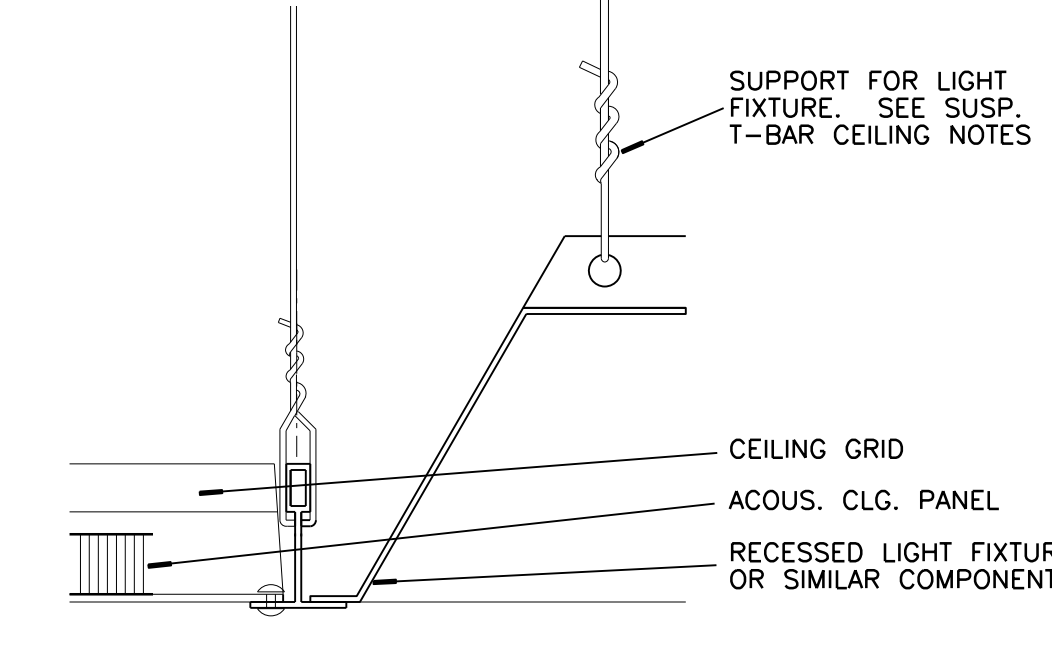
**D2** ACOUS. CEILING SYSTEM AT WALL - SLIP EDGE  
HALF



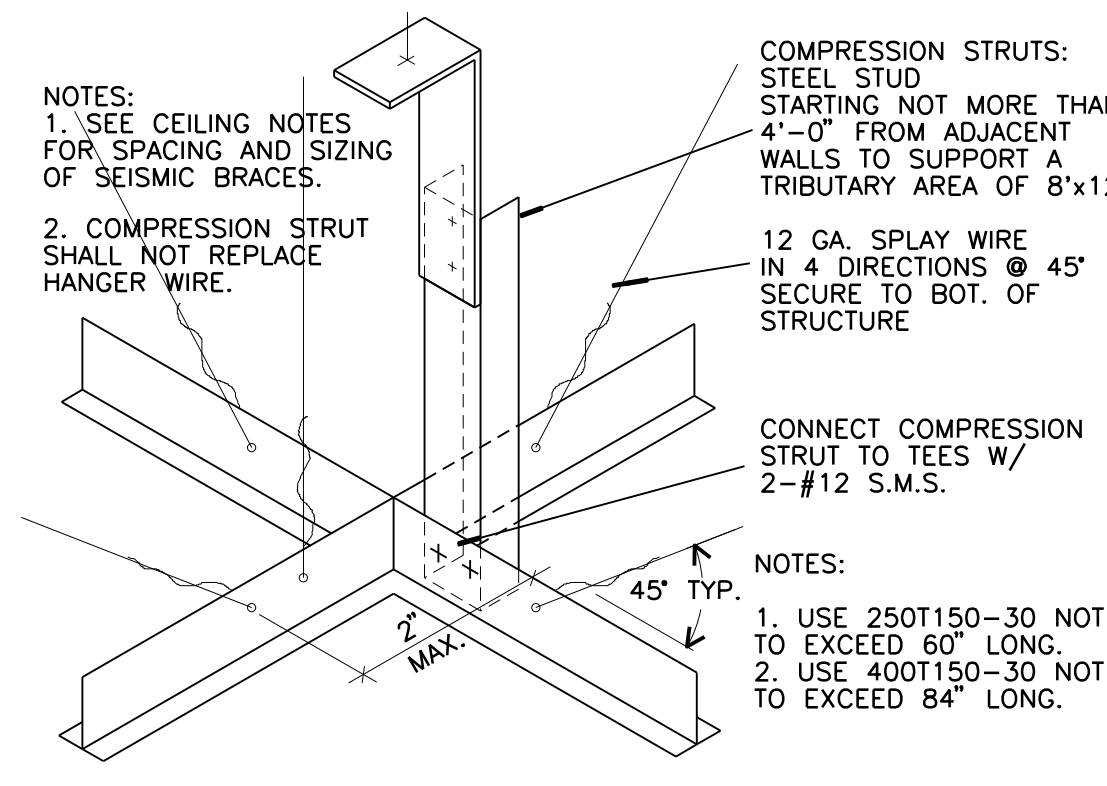
**C2** ACOUS. CEILING SYSTEM AT WALL - FIXED EDGE  
HALF



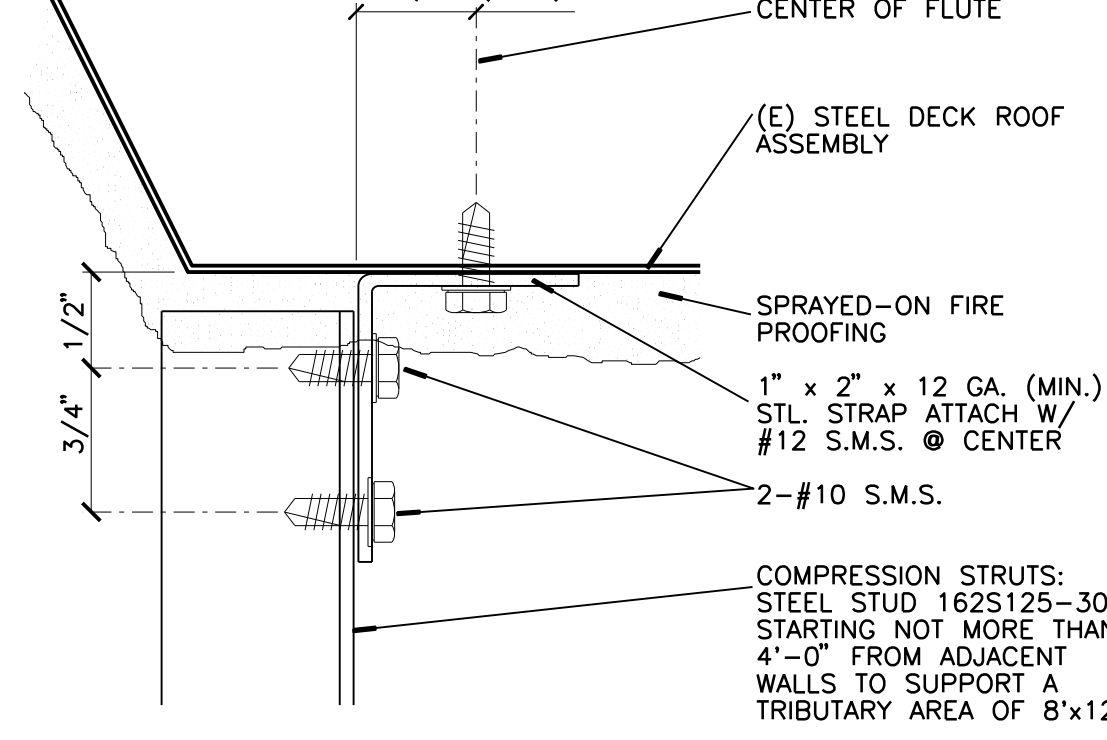
**B2** RECESSED LIGHT FIXTURE AT ACOUS. CEILING SYSTEM  
HALF



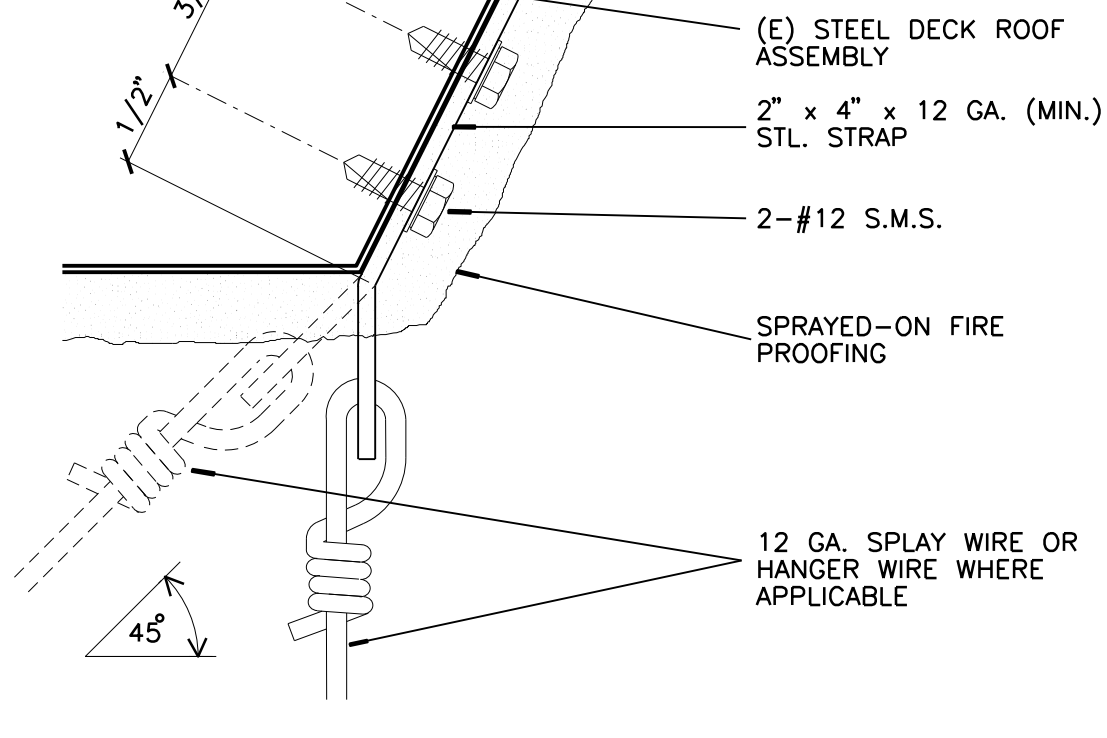
**A2** CURTAIN TRACK AT CEILING  
HALF



**D3** ACOUS. CEILING SYSTEM ISOMETRIC VIEW - TYPICAL  
N.T.S.



**C3** COMPRESSION STRUT AT DECK  
FULL



**B3** CEILING HANGER & SPLAY WIRE AT STRUCTURE ABOVE  
FULL

**A3** (NOT USED)

**ROOM FINISH SCHEDULE**

ROOM NO.	ROOM NAME	FLOOR	BASE	WAINSCOT				WALLS				DOOR	DOOR FRAME	CEILING	CEILING HEIGHT	REMARKS
				HEIGHT	FINISH	NORTH	EAST	SOUTH	WEST							
46	PROJECTION ROOM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	LECTURE HALL	PTX	WB-1	-	-	VARIABLES	VARIABLES	VARIABLES	VARIABLES	PTSG	PTSG	AP-2	11'-8"	SEE INT. ELEV. & REF. CLG. PLAN FOR MORE INFO.		
49	FOYER	VCT	WB-1	-	-	-	-	VARIABLES	-	-	PTSG	PTSG	PTFE	VARIABLES	SEE INT. ELEV. & REF. CLG. PLAN FOR MORE INFO.	

**ROOM SCHEDULE LEGEND**

- AP-1 = ACOUSTICAL PANEL 24"x48"
- AP-2 = ACOUSTICAL PANEL 24"x24"
- AT = ACOUSTICAL TILE
- CPT-1 = CARPET
- CT-1 = TILE (E), /E = EXISTING
- SVF-1 = SHEET VINYL FLOORING
- VCT-1 = VINYL COMPOSITION TILE
- WB-1 = TOP SET RUBBER BASE
- WB-2 = COVED BASE - 6"
- WC-1 = WALL COVERING
- PTFE = PAINT/FLAT
- PTES = PAINT/EGG-SHELL
- PTSG = PAINT/SEM-GLOSS
- PTX = PAINT/EPOXY

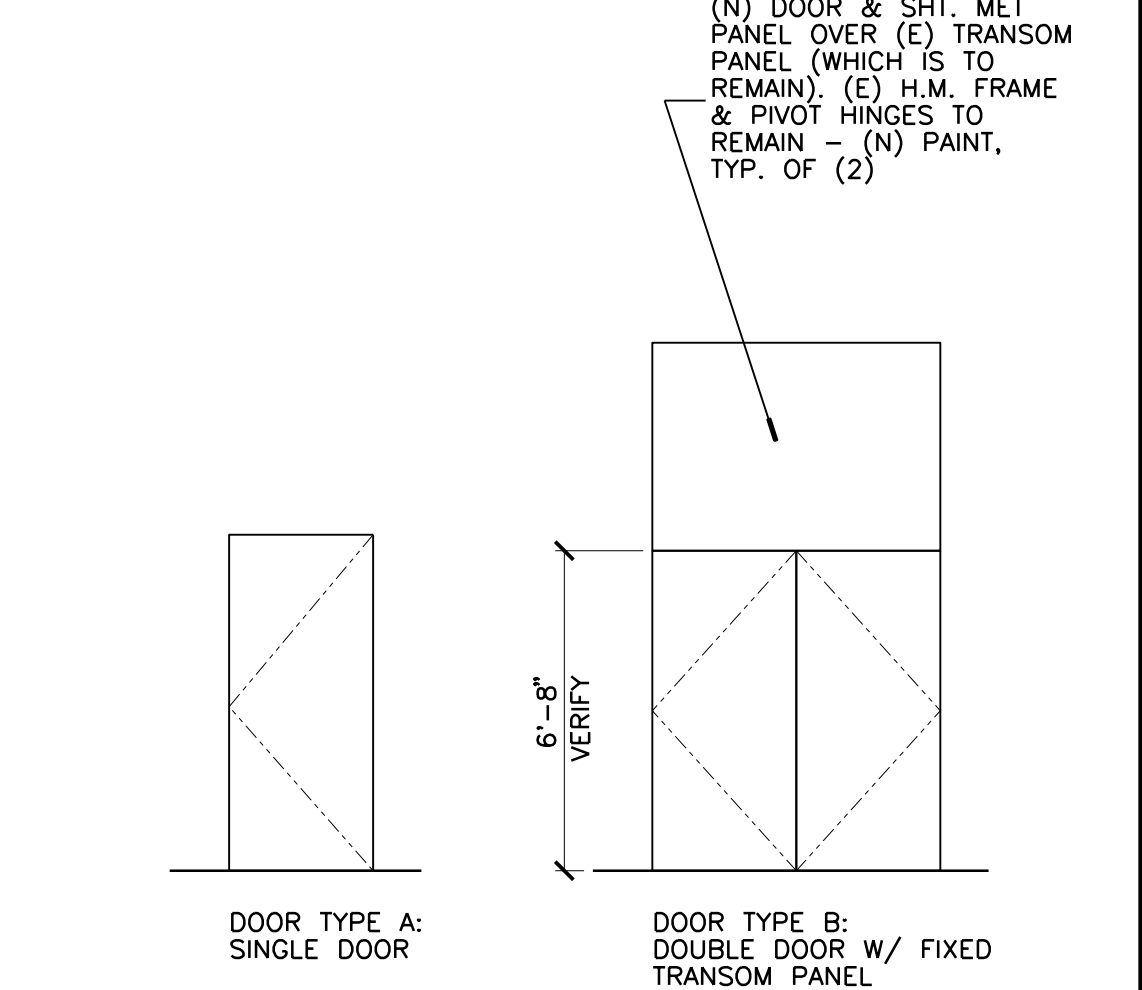
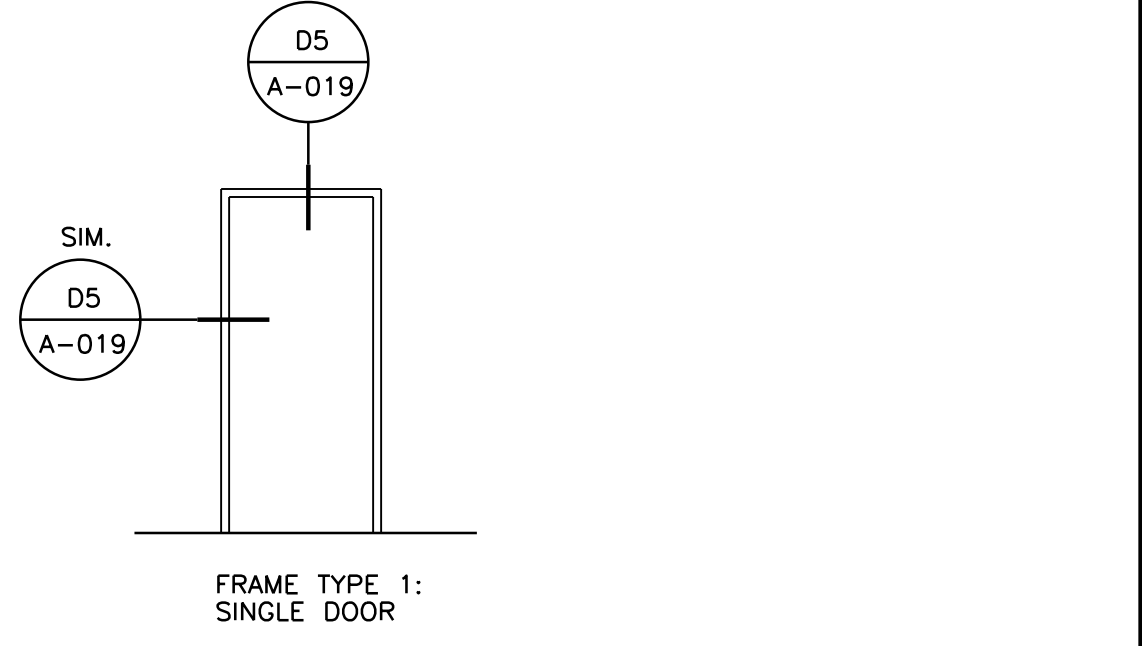
**DOOR SCHEDULE**

DOOR NO.	ROOM NO.	OPENING SIZE	TYPE	CONST.	FACING/ FINISH	GLASS	LOUVER	RATING	FRAME TYPE	FRAME CONST.	HARDWARE	DETAILS					REMARKS
												HEAD	JAMB STRIKE	JAMB HINGE	SILL	NOTE: DOOR RATING IS IN MINUTES	
01	FOYER 49	6'-0" x 7'-0"	-	AL	AL	GL3	-	-	-	1	C2/A-018	A1/A-018	A1/A-018	A2/A-018	SEE INTERIOR ELEVATIONS. AUTO SLIDING DOOR		
02	FOYER 49	6'-0" x 7'-0"	-	AL	AL	GL3	-	-	-	1	C2/A-018	A1/A-018	A1/A-018	A2/A-018	SEE INTERIOR ELEVATIONS. AUTO SLIDING DOOR		
03	LECTURE HALL 48	3'-0" x 7'-0"	A	HM	P	-	-	-	1	HM	2	D5/A-019	D5/A-019	D5/A-019	C5/A-019		
04	LECTURE HALL 48	6'-0" x 11'-0"	B	HM	P	-	-	45	(E)	HM	3	(E)	(E)	(E)	B5/A-019		
05	LECTURE HALL 48	6'-0" x 11'-0"	B	HM	P	-	-	45	(E)	HM	3	(E)	(E)	(E)	B5/A-019		

**DOOR SCHEDULE LEGEND**

- AL = ALUMINUM
- (E) = EXISTING
- WD1 = WOOD/NATURAL STAIN
- WD2 = WOOD/PAINT FINISH
- P = PAINT
- PL = PLASTIC LAMINATE
- HM = HOLLOW METAL
- SC = SOLID CORE
- MC = MINERAL CORE
- GL1 = FULLY TEMPERED SAFETY GLASS
- GL2 = FULLY TEMPERED PATTERNED GLASS
- GL3 = 1" THK INSULATING GLASS

- PER CBC SECTION 11B-404.2.9, MAXIMUM FORCE TO PUSH OR PULL DOORS SHALL NOT EXCEED THE FOLLOWING:
  - A INTERIOR HINGED, SLIDING, FOLDING DOORS - 5 POUNDS
  - B EXTERIOR HINGED DOORS - 5 POUNDS
  - C FIRE DOORS - 15 POUNDS
- PER CBC SECTION 11B-309.4, DOORS THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL HAVE HANDLES, PULLS, LATCHES, LOCKS, AND OTHER OPERABLE PARTS THAT SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST. THE FORCE REQUIRED TO ACTIVATE OPERABLE PARTS SHALL NOT EXCEED 5 LBS.
- PER CBC SECTION 1008.1.9, EGRESS DOORS SHALL BE READILY OPENABLE FROM THE EGRESS SIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
- FIRE-RATED AND SMOKE- AND DRAFT-CONTROL DOORS AND FRAMES SHALL BEAR AN APPROVED LABEL OR OTHER IDENTIFICATION PER CBC SECTIONS 715.4.6.1 AND 715.4.6.3. DOORS SHALL BE MAINTAINED SELF-CLOSING OR SHALL BE AUTOMATIC CLOSING BY ACTUATION OF A SMOKE DETECTOR IN ACCORDANCE WITH CBC SECTION 715.4.8.5.
- ALL FIRE-RATED DOORS AND SMOKE- AND DRAFT-CONTROL DOOR ASSEMBLIES SHALL BE PROVIDED WITH AN APPROVED GASKET INSTALLED SO AS TO PROVIDE A SEAL WHERE THE DOOR MEETS THE STOP ON BOTH SIDES AND ACROSS THE TOP.
- MAIN EXIT DOORS SHALL BE PROVIDED WITH A DURABLE SIGN OF ONE INCH (1") LETTERS ON CONTRASTING BACKGROUND INDICATING, "THIS DOOR TO REMAIN UNLOCKED WHEN THIS SPACE IS OCCUPIED."
- ADDITIONAL EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT (SINGLE ACTION). THE USE OF THUMB BOLTS IS NOT ALLOWED TO MEET THIS REQUIREMENT, AND CANNOT BE INSTALLED ON DOORS REQUIRED TO HAVE SINGLE ACTION HARDWARE.



**A4** DOOR NOTES  
NONE

**A5** DOOR & FRAME TYPE  
NONE

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Architect's Data:

Architect's Stamp: [Signature]

PROJECT TITLE  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**  
REBID AUGUST 2020

REVISIONS

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

Scale	AS NOTED	sd approval
Drawn by	J.D.	sd approval
Checked by	G.C.	cd approval
UCR project no.	957443	construction release
date number		

Drawing Name  
**DETAIL & SCHEDULE**

Sheet No.  
**A-020**  
OF



## GENERAL NOTES

- THE CONTRACTOR SHALL SECURE AND PAY FOR PERMITS AND FEES NECESSARY FOR EXECUTION AND COMPLETION OF ELECTRICAL WORK, INCLUDING ALL CHARGES BY THE LOCAL GOVERNMENT AGENCIES AND THE UTILITY COMPANIES.
- ALL OUTLET LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS PRIOR TO INSTALLATION.
- SEE SINGLE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR SIZES, PANELS, TRANSFORMERS, MOTOR CONTROL CENTERS, MECHANICAL EQUIPMENT, ETC. HOMERUNS TO PANELS MAY NOT BE SHOWN ON PLANS BUT ARE PART OF THIS CONTRACT.
- EXACT LOCATION OF ALL CEILING MOUNTED DEVICES SHALL BE AS INDICATED ON THE ARCHITECTURAL REFLECTED CEILING PLANS.
- UNLESS OTHERWISE NOTED, MOUNTING HEIGHTS INDICATED ON ELECTRICAL OUTLETS ARE FROM FINISHED FLOOR TO CENTER OF OUTLETS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUT-OUTS IN TILE OR COUNTER SPLASHES WHERE RECEPTACLES, OUTLETS, ETC., OCCUR.
- ALL RECESSED DEVICES, ETC., MOUNTED IN FIRE RATED CEILING SHALL BE ENCLOSED WITH AN APPROVED ENCLOSURE CARRYING THE SAME FIRE RATING AS THE CEILING. THE CEILING.
- THE NUMERAL(S) SHOWN AT TOP LIGHT FIXTURE IDENTIFICATION SYMBOL WHICH INDICATES NUMBER OF LIGHT FIXTURES REQUIRED SHALL NOT BE USED BY THE CONTRACTOR FOR HIS QUANTITY TAKE-OFF AT BIDDING OR FOR DETERMINATION OF HOW MANY FIXTURES WILL BE INSTALLED. THE CONTRACTOR SHALL INSTALL A LIGHT FIXTURE WHEREVER A FIXTURE OUTLET IS SHOWN ON DRAWINGS.
- ALL FINAL CONNECTIONS TO OWNER-FURNISHED EQUIPMENT SHALL BE MADE BY THE CONTRACTORS.
- EQUIPMENT ANCHORAGE  
THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO C.C.R. TITLE 24, 1998 CBC SECTION 1692A AND TABLE 16A-0. ANCHORAGE DETAILS FOR ROOF/FLOOR MOUNTED EQUIPMENT SHALL BE SHOWN ON PLAN.
- THE CONTRACTOR SHALL VISIT THE SITE INCLUDING SPECIFICALLY ALL AREAS INDICATED ON THE DRAWINGS. HE SHALL THOROUGHLY FAMILIARIZE HIMSELF WITH THESE EXISTING CONDITIONS AND BY SUBMITTING A BID ACCEPTS CONDITIONS UNDER WHICH HE WILL BE REQUIRED TO PERFORM HIS WORK.
- IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO DO ALL CORING, CUTTING, PATCHING AND REFINISHING OF WALLS AND SURFACES WHEREVER IT IS NECESSARY FOR HIM TO PENETRATE FOR HIS WORK. ALL OPENINGS MADE SHALL BE SEALED TO MEET THE RATED INTEGRITY OF THE PARTICULAR WALL, FLOOR OR CEILING.
- ATTENTION IS CALLED TO THE FACT THAT THE CEILING SYSTEMS FOR THE MOST PART ARE CONSIDERED TO BE INACCESSIBLE. THE CONTRACTOR SHALL STRATEGICALLY LOCATE BOXES, ETC., IN AN ACCESSIBLE CEILING SPACE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPATIBILITY OF ALL COMMUNICATIONS/SIGNALING SYSTEM DEVICES TO PROVIDE COMPLETE AND OPERABLE SYSTEMS.
- ALL EXPOSED CONDUIT SHALL BE PAINTED TO MATCH FINISH OF SURFACE TO WHICH IT IS ATTACHED/SUPPORTED TO.
- INSTALL RACEWAY SYSTEMS AS FOLLOWS:
  - RIGID GALVANIZED STEEL IN ALL OUTDOOR LOCATIONS AND IN INDOOR LOCATIONS WHERE SUBJECT TO PHYSICAL DAMAGE.
  - I.M.C. OR E.M.T. IN ALL INDOOR AREAS.
  - FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO LIGHT FIXTURES, MOTORS, VIBRATING ELECTRICAL EQUIPMENT AND HORIZONTAL RUNS IN WALLS.
  - USE COMPRESSION TYPE FITTINGS FOR ALL METALLIC CONDUIT.

## DEMOLITION NOTES

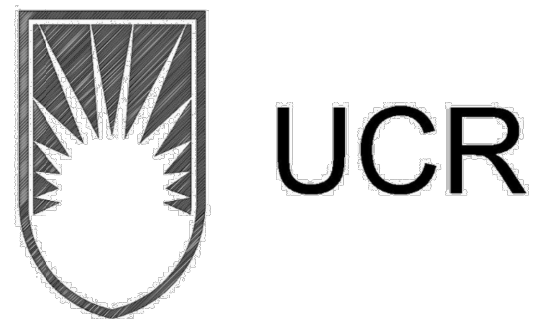
- ALL ELECTRICAL FIXTURES, OUTLETS, DEVICES, ETC., THAT ARE MARKED FOR DELETION, SHALL BE REMOVED COMPLETELY, INCLUDING CONDUIT AND WIRES BACK TO THE LAST REMAINING FIXTURE, OUTLET, DEVICE, ETC.
- WHERE EXISTING OUTLET/DEVICES TO REMAIN ARE FED BY OUTLETS BEING REMOVED BY WORK UNDER THIS CONTRACT, THE CONTRACTOR SHALL ROUTE NEW CONDUIT, WIRE, ETC., AS REQUIRED TO MAINTAIN THE SUBJECT OUTLETS IN OPERATION.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER PRIOR TO REMOVAL OF EXISTING ELECTRICAL EQUIPMENT AND TURN OVER REMOVED EQUIPMENT THAT THE OWNER REQUESTS, IN AS-FOUND CONDITION. EQUIPMENT THAT IS TO BE TURNED OVER SHALL BE BOXED AND TAGGED TO IDENTIFY THE SPECIFIC EQUIPMENT.
- ALL EXISTING CONDUITS WITHIN PROJECT AREA FOR LIGHTING FIXTURES, RECEPTACLES, OTHER BRANCH CIRCUITS LOADS AND COMMUNICATIONS/SIGNAL SYSTEMS, WHETHER SHOWN ON PLANS OR NOT, SHALL BE A PART OF THIS CONTRACT.
- IN GENERAL, THE DEMOLITION PLAN SHOWS EXISTING EQUIPMENT THAT IS TO REMAIN, BE REMOVED OR REMOVED AND RELOCATED. HOWEVER, ELECTRICAL EQUIPMENT WHETHER SHOWN ON THIS DRAWING OR NOT, THAT IS LOCATED IN A REMOVED WALL OR CEILING, SHALL BE REMOVED UNLESS OTHERWISE NOTED.
- WHERE EXISTING WALLS ARE REMOVED BY WORK UNDER THIS CONTRACT, EXISTING CONDUIT FEEDS UP THROUGH FLOOR SHALL BE CUT OFF AND PLUGGED FLUSH WITH FLOOR AND CONDUCTORS REMOVED FROM THAT POINT BACK TO LAST OUTLET REMAINING IN SERVICE. WHERE THE SUBJECT CONDUIT FEEDS OUTLETS/ DEVICES REMAINING IN OPERATION THE CONTRACTOR SHALL REROUTE THE SUBJECT CONDUIT AND CONDUCTORS AS REQUIRED TO MAINTAIN OPERATION OF SUCH CIRCUITS/SYSTEMS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND DIMENSION ALL SUCH CONDUITS ON THE "RECORD" DRAWINGS.
- IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO MAINTAIN CONTINUITY OF ALL ELECTRICAL AND COMMUNICATION SYSTEMS, EQUIPMENT, ETC., REMAINING IN OPERATION. MAINTAINING CONTINUITY SHALL CONSIST OF RE-ROUTING CONDUIT, WIRE, ETC., AS REQUIRED TO MAINTAIN THE SUBJECT SERVICES IN OPERATION.
- EXISTING CIRCUITS THAT ARE REMOVED AND NOT RE-USED SHALL BE IDENTIFIED ON PANEL SCHEDULE AS "SPARE".

## ELECTRICAL SYMBOL LIST

- CONDUIT RUN, CONCEALED IN CEILING, WALLS OR UNDER FLOOR 3/4" MIN.
- — — CONDUIT RUN, UNDERGROUND.
- — — ] CONDUIT STUBBED OUT AND CAPPED. FULL LINE IN PLACE.
- — — ] CONDUIT STUBBED OUT AND CAPPED. FULL LINE IN PLACE.
- — — ] FLEXIBLE CONDUIT. SEALTITE WHERE EXPOSED TO WEATHER. REFER TO SPECIFICATIONS FOR USE.
- ● — CONDUIT TURNED DOWN.
- ○ — CONDUIT TURNED UP.
- #10 — — — — — CROSS LINES ON CONDUIT RUNS INDICATE NUMBER OF #12 WIRES CONTAINED THEREIN. TWO #12 ARE INDICATED WHEN CROSS LINES ARE NOT SHOWN. NUMERALS ADJACENT TO CROSS LINES ON CONDUIT RUNS INDICATE SIZE OF CONDUCTORS IN LIEU OF #12.
- B-13 — — — — — CONDUIT HOME RUN TO PANELBOARD. LETTER AND NUMERALS INDICATES ELECTRICAL PANEL AND CIRCUIT NUMBER.
- E — EXISTING CONDUIT AND CIRCUIT CONDUCTORS TO REMAIN IN OPERATION.
- ER — EXISTING CONDUIT AND CIRCUIT CONDUCTORS TO BE REMOVED.
- EA — EXISTING CONDUIT TO BE ABANDONED IN PLACE. CONDUCTORS TO BE DISCONNECTED AND REMOVED.
- (E) EXISTING TO REMAIN.
- (R) EXISTING EQUIPMENT TO BE REMOVED.
- (N) NEW EQUIPMENT.
- — — — — BRANCH CIRCUIT PANEL, MOUNTING AS SHOWN ON SCHEDULES.
- ⊕ DUPLEX RECEPTACLE, FLUSH IN WALL, SPECIFICATION GRADE, GROUNDING TYPE, 20 AMP, 120V, WITH THERMOPLASTIC WALL PLATE TO MATCH DEVICE. MTD. AT "18".
- ⊗ EXIT SIGN
- S DOOR SWITCH

- ⬡<sup>3</sup><sub>+20'-0"</sub> LIGHTING FIXTURE IDENTIFICATION SYMBOL. LETTER INDICATES TYPE OF FIXTURE. NUMERAL AT TOP OF HEXAGON INDICATES NUMBER OF FIXTURES REQUIRED. NUMBER AT BOTTOM OF HEXAGON INDICATES MOUNTING HEIGHT FROM FLOOR TO BOTTOM OF FIXTURE. OMISSION OF MOUNTING HEIGHT INDICATES CEILING MOUNTING.
- ⊕ JUNCTION BOX.
- ⊠ 2X2 LED LIGHT FIXTURE. SHADING INDICATES FIXTURE TO BE PROVIDED WITH EMERGENCY BATTERY PACK.
- ○ CEILING MOUNTED LED LIGHT FIXTURE. SHADING INDICATES FIXTURE TO BE PROVIDED WITH EMERGENCY BATTERY PACK.
- STEP LIGHT FIXTURE
- ⊗ RECESSED EMERGENCY LIGHTS
- ⊗ NOTE IDENTIFICATION SYMBOL. NUMBER INDICATES NOTE.
- ⊗<sub>E4X</sub> DETAIL CALLOUT

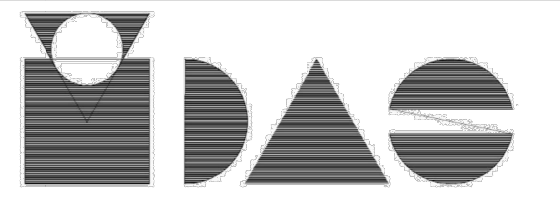
LIGHTING FIXTURE SCHEDULE					
TYPE	MANUFACTURER CATALOG#	LAMP QTY. & TYPE	FIXTURE WATTAGE	VOLTS	REMARKS
A	DUAL-LITE CLM50125 OR APPROVED EQUAL	(2) 25W HALOGEN (PROVIDED WITH FIXTURE)	50	120	RECESSED EMERGENCY LIGHT FIXTURE WITH 4" SQUARE FLUSH ROTATING DOOR. ROUGH-IN KIT, LAMPS AND INTEGRAL 90 MINUTE BATTERY. CUSTOM DOOR FINISH/COLOR AS SELECTED BY THE ARCHITECT.
B	LITHONIA EDG-1-RFR-EL OR APPROVED EQUAL	LED (PROVIDED WITH FIXTURE)	3	120	WALL MOUNTED ARCHITECTURAL LED EDGE-LIT EXIT SIGN WITH RED LETTERS ON MIRRORRED PANEL AND INTEGRAL 90 MINUTE BATTERY PACK.
C	LITHONIA LIGHTING 2AVL2-40LSE-ADP-EZ1-LP840 OR APPROVED EQUAL	4202 LUMEN LED 2AVL2-40LSE-ADP-EZ1-LP840 4000K	48	120	RECESSED 2"x2" LED LIGHT FIXTURE. FIXTURE SHALL BE PROVIDED WITH INTEGRAL LED DRIVER AND INTEGRAL 90 MINUTE 1400 LUMEN EMERGENCY BATTERY BACK-UP WHERE SHADING INDICATED ON PLAN.
D	WINONA LIGHTING 11FC11B-DRP-24D1A-TUWH-FROR-2400LH-30CRI-120-# OR APPROVED EQUAL	2410 LUMEN LED 15 LM/W 4000K	32	120	24" ROUND SURFACE MOUNTED LED LIGHT FIXTURE. FIXTURE SHALL BE PROVIDED WITH INTEGRAL LED DRIVER 3000K TO 3000K COLOR TEMPERATURE, AND 90 COLOR RENDERING INDEX. * * FINISH AS SELECTED BY ARCHITECT
E	BEGA 53 08-K4-BLK OR APPROVED EQUAL	27W LED 24 LUMENS 4000K	2.7	120	RECESSED MOUNTED LED STEP LIGHT FIXTURE. FIXTURE SHALL BE PROVIDED WITH 4000K COLOR TEMPERATURE, LED DRIVER, WHITE SAFETY GLASS, LOUVERS, AND BLACK FINISH.
F	TIVOLI V-LTP-03-40-#-12-PSJ OR APPROVED EQUAL	LED 8375 LUMENS 4000K	1.5	120	SURFACE MOUNTED LED STEP-LIGHT. PROVIDED WITH 4000K COLOR TEMPERATURE, AND LED DRIVER.



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Institutional Designs & Architectural Services  
3903 10th Street, Riverside, CA 92501-3521  
Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:



Architect's Stamp:

Consultants Stamp:

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

### REVISIONS

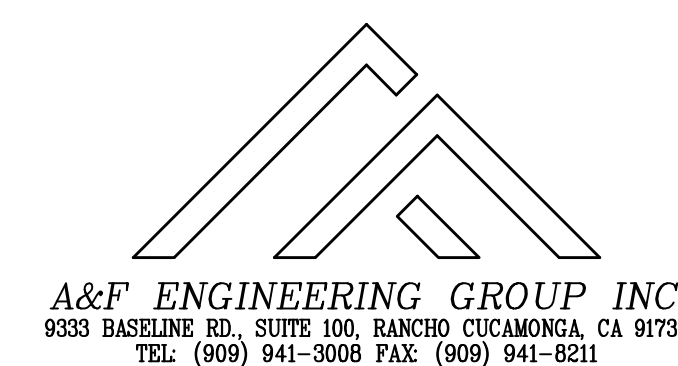
REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager  
SCOTT DONNEL

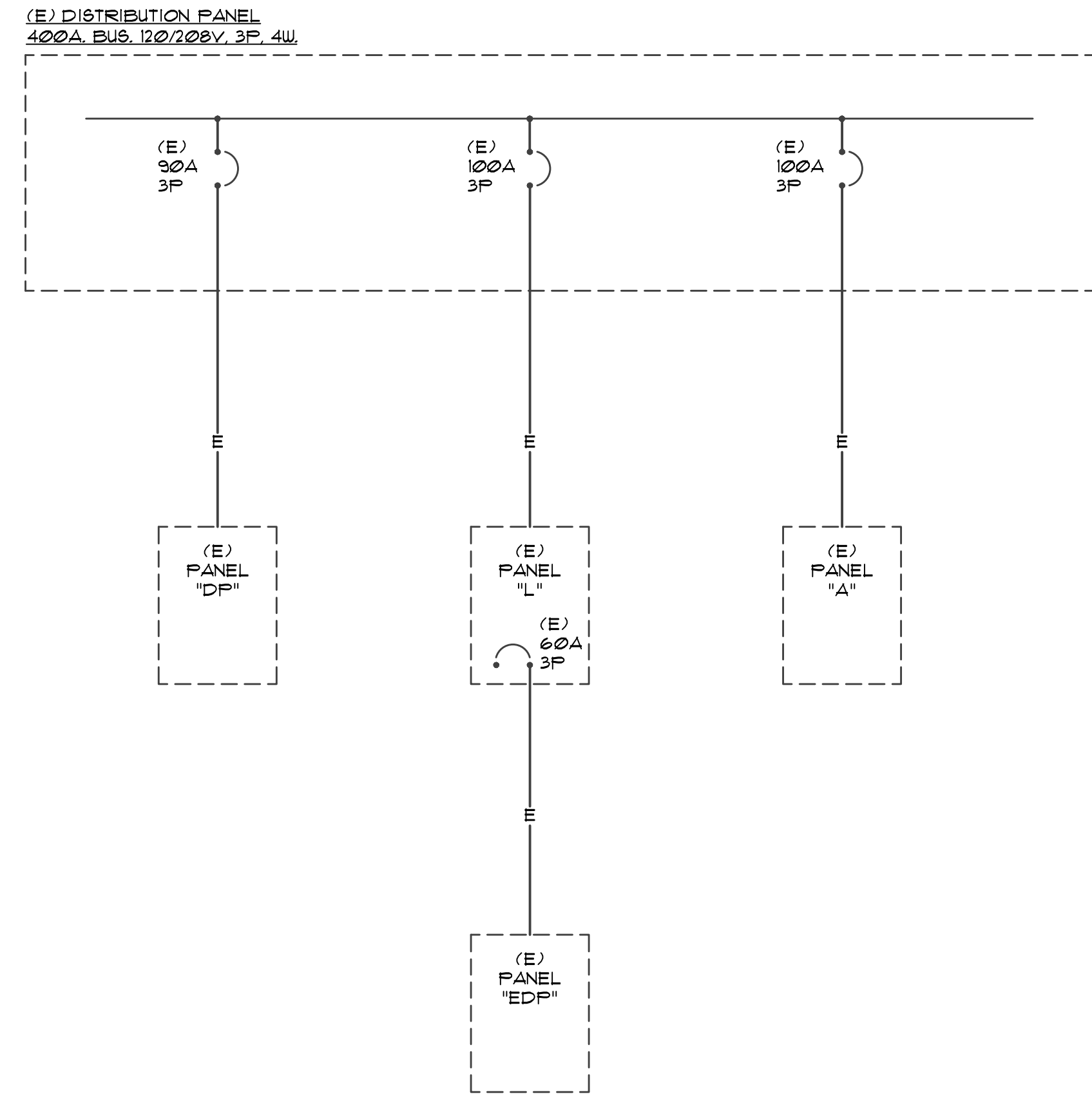
scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval 08/28/20
UCR project no. 957443	construction release
also number	



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9333 BASELINE RD., SUITE 100, RANCHO CUCAMONGA, CA 91730  
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Drawing Name  
GENERAL NOTES & SYMBOL LIST  
Sheet No.  
E-001  
OF





SINGLE LINE DIAGRAM

**PANEL "A"**  
VOLTAGE: 208/120V-4-WIRE      MAIN BREAKER: 100A      SCA EXISTING  
LOCATION: ELEVATOR LOBB      BUS SIZE: 100A      MOUNT: SURFACE  
ENTRY: BOTTOM

DESCRIPTION	QKT	BKR	P	LTS	REC	MSC	MTR	A-VA	B-VA	C-VA	AMPS
LAPTOP OUTLETS	1	20	1		8			1440			
LAPTOP OUTLETS	3	20	1		8				1440		
LAPTOP OUTLETS	5	20	1		8					1440	
LAPTOP OUTLETS	7	20	1		13			2340			
LAPTOP OUTLETS	9	20	1		9				1620		
LAPTOP OUTLETS	11	20	1		10					1800	
LAPTOP OUTLETS	13	20	1		8			1440			
LAPTOP OUTLETS	15	20	1		8				1440		
LAPTOP OUTLETS	17	20	1		8					1440	
AUTO SLIDING DOORS	19	20	1								
SPARE	21	20	1								
SPARE	23	20	1								
SPACE	25	20	1								
SPACE	27	20	1								
SPACE	29	20	1								
SUB TOTAL VOLT/AMPS:								5220	4500	4680	
LAPTOP OUTLETS	2	20	1		8			1440			
LAPTOP OUTLETS	4	20	1		8				1440		
LAPTOP OUTLETS	6	20	1		8					1440	
LAPTOP OUTLETS	8	20	1		6			1080			
LAPTOP OUTLETS	10	20	1		8				1440		
LAPTOP OUTLETS	12	20	1		7					1260	
SPARE	14	20	1								
LAPTOP OUTLETS	16	20	1		8				1440		
LAPTOP OUTLETS	18	20	1		8					1440	
LAPTOP OUTLETS	20	20	1		8			1440			
LAPTOP OUTLETS	22	20	1		10					1800	
LOBBY LTS	24	20	1	14							476
SPACE	26	20	1								
SPACE	28	20	1								
SPACE	30	20	1								
SUB TOTAL VOLT/AMPS:								3960	6120	4616	
TOTAL VOLT/AMPS:								9180	10620	9296	
TOTAL AMPS/PHASE:								77	89	77	
CONNECTED: 29096	VA										
25% OF MTR:	VA										
25% OF LCL:	VA										
CALCULATED: 29096	VA	=	80.76	AMPS		80.76	ACTUAL AMPS				



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Architect's Data:

Architect's Stamp:      Consultants Stamp:

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS

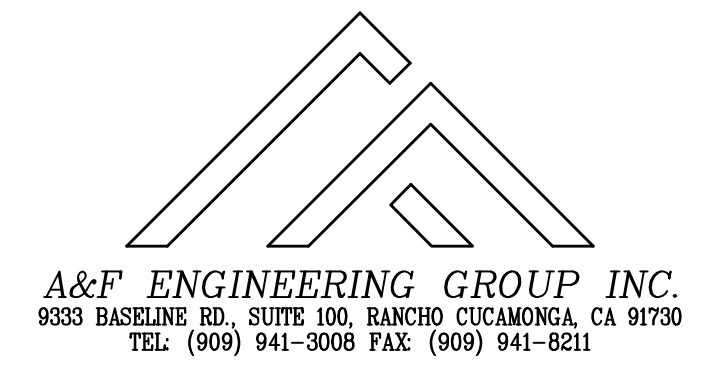
REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

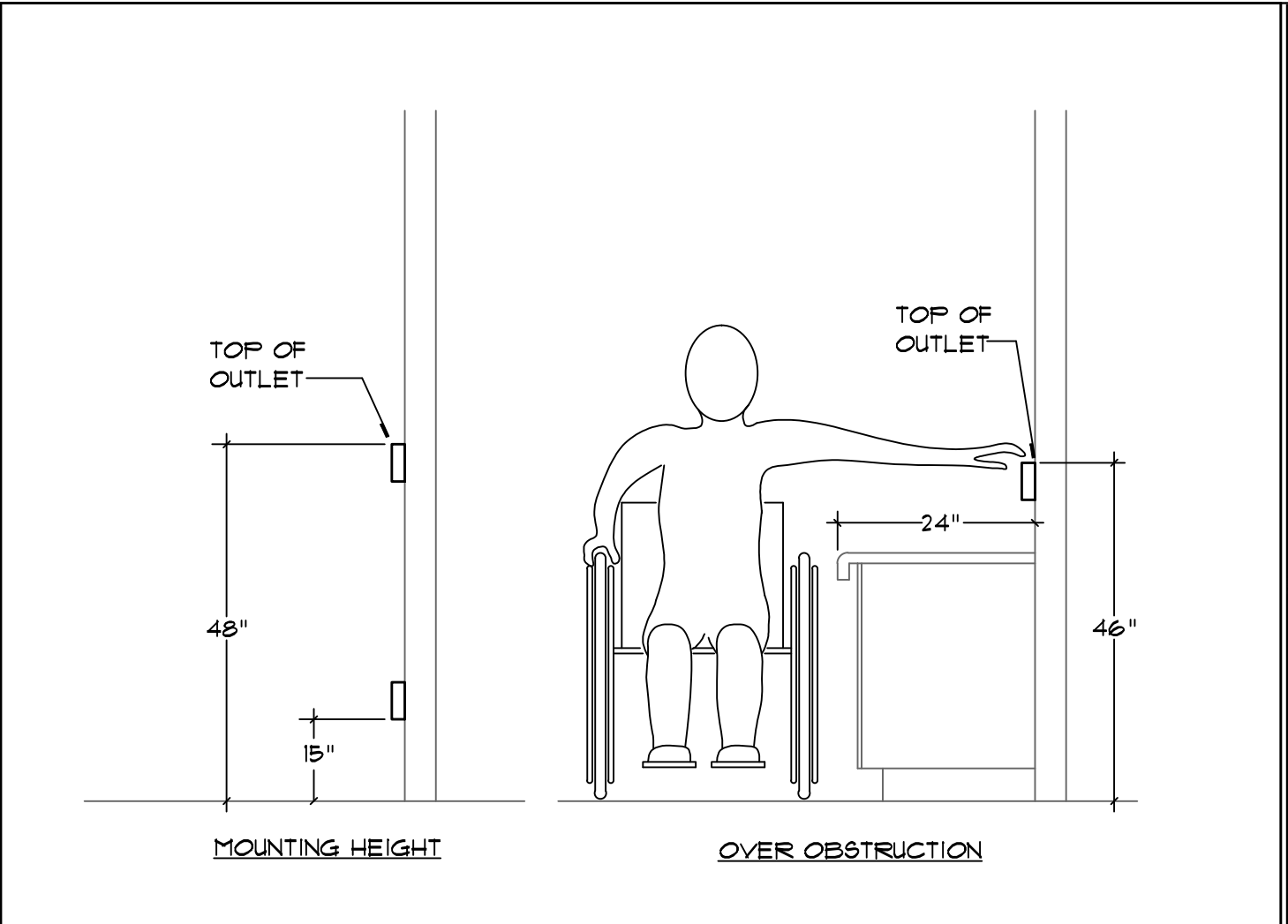
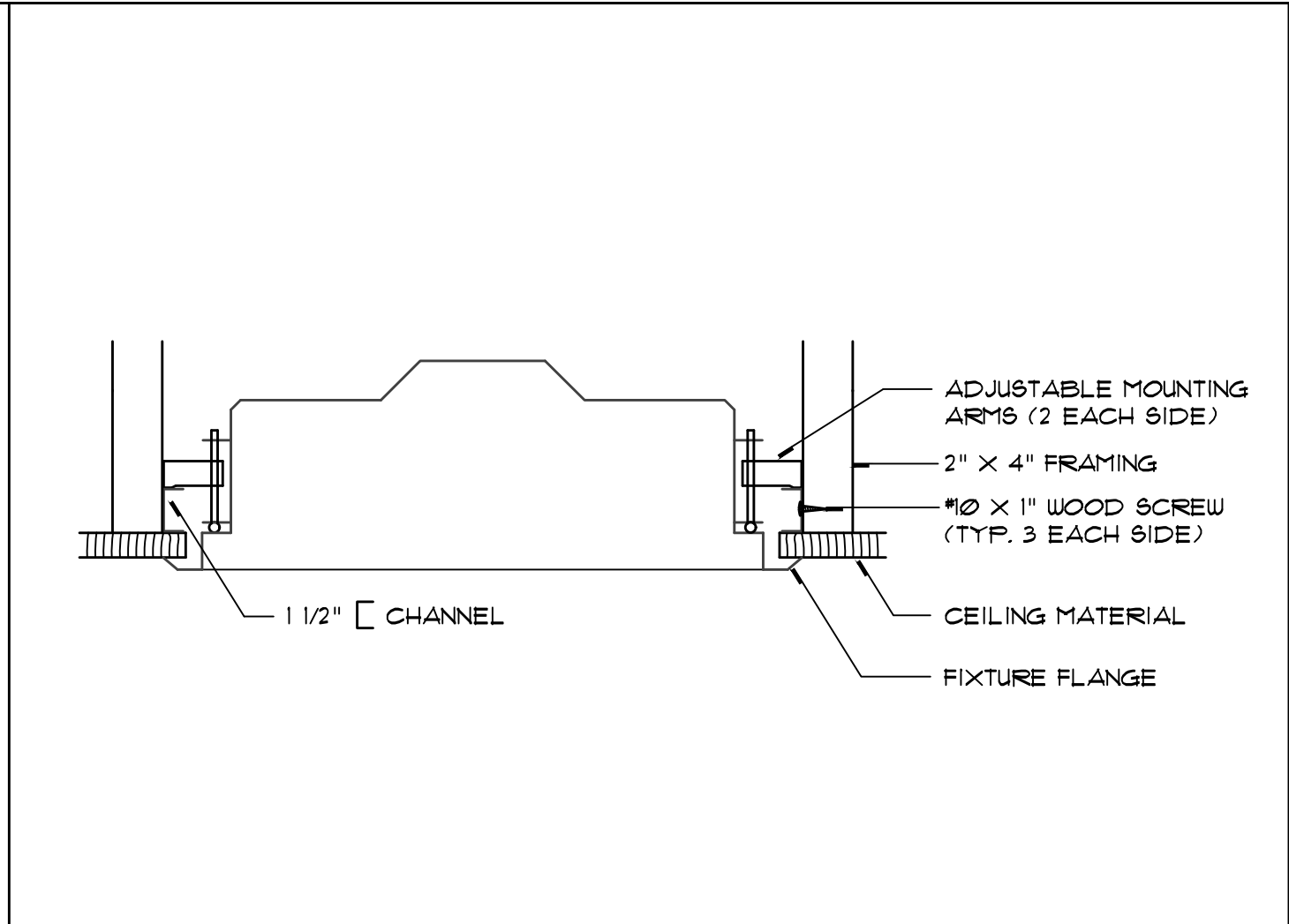
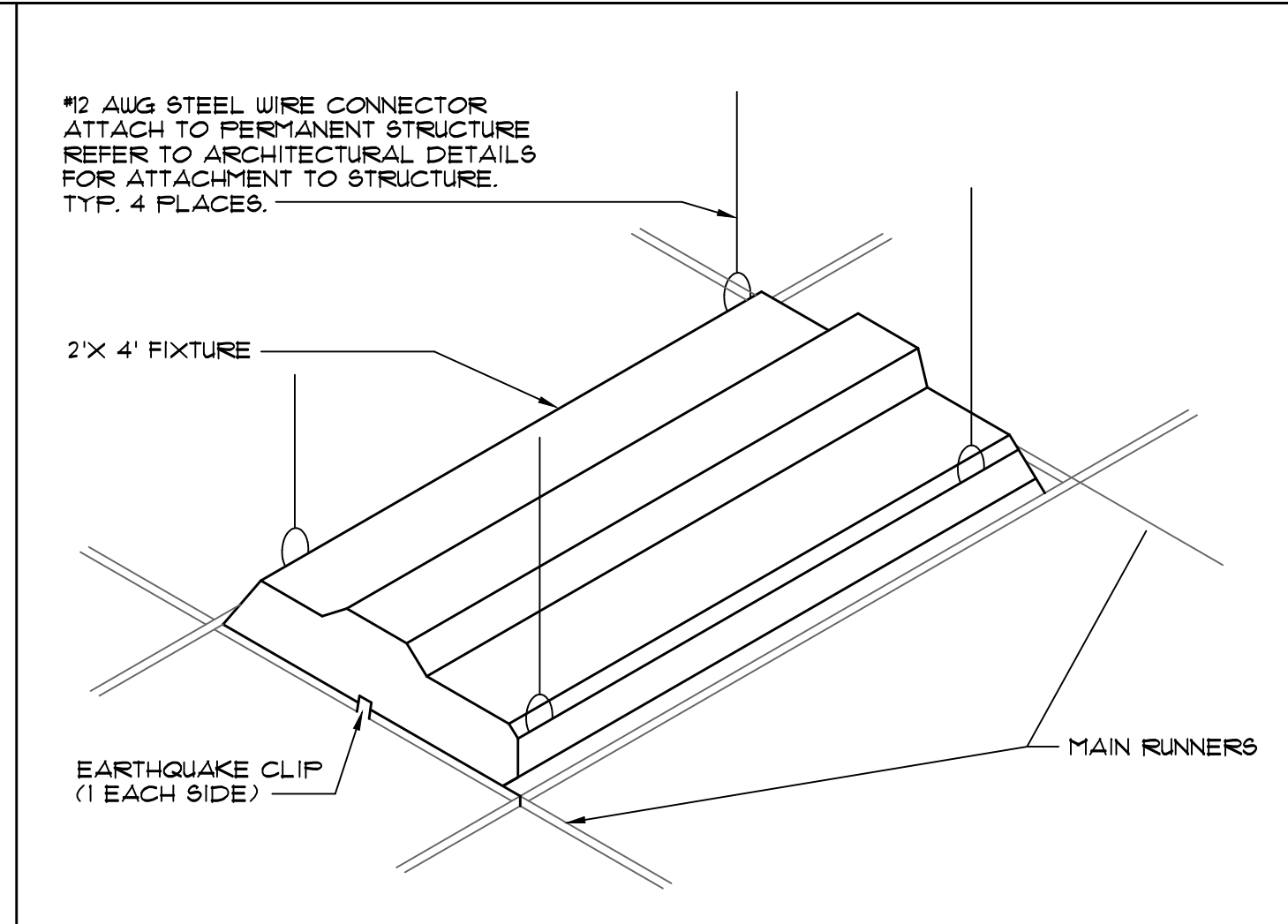
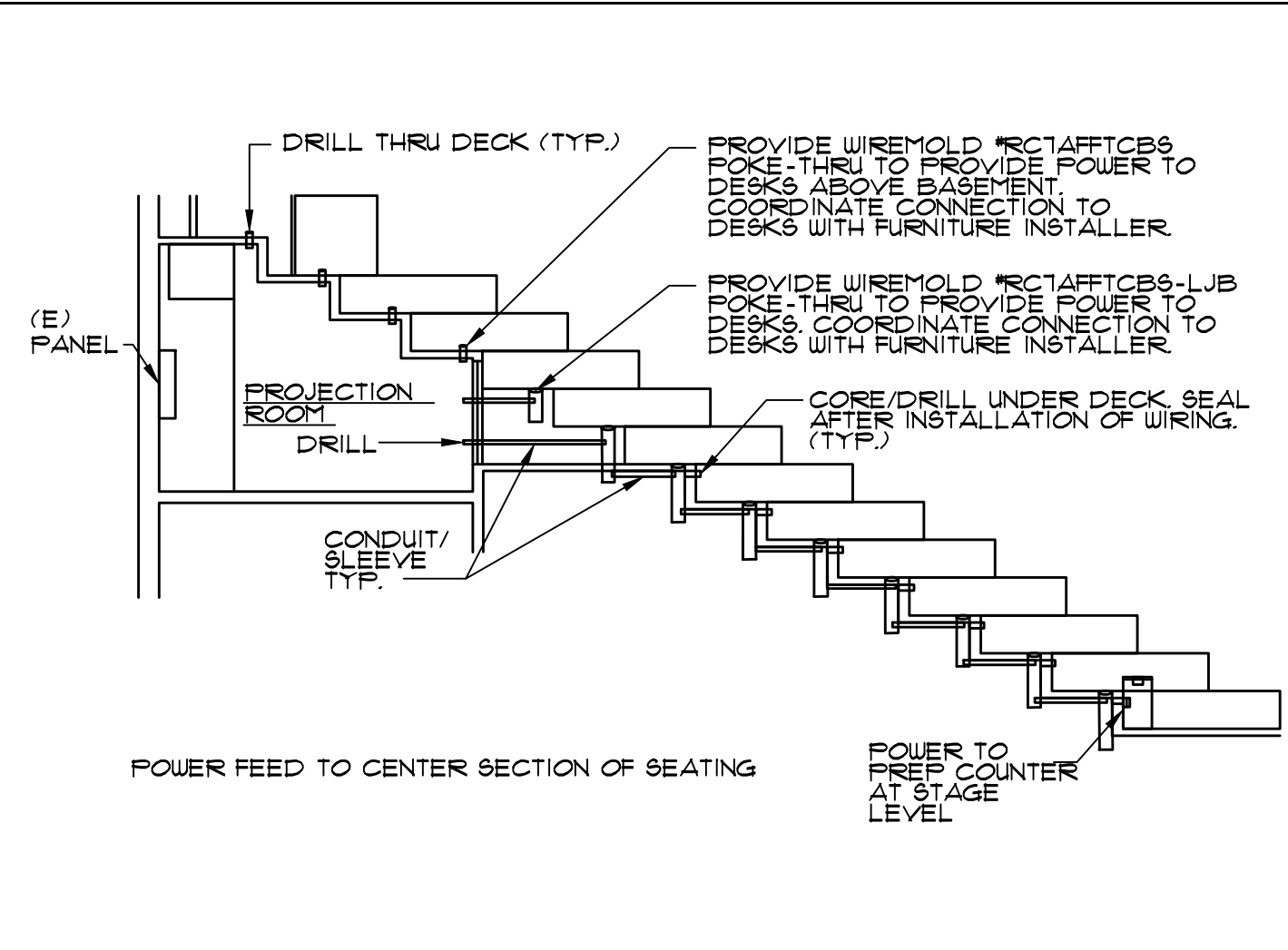
UCR project manager  
**SCOTT DONNEL**

scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval 08/28/20
UCR project no. 957443	construction release
iso number	



Drawing Name  
**PANELS & SINGLE LINE DIAGRAM**

Sheet No.  
**E-002**  
OF



FEED TO CENTER SEATING ROWS SCALE: NONE 1

LIGHT FIXTURE - T-BAR MOUNTED SCALE: NONE 2

LIGHT FIXTURE - GYP CEILING SCALE: NONE 3

DEVICE MOUNTING HEIGHTS SCALE: NONE 4

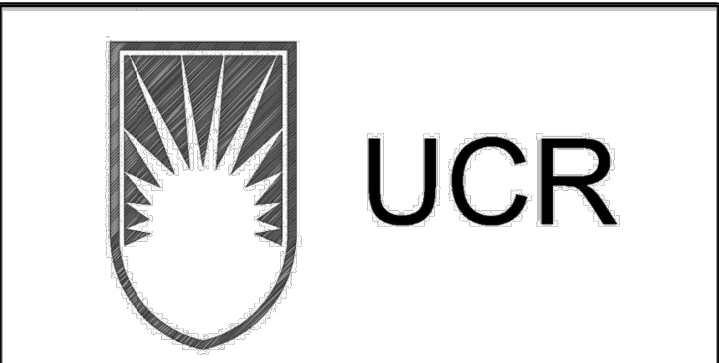
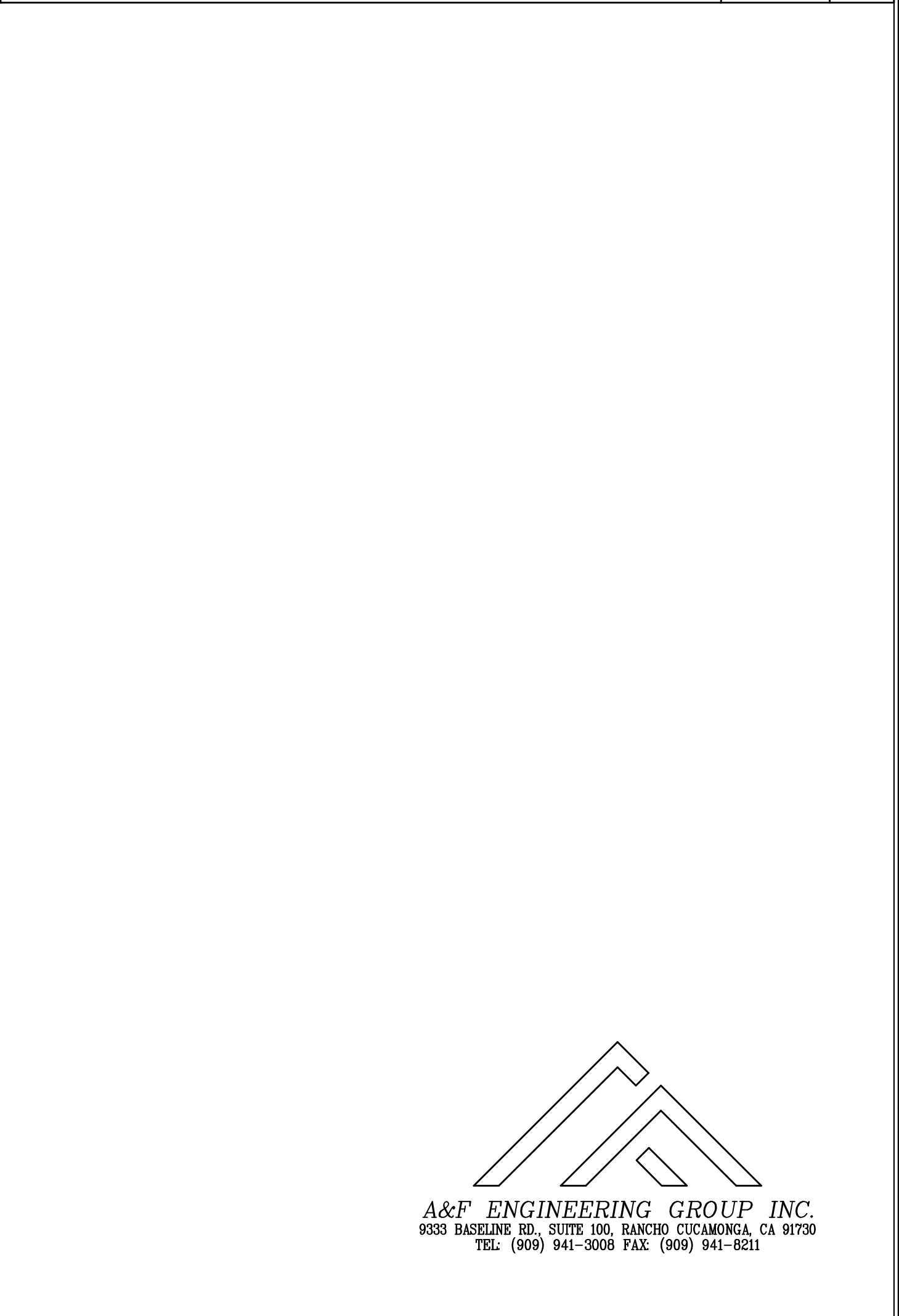
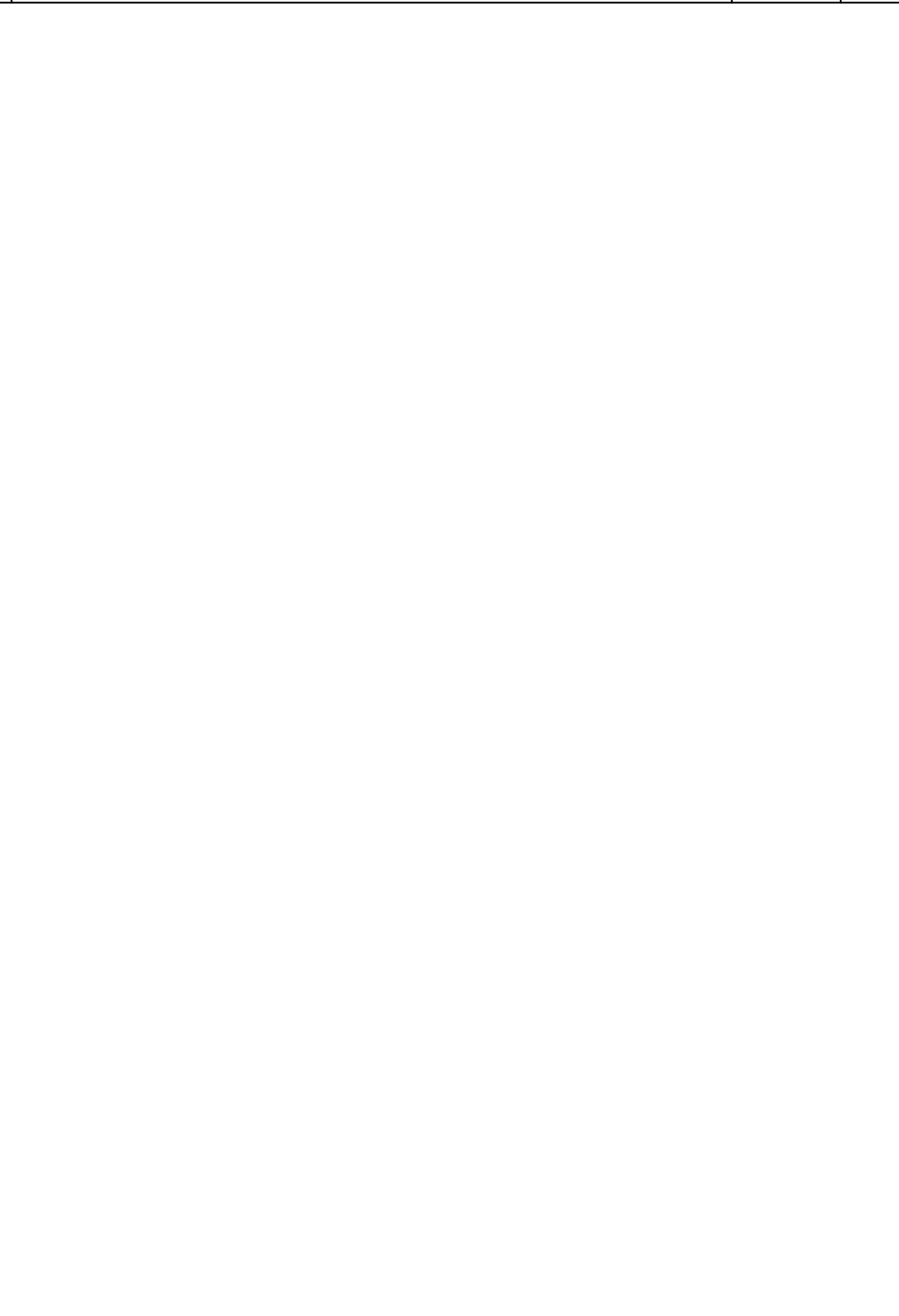


NOT USED SCALE: NONE 5

NOT USED SCALE: NONE 6

NOT USED SCALE: NONE 7

NOT USED SCALE: NONE 8



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Tel: (951) 342-3135 Fax: (951) 342-3137  
Architect's Data:



Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL  
REBID AUGUST 2020

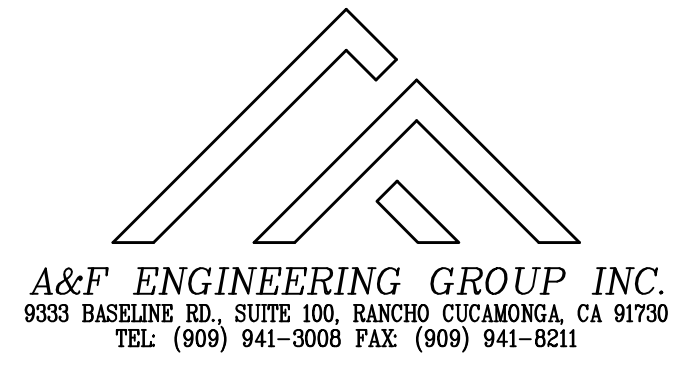
REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
UCR  
DMFI PROJECTS 2019  
PHYSICS 2000 RENEWAL

UCR project manager  
SCOTT DONNEL

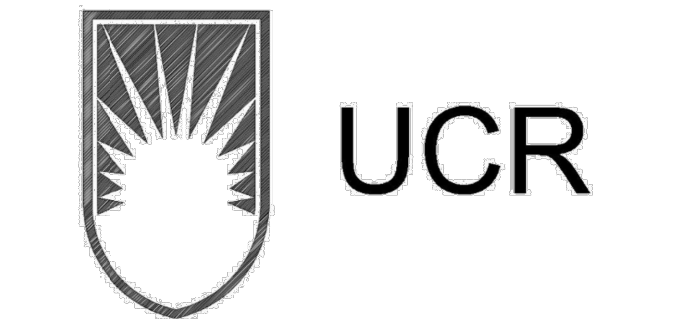
scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval 08/28/20
UCR project no. 957443	construction release
also number	



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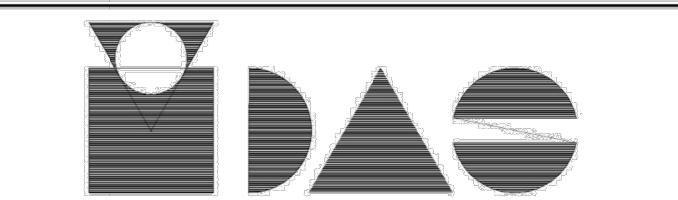
Drawing Name  
ELECTRICAL  
DETAILS  
Sheet No.  
E-003  
OF





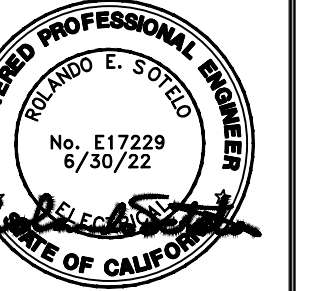
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RIVERSIDE, CA. 92507
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3903 10th Street, Riverside, CA 92501-3521
Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:



Architect's Stamp: Consultants Stamp:

PROJECT TITLE
UCR
DMFI PROJECTS 2019
PHYSICS 2000 RENEWAL
REBID AUGUST 2020

REVISIONS

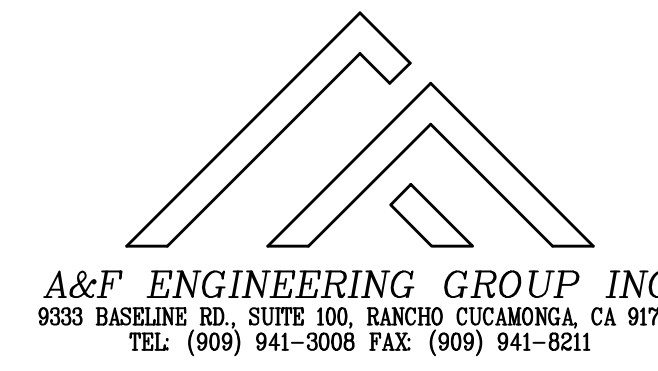
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Consultant's Data:

Project Title
UCR
DMFI PROJECTS 2019
PHYSICS 2000 RENEWAL

Table with 2 columns: scale, AS NOTED, sd approval, Checked by, cd approval, UCR project no., construction release, also number

Drawing Name
TITLE 24
COMPLIANCE FORMS
Sheet No.
E-004
OF



A&F ENGINEERING GROUP INC.
8330 BASILINE RD., SUITE 100, RANCHO CUCAMONGA, CA 91700
TEL: (909) 941-3008 FAX: (909) 941-8211

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 3 of 7)
Date Prepared: 5/8/2020

Table with 2 columns: F, 1.2w LED, No, No, 1.2, JAB Lamp, 48, No, 57.6, 533.6

Total Designed Watts: 533.6
\*FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)(8) is adjusted to be 75% of their rated wattage.

G. MODULAR LIGHTING SYSTEMS
This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)
This table includes lighting controls for conditioned and unconditioned spaces.

Table with 12 columns: 01-12, Area Description, Complete Building or Area Category Primary Function Area, Area Controls, Multi-Level Controls, Shut-Off Controls, Primary/Sky lit Daylighting, Secondary Daylighting, Interlocked Systems, Field Inspector

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 4 of 7)
Date Prepared: 5/8/2020

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS
Each area complying using the Complete Building or Area Category Methods per §140.6(a) are included in this table.

Table with 12 columns: 01-12, Area Description, Complete Building or Area Category Primary Function Area, Area Controls, Multi-Level Controls, Shut-Off Controls, Primary/Sky lit Daylighting, Secondary Daylighting, Interlocked Systems, Field Inspector

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Selections have been made based on information provided in this document.

Table with 3 columns: Yes, No, Field Inspector (Pass/Fail)

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Selections have been made based on information provided in this document.

Table with 3 columns: Yes, No, Field Inspector (Pass/Fail)

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 2 of 7)
Date Prepared: 5/8/2020

Table with 9 columns: 01-09, Allowed Lighting Power per §140.6(b) (Watts), Adjusted Lighting Power per §140.6(a) (Watts), Compliance Results

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Table with 10 columns: 01-10, Name or Item Tag, Complete Luminaire Description, Modular (Track) Fixture, Small Aperture & Color Change, Watts per luminaire, How is Wattage determined, Total Number of Luminaires, Excluded per §140.6(a)(3), Design Watts, Field Inspector

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 5 of 7)
Date Prepared: 5/8/2020

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS
This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE
This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))
This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS
This section does not apply to this project.

R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS
This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)
This section does not apply to this project.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 1 of 7)
Date Prepared: 5/8/2020

Table with 5 columns: 01-05, Project Location (city), Climate Zone, Occupancy Types Within Project, Office, Retail, Warehouse, High-Rise Residential, Relocatable, Healthcare, School, Support Areas, Other (Write in)

Table with 5 columns: 01-05, Scope of Work, My Project Consists of (check all that apply), New Lighting System, New Lighting System - Parking Garage, Total Area of Work (ft²)

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 6 of 7)
Date Prepared: 5/8/2020

H. INDOOR LIGHTING CONTROLS (Not including PAFs)
\*NOTES: Controls with a \* require a note in the space below explaining how compliance is achieved.

Table with 2 columns: 13, Plan Sheet Showing Daylit Zones

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS
Each area complying using the Complete Building or Area Category Methods per §140.6(a) are included in this table.

Table with 6 columns: 01-06, Area Description, Complete Building or Area Category Primary Function Area, Allowed Density (W/ft²), Area (ft²), Allowed Wattage (Watts), Additional Allowance / Adjustment

J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM
This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE
This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY
This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING
This section does not apply to this project.

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401

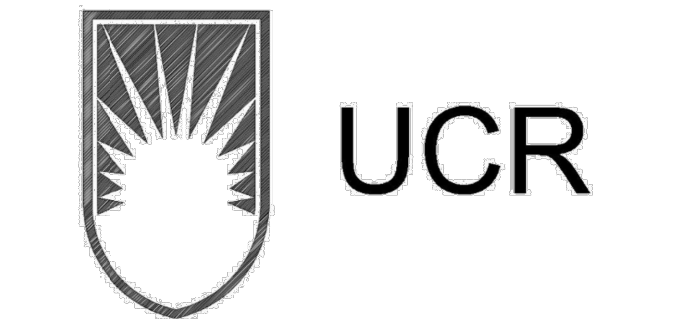
STATE OF CALIFORNIA
Indoor Lighting
CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE
Project Name: UCR Physics 2000 Renewal
Project Address: 900 University Ave
Report Page: (Page 7 of 7)
Date Prepared: 5/8/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:

Registration Number: CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance
Report Version: 2019.0.001
Schema Version: rev 20190401





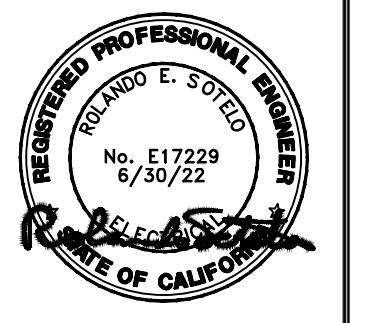
UNIVERSITY OF CALIFORNIA RIVERSIDE

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1223 UNIVERSITY AVENUE, SUITE 240
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Architect's Data:



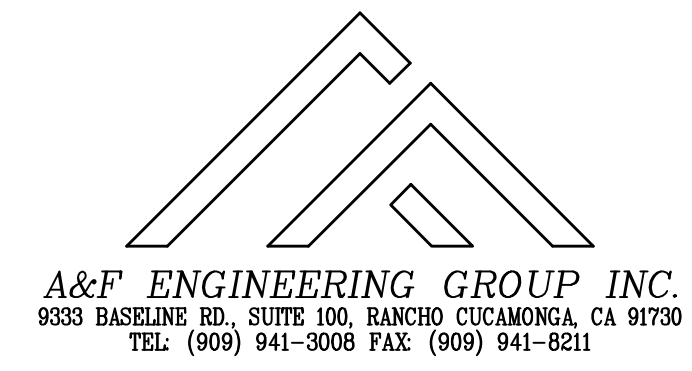
Architect's Stamp: Consultants Stamp:

PROJECT TITLE
UCR
DMFI PROJECTS 2019
PHYSICS 2000 RENEWAL
REBID AUGUST 2020

Table with 3 columns: REV #, DESCRIPTION, DATE. Header row: REVISIONS

Consultants Data:
Project Title: UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL
UCR project manager: SCOTT DONNEL

Table with 4 columns: scale, AS NOTED, sd approval, ds approval. Includes drawing name and sheet number.



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8330 BASILINE RD., SUITE 100, RANCHO CUCUMONGA, CA 91700
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STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 3 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

F. OUTDOOR LIGHTING FIXTURE SCHEDULE
Table with 10 columns: D1, D2, D3, D4, D5, D6, D7, D8, D9, D10. Includes Name or Item Tag, Complete Luminaire Description, Watts per luminaire, etc.

\* NOTES: Selections with a \* require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(c)
\*\* FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)
1 For linear luminaires, wattage should be indicated as W/l instead of Watts/luminaire. Total linear feet should be indicated in column D5 instead of number of luminaires.
2 Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.
3 Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by §130.2(b)

G. CUTOFF REQUIREMENTS (BUG)
This section does not apply to this project.

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18

STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 4 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This section does not apply to this project.

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Table with 3 columns: Yes, No, Field Inspector (Pass, Fail). Includes NRCCLTD-01-E and NRCCLTD-02-E.

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Table with 3 columns: Yes, No, Field Inspector (Pass, Fail). Includes NRCCLTD-02-A.

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18

STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 2 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

C. COMPLIANCE RESULTS
Table with 9 columns: O1, O2, O3, O4, O5, O6, O7, O8, O9. Includes General Hardship Allowance, Per Application, Sales Frontage, Ornamental, Per Specific Area, Existing Power Allowance, Total Allowed (Watts), Total Actual (Watts).

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18

STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 5 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

L. LIGHTING POWER ALLOWANCE (per §140.7)
Table with 10 columns: O1, O2, O3, O4, O5, O6, O7, O8, O9, O10. Includes Area Description, Surface Type, Illuminated Area, Allowed Density, Area Allowance, Perimeter Length, Allowed Density, Linear Allowance, Total General AWA + LWA (Watts).

J. LIGHTING ALLOWANCE: PER APPLICATION
Table with 10 columns: O1, O2, O3, O4, O5, O6, O7, O8, O9, O10. Includes Area Description, Surface Type, Illuminated Area, Allowed Density, Area Allowance, Perimeter Length, Allowed Density, Linear Allowance, Total General AWA + LWA (Watts).

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL
This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This section does not apply to this project.

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18

STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 1 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

A. GENERAL INFORMATION
Table with 4 columns: O1, O2, O3, O4. Includes Project Location (city), Climate Zone, Outdoor Lighting Zone per Title 24 Part 1 §10.114, etc.

B. PROJECT SCOPE
This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)(2), for alterations.

My Project Consists of:
Table with 2 columns: O1, O2. Includes New Lighting System, Altered Lighting System, etc.

PLEASE PROCEED TO TABLE F, OUTDOOR LIGHTING FIXTURE SCHEDULE TO DEFINE THE PROJECT'S LUMINAIRES.
\*\* FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18

STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 6 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

H. OUTDOOR LIGHTING CONTROLS
This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.

Mandatory Controls
Table with 5 columns: O1, O2, O3, O4, O5. Includes Area Description, Shut-Off, Auto-Schedule, Motion Sensor, Field Inspector.

\* NOTES: Controls with a \* require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c)
Wall Mount Fixture | Motion Sensing Controls: Luminaires with a maximum rated wattage of 40 watts each are not required to have motion sensing controls; EXCEPTION 1 to Section 130.2(c)(3)

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18

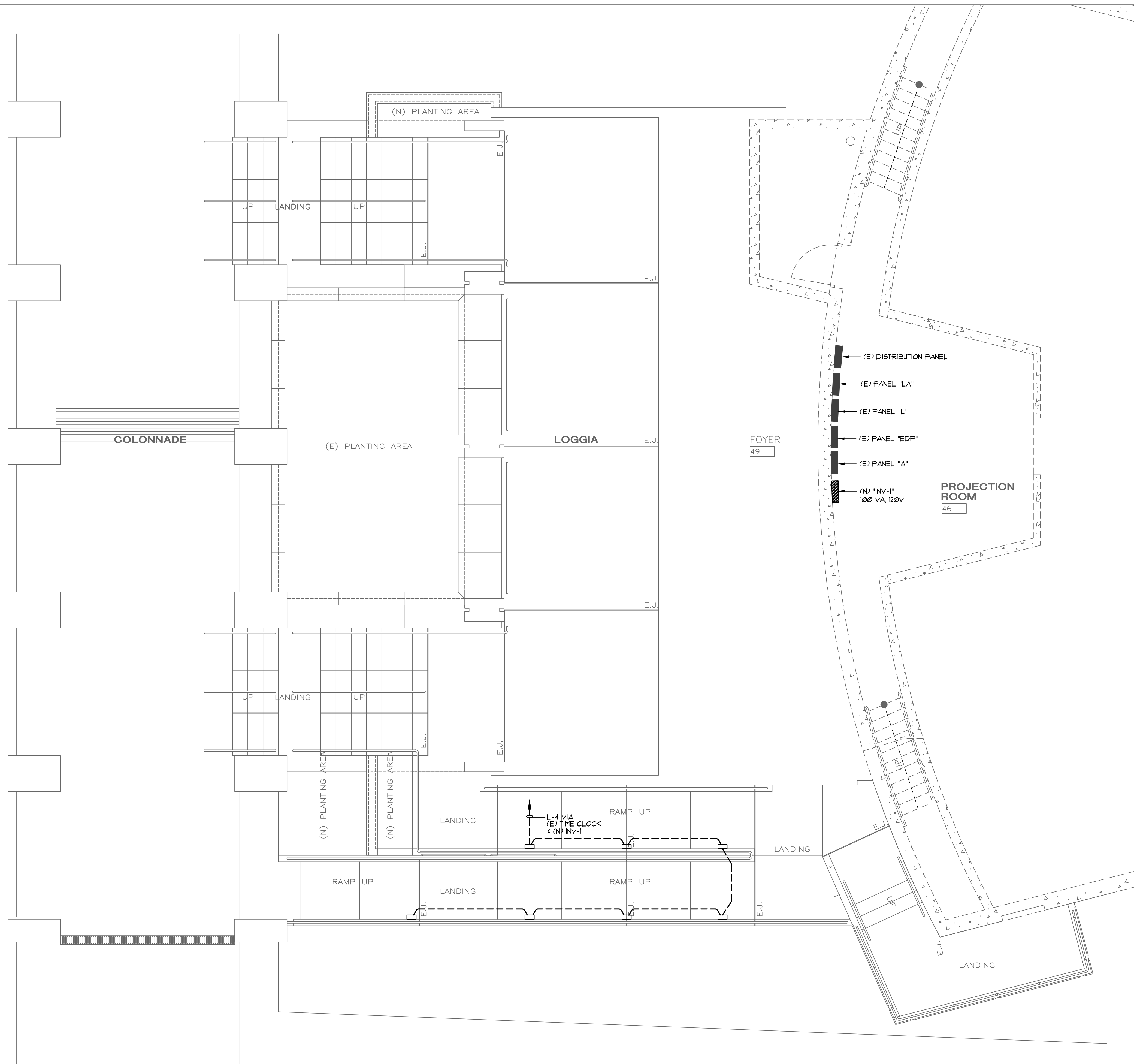
STATE OF CALIFORNIA Outdoor Lighting NRCCLTD-E CALIFORNIA ENERGY COMMISSION
CERTIFICATE OF COMPLIANCE NRCCLTD-E
Project Name: UCR Physics 2000 Renewal Report Page: (Page 7 of 7)
Project Address: 900 University Ave Date Prepared: 5/8/2020

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.
Documentation Author Name: Luis E. Flores
Documentation Author Signature: [Signature]
Company: A&F Engineering Group, Inc.
Address: 8320 Baseline Rd, Suite C, Rancho Cucamonga CA 91701
City/State/Zip: Rancho Cucamonga CA 91701

RESPONSIBLE DESIGNER'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1, and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) I issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner or occupant.
Responsible Designer Name: Rolando E. Sotelo
Responsible Designer Signature: [Signature]
Company: A & F Engineering Group, Inc.
Address: 8320 Baseline Rd, Suite C, Rancho Cucamonga CA 91701
City/State/Zip: Rancho Cucamonga CA 91701

Registration Number: Registration Date/Time: Registration Provider: Energysoft
CA Building Energy Efficiency Standards - 2019 Nonresidential Compliance Report Version: 2019.0.001 Schema Version: rev 20190401 Report Generated: 2020-05-08 14:51:18





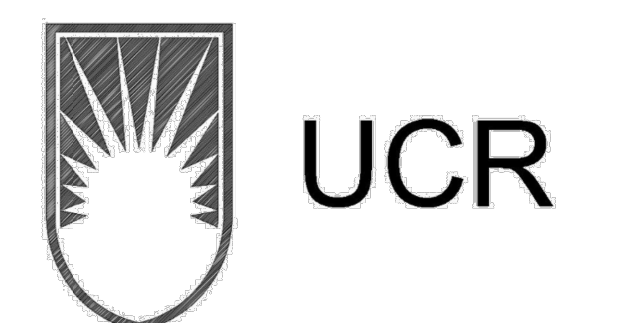
**PLAN NOTES:**

- ① REFER TO LIGHTING FIXTURE SCHEDULE, DRAWING E001, FOR TYPE OF FIXTURE TO BE PROVIDED AND INSTALLED.
- ② CONDUIT ROUTING INDICATED ON THESE PLANS IS DIAGRAMMATIC. ACTUAL ROUTING OF UNDERGROUND CONDUITS SHALL BE COORDINATED IN THE FIELD TO AVOID INTERFERENCE WITH OTHER UTILITIES AND TRADES.
- ③ IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN REQUIRED CLEARANCES BETWEEN UNDERGROUND ELECTRICAL CONDUITS AND FOOTINGS. CONDUIT STUB-UPS SHALL NOT BE INSTALLED IN FOOTINGS. EXACT METHOD FOR STUBBING-UP CONDUITS AT FOOTING LOCATIONS SHALL BE COORDINATED IN THE FIELD WITH THE GENERAL CONTRACTOR AND THE ARCHITECT.
- ④ REFER TO DRAWING E001, GENERAL NOTES, FOR ADDITIONAL REQUIREMENTS.
- ⑤ CONTRACTOR TO MEET AND COORDINATE WITH THE TITLE 24 ACCEPTANCE TESTER PRIOR TO THE BEGINNING OF THE PROJECT TO VERIFY ALL TITLE 24 ACCEPTANCE TEST REQUIREMENTS AND DOCUMENTS TO BE COMPLETED. CONTRACTOR SHALL PROVIDE, COMPLETE AND SUBMIT ALL REQUIRED TITLE 24 ACCEPTANCE TEST DOCUMENTS AS REQUIRED BY THE T24 ACCEPTANCE TESTER.

- (E) DISTRIBUTION PANEL
- (E) PANEL "LA"
- (E) PANEL "L"
- (E) PANEL "EDP"
- (E) PANEL "A"
- (N) "INV-1"  
100 VA, 120V

**SITE PLAN**

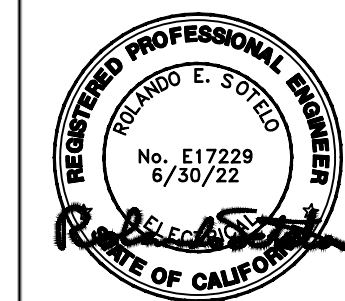
1/4" = 1'-0" **1**



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RIVERSIDE, CA. 92507  
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Architect's Data:



Architect's Stamp: Consultants Stamp:

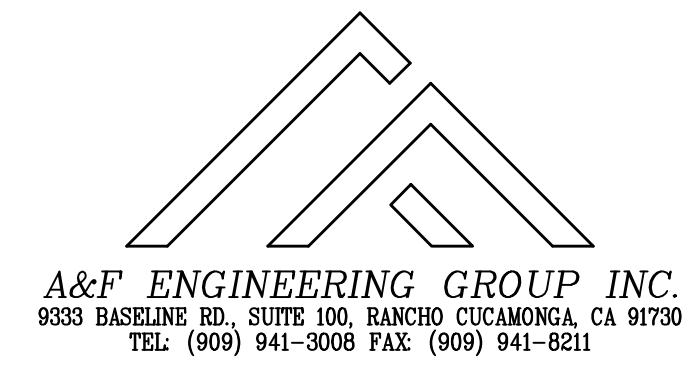
PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS		
REV #	DESCRIPTION	DATE

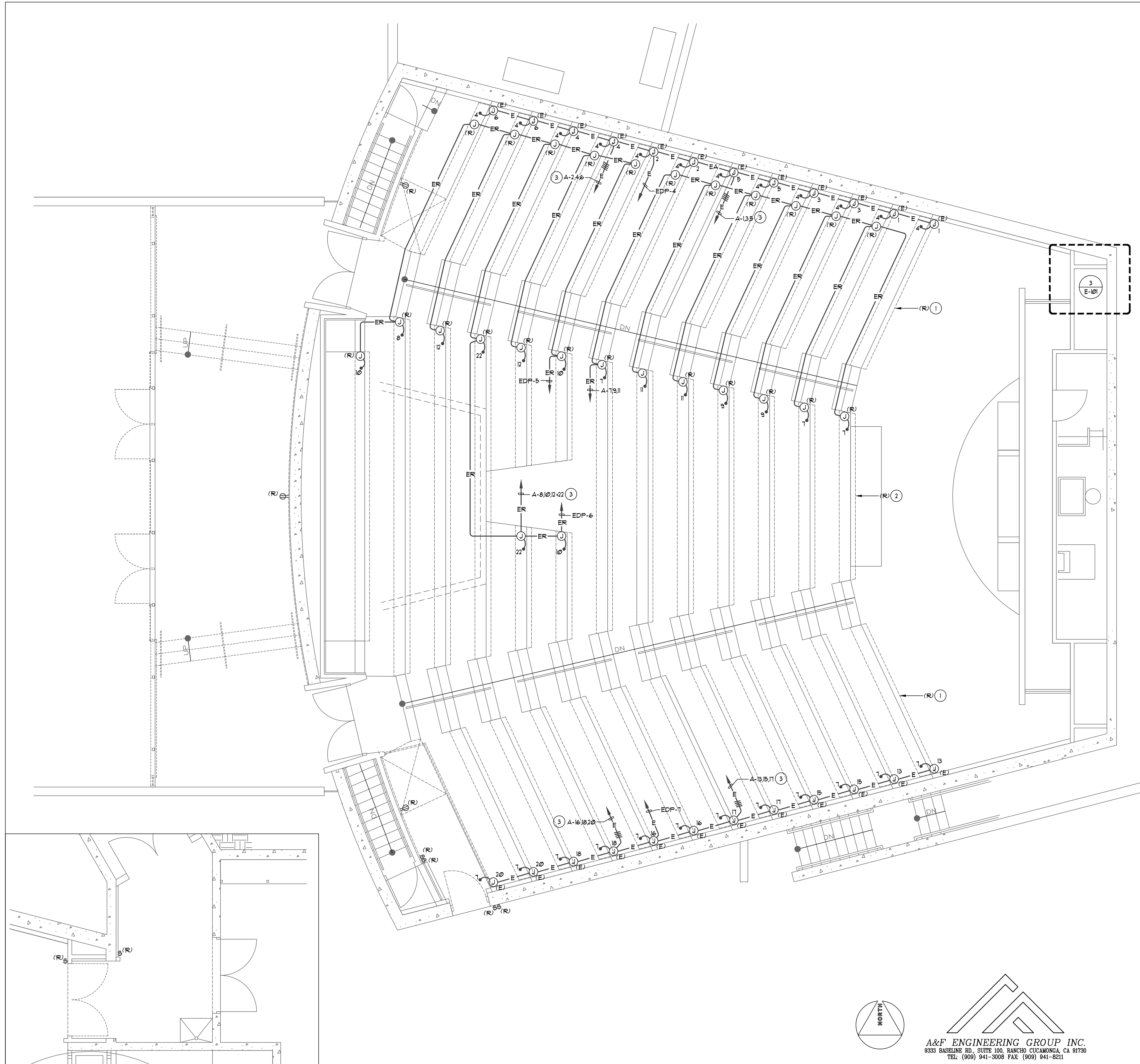
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Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval 08/28/20
UCR project no. 957443	construction release
iso number	

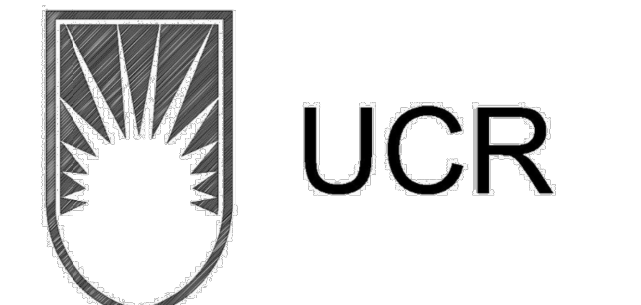
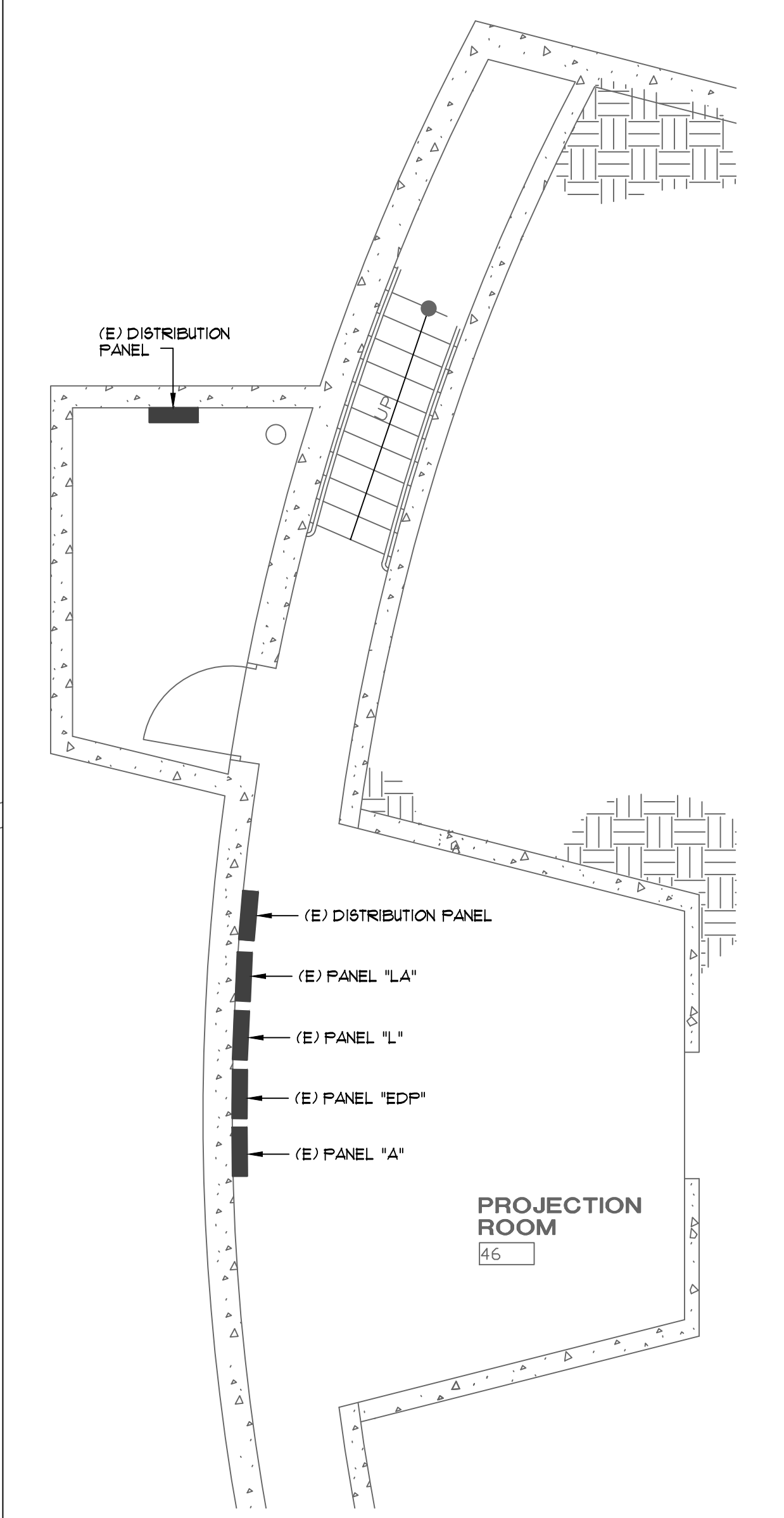


Drawing Name: **SITE PLAN** Sheet No. **E-100**  
OF



**PLAN NOTES**

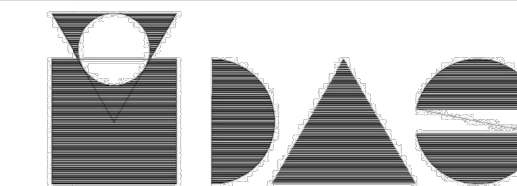
- ① CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING RECEPTACLES/ FIXTURES. DISCONNECT AND REMOVE CONDUIT AND CIRCUIT CONDUCTORS BACK TO THE SERVING J-BOX/CONDUIT BODY AT WALL. PROTECT CIRCUIT CONDUCTORS IN PLACE AT THE WALL J-BOX/CONDUIT BODY.
- ② CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING RECEPTACLES/ FIXTURES. DISCONNECT AND REMOVE CONDUIT AND CIRCUIT CONDUCTORS BACK TO THE CONDUIT HOME-RUN TO THE SERVING PANEL. PROTECT CIRCUIT CONDUCTORS IN PLACE AT THE CONDUIT HOME-RUN LOCATION. TYPICAL FOR CENTER/MIDDLE SEATING ROWS.
- ③ EXISTING CIRCUITS IDENTIFIED ON PLAN TO REMAIN ARE TO BE RE-USED AND PROVIDE POWER TO THE NEW FURNITURE INDICATED ON THE ARCHITECTURAL PLANS.
- ④ ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED. ALL TRACED CIRCUITS WHICH ARE TO REMAIN IN OPERATION SHALL BE IDENTIFIED ON THE SERVING BRANCH CIRCUIT PANEL DIRECTORY. CONTRACTOR SHALL PROVIDE NEW UPDATED TYPED PANEL DIRECTORIES.
- ⑤ REFER TO REMODEL PLANS FOR ADDITIONAL REQUIREMENTS.
- ⑥ REFER TO GENERAL NOTES AND DEMOLITION NOTES, SHEET E-01, FOR ADDITIONAL REQUIREMENTS.



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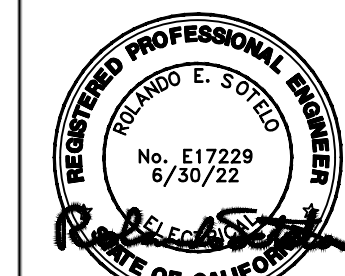
OFFICE OF ARCHITECTS & ENGINEERS

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Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:



Architect's Stamp:

Consultants Stamp:

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

Scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval 08/28/20
UCR project no. 957443	construction release
also number	

Drawing Name  
**1ST FLOOR DEMO. PLAN**  
 Sheet No.  
**E-101**  
 OF

ENLARGED AUTO. DOOR 1/4" = 1'-0" 3

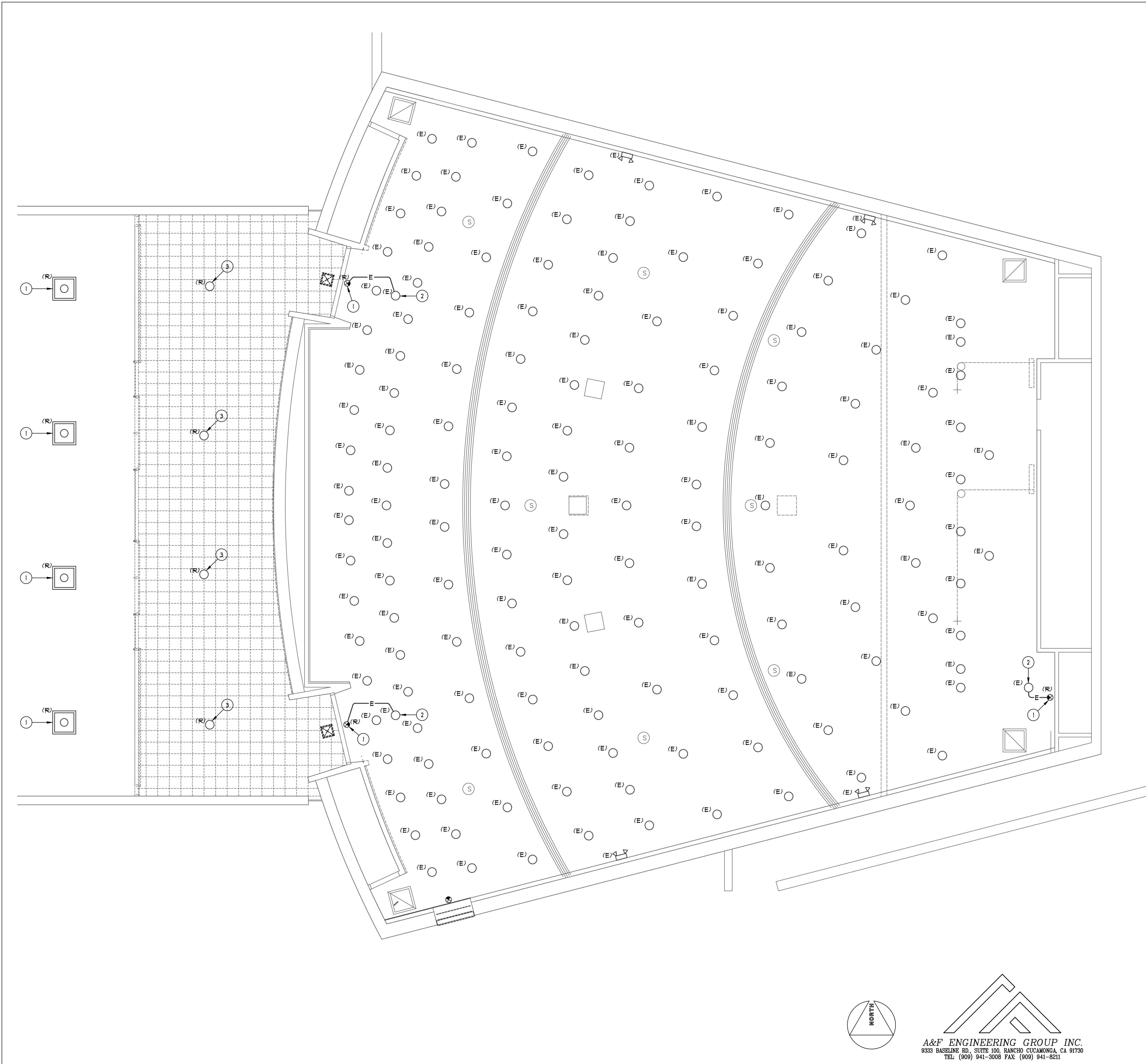
1ST FLOOR DEMO. PLAN

1/4" = 1'-0" 1

BASEMENT DEMO PLAN 1/4" = 1'-0" 2

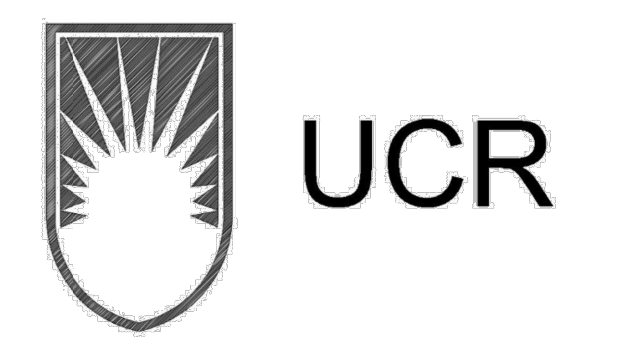
**A&F ENGINEERING GROUP INC.**  
 9533 BASELINE RD., SUITE 100, RANCHO CUCAMONGA, CA 91730  
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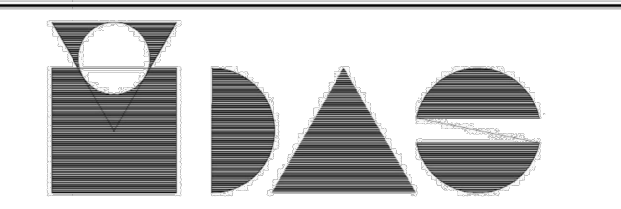
**PLAN NOTES**

- 1 CONTRACTOR SHALL DISCONNECT AND REMOVE LIGHT FIXTURE ONLY. EXISTING BACK-BOX/OUTLET BOX TO BE RE-USED TO SERVE THE NEW LIGHT FIXTURES. EXISTING CIRCUIT/CONTROL CONDUCTORS ARE TO BE PROTECTED IN PLACE.
- 2 EXISTING NIGHT-LIGHT (ALWAYS ON) CIRCUIT TO BE USED TO PROVIDE TO THE NEW EMERGENCY LIGHT FIXTURES.
- 3 CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE, CONDUIT AND CIRCUIT CONDUCTORS BACK TO THE SERVING PANEL OR LAST REMAINING FIXTURE ON THE CIRCUIT.
- 4 ALL CIRCUITS SERVING THE REMODEL AREA, WHETHER IDENTIFIED ON PLAN OR NOT, SHALL BE TRACED AND IDENTIFIED PRIOR TO START OF THE DEMOLITION PHASE. CIRCUITS AFFECTED BY THE REMODEL THAT SERVE AREAS OF THE BUILDING THAT ARE NOT A PART OF THE REMODEL SHALL BE MAINTAINED IN OPERATION DURING THE CONSTRUCTION PHASE. INTERRUPTION OF SERVICE WILL NOT BE ALLOWED. ALL TRACED CIRCUITS WHICH ARE TO REMAIN IN OPERATION SHALL BE IDENTIFIED ON THE SERVING BRANCH CIRCUIT PANEL DIRECTORY. CONTRACTOR SHALL PROVIDE NEW UPDATED TYPED PANEL DIRECTORIES.
- 5 REFER TO REMODEL PLANS FOR ADDITIONAL REQUIREMENTS.
- 6 REFER TO GENERAL NOTES AND DEMOLITION NOTES, SHEET E-01, FOR ADDITIONAL REQUIREMENTS.



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 Tel: (951) 342-3135 Fax: (951) 342-3137

Architect's Data:

Architect's Stamp: Consultants Stamp:

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

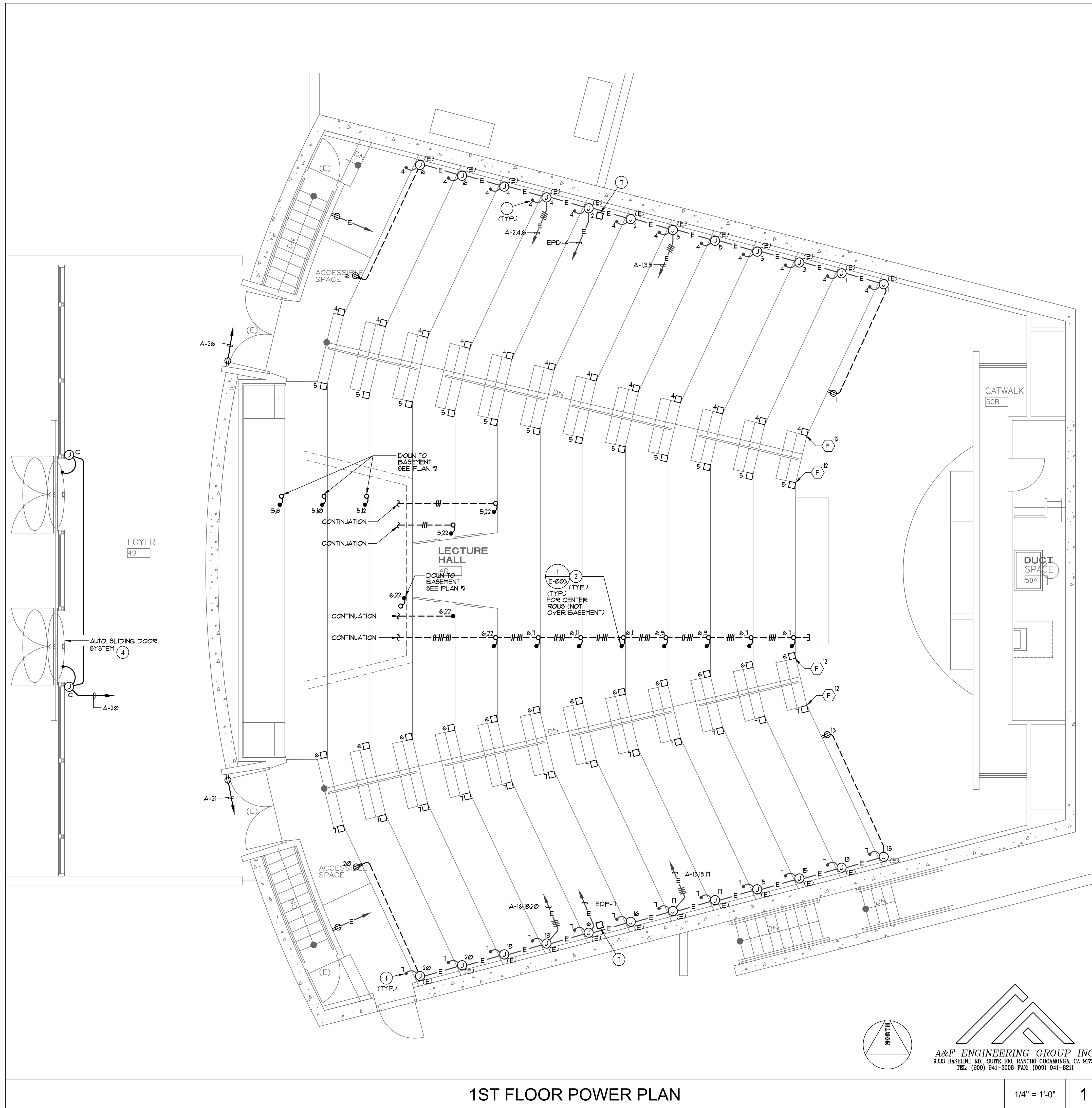
REVISIONS		
REV #	DESCRIPTION	DATE

Consultants Data:

Project Title	
UCR	
DMFI PROJECTS 2019	
PHYSICS 2000 RENEWAL	
UCR project manager	
SCOTT DONNEL	
Scale	AS NOTED
Drawn by	J.D.
Checked by	S.C.
UCR project no.	957443
iso number	
sd approval	
sd approval	
cd approval	
construction release	08/28/20

Drawing Name	Sheet No.
1ST FLOOR DEMO. LIGHTING PLAN	E-102
	OF

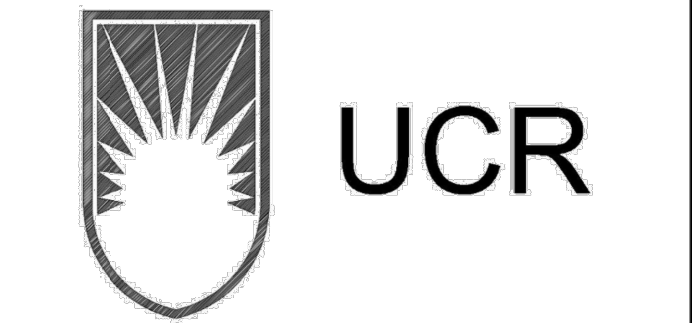
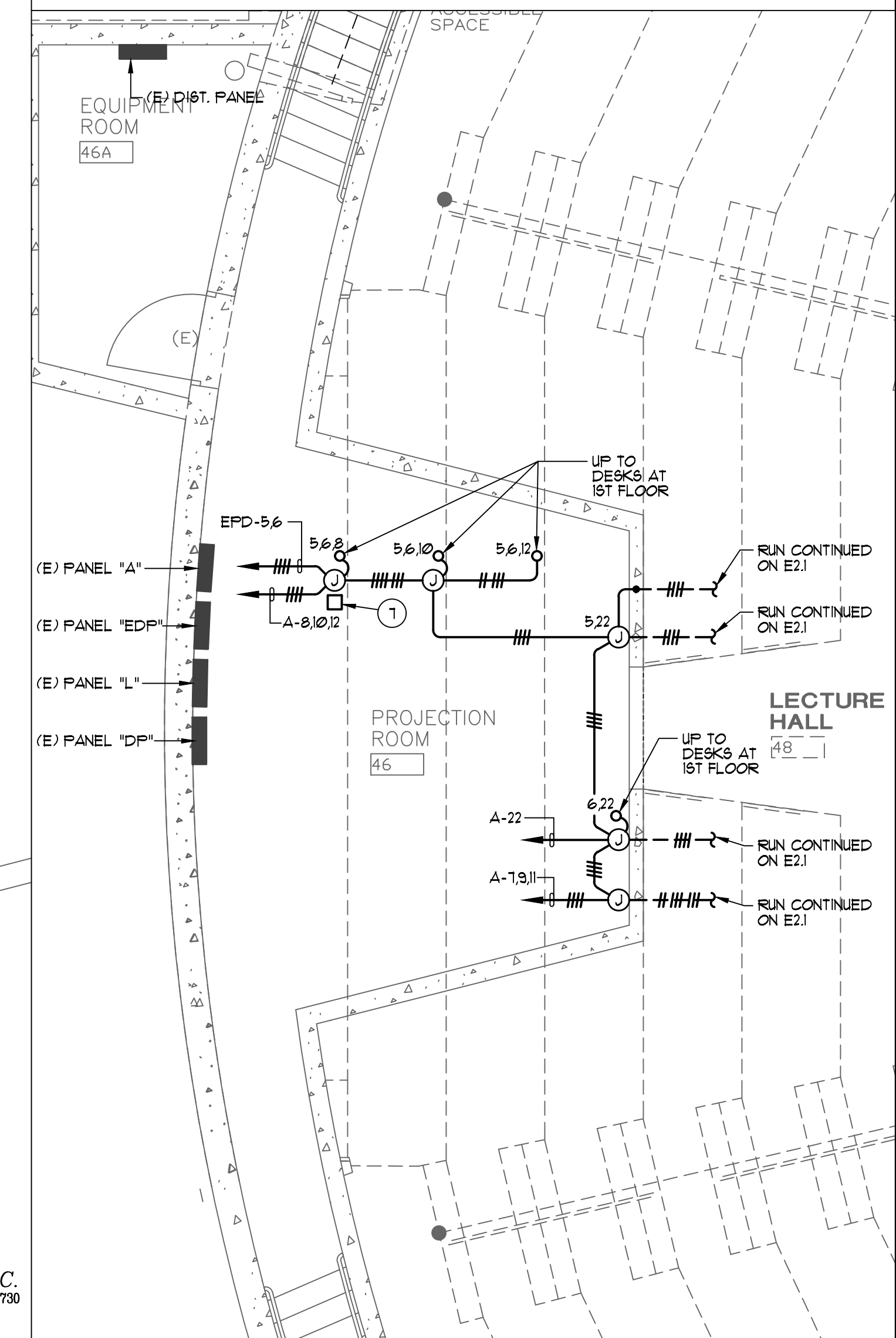
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**PLAN NOTES**

- ① PROVIDE NEW FLEXIBLE CONDUIT WHIP/CONNECTION FROM THE EXISTING J-BOX/CONDUIT BODY AT WALL TO THE NEW FURNITURE INDICATED ON THE ARCHITECTURAL DRAWINGS. PROVIDE REQUIRED CONDUIT FITTINGS AND ACCESSORIES TO MODIFY THE EXISTING CONDUIT SYSTEM TO ACCOMMODATE THE NEW FURNITURE WHIP. COORDINATE FINAL CONNECTION TO THE FURNITURE WITH THE FURNITURE VENDOR.
- ② CONTRACTOR SHALL CORE/DRILL NEW RACEWAYS IN EXISTING CONCRETE DECK AND RISERS TO ROUTE NEW CIRCUIT CONDUCTORS TO THE NEW FURNITURE IN THE CENTER/MIDDLE SEATING ROWS. THE CONTRACTOR SHALL PROVIDE AND INSTALL A WIREMOLD PROTECTORS-LJJB FOLKE-THRU FITTING AT EACH DECK TO PROVIDE SERVICE TO THE NEW FURNITURE. PROVIDE NEW FLEXIBLE CONDUIT WHIP/CONNECTION FROM THE FOLKE-THRU FURNITURE FEED COVER TO THE FURNITURE INDICATED ON THE ARCHITECTURAL DRAWINGS. COORDINATE FINAL CONNECTION TO THE FURNITURE WITH THE FURNITURE VENDOR.
- ③ CONTRACTOR SHALL DRILL EXISTING DECK AS REQUIRED TO INSTALL A WIREMOLD PROTECTORS FOLKE-THRU FITTING AT EACH DECK TO PROVIDE SERVICE TO THE NEW FURNITURE. PROVIDE NEW FLEXIBLE CONDUIT WHIP/CONNECTION FROM THE FOLKE-THRU FURNITURE FEED COVER TO THE FURNITURE INDICATED ON THE ARCHITECTURAL DRAWINGS. COORDINATE FINAL CONNECTION TO THE FURNITURE WITH THE FURNITURE VENDOR.
- ④ CONTRACTOR SHALL COORDINATE FINAL CONNECTION TO THE AUTOMATIC DOOR OPERATOR WITH THE AUTO DOOR INSTALLER/VENDOR PRIOR TO ROUGH-IN AND PROVIDE MATERIAL AND LABOR REQUIRED FOR A FULLY FUNCTIONAL SYSTEM.
- ⑤ REFER TO DEMOLITION PLANS FOR ADDITIONAL REQUIREMENTS.
- ⑥ REFER TO GENERAL NOTES AND DEMOLITION NOTES, SHEET E-01, FOR ADDITIONAL REQUIREMENTS.
- ⑦ DRIVER TO BE WALL MOUNTED IN NEMA-1 BOX

NO EXPOSED CONDUIT WILL BE ALLOWED.



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Architect's Data: \_\_\_\_\_  
 Consultants Stamp: \_\_\_\_\_



PROJECT TITLE  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

**REVISIONS**

REV #	DESCRIPTION	DATE

Consultants Data:

Project Title  
**UCR DMFI PROJECTS 2019 PHYSICS 2000 RENEWAL**

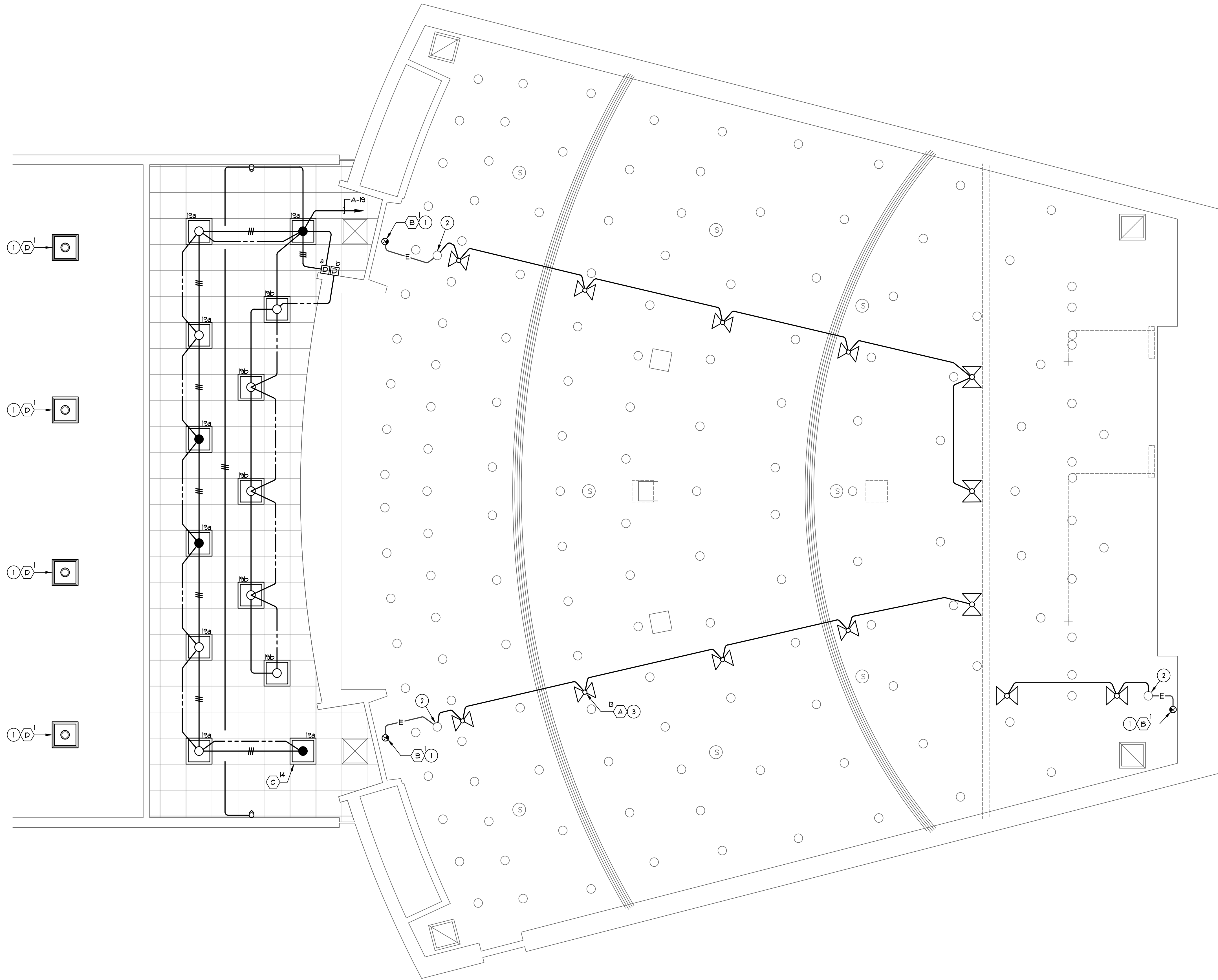
UCR project manager  
**SCOTT DONNEL**

scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval 08/28/20
UCR project no. 957443	construction release
iso number	

Drawing Name  
**1st FLOOR POWER PLAN**

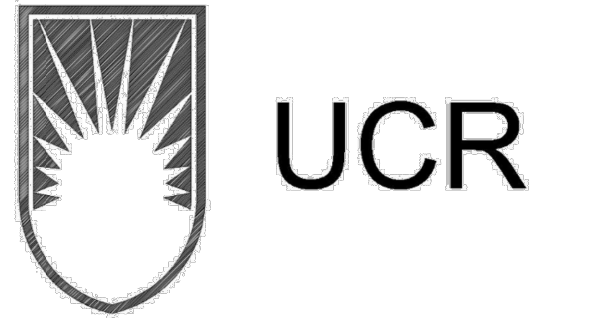
Sheet No.  
**E-201 OF**

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**PLAN NOTES**

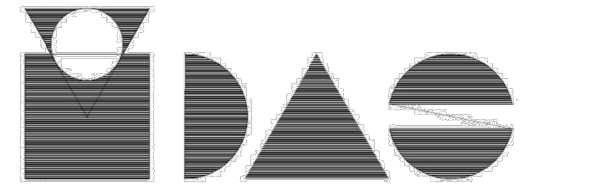
- ① NEW LIGHT FIXTURE IN PLACE OR REMOVED LIGHT FIXTURE. CONNECT NEW LIGHT FIXTURE TO EXISTING BACK-BOX AND CIRCUIT CONDUCTORS. PATCH, REPAIR AND RE-FINISH CEILING AS DIRECTED BY THE ARCHITECT.
- ② EXTEND NEW CONDUIT AND CIRCUIT CONDUCTORS FROM EXISTING NIGHT-LIGHT FIXTURE TO THE NEW EMERGENCY LIGHT FIXTURES.
- ③ COORDINATE EXACT LOCATION OF THE NEW EMERGENCY LIGHT FIXTURES PRIOR TO ROUGH-IN TO AVOID INTERFERENCE WITH EXISTING CEILING MOUNTED LIGHT FIXTURES, DEVICES AND UTILITIES.
- ④ REFER TO DEMOLITION PLANS FOR ADDITIONAL REQUIREMENTS.
- ⑤ REFER TO GENERAL NOTES AND DEMOLITION NOTES, SHEET E-01, FOR ADDITIONAL REQUIREMENTS.



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3903 10th Street, Riverside, CA 92501-3521  
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Architect's Data:



Architect's Stamp:

Consultants Stamp:

PROJECT TITLE  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**  
**REBID AUGUST 2020**

REVISIONS		
REV #	DESCRIPTION	DATE

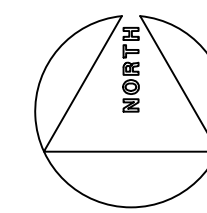
Consultants Data:

Project Title  
**UCR**  
**DMFI PROJECTS 2019**  
**PHYSICS 2000 RENEWAL**

UCR project manager  
**SCOTT DONNEL**

scale AS NOTED	sd approval
Drawn by J.D.	sd approval
Checked by S.C.	cd approval
UCR project no. 957443	construction release 08/28/20
iso number	

Drawing Name  
**1ST FLOOR LIGHTING PLAN**  
 Sheet No.  
**E-202**  
 OF

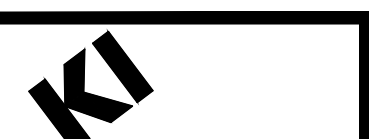


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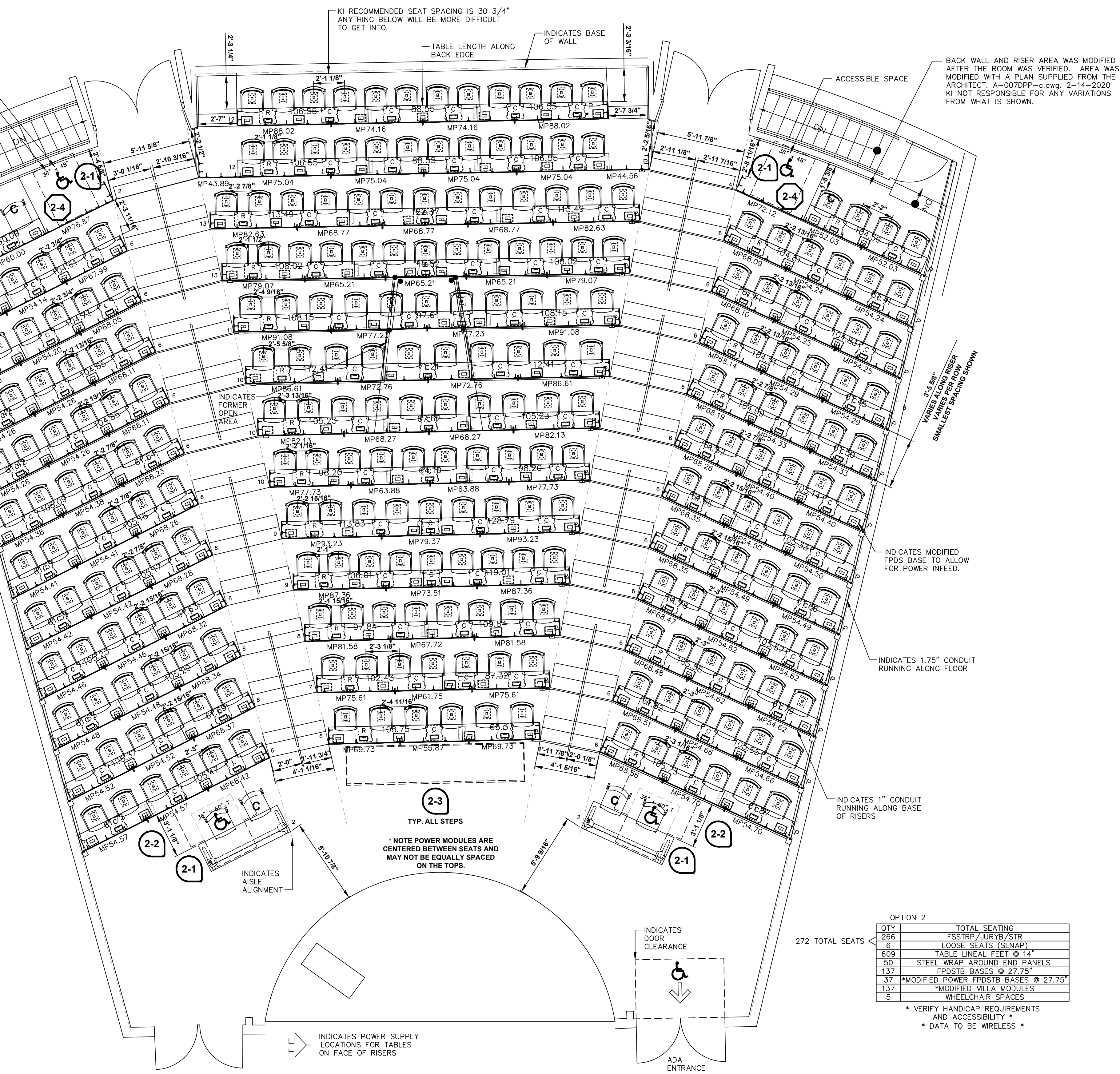






BACK WALL AND RISER AREA WAS MODIFIED AFTER THE ROOM WAS VERIFIED. AREA WAS MODIFIED WITH A PLAN SUPPLIED FROM THE ARCHITECT. KI NOT RESPONSIBLE FOR ANY VARIATIONS FROM WHAT IS SHOWN.

PLEASE VERIFY IF THE FLOOR OF THIS ACCESSIBLE ROW IS ALL ON THE SAME LEVEL.



OPTION 2

272	TOTAL SEATING
6	STRIVE SHELLS (ODD ROWS)
6	STRIVE SHELLS (EVEN ROWS)
6	MODIFIED POWER FPD'S BASES
13	MODIFIED VILLA POWERUP MODULES
5	WHEELCHAIR SPACES

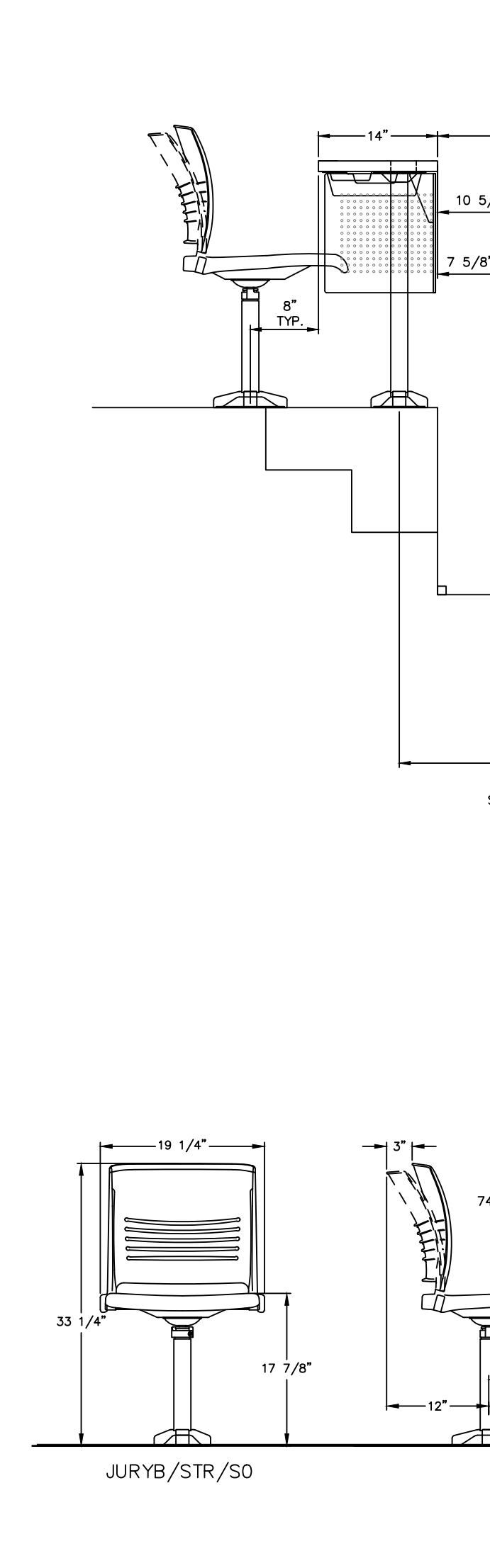
272 TOTAL SEATS

SEATING LAYOUT - OPTION 2

1/4" = 1'-0"

FINISH SCHEDULE - CLASSROOM 2000 - OPTION 2

COMPONENT	MATERIAL	COLOR	CODE
STRIVE SHELL - ODD ROWS	POLY	SAND	PSA
STRIVE SHELL - EVEN ROWS	POLY	NORDIC	PNP
WORK SURFACE	LAMINATE	FLAX LINEN	LFX
WORK SURFACE EDGE	PVC FREE (74P)	MISTY BROWN	EM7
MODESTY PANEL	CONTINUOUS LAMINATE	FLAX LINEN	LFX
MODESTY PANEL EDGE	PVC FREE (74P)	MISTY BROWN	EM7
BASE / FRAME	POWERGRADY PAINT	MISTY BROWN	MY
POWER MODULE	MODIFIED - VILLA POWERUP MODULE	MISTY BROWN	MY



ELEVATION - OPTION 2

3/4" = 1'-0"

TABLE LENGTH ALONG BACK EDGE

INDICATES BASE OF WALL

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES 1" CONDUIT RUNNING ALONG FLOOR

INDICATES 1" CONDUIT RUNNING ALONG BASE OF RISERS

INDICATES AISLE ALIGNMENT

INDICATES POWER SUPPLY LOCATIONS FOR TABLES ON FACE OF RISERS

INDICATES AISLE CLEARANCE

INDICATES 1.75" CONDUIT RUNNING ALONG FLOOR

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES AISLE ALIGNMENT

INDICATES POWER SUPPLY LOCATIONS FOR TABLES ON FACE OF RISERS

INDICATES AISLE CLEARANCE

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES AISLE ALIGNMENT

INDICATES POWER SUPPLY LOCATIONS FOR TABLES ON FACE OF RISERS

INDICATES AISLE CLEARANCE

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES AISLE ALIGNMENT

INDICATES POWER SUPPLY LOCATIONS FOR TABLES ON FACE OF RISERS

INDICATES AISLE CLEARANCE

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES AISLE ALIGNMENT

INDICATES POWER SUPPLY LOCATIONS FOR TABLES ON FACE OF RISERS

INDICATES AISLE CLEARANCE

INDICATES MODIFIED FPD'S BASE TO ALLOW FOR POWER INFED.

INDICATES AISLE ALIGNMENT

SEMINAR & UNIVERSITY SEATING LEGEND

- MP = WORKING POINT
- C = COMPANION SEAT
- LI = LAYOUT NOTE INDICATOR
- BB = BASIC BASE (FPD'S, FPD'S, UNIV)
- SB = SELECT BASE (FPD'S, FPD'S, UNIV)
- I = MODESTY PANEL BRACKET
- MB = ACRYLIC MODESTY PANEL BRACKET
- MS = MODESTY PANEL SPLIT
- MP = MODESTY PANEL
- EP = END PANEL
- JP = JOINT PLATE
- TM = TABLE MARKER
- MPM = MODESTY PANEL MARKER
- P = POWER INFED
- D = DATA INFED
- EC = ELECTRICAL CONNECTOR WITH TROUGH
- E = ELECTRICAL CONNECTOR
- TR = TROUGH
- PCN = RECEPTACLE CIRCUIT NUMBER
- SR = SHROUD (L, R, C)
- SM = SHROUD & POWER MODULE (L, R, C)
- USM = UNDER SURFACE SHROUD & POWER MODULE (L, R, C)
- RPM = REMOTE POWER TAP SHROUD & POWER MODULE INCLUDES ELECTRICAL CONNECTOR (L, R, R)

JURY SEATING LEGEND

- MP = WORKING POINT
- C = COMPANION SEAT
- DS = DESIGNATED AISLE SEAT
- LI = LAYOUT NOTE INDICATOR
- BB = FLOOR MOUNT BASIC BASE
- SB = FLOOR MOUNT SELECT BASE
- AM = FLOOR MOUNT ADJUSTABLE HEIGHT BASE
- FM = FIXED HEIGHT JURY SWING BASE
- AMJ = ADJUSTABLE HEIGHT JURY SWING BASE

SEMINAR/UNIVERSITY POWERUP NOTES

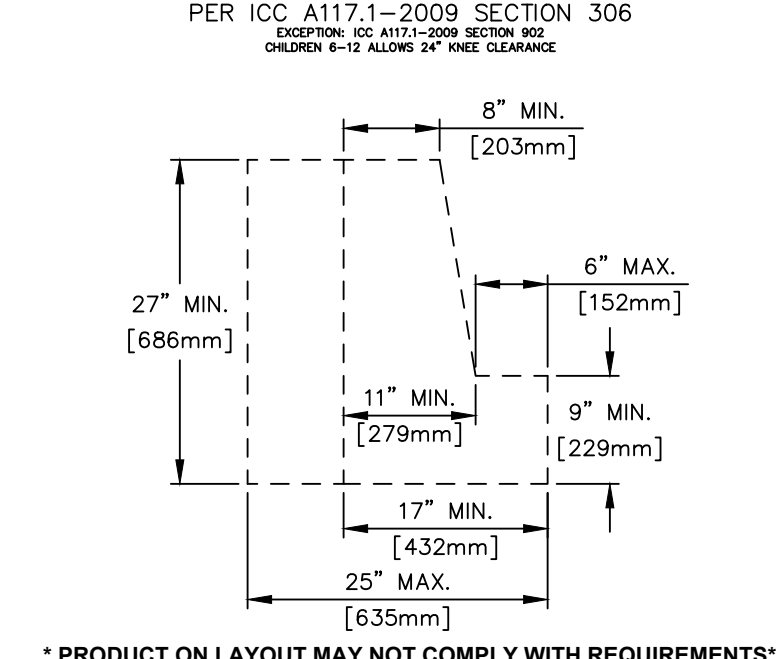
- POWER INFED LOCATIONS WILL BE PLACED AS INDICATED UNLESS OTHERWISE NOTED.
- VERIFY LOCATION OF INFEDS PER TABLE.
- VERIFY WHAT TYPE OF INFED.
  - FLOOR INFED THRU THE BASE FLANGE
  - POWER INFED THRU SIDE OF PEDESTAL
  - COLOR SELECTIONS

Refer to KI's Assembly Guidelines documentation of University Seating® & Seminar® Tables - Power & Data Infed Requirements

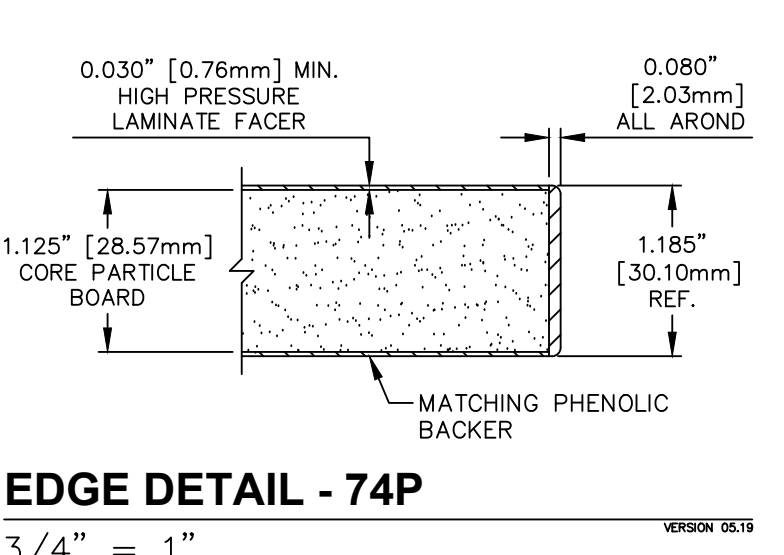
THIS DRAWING WAS CREATED WITH VERIFIED FIELD DIMENSIONS (VPD'S) USING TACHYCAD EQUIPMENT ON 01-28-2020. KI WILL NOT BE RESPONSIBLE FOR ANY FIT ISSUES THAT OCCUR DUE TO ROOM MODIFICATIONS MADE AFTER THIS DATE.

NOTE: SEATING CAPACITY WAS DETERMINED USING A MINIMUM SEAT SPACING OF 24". SEAT COUNT IS SUBJECT TO VARYING POKING VIDS AND FINAL APPROVAL AND WILL BE CONFIRMED AT TIME OF ORDER.

ADA KNEE AND TOE CLEARANCE



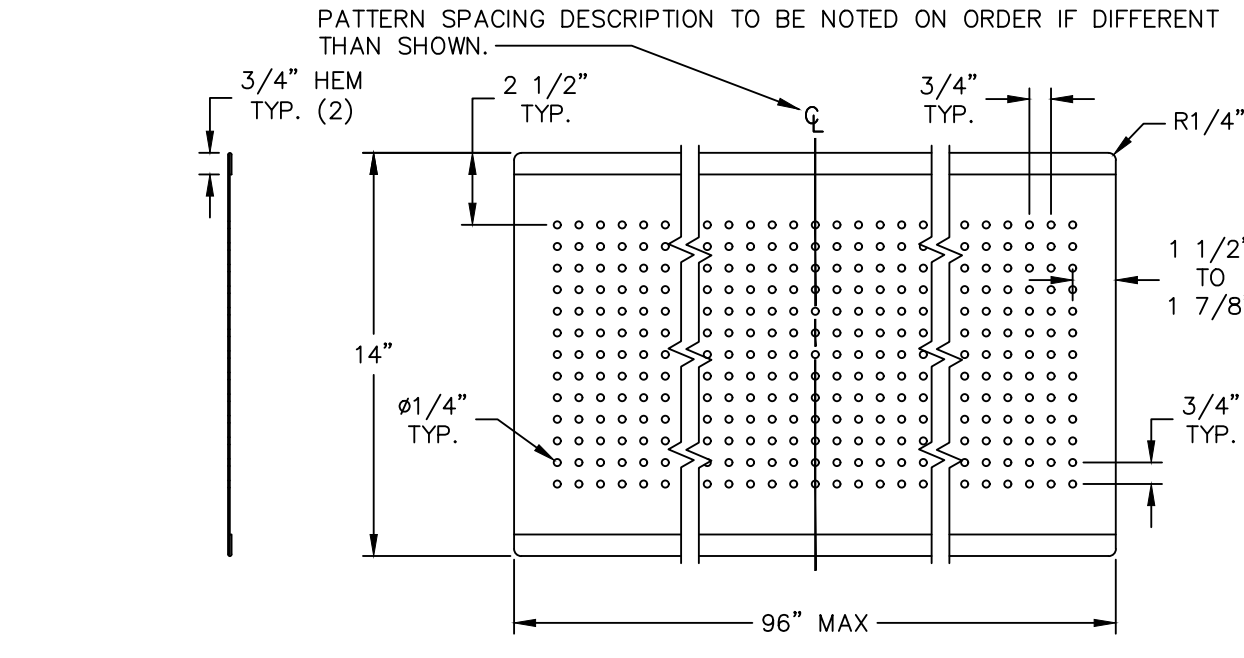
PER ICC 117.1-2009 SECTION 306



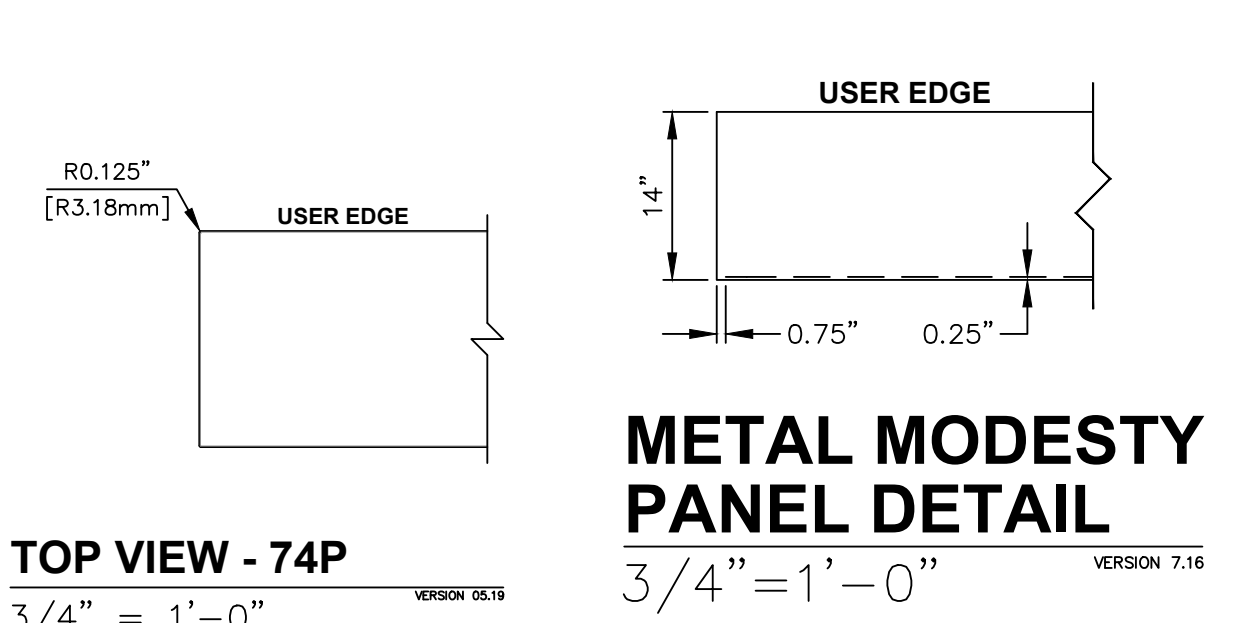
EDGE DETAIL - 74P

PERFORATED STEEL MODESTY PANEL

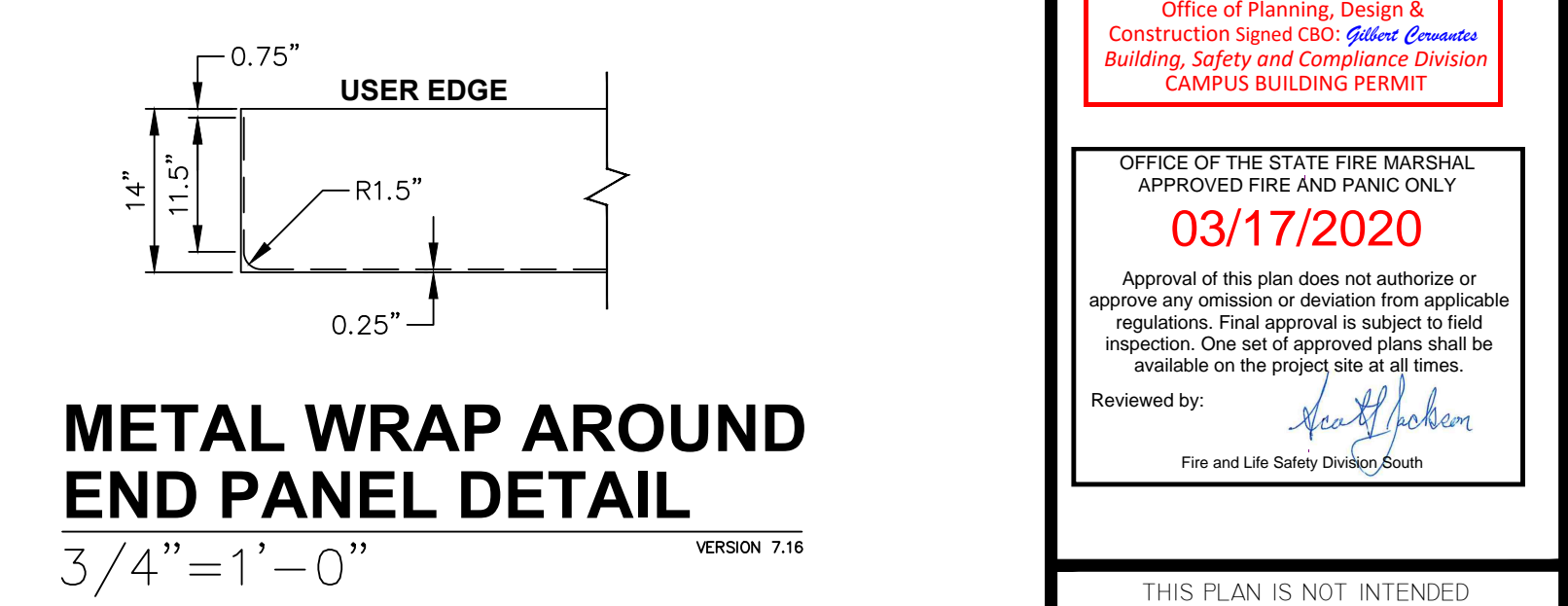
PATTERN TO START ON CENTERLINE OR 1/2 THE SPACING DISTANCE OFF CENTER TO ALLOW A MINIMUM AMOUNT OF VARIANCE ON THE END DIM.



PATTERN SPACING DESCRIPTION TO BE NOTED ON ORDER IF DIFFERENT THAN SHOWN.

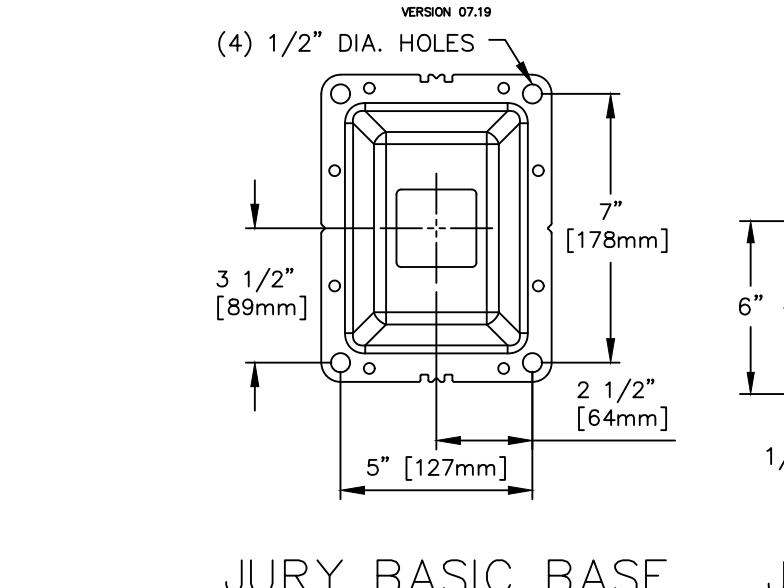


TOP VIEW - 74P



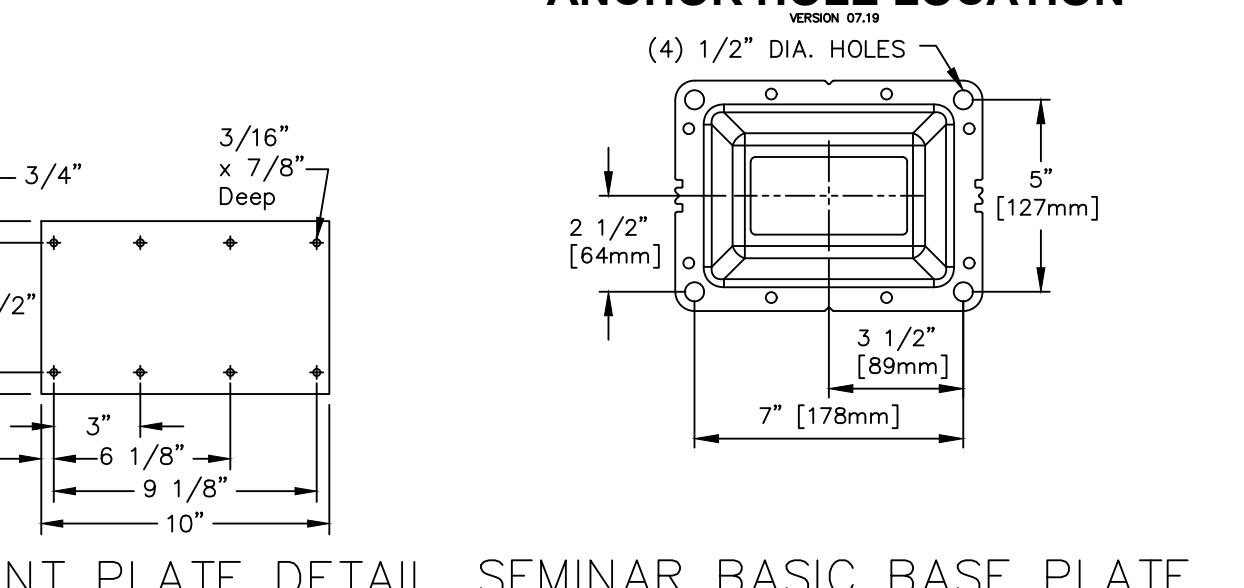
METAL WRAP AROUND END PANEL DETAIL

JURY BASIC BASE ANCHOR HOLE LOCATION



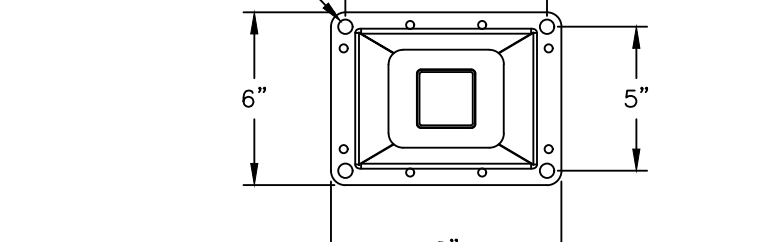
JURY BASIC BASE

SEMINAR BASIC BASE ANCHOR HOLE LOCATION



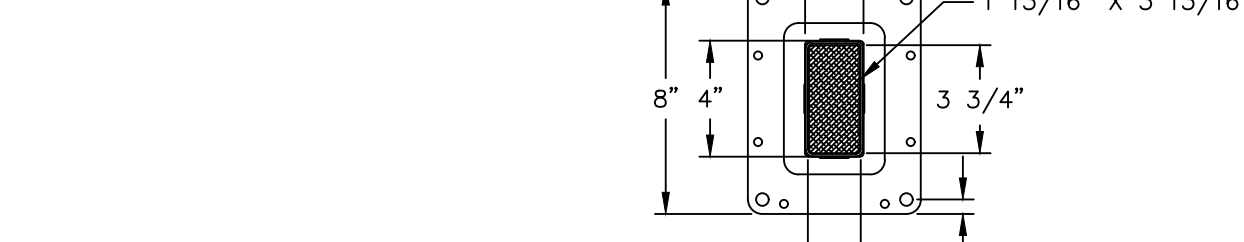
SEMINAR BASIC BASE PLATE

JOINT PLATE DETAIL



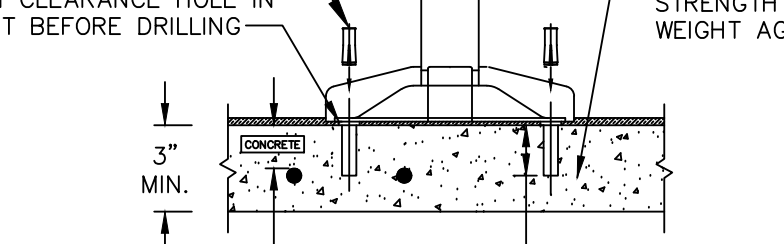
JOINT PLATE DETAIL

SEMINAR BASIC BASE PLATE



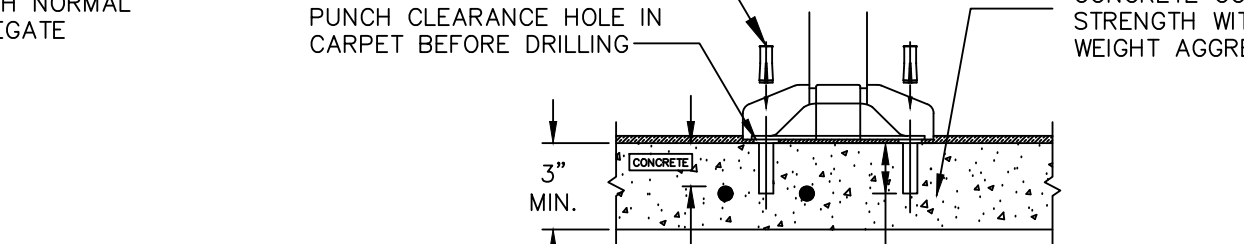
SEMINAR BASIC BASE PLATE

APPLIED LOAD PER ANCHOR WITH A THREE TIME SAFETY FACTOR



APPLIED LOAD PER ANCHOR WITH A THREE TIME SAFETY FACTOR

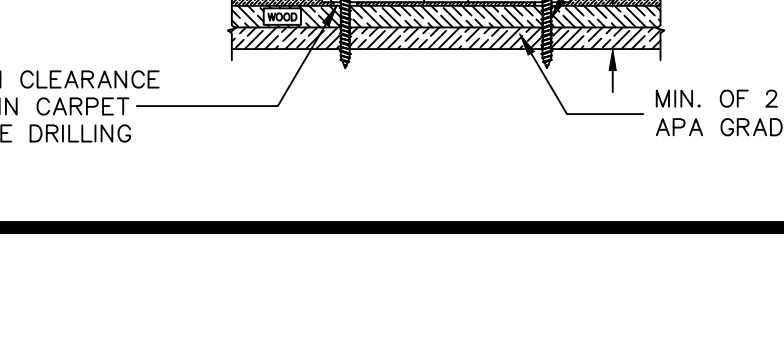
APPLIED LOAD PER ANCHOR WITH A THREE TIME SAFETY FACTOR



APPLIED LOAD PER ANCHOR WITH A THREE TIME SAFETY FACTOR

3D SAMPLE - OPTION 2

3/4" = 1'-0"



APPROVED

OFFICE OF PLANNING, DESIGN & CONSTRUCTION

03/17/2020

APPROVAL OF THIS PLAN DOES NOT CONSTITUTE OR IMPLY ANY OPINION OR GUARANTEE OF ACCURACY OR COMPLETION OF THE PROJECT.

THIS PLAN IS NOT INTENDED TO BE USED FOR BUILDING CONSTRUCTION.

DRAWING REVIEW

APPROVED AS NOTED

REVISIONS

PROJECT TITLE: UNIVERSITY OF CALIFORNIA RIVERSIDE

FLOOR/AREA: PHYSICS 2000

PRODUCT LINE: Seminar

REPRESENTATIVE: JURY BOSE

DATE: 02/26/2019

REVISIONS

ORDER NUMBER: 418659

DRAWING NO: D418659\_00\_00\_L02\_F

SHEET: Seating Option 2

2 of 2, E. 8



## SPECIFICATIONS

### TABLE OF CONTENTS

#### Division 01 – General Requirements

<u>Initial Issue</u>	<u>Revision</u>	<u>Section #</u>	<u>Title</u>
		01 1100	Summary of Work
		01 1400	Work Restrictions
		01 2300	Alternates
		01 2500	Product Options, Requirements & Substitution Procedures
		01 2613	Requests for Information & Instructions (RFI) Procedures
		01 3113	Coordination
		01 3119	Project Meetings
		01 3200	Document Control
		01 3216	Schedules
		01 3280	Electronic Data Transfer
		01 3300	Submittals
		01 3329.08	Buy Clean California Reporting
		01 3520	Design Assist Procedures
		01 3543	Environmental Procedures
		01 3546	Indoor Air Quality Procedures & Requirements
		01 4100	Regulatory Requirements
		01 4200	References
		01 4300	Inspection of Work
		01 4339	Mockups
		01 4500	Quality Control
		01 4516	Contractor’s Quality Control Program
		01 4520	Concrete Moisture Testing
		01 5100	Temporary Utilities
		01 5300	Temporary Construction



<u>Initial Issue</u>	<u>Revision</u>	<u>Section #</u>	<u>Title</u>
		<b>01 5500</b>	<b>Vehicular Access and Parking</b>
		<b>01 5600</b>	<b>Temporary Barriers and Enclosures</b>
		<b>01 5639</b>	<b>Tree and Plant Protection</b>
		<b>01 5700</b>	<b>Temporary Controls</b>
		<b>01 5800</b>	<b>Temporary Signage</b>
		<b>01 6000</b>	<b>Product Requirements</b>
		<b>01 7100</b>	<b>Examination and Preparation</b>
		<b>01 7123</b>	<b>Field Engineering</b>
		<b>01 7329</b>	<b>Cutting and Patching</b>
		<b>01 7400</b>	<b>Cleaning and Waste Management</b>
		<b>01 7700</b>	<b>Contract Closeout</b>
		<b>01 7839</b>	<b>As-Built Documents</b>
		<b>01 9113</b>	<b>General Commissioning Requirements</b>
<b>Division 02 – Existing Conditions</b>			
		<b>02 4119</b>	<b>Selective Demolition</b>
<b>Division 03 – Concrete</b>			
		<b>03 3000</b>	<b>Cast In Place Concrete</b>
<b>Division 05 – Metals</b>			
		<b>05 1200</b>	<b>Structural Steel Framing</b>
		<b>05 5000</b>	<b>Metal Fabrications</b>
		<b>05 5213</b>	<b>Pipe and Tube Railings</b>
<b>Division 07 – Thermal and Moisture Protection</b>			
		<b>07 8100</b>	<b>Applied Fireproofing</b>
		<b>07 9200</b>	<b>Joint Sealants</b>
<b>Division 08 – Glass Glazing</b>			
		<b>08 1113</b>	<b>Hollow Metal Doors And Frames</b>

<u>Initial Issue</u>	<u>Revision</u>	<u>Section #</u>	<u>Title</u>
		<b>08 4113</b>	<b>Aluminum Framed Entrances</b>
		<b>08 4229 23</b>	<b>Sliding Automatic Entrances</b>
		<b>08 7100</b>	<b>Door Hardware</b>
		<b>08 8000</b>	<b>Glazing</b>
 <b>Division 09 – Finishes</b>			
		<b>09 0190.53</b>	<b>Exterior Maintenance Repainting</b>
		<b>09 3000</b>	<b>Tiling</b>
		<b>09 5100</b>	<b>Acoustical Ceilings</b>
		<b>09 6500</b>	<b>Resilient Flooring</b>
		<b>09 9000</b>	<b>Painting and Coating</b>
 <b>Division 26 – Electrical</b>			
		<b>26 0000</b>	<b>General Electrical Requirements</b>
 <b>Division 28 – Electronic Safety and Security</b>			
		<b>28 3111</b>	<b>Digital, Addressable Fire Alarm System</b>

END OF SPECIFICATIONS  
TABLE OF CONTENTS

## SECTION 01 6000 PRODUCT REQUIREMENTS

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project:
1. Quality Assurance
  2. Product Delivery, Storage, and Handling
  3. Product Selection
  4. Product Installation
- B. Definitions: The Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
    - a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature that is current as of the date of the Contract Documents.
    - b. "Foreign Products," as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside the United States and its possessions. Products produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of, nor living within, the United States and its possessions are also considered to be foreign products.
  2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
  3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

#### 1.2. QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
1. Each prime contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate contractors.
  2. If a dispute arises between prime contractors over concurrently selectable, but incompatible products, the University's Representative will determine which products shall be retained and which are incompatible and must be replaced.



- C. Foreign Product Limitations: Except under one or more of the following conditions, provide domestic products, not foreign products, for inclusion in the Work:
  - 1. No available domestic product complies with the Contract Documents.
  - 2. Domestic products that comply with the Contract Documents are available only at prices or terms substantially higher than foreign products that comply with the Contract Documents.
  
- D. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.
  - 1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
  - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
    - a. Name of product and manufacturer.
    - b. Model and serial number.
    - c. Capacity.
    - d. Speed.
    - e. Ratings.
  - 3. UL Label: Provide products bearing appropriate UL label as indicated.

### 1.3. PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Refer to Section 01 5200, Paragraph 1.5.

## PART 2 – PRODUCTS

### 2.1. PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation, except where salvaged materials are indicated.
  - 1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
  - 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  
- B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:
  - 1. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract

- Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
2. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
  3. Visual Matching: Where Specifications require matching an established Sample, the University Representative's decision will be final on whether a proposed product matches satisfactorily.
    - a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category.
  4. Visual Selection: Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The University's Representative will select the color, pattern, and texture from the product line selected.

## PART 3 – EXECUTION

### 3.1 PRODUCT INSTALLATION

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
  1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

## **SECTION 01 4339 MOCKUPS**

### **PART 1 – GENERAL**

#### **1.1 SUMMARY**

**A. Section Includes:**

1. Design and Performance Requirements
2. Submittals
3. Quality Assurance
4. Materials
5. Examination
6. Construction
7. Review and Acceptance
8. Maintenance
9. Removal and Salvage
10. Mockup Schedule

**B. Mock-ups will be used to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, interface, testing, and operation of various building components.**

1. Construction of a free-standing, on-site, building wall mock-up on site.
2. Representative Residential Unit
3. Additional Material Mock-Ups: As required by the Specifications Sections.

**C. Related Requirements:**

1. Review requirements specified in other Sections for materials incorporated into the mock-ups.

#### **1.2 DESIGN AND PERFORMANCE REQUIREMENTS**

**A. Design Concept:** Wall mock-up is intended to permit verification of workmanship and visual qualities of the final completed installation.

**B. Include, as part of wall mock-up as applicable, required shoring and bracing to support mock-up.**

**C. Mock-ups may be subjected to inspections, but are not intended for formal performance testing unless specified.**

**D. Make necessary additions and modifications to the details shown on the Drawings as may be required to comply with specified performance requirements while maintaining the design concept.**

**E. Accepted mock-ups shall be used as a visual standard for the final installation and, to the extent tested, performance requirements specified.**

#### **1.3 SUBMITTALS**

**A. General:**

1. Review all Sections.
2. Procedures: In accordance with Section 01 3300, "Submittals."



B. Action Submittals:

1. Samples: Initial samples for materials to be incorporated into each mock-up shall be reviewed and approved prior to providing materials for mock-up and mock-up construction. Where actual final finished materials are not available for inclusion in mock-up, facsimile materials shall be submitted for approval.

C. Informational Submittals:

1. Although a temporary structure, Contractor shall submit documentation that building mock-up has been fabricated to meet structural requirements if requested by governing authorities.
2. Report of field testing on window elements of mock-up if testing is required.

1.4 QUALITY ASSURANCE

- A. Mock-up components shall be finished as required for completed installation including selected colors.
- B. Obtain approval from University's Representative of all mock-ups before starting work, fabrication or construction.
- C. Allow in Construction Schedule a minimum of 7 days for initial review and each re-review of each mock-up.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. General: Materials for the mock-up shall be as shown and specified in the Specification Sections.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine site and area established by the University's Representative to receive free standing mock-up and conditions under which mock-up is to be constructed. Deficiencies shall be brought to the attention of the University's Representative and corrected as directed.

3.2 CONSTRUCTION

- A. Mock-ups shall be erected on site within the limits of work at a location to be determined by the University's Representative.
- B. Construct mock-ups as shown on Drawings and in accordance with reviewed submittals, complete with all required fastenings, bracing, and other elements, plumb and true, firmly erected and anchored.
- C. Anchorage and assembly shall conform to code requirements including seismic stability. Retaining a licensed engineer to assure mock-ups meet code requirements is the responsibility of the Contractor.
- D. Coordinate mock-up construction with delivery and assembly of related materials and components to be included in the mock-up.

3.3 REVIEW AND ACCEPTANCE

- A. Upon completion of mock-up construction, notify University's Representative and make arrangements for review, evaluation, and any testing required by University's Representative.
  - B. Modify mock-ups, or construct new components if requested by University's Representative until final acceptance is obtained.
  - C. Following acceptance, mock-ups shall remain on site and shall be readily identifiable to serve as a visual standard of quality and appearance of the work it represents, including interface with adjacent materials and components.
- 3.4 MAINTENANCE
- A. Maintain mock-ups in a clean condition and as approved by University's Representative.
- 3.5 REMOVAL AND SALVAGE
- A. Remove mock-ups prior to completion of Project but not before the work they are being used to judge has been accepted by University's Representative.
  - B. Where appropriate, accepted mock-ups and field samples may be incorporated into the finished work subject to approval of University's Representative.
- 3.6 MOCK-UP SCHEDULE
- A. Erect the full-size, representative exterior building wall mock-up as shown on the Drawings. As a minimum, this mock-up shall show the following components and materials.
    - 1. All exterior finish materials included in cement plaster and cladding systems of fiber cement siding, sheet meal panels, and brick veneer.
    - 2. Storefront and single hung windows, including exterior sun control.
    - 3. Underlayments and flashings; reviewed before installation of finish materials and windows.
    - 4. Include, as part of wall mock-up as applicable, required shoring and bracing to support mock up.
  - B. Residential Unit:
    - 1. Typical unit components of kitchen, bath and vanity.
    - 2. Kitchen, bath and vanity casework.
    - 3. Appliances (actual or dummy)
  - C. Additional Mock-Ups and Field Samples: As specified in other Sections.

END OF SECTION

## **SECTION 01 1100 SUMMARY OF WORK**

### **PART 1 – GENERAL**

#### **1.1. SUMMARY**

##### **A. Section includes:**

1. Work Covered by Contract Documents
2. Work Sequence
3. Work by University
4. University Furnished Products

##### **B. In case any Sections contain conflicting requirements, refer to General Conditions, Paragraph 4.1.8.**

#### **1.2. WORK COVERED BY CONTRACT DOCUMENTS**

**A.** The University of California, Riverside (UCR) intends to procure the services of a General Contractor (Contractor) to construct an interior building renewal that includes abatement, demolition of existing seating and deskwork by the Contractor with some new O.F.C.I. fabrication, installation of new seating shall be by the University's Vendor O.F.O.I. to be incorporated into the project schedule. Refurbishment of finishes and treatments including flooring, walls, and ceilings. Accessibility improvements including approaches and path of travel with new aluminum storefront entrance at the foyer, exterior site improvement of stairs, ramps, handrails, guards, and new automated doors. Electrical with deferred submittal of fire alarm improvements, and minor Lutron lighting rewiring and reprogramming.

**B.** The Contract Time to complete the Work of this Contract is specified in the Supplemental Instructions to Bidders.

**C.** Project Location:

**D.** The University has specified that the requirements and procedures for compliance with certain U.S. Green Building Council's (USGBC) LEED (Leadership in Energy and Environment Design) New Construction (NC) Version 3 (v3) prerequisites and credits will be used to target the Project to obtain the goal of LEED Gold certification. See Section 01 8113 "Sustainability Design Requirements" for additional information.

#### **1.3. WORK SEQUENCE**

**A.** Contractor to provide work sequence and Project schedule to University for review and approval.

#### **1.4. WORK BY UNIVERSITY- NOT USED**

**A.** The work by the university is to install new seating and desk work per plan. The Contractor shall provide a schedule that allows for the installation by others during Aug 31 and September 18 2020.

#### **1.5. UNIVERSITY FURNISHED PRODUCTS- NOT USED**

**PART 2 – PRODUCTS (Not Applicable)**

**PART 3 – EXECUTION (Not Applicable)**



END OF SECTION

## **SECTION 01 1400 WORK RESTRICTIONS**

### **PART 1 – GENERAL**

#### **1.1. SUMMARY**

##### **A. Section includes:**

1. Access to Site
2. Coordination with Occupants
3. Use of Site
4. Scheduling of Work and Work Hours
5. Neighbor Complaint Hotline
6. Site Decorum

#### **1.2. ACCESS TO SITE**

##### **A. Special Requirements**

1. Existing Site Conditions and Restrictions:
  - a. Maintain access and code required exiting to and from surrounding buildings during construction.
2. Contractor shall be responsible for safely securing the work areas, with at a minimum, trench plates, fencing, signage, safety lighting, traffic and pedestrian coordinators.
3. Trench plates shall be provided and safely secured at all roadway, parking lots, and walkways.
4. Trenches shall be protected from vehicles by utilizing trench plates, and from pedestrians by utilizing fully installed galvanized fencing. Excavations and holes shall be protected by utilizing fully installed galvanized fencing, safety lighting, and other methods to safely secure the site. Establishment of the work area in any space requiring the University's vacating shall not commence before notification to University's Representative. Refer to Section 01 1400 - CONTRACTOR'S USE OF THE PROJECT SITE, Notifications.
5. Individual work areas shall not be established until Contractor has labor, materials and equipment ready to commence and complete the Work in that area.
6. Work shall not commence in any area until barriers and other protections are in place.

##### **B. Use of Public Thoroughfares and University Roads**

1. Contractor shall make its own investigation of the condition of available public thoroughfares and University roads, and of the clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the Project site.
2. Where materials are transported in the prosecution of the Work, do not load vehicles beyond the capacity recommended by manufacturer of the vehicles or prescribed by any applicable state or local law or regulation.
3. Use only established roads on the campus; provided, however, that such temporary haul roads as may be required in the work shall be constructed and maintained by Contractor, subject to the approval of University's Representative. Refer to Section 01 3540 Environmental Mitigation for description of the approved haul route to and from the campus.

4. Provide protection against damage whenever it is necessary to cross existing sidewalks, curbs, and gutters in entering upon the University roads and public thoroughfares. Repair and make good immediately at the expense of Contractor all damages thereto, including damage to existing utilities and paving, arising from the operations under the Contract.
5. Truck staging is not allowed on campus or on any residential street surrounding the campus.

C. See also Section 01 5500, Vehicular Access and Parking.

### 1.3. COORDINATION WITH OCCUPANTS

- A. The University reserves the right to occupy and to place and install equipment in completed areas of the Work prior to Notice of Completion, provided such occupancy does not interfere with completion of the Work and subject to the General Conditions. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
  1. Partial occupancy of the Work may occur upon University's approval, in which case the University's Representative will prepare a Certificate of Beneficial Occupancy for each specific portion of the Work to be occupied prior to Final Completion of the entire Work.
  2. Refer to Article 9.6 of the General Conditions.

### 1.4. USE OF SITE

- A. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
  1. Driveways and Entrances: Keep driveways and entrances serving adjacent buildings clear and available to the University, and its employees, students, faculty, visitors, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for use of these areas.
  2. Contractor's use of the Project site for the work, staging, deliveries, and storage is restricted to the project limits on the Drawings, or as directed by the University's Representative.
  3. All material for construction operations shall be brought in and the work conducted so as to avoid any interference with existing University facilities or their normal operations.
  4. Noise from job equipment shall be kept to a minimum by use of adequate mufflers and other appropriate means.
  5. Delivery of Materials: Arrange for delivery of materials and equipment to minimize length of on-site storage prior to installation. Delivery route shall be from South Campus Circle Drive to Big Springs Road to the project site, or as designated by the University's Representative.
  6. The Contractor shall take appropriate steps throughout the term of the project to prevent airborne dust due to work under this contract. Water shall be applied wherever practical to settle and hold dust to a minimum, particularly during excavation and moving of materials. No chemical palliatives shall be used.



1.5. SCHEDULING OF WORK AND WORK HOURS

- A. Work outside of regular work hours, **7:00 a.m. to 3:30 p.m.**, "overtime", required to accomplish work of this contract, such as utility shutdowns, shall be included in the contract sum.

OR:

- A. **Restrict Construction Hours: All contractors, and overseen by the General Contractor, shall ensure that all construction contracts will limit exterior construction activities to occurring between 7:00 a.m. and 7:00 p.m. Monday through Friday, and 8 a.m. and 5 p.m. on Saturday. Construction will not be allowed on Sunday or federal holidays.**

- B. Overtime work requests must be submitted to the University's Representative three working days before the work is to commence.

1. Acceptable overtime hours are no earlier than 7:00 a.m. and no later than 7:00 p.m., Monday through Friday; and from 8:00 a.m. to 5:00 p.m. on Saturday. Work will not be allowed on Sunday and Holidays.
2. Work at other times may be permitted if it takes place within the enclosed building and the University's Representative determines that it is unlikely to affect University personnel, students, operations and the surrounding neighborhood.
3. Additional overtime operating hours may be approved at the University's Representative sole discretion and only without change to the contract sum.
4. Contractor shall pay all the inspectors (in-house inspectors and University's testing laboratory inspectors) and University's Representative's costs if the overtime request is approved by University's Representative.

1.6. NEIGHBOR COMPLAINT HOTLINE

- A. Contractor to provide a phone number monitored 24 hours a day for the public to use to lodge complaints about construction activities that may harm or degrade their quality of life. Refer to Section 01 5000 "Construction Controls and Temporary Facilities" for more detailed specifications.

- B. Neighbor Complaint Hotline Phone Number: Contractor shall provide signage described elsewhere in this section with the telephone number for the off-campus neighbors to use to notify the contractor and University about construction related issues affecting their persons and properties such as, but not limited to excessive noise, dust and construction vehicle traffic along Valencia Hill Drive which is not allowed under any circumstances.

1. The contractor shall contact a security service which shall provide an answering service for any calls, 24 hours a day and relay the call to a list of designated construction personnel on site for response. The contractor can contact Knight Security at (760) 745-3604 which provided service for the Phase 1 portion of the project for terms and conditions but is not obligated to use this firm and can choose to any service of a similar type.

## 1.7. SITE DECORUM

- A. Contractor shall control the conduct of its employees (including subcontractor's employees) so as to prevent unwanted interaction initiated by Contractor's employees with University of California Riverside (UCR) students, UCR staff, UCR Faculty or other individuals (except those associated with the Project), adjacent to the Project site. Without limitation, unwanted interaction by Contractor employees would include whistling at or initiating conversations with passersby. In the event that any Contractor employee initiates such unwanted interaction, or utilized profanity, 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. No radios, other than two-way communication type, will be allowed on the Project site. No smoking is allowed in any University Building.
  
- B. Contractor shall control the conduct of its employees (including subcontractor's employees) to prevent unwanted interaction initiated by Contractor's employees with UCR students, staff, Faculty or other individuals, adjacent to the Project site. Unwanted interaction by Contractor employees includes whistling at, or initiating conversations with, passersby. If any contractor employee initiates such unwanted interaction, or utilizes profanity, Contractor shall, 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 University. No radios, other than two-way communication type, will be allowed on the Project site. No smoking is allowed in any existing University Building or University Building under Construction.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 2300 ALTERNATES

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes:
  - 1. Procedures
  - 2. Alternate Descriptions
- B. This Section identifies each Alternate and describes basic changes to the Work only when that Alternate is made a part of the Work by specific provision in the Agreement.
- C. Definition: Refer to the Instructions to Bidders, 1.2 for the term “Alternate.”

#### 1.2. PROCEDURES

- A. The Lump Sum Base Bid and Alternates shall include the costs of all supporting elements required, so that the combination of the Lump Sum Base Bid and any Alternates shall be complete. The scope of Work for all Alternates shall be in accordance with applicable Drawings and Specifications.
- B. Except as otherwise specifically provided by University, the Work described in Alternates shall be completed with no increase in Contract Time.
- C. This Section includes only the non-technical descriptions of the Alternates. Refer to the specific Sections of Divisions 2-33 of the Specifications for technical descriptions of the Alternates.
- D. Coordinate related Work and modify surrounding Work as required to properly and completely integrate the Alternates into the Work.

#### 1.3. ALTERNATE DESCRIPTIONS

- A. Alternate No. 1: Add Projection Room Platform.

Description: In the middle of Lecture Room 49, there is a void in front of the Projection Room 49 windows. Fill in this void with steel-framed platforms in order to create additional stepped seating area, as shown on Drawing, Sheet A-011. Note that addition seats at this newly created stepped seating area will be Owner Furnished, Owner Install. (O.F.O.I.) as shown in Furniture Plan, Sheet 2.

No extension of the Contract Time will be granted if this Alternate is accepted.

University reserves the right to accept this Alternate within 10 calendar days after the commencement date per the Notice to Proceed.

- B. Alternate No. 2: Add Preparation and Painting of the Building Exterior Colonnade

Description: Repaint all exterior paintable surfaces of entire existing Physics 2000 Building and Colonnade, including exterior soffits and undersides of roof decks, as specified in Section 090190.53 - EXTERIOR MAINTENANCE REPAINTING.

No extension of the Contract Time will be granted if this Alternate is accepted.



University reserves the right to accept this Alternate within 10 calendar days after the commencement date per the Notice to Proceed.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 2500 PRODUCT OPTIONS AND SUBSTITUTIONS

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes:
1. General Provisions
  2. Special Requirements for Other Than First-Named Product, Material or Equipment
  3. Special Requirements for Substitutions
  4. Material/Product Substitution Request Form

#### 1.2. GENERAL PROVISIONS

- A. This subsection includes the general provisions regarding specification of products, material and equipment by brand or trade name.
- B. Products, material or equipment specified by both brand or trade name and model number are approved for use, provided that Contractor complies with all Contract requirements. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment can be used without modification, to meet the requirements of the plans and specifications; Contractor shall, at its sole cost, modify such products, material, or equipment so that they comply with all requirements of the plans and specifications.
- C. The **first-named** product, material or equipment specified by brand or trade name and model number is the **basis for the Project design** and the use of any item other than the first-named one may require modifications of that design. If Contractor uses any product, material or equipment other than the first-named one, Contractor shall, at its sole cost:
1. Make all revisions and modifications to the design and construction of the Work necessitated by the use of the product, material or equipment.
  2. Be responsible for all costs of any changes resulting from the use of the product, material or equipment including without limitation, costs or changes which affect other parts of the Work, the work of Separate Contractors, or any other property or operations of the University.
- D. When a product, material or equipment specified by brand or trade name is followed by the words “**or equal,**” a **substitution** may be permitted if the substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and if the substitution complies with all other requirements of the plans and specifications.
- E. A product, material or equipment specified by brand or trade name followed by the words “**or equal, no known equal,**” signifies that University does not have sufficient knowledge to specify a product, material or equipment, other than the one specified by brand or trade name, that is suitable for use on the Project. The use of the words “no known equal” is not intended to discourage substitution requests in accordance with the requirements specified herein.
- F. When catalog numbers and specific brands or trade names not followed by the designation “or equal” are used in conjunction with a product, material or equipment required by the specifications, **substitutions will NOT be allowed** and the named product, material or equipment must be used.

- G. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment is available; Contractor should confirm, prior to submitting its Bid, the availability of any product, material or equipment specified by brand or trade name and model number.
- 1.3. SPECIAL REQUIREMENTS FOR OTHER THAN FIRST-NAMED PRODUCT, MATERIAL OR EQUIPMENT
- A. This subsection includes special requirements for named products, material and equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number.
- B. In addition to complying with all other submittal requirements of the Contract, **submit within 70 days after the date of commencement specified in the Notice to Proceed**, for review and approval by the University's Representative, Contractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriate licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the product, material or equipment. **If no revisions or modifications are necessary, submit within 70 days after the date of commencement specified in the Notice to Proceed**, a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. Contractor shall utilize the first-named product, material or equipment if Contractor fails to make the appropriate required submittal pursuant to this paragraph within the 70-day period.
- C. A product, material or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number may be used if no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment. If such revisions or modifications are necessary, the product, material or equipment may be used only if the revisions or modifications are approved in writing by the University's Representative. Contractor has the burden of demonstrating, through the procedures specified herein, that any such revisions or modifications will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, Contractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility or appearance of the Project or any portion of the Project.
- 1.4. SPECIAL REQUIREMENTS FOR SUBSTITUTIONS
- A. In addition to complying with all other submittal requirements of the Contract, submit written data demonstrating that the proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility, appearance, environmental performance criteria, and otherwise complies with all requirements of the plans and specifications, including:
1. Complete technical data including drawings, performance specifications, samples, and test reports of the article proposed for substitution.
  2. Statement by Contractor that the proposed substitution is in full compliance with the requirements of the Contract Documents and Applicable Code Requirements.
  3. List of Subcontractors, if any, that may be affected by the substitution.
  4. Contractor prepared specifications and drawings, including design and engineering calculations, prepared by an appropriately licensed professional, depicting all revisions and modifications to the design and construction of the Work necessitated by the use of the substitution. If no revisions or modifications are necessary, submit a written representation that no revisions or modifications to the design or construction of the Work are necessitated by the use of the product, material or equipment.



- B. Requests for substitutions will only be considered if Contractor completes and submits Material/Product Substitution Request Form and the above supporting data.
- C. At the request of and within the timeframes specified by the University's Representative:
1. Submit samples as deemed necessary by the University's Representative to evaluate the proposed substitution.
  2. Submit proposed substitution to tests deemed necessary by the University's Representative to evaluate the proposed substitution. Such tests shall be made by an independent Testing Laboratory and at the sole expense of Contractor, after review and approval of the test procedures by University's Representative. If re-testing is deemed necessary by the University's Representative to evaluate the proposed substitution, such re-testing shall be made by an independent Testing Laboratory at the sole expense of the Contractor.
  3. Provide any additional information deemed necessary by the University's Representative to evaluate the proposed substitution.
- D. If University's Representative, in reviewing a proposed substitution, requires revisions or corrections to be made to previously accepted shop drawings and supplemental supporting data to be resubmitted, Contractor shall do so within the time period specified by the University's Representative. A proposed substitution may be rejected if Contractor fails to submit such revisions, corrections, or supplemental supporting data within the specified time period.
- E. Except for products, material or equipment designated in the Bidding Documents for evaluation of substitutions prior to award, **requests for substitution, including the data required by Paragraph 1.4.A., must be submitted to the University's Representative not later than 35 days after the date of commencement specified in the Notice to Proceed.** No requests for substitutions of products, material or equipment subject to the 35-day deadline shall be considered unless the request and supporting data is submitted on or before the deadline, except those deemed, in University's Representative's sole opinion, to be necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.
- F. If a product, material or equipment is designated in the Bidding Documents for evaluation of substitutions prior to award, then a request for substitution of the product, material or equipment, including the data required by Paragraph 1.4.A., must be submitted by the deadline specified in the Bidding Documents. Because of time constraints, only one submittal will be allowed for each such substitution request. Requests for substitutions of products, material or equipment designated for evaluation prior to award may not be made after the deadline specified in the Bidding Documents, and such requests be shall not be considered unless the request and supporting data is submitted on or before the deadline specified in the Bidding Documents. Notwithstanding the forgoing, the University may consider, after award of the Contract, requests for substitution of a product, material or equipment designated for evaluation prior to award where, in University's Representative's sole opinion, a substitution is necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution.
- G. In reviewing the supporting data submitted for substitutions, University's Representative will use, for purposes of comparison, all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Specifications. If more than 2 submissions of supporting data are required, the cost of reviewing the additional supporting data shall be at Contractor's expense.

- H. Contractor has the burden of demonstrating, through the procedures specified herein, that its proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and complies with all other requirements of the plans and specifications. If revisions or modifications to the design or construction of the work are necessitated by the use of the substitution, Contractor also has the burden of demonstrating, through the procedures specified herein, that the use of the substitution will not be detrimental to the quality, utility or appearance of the Project or any portion of the Project.
- I. The University's Representative may refuse to approve any requested substitution where, in the reasonable opinion of the University's Representative, Contractor has failed to demonstrate, through the procedures specified herein, that the proposed substitution is equal to, or superior to, the first-named product, material or equipment, in quality, utility and appearance and that the proposed substitution complies with all other requirements of the plans and specifications.
- J. University's Representative may reject any substitution not proposed in the manner and within the time limits prescribed herein.
- K. Substitutions are not allowed unless approved in writing by the University's Representative. Any such approval shall not relieve Contractor from the requirements of the Contract Documents.
- L. The 35-day and 70-day submittal periods do not excuse Contractor from completing the Work within the Contract Time or excuse Contractor from paying liquidated damages if Final Completion is delayed.
- M. If revisions or modifications to the design or construction of the Work are necessitated by the use of a substitution, the substitution may be used only if the revisions and modifications are approved in writing by the University's Representative. The University's Representative may refuse to approve any such proposed revisions or modifications where, in the reasonable opinion of the University's Representative, Contractor has failed to demonstrate, through the procedures specified herein, that the revisions or modifications are not detrimental to the quality, utility and appearance of the Project or any portion of the Project.
- N. If a substitution request is finally rejected by the University's Representative, Contractor shall furnish and install:
  - 1. The first-named product, material or equipment; or
  - 2. A product, material, or equipment, other than the first-named product, material or equipment, specified by both brand or trade name and model number, provided Contractor complies with the submittal requirements (including deadlines) of this specification section 01 2500.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

**(MATERIAL/PRODUCT SUBSTITUTION REQUEST FORM ON FOLLOWING PAGE)**

**MATERIAL/PRODUCT SUBSTITUTION REQUEST FORM**

**Date:** \_\_\_\_\_ **Material/Product Substitution Request No.** \_\_\_\_\_

**TO:** University's Representative **FROM:**

A. We hereby submit for your consideration the following product instead of the specified item:

1. Section: \_\_\_\_\_ Sub-Article: \_\_\_\_\_
2. Specified Item: \_\_\_\_\_
3. Proposed Substitution: (Mfg., Type, Model, etc. Attach a separate sheet if necessary.)

B. Complete all of the following:

1. Does this Substitution offer The Regents a cost credit (including costs for changes by other trades)?  Yes  No  
 If "Yes," state how much and attach an itemized breakdown of all costs: \$ \_\_\_\_\_
2. Does this Substitution offer earlier delivery or less construction time?  Yes  No  
 If "Yes," state the effect on the Contract Time: (Attach a separate sheet if necessary.)
3. Does this substitution affect any dimensions, layout, or details of other trades as shown on the drawings?  Yes  No  
 If "Yes," explain in the space below: (Attach a separate sheet if necessary.)
4. Describe the specific differences between this Substitution and the specified item in the space below: (Attach a separate sheet if necessary.)

C. Attach the following items as applicable: (Check if attached.)

1. Manufacturer's technical data.
2. Laboratory test or performance results.
3. Drawings and wiring diagrams of the proposed product.
4. Drawings and description of changes required by other trades.
5. Samples.
6. Manufacturer's guarantee and maintenance instructions.
7. Documentation of code compliance for all specific uses.

D. The undersigned agrees to pay for all additional review, design, testing, changes in the contract documents, and construction as a result of the acceptance of this substitution, at no cost to The Regents.

E. Submitted by Contractor: \_\_\_\_\_  
(Signed)  
 \_\_\_\_\_  
(Printed Name & Title)

**UNIVERSITY'S REPRESENTATIVE'S USE ONLY:**

Accepted  Revise and Resubmit  Rejected  See attachment dated \_\_\_\_\_





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## SECTION 01 2613 REQUESTS FOR INFORMATION & INSTRUCTIONS (RFI) PROCEDURES

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section contains the procedures to be followed by Contractor upon discovery of any apparent conflicts, omissions, or errors in the Contract Documents or upon having any question concerning interpretation.

#### 1.2. PROCEDURES

- A. Notification by Contractor:
  - 1. Submit all requests for clarification or additional information in writing to Design Professional and University's Representative concurrently using the **Request for Information (RFI) form attached to this Section.**
    - a. All RFI's, and any attachments thereto, must be submitted in PDF format with Optical Character Recognition (OCR) Text.
    - b. For any RFI for which Contractor has indicated a Cost Impact or Work/Time Impact, Contractor must also send a copy of the RFI to University's Responsible Administrator at Richard.Racicot@ucr.edu.
  - 2. Limit each RFI to one subject and number RFI's sequentially. For each resubmission, follow the RFI number with suffix "R" sequentially numbered as necessary. For example, the first RFI would be "1." The second RFI would be "2." The first resubmittal of RFI "2" would be "2R1."
  - 3. Submit a RFI if one of the following conditions occurs:
    - a. Contractor discovers an unforeseen condition or circumstance that is not described in the Contract Documents.
    - b. Contractor discovers an apparent conflict or discrepancy between portions of the Contract Documents that appears to be inconsistent or is not reasonably inferred from the intent of the Contract Documents.
    - c. Contractor discovers what appears to be an omission from the Contract Documents that cannot be reasonably inferred from the intent of the Contract Documents.
  - 4. Contractor shall not submit a RFI:
    - a. As a request for substitution.
    - b. As a submittal.
    - c. Under the pretense of a Contract Documents discrepancy or omission without thorough review of the Contract Documents.
    - d. In a manner that suggests that specific portions of the Contract Documents are assumed to be excluded or by taking an isolated portion of the Contract Documents in part rather than whole.



- e. In an untimely manner without proper coordination and scheduling of Work of related trades.
  - f. As a request for approval of Contractor's means and methods.
- 5. If Contractor submits a RFI contrary to 1.2. A.4. above, Contractor shall pay the cost of any review, which cost shall be deducted from the Contract Sum.
  - 6. Contractor shall submit a RFI immediately upon discovery. Contractor shall submit RFI's within a reasonable time frame so as not to delay the Contract Schedule while allowing the full response time described below.
- B. Response Time:
- 1. Design Professional shall send its RFI response to University's Representative within a reasonable time so that University's Representative can send a final RFI response to Contractor within the time frames in 1.2. B.2. below.
  - 2. University's Representative, or his/her designee, whose decision will be final and conclusive, shall resolve such questions and issue instructions or issue approval of instructions or information from Design Professional, to Contractor within a reasonable time frame. In most cases, RFI's will receive a response within **7 days for architectural issues and within 14 days for issues that require review and response from Design Professional's consultants**. In some cases, the response time may be lengthened for complex issues or shortened for emergencies as approved by University's Representative in writing. If in the opinion of University's Representative more than **14 days** is required to prepare a response to a RFI, Contractor will be notified in writing.
  - 3. Should Contractor proceed with the Work affected before receipt of a response from University's Representative within the response time described above, any portion of the Work which is not done in accordance with University's Representative's interpretations, clarifications, instructions, or decisions is subject to removal or replacement and Contractor shall be responsible for all resultant losses.
  - 4. Failure to Agree: In the event of failure to agree as to the scope of the Contract requirements, Contractor shall follow procedures set forth in Article 4 of the General Conditions.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

**REQUEST FOR INFORMATION**

**DATE:**     mm/dd/yy    

**RFI #:**                     

**TO:**

**Cc:**

**FROM:**

**Subject/Title:**

- Architectural   
  Civil   
  Mechanical   
  Electrical   
  Plumbing   
  Structural  
 Fire Protection   
 Landscape   
 Other:

**Reason(s) for RFI:**

<input type="checkbox"/> Clarification/Interpretation <input type="checkbox"/> Coordination Issue <input type="checkbox"/> Cost Impact: <u>      </u>	<input type="checkbox"/> Conflict in CD's <input type="checkbox"/> Information Not Shown on CD's <input type="checkbox"/> Safety <input type="checkbox"/> Work/Time Impact: <u>      </u>
---	--

**Issue/Question:**  
 (Reference Attachments)

Specification #:               Paragraph #:               Sheet #:               Detail #:             
 Other Reference:                                         Schedule Activity:                                     

**Proposed Solution:**  
 (Reference Attachments)

**Signed by Contractor:**                                         **Response Required by Date:**     mm/dd/yy    

**RESPONSE TO CONTRACTOR:**

**From Design Professional:**  
 (Reference Attachments)

**Date Received RFI:**     mm/dd/yy        **Response Date:**     mm/dd/yy        **Signed:**                     

**From University's Rep.:**  
 (Reference Attachments)

**Date Received RFI:**     mm/dd/yy        **Response Date:**     mm/dd/yy        **Signed:** \_\_\_\_\_



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## SECTION 01 3113 COORDINATION

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. Administrative Requirements
2. Facilities Services Coordination and Service Continuity

#### 1.2. ADMINISTRATIVE REQUIREMENTS

- A. Coordinate construction operations including, but not limited to, the following:

1. Coordinate the Work and do not delegate responsibility for coordination to any Subcontractor.
2. Anticipate the interrelationship of all Subcontractors and their relationship with the Work.
3. Resolve differences or disputes between Subcontractors and their relationship with the Work.
4. Coordinate the Work of Subcontractors so that portions of the Work are performed in a manner that minimizes interference with the progress of the Work.
5. Do not obstruct spaces and installations that are required to be clear by Applicable Code Requirements.
6. Do not cover any piping, wiring, ducts, or other installations until they have been inspected and approved and required certificates of inspection issued.
7. Remove and replace all Work, which does not comply with the Contract Documents. Repair or replace any other Work or property damaged by these operations with no adjustment of Contract Sum.

- B. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation. Coordinate all portions of the Work requiring careful coordination in order to fit in space available. Before commencing such portions of the Work, prepare supplementary Drawings for review by University's Representative and Design Professional. Non-conformance of this task will result in the delay of applications for payment and the contractor responsibility for any remedial works requested by University Representative.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation, including, but not limited to, coordination of furnishing and placing embedded items, sleeves, and block-outs with formwork and reinforcing steel for cast-in-place concrete.
4. Resolve conflicts and coordinate access to, and utilization of, spaces available for construction activities on the site and within structures, and delivery, storage, and installation of materials and equipment.
5. Implement a quality assurance program designed to ensure completion of the Work in accordance with requirements of the Contract Documents.

- C. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
  - 1. Prepare similar memoranda for the University and separate contractors where coordination of their work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of schedules.
  - 2. Installation and removal of temporary facilities.
  - 3. Delivery and processing of submittals.
  - 4. Progress meetings.
  - 5. Project closeout activities.
  - 6. Obtaining required permits and approvals from authorities having jurisdiction.
  - 7. Utility company approvals and installations.
- E. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.
- F. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.
- G. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

### 1.3. FACILITIES SERVICES COORDINATION AND SERVICE CONTINUITY

- A. Maintain continuous services to all existing facilities during the period of construction except for the following conditions:
  - 1. Perform Work that involves "shut-down" of existing facilities at such times as will cause the least inconvenience to the University activities, performing at night, on Saturdays, Sundays, holidays and at the discretion of University's Representative. Furnish University's Representative written notice of exact date and time of "shut-down" at least **thirty (30) working days** in advance, unless a longer period is specified or shown on the Drawings. On jobs with short performance time, Contractor shall verify with University's Representative the number of days required in advance for shut-down.
  - 2. The University's preference would be for the contractor to try to coordinate the high voltage utility shut down simultaneously with the Student Recreation Center's shut down to avoid unnecessary inconvenience to the campus. However this preference is not a mandatory requirement if it doesn't fit in with the contractor's schedule.
  - 3. The Contractor's bid shall include the cost of overtime necessary for the Work. No extra payment will be allowed for overtime to meet this requirement or the Contract Schedule.



- B. Service Continuity:
    - 1. Within the areas of the Work, investigate and uncover all drainage lines, sewers, electrical ducts, and other piping in use or forming continuations or utility systems required for other buildings or improvements upon the campus, and maintain such services in operation during performance of the Work of the Contract.
  - C. Notify University's Representative at least 30 days in advance of all utility shutdowns including date, time and expected duration.
- 1.4.
- A.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 3119 PROJECT MEETINGS

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes administrative and procedural requirements for the following project meetings:
1. reconstruction Meeting
  2. Pre-Installation Meetings
  3. Progress Meetings
  4. Billing Meetings
  5. 11-Month Warranty Meeting

#### 1.2. PRECONSTRUCTION MEETING

- A. The University's Representative will schedule a preconstruction conference before starting construction, at a time convenient to the University and the University's Representative, but no later than 10 days after execution of the Agreement. The conference will be held at the Project Site or another convenient location. The meeting will review responsibilities and personnel assignments.
1. Distribute written notice of agenda, meeting time, and location a minimum of five calendar days in advance.
- B. Attendees: The University's Representative and authorized representatives of the Architect, and its consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; Contractor's designated safety manager; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
- C. Agenda: Items of significance that could affect progress, including the following:
1. Tentative construction schedule.
  2. Critical work sequencing.
  3. Designation of responsible personnel.
  4. Procedures for processing field decisions and Change Orders.
  5. Procedures for processing Applications for Payment.
  6. Distribution of Contract Documents.
  7. Submittal of Shop Drawings, Product Data, and Samples.
  8. Preparation of record documents.
  9. Use of the premises.
  10. Parking availability.
  11. Office, work, and storage areas.
  12. Equipment deliveries and priorities.
  13. Safety procedures, including emergency notification procedures.
  14. First Aid.
  15. Security.
  16. Housekeeping.
  17. Working hours.
  18. Sustainability requirements, including Contractor staffing.

#### 1.3. PRE-INSTALLATION MEETINGS

- A. The Contractor shall conduct a pre-installation conference at the Project Site before each construction activity that requires coordination with other construction, and as required by other sections of the specifications.
1. The Contractor shall distribute written notice of agenda, meeting time, and location a minimum of five calendar days in advance.
- B. Attendees: The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the University's Representative of scheduled meeting dates.
1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:
    - a. Contract Documents
    - b. Options
    - c. Related Change Orders
    - d. Purchases
    - e. Deliveries
    - f. Shop Drawings, Product Data, and quality-control samples
    - g. Possible conflicts
    - h. Compatibility problems
    - i. Time schedules
    - j. Weather limitations.
    - k. Manufacturer's recommendations
    - l. Warranty requirements
    - m. Compatibility of materials
    - n. Acceptability of substrates
    - o. Temporary facilities
    - p. Space and access limitations
    - q. Governing regulations
    - r. Safety
    - s. Inspecting and testing requirements
    - t. Required performance results
    - u. Recording requirements
    - v. Protection.
  2. Record significant discussions and agreements and disagreements of each conference, and the approved schedule. Promptly distribute the record of the meeting to everyone concerned, including the University and the University's Representative.
  3. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

#### 1.4. PROGRESS MEETINGS

- A. The Contractor shall conduct progress meetings at the Project Site at regular intervals. Notify the University's Representative and the Design Professional of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request. Document meetings with meeting minutes to be distributed to the University's Representative, the Design Professional and all other attendees.
- B. Attendees: In addition to representatives of the University and the Architect, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these



meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

- C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.
  - 1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
  - 2. Review the present and future needs of each entity present, including the following:
    - a. Interface requirements
    - b. Time
    - c. Sequences
    - d. Status of submittals
    - e. Status of RFI's
    - f. Deliveries
    - g. Off-site fabrication problems
    - h. Access
    - i. Site utilization
    - j. Temporary facilities and services
    - k. Hours of work
    - l. Contractor's Safety Program (including any special hazards and risks)
    - m. Housekeeping
    - n. Quality and work standards
    - o. Contractor's two week "look ahead" schedule and issues
    - p. Change Orders
    - q. Documentation of information for payment requests
    - r. Sustainability review, including tracking and status.
- D. Schedule Updating: Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

#### 1.5. BILLING MEETINGS

- A. Attend a meeting monthly 5 days prior to submittal of the Application for Payment, at a location acceptable to University's Representative.
- B. Attendees:
  - 1. University's Representative.
  - 2. Design Professional and Consultants, as appropriate.
  - 3. Contractor's Project Manager.
  - 4. Superintendent.
  - 5. Others as directed by University's Representative.
- C. Agenda:
  - 1. Determination of current schedule progress.
  - 2. Review of work completed based on the cost loaded schedule to be billed in the Application for Payment.

- D. Schedule Updating: Revise the Contract Schedule prior to the meeting based on information determined at prior progress meetings. Review schedule revisions and prepare a final revised schedule for submission 10 days prior to the application for payment.
- 1.6. 11-MONTH WARRANTY MEETING
- A. Attend a meeting eleven months following the date of Notice of Completion.
  - B. Attendees:
    - 1. University's Representative
    - 2. Design Professional and Consultants, as appropriate
    - 3. Contractor's Project Manager
    - 4. Subcontractors, as appropriate
    - 5. Others as directed by Responsible Administrator.
  - C. Agenda: Review of guarantees, bonds, service and maintenance contracts for materials and equipment.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 3200 DOCUMENT CONTROL

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes the requirements for Contractor provided electronic document control system(s):
  - 1. General Requirements
  - 2. Submittals
  - 3. Software
  - 4. System Maintenance

#### 1.2. GENERAL REQUIREMENTS

- A. Contractor shall provide a web accessible system for electronic document control designed for use during pre-construction and construction to manage documents including RFIs and submittals.
- B. Contractor shall provide an electronic document control system(s) that is accessible via a web browser (including IE version 7.7) from any geographical location.
- C. Contractor shall provide access to University's Representative, University's Inspector of Record, Design Professional, and at least 7 other individuals identified by University's Representative.
- D. The electronic document control system must use the University numbering system specified in the applicable Specification Section.
- E. Hours of Operation: The electronic document control system shall be available 24 hours a day, 7 days a week except for short periods of planned system maintenance.

#### 1.3. SUBMITTALS

- A. Contractor shall submit a narrative description and outline of the proposed electronic document control system for review and approval by University's Representative.
- B. Contractor shall submit an example of the electronic log for both RFIs and Submittals for review and approval by University's Representative.
- C. Contractor shall establish a commercially available web based RFI and submittal processing system capable of posting RFI's and submittals with the following capabilities:
  - 1. Password secured access with varying levels of "write" or action capability, with multiple user defined stamps for action taken.
  - 2. Accessible from any computer with Internet access, whether in the office or the field.
  - 3. Notification of submittal status based on user profile.
  - 4. Automatic Transmittal generation when submittal is released.
  - 5. Extensive and user friendly mark-up tools and capability.
  - 6. Ability to hide mark-up comments based on user profile.
  - 7. Status of submittal and responsible party.
  - 8. Download in PDF format based on user profile.
  - 9. Tracking of resubmittal process, including University designated numbering system.



## PART 2 – PRODUCTS

### 2.1. SOFTWARE

- A. Primavera, Prolog or equal is acceptable as the electronic document control system used for RFIs and submittals.

### 2.2. SYSTEM MAINTENANCE

- A. University shall be notified at least 48 hours in advance of planned system maintenance of the electronic document control system(s). Planned system maintenance should be scheduled not to interfere with construction activities whenever possible. The system uptime shall be at least 95% based on a rolling monthly average.
- B. Contractor is responsible for installation, maintenance, and backup activities of the electronic document control system(s).

## PART 3 – EXECUTION (Not Applicable)

### 1.1. UPDATES

- A. Every two (2) weeks, Contractor shall export or otherwise generate electronic logs of all RFIs and submittals that can be imported into the University's enterprise system. The format of the electronic logs shall be a spreadsheet in MS-Excel format of all the structured data from each RFI or submittals. The exported or otherwise generated log for RFIs shall be separate from the log for submittals. Samples shall be included in the log of submittals.
- B. Contractor shall also allow, at any time, the University's Representative or designee, to download electronic copies of such RFI and submittal documents in a format that is searchable such as printed PDFs. Scanned PDFs are not acceptable except in the case of drawings.
- C. At least 7 days before the date scheduled for Final Inspection, Contractor shall provide University's Representative a complete electronic copy of all electronic files from the electronic document control system for the project.
  - 1. The electronic files shall be executable on CD or DVD.
  - 2. Each disc shall be fully labeled with the project name, contract number, date, and the sequence number of the disc in the set. Files may be submitted compressed, but the decompression utility used (executable preferred) should be fully described with directions included on the transmittal as well as in digital form.

END OF SECTION

**SECTION 01 3216  
SCHEDULES****PART 1 – GENERAL****1.1. SUMMARY**

- A. This Section includes administrative and procedural requirements for the Critical Path Method (CPM) of scheduling and reporting progress of the Work:
1. Preliminary Contract Schedule
  2. Contract Schedule
  3. Summary Schedule
  4. Narrative Report
  5. Variance Report
  6. Cash Flow Curve
  7. Manpower Curve
  8. Look-Ahead Schedule
  9. Final As-Built Schedule
  10. Responsibility for Completion
  11. Adjustment of Time for Completion
- B. Refer to the Agreement, General Conditions, and Notice to Proceed for definitions and specific dates of Contract Time.
1. Contractor shall develop a network plan and schedule for the Project demonstrating complete fulfillment of all contract requirements, shall keep the network plans up-to-date and in accordance with the requirements of this Section and shall utilize the CPM in planning, coordination, performing and reporting the Work under this Contract, including all activities of subcontractors, equipment vendors, and suppliers and in assisting University's Representative in monitoring the progress of the Work.
  2. The Precedence Diagramming Method (PDM) shall be utilized in preparing the CPM Schedule network diagrams utilizing Primavera Scheduling Software (P6 or the latest version for Windows, MS Project (latest version for Windows), or equal which is 100% importable into Primavera.
  3. Contractor shall use Primavera Scheduling Software as a computerized critical path scheduling system for producing computer generated reports with the following minimum information:
    - a. Activity identification code keyed to summary and Contract Schedule activities.
    - b. Activity description.
    - c. Status date and remaining duration.
    - d. Activity percentage complete.
    - e. Activity duration.
    - f. Early start/finish and late start/finish.
    - g. Total float.
    - h. Free float.
    - i. The predecessor and successor activities for each individual activity.
    - j. A comparison between the current updated Contract Schedule and the Baseline Schedule.
    - k. Designation of the planned work day/work week for each activity.
    - l. A critical item list of activities with ten (10) working days or less total float.
    - m. Scheduled and actual manpower loading for each activity.
    - n. Scheduled and actual progress payment for each activity.

C. Definitions:

1. Critical Path activities are defined as Work activities that, if delayed or extended, will cause a critical delay as defined in Article 8 of the General Conditions. All other Work activities are defined as non-critical Work activities and are considered to have float.
2. Float is defined as the time that a non-critical Work activity can be delayed or extended without causing a critical delay as defined in Article 8 of the General Conditions. Neither Contractor nor University shall have an exclusive right to the use of float. Float is a shared resource available to Contractor and University.
  - a. Float for any Work Activity shall be calculated as the difference in days between the Latest Finish and its Earliest Finish. Any such calculated float that results in a negative number is considered Negative Float.

D. Submittals:

1. Preliminary Contract Schedule
2. Contract Schedule
3. Summary Schedule
4. Narrative Report
5. Variance Report
6. Cash Flow Curve
7. Manpower Curve
8. Look-Ahead Schedule
9. Final As-Built Schedule

1.2. PRELIMINARY CONTRACT SCHEDULE

A. Submittal

1. Submit the Preliminary Contract Schedule to University's Representative within the time specified in the Instructions to Bidders and Supplementary Instructions to Bidders.
2. Submit to University's Representative **1 hardcopy, 1 electronic copy** in PDF, and **1 electronic copy** in the computerized critical path scheduling system software per 1.1.A.2. above approved by University's Representative.
3. Use the form of a bar chart, GANT chart, or other system approved by University's Representative showing the Work from the construction start date through the final completion date, with the work activities involved and other information relative to the progress of the Work, in a continuous flow from left to right.
4. Show sufficient detail to demonstrate adequate planning for the Work and to show a practical plan to complete the Work within the Contract Time, and suitable for monitoring progress of the Work.

B. Approval

1. Within **5 days** after receipt of the Contract Schedule, University's Representative will notify Contractor of its acceptance or return with comments for resubmittal.

C. Activities and Milestones

1. Identify all Work activities which constitute the Critical Path.
2. Include submittals and lead times.



3. Identify the milestone for completion of the Project. At a minimum, identify the following milestones:

Commencement Date  
Substantial Completion  
Final Completion

4. Identify all holidays and non-working days. Contractor shall perform no work that requires the University's observation or inspection on the following University holidays and campus closure days:

- a. Regular University Holidays and Campus Closure Days:

New Year's Day  
Martin Luther King, Jr. Day (3<sup>rd</sup> Monday in January)  
Presidents' Day (3<sup>rd</sup> Monday in February)  
Cesar Chavez Day (Last Friday in March)  
Memorial Day (Last Monday in May)  
Independence Day (July 4)  
Labor Day (1<sup>st</sup> Monday in September)  
Veterans' Day (November 11)  
Thanksgiving Day (4<sup>th</sup> Thursday in November)  
Friday following Thanksgiving Day  
Christmas Eve  
Christmas Day  
Campus Closure: business days between Christmas Day and New Year's Eve  
New Year's Eve

Exception: A University Holiday that falls on a Saturday is observed on the preceding Friday, and a University Holiday that falls on a Sunday is observed on the following Monday, unless an alternate day to observe the University Holiday is designated by the University.

### 1.3. CONTRACT SCHEDULE

#### A. Submittal

1. Submit the Contract Schedule, or updated Contract Schedule as applicable, within **7 days** prior to submitting an Application For Payment.
  - a. The initial Contract Schedule submitted to and approved by University's Representative shall be known as the Baseline Schedule, and shall be used by Contractor to execute the Work of the Contract, including planning, organizing and directing the Work, and reporting its progress until subsequently updated.
  - b. In no event shall Contractor submit an updated Contract Schedule less than monthly.
  - c. If the commencement or completion of any Work activity on the critical path is more than 30 days behind the date set forth in the Contract Schedule for such Work activity, at University's Representative's sole discretion, University's Representative may require Contractor to submit an updated Contract Schedule at a more frequent interval without additional cost to the University.

If the Contract Time is less than 300 days, and if the commencement or completion of any Work activity on the critical path is more than 10% of the Contract Time behind the date set forth in the Contract Schedule for such Work activity, at University's Representative's sole discretion, University's Representative may require Contractor

to submit an updated Contract Schedule at a more frequent interval without additional cost to the University.

2. Submit to University's Representative **1 hardcopy, 1 electronic copy** in PDF, and **1 electronic copy** in the computerized critical path scheduling system software per 1.1.A.2. above approved by University's Representative.
3. Submit the Contract Schedule or updated Contract Schedule in the same form as required in 1.2.A. above.
4. The presentation of each Work activity on the Contract Schedule or updated Contract Schedule shall include a brief description of the Work activity, the duration of the Work activity in days, and a responsibility code identifying the organization or trades performing the Work activity.
5. The Contract Schedule or updated Contract Schedule shall be a computerized, detailed, task level CPM diagram in PDM format. A clear delineation of construction activities shall be shown. This schedule shall be manpower and cost loaded and not extending beyond the Contract Time.
6. The work activities comprising the Contract Schedule shall be of sufficient detail to ensure adequate planning and execution of the Work to provide an appropriate basis for monitoring and evaluating the progress of the Work. A work activity is defined as an activity which requires time and resource (manpower, equipment, and/or material) to complete in a continuous operation. No activity shall be less than 1 day, no more than 14 days duration for any onsite operation.
7. Failure by Contractor to include any element of the Work required for the performance of this Contract and completion of the Project shall not excuse Contractor from completing all work required within the Contract Time, regardless of University's Representative's acceptance of the Contract Schedule or any updated Contract Schedule.
8. No more than 30% of the total number of activities shown shall be critical or near critical. Near critical is defined as float less than 10 days.
9. These schedules shall indicate the sequence and interdependency of work activities and shall be coordinated with all submittal, review and approval requirements.
10. Each approved Change Order and Field Order shall be listed and plotted as a separate and independent activity. Schedule components shall be organized into logical groupings by location, responsibility, Specification Section, etc.

#### B. Approval

1. Within **5 days** after receipt of the Contract Schedule or updated Contract Schedule, University's Representative will notify Contractor of its acceptance or return with comments for resubmittal.
  - a. Contractor shall participate in a review of the proposed Contract Schedule or updated Contract Schedule by University's Representative when requested.
  - b. Contractor shall resubmit any revisions within **3 days**.
2. The accepted Contract Schedule or updated Contract Schedule shall be the Contract Schedule of record for the period it is current and shall be the basis for payment during that period. Contractor shall perform the Work in accordance with the Contract Schedule or updated Contract Schedule as accepted.

3. No Application For Payment will be processed nor shall any progress payment become due for work performed until the Contract Schedule or updated Contract Schedule is accepted by University's Representative. University's Representative's acceptance of the Contract Schedule or updated Contract Schedule is a condition precedent to University making any progress payment for work performed.
4. Updating
  - a. Contractor shall meet with University's Representative at least **once per month**, or as directed by University's Representative, to review the latest approved Contract Schedule for actual progress made to date, activities started and completed to date, and the percentage of work completed to date on each activity started but not completed, and to incorporate in the Contract Schedule all changes in the progress, sequences, and scope of Work activities.
    - (1) The updated Contract Schedule shall accurately represent the as-built condition of all completed and in-progress Work activities as of the date of the updated Contract Schedule.
    - (2) The updated Contract Schedule shall incorporate all changes mutually agreed upon by Contractor and University during preceding periodic reviews and all changes resulting from Change Orders and Field Orders.
    - (3) Contractor shall document the effect on the updated Contract Schedule whenever float has been used.

#### C. Activities and Milestones

1. Identify all Work activities which constitute the critical path.
2. Identify all Work activities in correct sequence for the completion of the Work. Work activities shall include the following:
  - a. Major Contractor-furnished equipment, materials, and building elements, and scheduled activities requiring submittals or University's prior approval.
  - b. Show dates for the submission, review, and approval of each submittal. Dates shall be shown for the procurement, fabrication, delivery, and installation of major equipment, materials, and building elements, and for scheduled activities designated by University.
  - c. System test dates.
  - d. Scheduled overtime Work if required by Contract Documents.
  - e. Dates of Contractor requests for designated working spaces, storage areas, access, and other facilities to be provided by University.
  - f. Dates of Contractor requests for approvals and decisions from University on designated items.
  - g. Dates of Contractor requests for University-furnished equipment.
  - h. Dates of Contractor requests for University-furnished utilities.
  - i. Connection and relocation of existing utilities.
  - j. Connecting to or penetrating existing structures.



- k. Inspections and testing.
- l. Commissioning Sequence and activities for all building systems.

- 3. Include the milestones per 1.2.C.
- 4. Include all holidays and non-working days per 1.2.C.

#### 1.4. SUMMARY SCHEDULE

- A. All activities in the Contract Schedule shall be grouped to enable “rollup” of the activities in the form of a Summary Schedule which shall be submitted along with the updated Contract Schedule within **7 days** prior to submitting Contractor’s next Application For Payment. A clear delineation of construction activities shall be shown on the summary schedule. The summary schedule shall be manpower and cost loaded.
- B. Review and approval by University’s Representative of the Summary Schedule is a condition precedent to University making any progress payments for work performed.

#### 1.5. NARRATIVE REPORT

- A. With each updated Contract Schedule, Contractor shall provide an accompanying Narrative Report within **7 days** prior to submitting its next Application For Payment.
- B. The Narrative Report shall describe the progress achieved over the past period since the prior update, the progress anticipated during the upcoming period, critical activities, delays encountered during the prior period, delays anticipated during the upcoming period, and an audit of the Contract Time. The narrative shall also discuss the status of major project milestones. The audit shall show current days allowed by Contract, days used through the end of the period, days remaining, percent of time used to date, and percent complete as measured by a cost loaded schedule, and days ahead of or behind schedule. In the event that the Contractor was delayed by any occurrence during the prior period, the narrative report shall include a listing of all delays that affected the critical path and shall clearly explain the impact the claimed delay(s) had on the critical path and shall include an accounting of days lost or gained.
- C. In the event the monthly update shows the Contractor to be behind schedule (negative float), the narrative shall include a description of actions needed to bring the project back on schedule.
- D. Review and approval by University’s Representative of the Narrative Report is a condition precedent to University making any progress payments for work performed.

#### 1.6. VARIANCE REPORT

- A. A variance report shall be submitted along with the updated Contract Schedule within **7 days** prior to submitting Contractor’s next Application For Payment.
- B. The variance report shall compare the approved Baseline Schedule and the latest updated Contract Schedule. The report shall include a description of all activities completed during the preceding period (last approved updated Contract Schedule), a description of progress made and planned for activities listed as started but not completed on the updated Contract Schedule, and shall report noncritical activities which have been delayed 10 or more days and critical (8 days or less total float) activities that have incurred any delay. The format of this report shall include:
  - 1. Activity code and description.
  - 2. Baseline scheduled early start/finish dates.
  - 3. Current anticipated early start/finish dates.
  - 4. Days remaining to complete the activity.

5. Percentage complete of the activity.
6. Total float of the activity.

C. Review and approval by University's Representative of the Variance Report is a condition precedent to University making any progress payments for work performed.

#### 1.7. CASH FLOW CURVE

- A. Contractor shall submit its Cash Flow Curve of expected progress payments over the time of the Project along with its Contract Schedule within **7 days** prior to submitting its first Application For Payment. The curve shall be plotted against the Contract Schedule using the Cost Breakdown approved by University's Representative.
- B. Contractor shall furnish costs for each Work activity that cumulatively equal the total Contract Sum. Mobilization costs may be shown separately; however, other costs, such as profit and bonds, shall be pro-rated throughout all activities.
- C. Contractor shall update the Cash Flow Curve with actuals from the approved progress payments and forecasted progress payments and submit it to University's Representative along with Contractor's updated Contract Schedule per 1.3. The total of approved progress payments and forecasted progress payments shall equal the Contract Sum plus approved Change Orders. The updated curve shall be plotted against the Baseline Schedule and updated Contract Schedule.
- D. Review and approval by University's Representative of the Cash Flow Curve is a condition precedent to University making any progress payments for work performed.

#### 1.8. MANPOWER CURVE

- A. Contractor shall submit a Manpower Curve of the labor requirements per calendar week over the time of the Project along with its Contract Schedule within **7 days** prior to submitting its first Application For Payment. The curve shall be plotted against the Baseline Schedule. The curve shall show the number of persons in each craft for each week.
- B. Contractor shall update the Manpower Curve with actual labor employed and forecasted labor requirements necessary to complete the Project within the Contract Time, and shall submit it to University's Representative along with Contractor's updated Contract Schedule per 1.3. The updated curve shall be plotted against the Baseline Schedule and updated Contract Schedule.
- C. Review and approval by University's Representative of the Manpower Curve is a condition precedent to University making any progress payments for work performed.

#### 1.9. LOOK-AHEAD SCHEDULE

- A. The Look-Ahead Schedule is a schedule derived from the Contract Schedule or updated Contract Schedule that indicates in detail all activities scheduled for work for the next 2 weeks and all activities scheduled to occur during the next 4 weeks.
- B. Submit in 11" x 17" Gantt chart format. Provide as many copies as requested by University's Representative.
- C. The Look-Ahead Schedule shall be generated from the then current Preliminary Contract Schedule, Contract Schedule, or updated Contract Schedule.

#### 1.10. FINAL AS-BUILT SCHEDULE

- A. A combined 2-week Look-Ahead Schedule with a 2-week As-Built Schedule for previous two weeks shall be submitted by Contractor for review and approval as often as requested by the University's Representative, at no additional cost.

- B. As a condition precedent to final acceptance of the Project, Contractor shall submit a final As-Built Schedule and all final reports which accurately reflect the manner in which the Project was constructed and includes actual start and completion dates for all work activities on the last updated Contract Schedule.
- C. As a condition precedent to the release of retention, the last update of the Contract Schedule submitted shall be identified by the Contractor as the "As Built Schedule". The As-Built Schedule shall be submitted when all activities are 100 percent complete. The As-Built Schedule shall reflect the exact manner in which the Project was actually constructed (including start and completion dates, activities, sequences, and logic) and shall include a statement signed by the Contractor that the As Built Schedule accurately reflects the actual sequence and timing of the construction of the Project.

#### 1.11. RESPONSIBILITY FOR COMPLETION

- A. Delays of any non-critical Work activity shall not be the basis for an extension of Contract Time until the delays consume the float associated with that non-critical Work activity and cause the Work activity to become critical.
- B. Contractor shall not sequester float through strategies including extending activity duration estimates to consume available float, using preferential logic, using extensive or insufficient crew/resource loading, use of float suppression techniques, special lead/lag logic restraints or imposed dates. Use of float time disclosed or implied by the use of alternate float suppression techniques shall be shared for the benefit of both the University and contractor.
- C. It is acknowledged that University generated time savings (critical path submittal reviews returned in less time than allowed by the Contract Documents, approval of substitution requests which result in a savings of time for contractor) create shared float. Accordingly, University caused delays may be offset by University generated time savings.
- D. Contractor agrees that whenever it becomes apparent from the current updated Contract Schedule that the Contract completion date will not be met, it will take some or all of the following actions, with prior approval of University's Representative, at no additional cost.
  - 1. Increase construction manpower in such quantities and crafts as will eliminate, in the judgment of University's Representative, any delay.
  - 2. Increase the number of working hours per shift, shifts per working day, working days per week, or the amount of construction equipment, or any combination of the foregoing, sufficiently to eliminate, in the judgment of University's Representative, any delay. This paragraph shall not be construed to permit Contractor to violate the work hour restrictions specified in the Contract Documents.
  - 3. Reschedule activities to achieve maximum practical concurrent completion activities within the requirements of the specifications.

#### 1.12. ADJUSTMENT OF TIME FOR COMPLETION

- A. Contractor shall submit a detailed time impact analysis of the Contract Schedule to support an adjustment of the Contract Time for delay under Article 8 of the General Conditions or an adjustment of the Contract Sum for delay under Article 7 of the General Conditions.
- B. Each time impact analysis shall provide information justifying the request and stating the extent of the adjustment requested for each specific change or alleged delay. Each time impact analysis shall be in form and content acceptable to University's Representative, and shall include, but not be limited to the following:



1. A fragmentary CPM type network (Fragnet) illustrating how Contractor proposes to incorporate the change or alleged delay into the current updated Contract Schedule.
  2. Identification of activities in the current updated Contract Schedule which are proposed to be amended due to the change or alleged delay, together with engineering estimates and other appropriate data justifying the proposal.
- C. The time impact analysis shall be determined on the basis of the date when the change was issued, or the date when the alleged delay began. The status of completion of the Work and time impact analysis shall include event time computations for all affected activities.
- D. Contractor shall provide time impact analysis at no additional cost to demonstrate the time impact upon the Contract Time.
- E. If University's Representative finds, after review of the time impact analysis, that Contractor is entitled to any extension of time, the Contract Time will be adjusted per the General Conditions, and Contractor shall revise the updated Contract Schedule accordingly.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 3280 ELECTRONIC DATA TRANSFER

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. Section includes Terms and Conditions for the transfer of Electronic Data to Contractor for use in preparation of Submittals, Record Documents, coordination drawings, and related documents to be produced by Contractor and submitted to University:

**1. CONTRACTOR'S ACCEPTANCE OF ELECTRONIC DATA IN ANY FORM SHALL CONSTITUTE ACCEPTANCE OF THE TERMS AND CONDITIONS OF THIS SECTION, INCLUDING PAYMENT OF INDICATED FEES.**

- B. The University and the Contractor acknowledge that established administrative procedures for management of construction Projects anticipate paper documentation and methods for the exchange of such documents. To the extent the administrative and procedural requirements of the Contract Documents are predicated on established practices the University and the Contractor agree to accept reasonable modifications to certain procedural requirements to facilitate electronic exchange of information and the use of digital media.
- C. Submittals: Only a material original stamped and signed by the University's Representative shall be acceptable as an official record of the processed submittal. When directed, quantities of document submittals specified in the Contract Documents may be adjusted as permitted to facilitate utilization of electronic transfer of information.

#### 1.2. TERMS AND CONDITIONS

- A. In consideration of Contractor's request to the University to deliver certain Electronic Data for use on the Project, Contractor agrees to the following:
1. Electronic Data includes but is not limited to, computer-aided design (CAD) files including native file formats (DWG) and drawing exchange formats (DXF), and files produced by word processing, spread sheet, scheduling, data base and other software programs. The Electronic Data may be provided in an original format produced by Design Professional or other University consultant, or an alternate, "translated" format as requested by other parties to this Agreement.
  2. The means by which the Electronic Data is transferred may include but are not limited to, electronic mail, File Transfer Protocol (FTP) sites, project websites, and disk copies transmitted between the parties to this Agreement. Contractor acknowledges that Electronic Data transferred in any manner or translated from the system and format used by Design Professional or other University consultant, to an alternate system or format is subject to errors that may affect the accuracy and reliability of the data and that the data may be altered, whether inadvertently or otherwise. Accordingly, the University and Design Professional make no warranty, express or implied, as to the accuracy of the information transferred. The Electronic Data are not the Bidding Documents and differences may exist between these electronic files and corresponding hard-copy Bidding Documents. University reserves the right to retain hard copy originals in addition to electronic copies of the Electronic Data transferred, which originals shall be referred to and shall govern.
  3. As consideration to University for the transfer of the Electronic Data, Contractor agrees that the University, University's Design Professional, and University's agents and consultants shall not be liable for and hereby waives all claims and agrees to indemnify and hold University harmless from all liabilities, losses, damages or expenses (including attorneys' fees) arising out of, or connected with: (1) the transfer of Electronic

Data by any means; (2) the use, modification or misuse by parties other than University and Design Professional of the Electronic Data; (3) the limited life expectancy and decline of accuracy or readability of the Electronic Data due to storage; (4) any use of the Electronic Data by any third parties receiving the data from other parties to this Agreement; or (5) the incompatibility of software or hardware used by University and Design Professional and the other parties participating in the Work.

4. The Electronic Data provided under the terms of this Agreement are the proprietary information of University. All Electronic Data shall be treated as confidential and shall not be disclosed to or shared with others without express, written consent from the University's.
5. The University shall issue the most current information available, but does not undertake the responsibility for providing updated information as the Project proceeds. Contractor may make a specific written request for such updated information as Contractor deems necessary, which University will then provide subject to the Terms and Conditions hereof.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION



## SECTION 01 3300 SUBMITTALS

### PART 1 – GENERAL

#### 1.1. SUMMARY

##### A. Section includes:

1. Certificates
2. Shop Drawings, Product Data, and Samples
3. LEED Documentation
4. Refrigerant Management Documentation
5. Contractor Certification Form
6. Subcontractor Certification Form
7. Submittal Schedule

##### B. Definitions:

1. Mockups are full-size assemblies for review of construction, coordination, testing, or operation, appearance, and finish by which the Work will be judged; they are not Samples.
2. The terms "Shop Drawings" and Product Data" are defined in Article 3.12 of the General Conditions.
3. As used herein, the term "manufactured" applies to standard units usually mass-produced. The term "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements. Shop drawings shall establish the actual detail of all manufactured or fabricated items, indicate proper relation to adjoining Work, and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.
4. The terms "Shop Drawings" and "Product Data" are defined in Article 3.12 of the General Conditions.

**C. Manufacturers' Instructions:** Where any item of Work is required by the Contract Documents to be furnished, installed, or performed in accordance with a specified product manufacturer's instruction, Contractor shall procure and distribute the necessary copies of such instructions to University's Representative and all other concerned parties, and Contractor shall furnish, install, or perform the Work in strict accordance therewith.

OR

**Manufacturer's Instructions:** Where it is required in the specifications that materials, products, processes, equipment or the like to be installed or applied in accordance with manufacturer's instructions, directions or specification, or words to this effect, it shall be construed to mean that said application or installation shall be in strict accordance with printed instructions furnished by the manufacturer of the material concerned for use under conditions similar to those at the job site. Three (3) copies of such instructions shall be furnished to the University's Representative and his/her approval thereof obtained before work is begun.

**D.** The University's Representative or its Design Professional reserves the right to review and request the removal or redesign of manufacturers' trade marks and names on items of materials and equipment which will be exposed to view in the completed Work. Such removal or redesign shall be at no increase in Contract Sum.

- E. Materials and equipment, for which Underwriters' Laboratories, Inc. standards have been established and their label service is available, shall bear the appropriate UL label.

## 1.2. CERTIFICATES

- A. Certifications of Review and Coordination: Within 10 days of Notice to Proceed, submit completed Contractor Certification of Review and Coordination and all Subcontractor Certifications of Review and Coordination.
- B. Certifications of Review and Coordination: As required by the General Conditions, perform a thorough review of the Contract Documents prior to commencing the Work. If there are no exceptions, write "NO EXCEPTIONS" in the space provided.
  - 1. Complete a copy of the Contractor Certification of Review and Coordination Form following this Section.
  - 2. Require all subcontractors to perform a thorough review of the Contract Documents and complete a copy of the Subcontractor Certification of Review and Coordination Form following this Section.
  - 3. Review all completed Forms and resolve conflicting comments, if any, among the various parties so as to present a clear, concise view of items noted.
  - 4. Submitting the required certifications does not relieve the Contractor from responsibility to continue to immediately report new discrepancies, errors, omissions, conflicts, code violations, and improper use of materials discovered in the Contract Documents during the course of construction.
  - 5. Applications for Payment will not be processed by the University's Representative until all certificates have been received.

## 1.3. SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. Shop drawings, product data, and samples, other than in connection with proposed substitutions, shall be submitted to University's Representative only when specifically required; and University's Representative will not review any other such submittals. Product data and samples for proposed substitutions shall be submitted to University's Representative in accordance with Section 01 2500. Contractor shall be responsible for obtaining such copies of shop drawings, product data, and samples as it may require for its own use. Submittals Not Required: No shop drawings of supplemental data are required unless specifically requested by the University or specified herein. No shop drawings shall be submitted unless specifically requested.
  - 1. Submittal Schedule:
    - a. Refer to Specific Specification Sections for the list of submittals required under each section and indicate the required submittals on the attached Submittal Schedule for review by University's Design Professional. A schedule of submission of shop drawings, product data, and samples by Contractor ("Submittal Schedule"), and their processing and return by the University's Design Professional shall be agreed upon by both parties in order that the items covered by these submittals will be available when needed by the construction process and so that each party can plan its workload in an orderly manner. Submit Submittal Schedule no later than 30 days after Award of Contract.
    - b. Contractor shall prepare the Submittal Schedule in the form as attached or similar form acceptable to the University's Representative, and coordinate it with the Contract Schedule. No submittals will be processed before the Submittal Schedule has been submitted to and accepted by University's Representative, except in such cases where the processing of submittals is required to maintain job progress before the acceptance of the Submittal Schedule.
    - c. In preparing the Submittal Schedule, Contractor must first determine from the Contract Schedule the date a particular item is needed for the Work. Working

- backwards, Contractor will establish the number of days required for fabrication, shipment, placement, and similar activities to determine the date required for the first submittal.
- d. Allow 14-28 day duration for the University's Design Professional's initial review of submittals depending on the submittal/shop drawing and specification section. Allow 7 days for Design Professional to re-review revised or unapproved submittal/shop drawings.
  - e. Contractor to indicate whether the submittal is a "Full" or "Partial" submittal on the schedule and on the submittal.
2. Material List: Provide complete material list of products proposed for use. Submit Material Safety Data Sheets (MSDS) for Owner's use. Neither the University Representative nor its Design Professional will review MSDS.
3. Contractor's Review:
- a. Contractor Review: The shop drawings and supplemental data, when called for, shall be submitted as the instruments of the Contractor, even though they may have been prepared by a subcontractor, supplier, dealer, manufacturer, or by any other person, firm or organization. Prior to submission, the Contractor shall undertake his/her own review and stamp with his/her acceptance those shop drawings and supplemental data he/she is requested to submit to the University's Architect/Design Professional for his/her review. By accepting and submitting shop drawings and supplemental data, the Contractor represents that the Contractor has determined and verified all field measurements, the physical construction, the quality of materials, the applicability of catalog numbers, and similar data, or will do so, and that the Contractor has checked and coordinated each shop drawing with the requirements of the work and of the Contract Documents. Conflicts with other trades shall be resolved by the Contractor in the shop drawings, if possible, but in any event prior to the actual construction. Drawings submitted in response to a request of the University's Architect shall show rearrangements, if any, made necessary by the use of materials or equipment other than those specified. Review, mark-up as appropriate, and stamp show drawings, product data, and samples prior to submission. Submittals shall clearly show that they have been reviewed and approved by Contractor for conformance with the requirements of the Contract Documents and for coordination with other Sections.
  - b. Submittals not stamped and signed by Contractor will be returned without review.
  - c. Determine and verify:
    - (1) Field measurements.
    - (2) Field construction criteria.
    - (3) Catalog numbers and similar data.
    - (4) Conformance with Contract Documents.
  - d. Coordinate each submittal with requirements of the Work and of the Contract Documents.
  - e. Notify University's Representative and its Design Professional in writing, at time of submission, of any changes in the submittals from requirements of the Contract Documents. Contractor is responsible to correct the deficiencies from the requirements of the contract documents when any changes are not made in writing to the University Representative or its Design Professional at the time of submission. The approval of submittals will be deemed null and void.
  - f. Begin no fabrication or Work which requires submittals until the return of the University's Design Professional's final reviewed submittals.



4. Coordination Drawings: Prepare coordination drawings where careful coordination is needed for installation of products and materials fabricated by separate entities as specified in Section 01 3300. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.
  - a. Show the relationship of components shown on separate Shop Drawings.
  - b. Indicate required installation sequences.
  - c. Comply with requirements contained in this Section.
  
5. BIM Procedures:
  - a. Contractor shall establish procedures for coordinating work using BIM methods and protocols.
  
  - b. Format and Development: Prepare coordination drawings according to the following requirements:
    - (1) Prepare BIM files for the project based on original hard copy documents as received from the University.
    - (2) Prepare all files using BIM software program, version, and operating system as approved by University.
    - (3) Prepare BIM Execution Plan establishing BIM protocols for project, including standards, responsibilities of Contractor and sub-contractors, schedules, clash detection, and quality control.
    - (4) Designate a specific staff person as Contractor's BIM Coordinator.
    - (5) Submit or post coordination drawing files using format same as file preparation format or Portable Data File (PDF) format.
  
  - c. Clash Detection:
    - (1) Using BIM procedures perform clash detection as part of preparation of coordination drawings.
    - (2) Include clash detection protocol in the BIM execution plan.
    - (3) BIM Coordinator will review and assemble the various design and trade models, create clash reports and conduct coordination meetings with University's Representative as defined by the BIM execution plan.
    - (4) Run Parameters: Clash detection, at minimum, shall be set to report any hard clashes within a 1 /4 inch tolerance. Clearance tolerances shall be used to account for additional material applied to modeled elements, such as fire proofing or required clearances.
    - (5) At a minimum, review Clash Detection documents on a weekly basis. Identify conflicts requiring document modifications and review with University's Representative.
    - (6) Update model elements based on field verification of dimensions and orientation.
  
  - d. Following resolution of conflicts and clash detection, prepare coordination drawings for review as follows:
    - (1) Comply with shop drawing requirements for sheet size and submittal methods specified in Section 01 3300 "Submittals".
    - (2) Refer to Specifications in Divisions 2-33 technical specification sections for specific Coordination Drawing requirements.
    - (3) Provide composite coordination drawings for equipment and system installations in mechanical and electrical rooms and spaces where two or more entities will provide the work.
    - (4) Provide composite coordination drawings showing planned locations of core cuts, sleeves, and other penetrations intended for placement in

- concrete decks, slabs, and structural components. Indicate intended use such as openings for conduit, piping, ducts, and utility services.
- (5) Provide composite coordination drawings showing planned locations of fire and sound rated wall penetrations, including dampers. Indicate intended use such as openings for conduit, piping, ducts, and utility services.
  - (6) Prepare above-ceiling coordination drawings showing all above-ceiling work including structural members and required clearances and dimensions.
- e. At the end of the project as part of the close out submittals the Contractor shall provide an “as-built” BIM model to be given to the University in addition to the hard copy as built drawings.
6. Submission Requirements:
- a. Make submittals promptly in accordance with the Specifications and in such sequence as to cause no delay in the Work.
    - (1) Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
      - (a) Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
      - (b) Coordinate transmittal of different types of submittals for related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
      - (c) The University's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
    - (2) Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
      - (a) Allow sufficient time from receipt by University's Representative, for initial review and comment. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The University's Representative will promptly advise the Contractor when a submittal being processing must be delayed for coordination.
      - (b) If an intermediate submittal is necessary, process the same as the initial submittal.
      - (c) Allow additional time for reprocessing each submittal.
      - (d) No extension of Contract Time will be authorized because of failure to transmit submittals to the University's Representative sufficiently in advance of the Work to permit processing.
  - b. Number of Submittals Required: Refer to Specification Section 01 3500 “Document Control” for distribution of Shop Drawings and Product Data submittals. After each submittal has been reviewed by the Design Professional and returned to the Contractor. The Contractor shall make (two) 2 hard copies of all approved submittals and shall submit the hard copies to the University's Representative for project record filing.
    - (1) Samples: Contractor to submit a minimum of (five) 5 physical samples each of products and or samples for Design Professional's review and approval. After review and approval one sample will be retained by the architect, two (2) for

the contractor and its subcontractor and two (2) for the University's Representative.

- (2) Shop drawings and supplemental data, where called for, shall be prepared and submitted as per General Conditions. Final corrected copies of schedules and shop drawings or supplemental data to University's Design Professional for review shall be such as to provide one (1) for University's Architect's files, two (2) for the University and two (2) to the Contractor's job files and for distribution by the Contractor to subcontractors or vendors. Exceptions shall be as noted in Specifications sections.

c. Submittals shall contain:

- (1) Identification data number assigned by the Contractor, consisting of the specification section number followed with the number 001 and continuing in sequence.

- (a) Resubmittals: Add a letter to the previous identification, for instance 01 3400/005/R1 would be a first resubmittal.
- (b) Use a separate number for each product, assembly, or system. Similar or related items may be grouped only if compatible with review process as approved.

- (2) Date of submission and dates of any previous submissions.
- (3) Project name and number, and contract identification.
- (4) Names of Contractor, Subcontractor, Supplier and Manufacturer.
- (5) Identification of item, with Specification Section number and article/paragraph references.
- (6) Field dimensions, clearly identified as such.
- (7) Relation to adjacent or critical features of the Work or materials.
- (8) Reference standards, such as ASTM or Federal Specification numbers.
- (9) Identification of changes from requirements of the Contract Documents.
- (10) Identification of revisions on resubmittals.
- (11) An 8-inch x 3 inch blank space for review stamps, as necessary.
- (12) Contractor's stamp, initialed or signed, certifying to the review of the submittal; verification of materials and field measurements and conditions; and compliance of the information within the submittal with requirements of the Work and of the Contract Documents.

d. Interpretation of Terms:

- (1) "As directed", "as required", "as permitted", "acceptable", "satisfactory", means by or to the University's Architect. The term "equal" means "equal in the opinion of the University's Architect after submittal data is reviewed". The term "favorable review" means that the submittals for material list, shop drawings, material substitutions, schedules, etc., will be reviewed by the University's Architect and copies returned to the Contractor marked as "Review Completed", "No Exceptions Taken" or "Make Corrections Noted" in which case no further submittals are needed.
- (2) Submittals returned marked "Resubmit", "Amend and Resubmit" or "Rejected - Resubmit" shall be corrected to comply with project requirements and shall be resubmitted for review

7. Resubmission Requirements:

a. Shop Drawings and Product Data:

- (1) Revise shop drawings or product data, and resubmit as specified for the initial submittal, only if required by University's Design Professional.
- (2) Identify any changes which have been made other than those requested.



- (3) Note any departures from the Contract Documents or changes in previously reviewed submittals which were not commented upon by University's Design Professional.
  - b. Samples: Submit new samples as required for initial submittal.
  - c. University's Design Professional's Review: The University's Design Professional will review shop drawings and supplemental data submitted by the Contractor only for general design conformance with the concept of the Project and compliance with the information given in the Contract Documents. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of Contractor as required by the Contract Documents.
8. Distribution:
  - a. Reproduce and distribute copies of Submittals including Shop Drawings and Product Data, which carry the University's Design Professional's review stamp, to the following locations:
    - (3) Contractor's Project site file.
    - (4) Record documents file maintained by Contractor.
    - (5) Separate Contractors.
    - (6) Subcontractors.
    - (7) Supplier or manufacturer.
    - (8) Other involved parties as directed by University's Representative.
9. Design Professional's or Design Professional's designee's or University Representative's Review will be under the following conditions.
  - a. Review of submittals is only for general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instruction for installation for performance or equipment or systems, all of which remain the responsibility of contractor as required by the Contract Documents.
  - b. The review does not affect the Contractor's responsibility to perform all Contract requirements with no change in Contract Sum or Contract Time. Any actions shown are subject to the requirements of the Drawings, Specifications and other Contract Documents. The Contractor is responsible to confirm and correlate dimensions at the site, for information that pertains to the fabrication processes, for the means, methods, techniques, procedures, sequences and quantities necessary to complete the Contract and for coordination of the work of all trades and satisfactory performance of his work. The review is undertaken solely to satisfy Consultant's obligations, if any to the University and shall not give rise to any claim by the Contractor or other parties against the University's Representative, his/her Consultants or University.

#### B. Shop Drawings

1. Present information required on shop drawings in a clear and thorough manner. Identify details by reference to drawings and detail, schedule, or room numbers shown and specified.
2. Shop drawings shall be original drawings by the Contractor. Direct reproductions of the Contract Drawings will not be acceptable as shop drawings.

3. **Shop Drawings Delineation:** The Shop Drawings shall be drawn to scale and shall be completely dimensioned, giving the plan together with such sections as are necessary to clearly show construction detail.
4. **Responsibility:** These Shop Drawings and all supporting data, catalogs, etc., shall be prepared by the Contractor or his/her suppliers, but shall be submitted as the instruments of the Contractor. Therefore, the Contractor shall review and approve the drawings of his/her suppliers as well as his/her own drawings before submitting them to the University's Representative. In particular, the Contractor shall ascertain that the drawings meet all requirements of the Drawings and Specifications and also conform to the structural and space conditions. Each Shop Drawing submitted for review shall bear a stamp certifying that it has been reviewed and approved by the Contractor in accordance with the Contract Documents. If such Shop Drawings show variations from Contract Documents, whether because of standard shop practice or other reasons, the Contractor shall make special mention thereof in his/her letter of transmittal. The Contractor shall be fully responsible for observing the need for and making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the equipment he/she proposes to supply both as pertains to his/her own work and any work affected under other parts, heading or divisions of Drawings and Specifications.
5. **Identification:** Shop Drawings shall be entitled with the name of the project on each sheet and shall otherwise be identified by listing the particular division, section, article or reference of the work pertaining. Submit different items on separate sheets. All submittals shall be numbered sequentially.
6. **Manner:** Furnish for University's Design Professional's approval separate sheets of submittal of each specialty item in the following manner:
  - a. Catalog cuts shall be photocopied or reproduced in some other acceptable manner and submitted on one (1) side only of an 8-1/2" x 11" sheet, noting only the items in question, together with the descriptive (specification) data complete. Once the Design Professional has reviewed the submittal provide two (2) hard copies of each approved, stamped shop drawing and other supporting data to the on-site University's Representative.
  - b. Each sheet shall be identified with the division, section, article or reference in the Contract Documents which covers the item submitted for approval.
  - c. Each sheet shall be identified with the project name, the University's Representative and the project's Design Professional.
  - d. Each sheet shall bear the Contractor's stamp and signature of approval.
7. All shop drawings shall be drawn accurately suitable for duplicate copying by black line, blue line printing processes or photocopy.
8. **Supplemental Data:** Supplemental data shall include information as noted in the specification paragraphs requiring them, or as requested by the University.
9. **Review Required:** Shop drawings, if requested, must be submitted to and favorably reviewed by the University's Architect/Design Professional before being used by the Contractor on the job.

#### C. Product Data

1. Clearly mark each copy to identify pertinent Products or models.
2. Show performance data consisting of capabilities, rpm, kw pressure drops, design and operating pressures, temperatures, performance curves, noise level curves, power characteristics and consumption; conforming as closely as possible to the test methods referenced in the plan and specifications.

3. Show dimensions, weights and clearances required.
4. Show wiring or piping diagrams and controls.
5. Modify the standard schematic drawings and other diagrams to delete information, which is not applicable to the Work.
6. Supplement standard information to provide information specifically applicable to the Work.

#### D. Samples

1. Office samples shall be of sufficient size and quality to clearly illustrate the following:
  - a. Functional characteristics of the products, with integrally related parts and attachment devices.
  - b. Full ranges of color, texture, and pattern.
  - c. Provide a minimum of 5 samples plus any additional number for Contractor needs.
2. Samples herein referred to shall include all materials, equipment, surface textures, colors, fabrics, etc., as required by Drawings and Specifications or as requested by the University's Design Representative. They shall be submitted as required by the Specifications or requested by the University's Representative or its Design Professional.
3. Submittal: Samples, properly identified and described, shall be submitted as noted herein, or as may be required by the University's Representative. They shall be submitted and resubmitted until approved. No approval of a sample shall be taken in itself to change or modify any contract requirement. Finishes, materials, or workmanship in the completed building shall match the approved samples.
4. Manner: Contractor shall forward all samples under cover letter in five (5) copies, including a complete listing of such samples designated for use on the project, with complete identification on each sample by project name, ultimate destination of material, manufacturer, brand, lot, style, model, etc., Contract Document reference as well as the names of the Contractor, Supplier, Project, Design Professional and University's Representative. All submittals shall be numbered sequentially.
5. Return: Samples of value will be returned to the Contractor for use in the project after review, analysis, comparison and/or testing as may be required by the University's Architect.
6. Test Sample: Test samples, as the University's Representative designates, will be selected from the materials or equipment delivered by the Contractor for use in the work. If any test sample fails to meet the specification requirements, all previous approvals will be withdrawn and such materials or equipment which fail the testing shall be subject to removal and replacement by the Contractor with materials or equipment meeting the specification requirements.

#### E. Mockups

1. Provide mock-ups as described in Specification Section 01 4339 and on the following drawings:
2. Material List: Provide complete material list of products proposed for use. Submit Material Safety Data Sheets (MSDS) for Owner's use. Neither the University Representative nor its Design Professional will review MSDS.
3. Contractor's Review: Review, mark-up as appropriate, and stamp show drawings, product data, and samples prior to submission. Submittals shall clearly show that they have been reviewed and approved by Contractor for conformance with the requirements of the Contract Documents and for coordination with other Sections.



1.4. LEED DOCUMENTATION

- A. Sustainable Design and LEED submittals are in addition to other submittals. If submittal item is identical to that submitted to comply with other requirements, submit duplicate electronic copies as a separate submittal to verify compliance. Any discrepancies shall be referred to the Universities Representative for clarification.
- B. LEED documentation submittals shall be prepared and submitted using the LEED-Online credit website.
- C. Refer to Section 01 8113 "Sustainability Design Requirements" item 1.5 Submittals; for the complete listing of all LEED documentation and submittals required for the project.

1.5. REFRIGERANT MANAGEMENT DOCUMENTATION

- A. UCR has instituted a requirement to comply with end-of-year refrigerant inventory for reporting to UCOP and with the South Coast Air Quality Management District's policies to account for the use of refrigerant gas delivery, recovery and charging installed with new HVAC and any other equipment using gas refrigerant on UCR projects.
- B. To provide accurate accounting for the reporting of the refrigerant charge in a mechanical system and/or equipment, the actual quantity must be known in order to document gas lost from leaks etc. when repairs are done.
- C. HVAC and other equipment utilizing gas refrigerant that are delivered to the site intact with the factory charge quantity listed on the nameplate or in literature submitted for the design professional's review, can sometimes be charged in the field according to various indications. Therefore the contractor who delivers and installs any system and/or equipment which uses refrigerant shall provide startup reports that list the exact quantity of gas charged into each system and submit these reports to the University's Representative who will provide to UCR EH&S.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## CONTRACTOR CERTIFICATION

COMPLETE THIS CERTIFICATE, INCLUDING SIGNATURE BY PERSON DIRECTLY RESPONSIBLE FOR WORK ON THIS PROJECT. REVIEW EACH SUBCONTRACTOR CERTIFICATION FOR COMPLETENESS AND COORDINATION WITH COMMENTS MADE ON THIS CERTIFICATE AND OTHER SUBCONTRACTOR CERTIFICATES. SUBMIT THIS CERTIFICATE AND ALL SUBCONTRACTOR CERTIFICATES TO THE UNIVERSITY'S REPRESENTATIVE WITHIN 10 DAYS OF RECEIVING NOTICE TO PROCEED.

1. As required by the General Conditions of the Contract for Construction, the undersigned certifies that a thorough review has been made of all of the Contract Documents, including, but not limited to the Agreement, General and Supplementary conditions, Drawings, specifications, and Addenda (if any) for the Work. The undersigned also acknowledges each subcontractor has been required to perform a similar thorough review and that Contractor and subcontractors have related and coordinated requirements of individual units of Work to requirements for the entire Work.
2. The undersigned acknowledges his/her obligation to identify below discrepancies, errors, omissions, conflicts, code violations, and improper use of materials discovered in the Contract Documents. Except as noted below and on subcontractor certificates, the undersigned certifies, to the best of his/her knowledge, information, and belief that the Work can be completed in a workmanlike manner without extensive modifications or additional expense.

EXCEPTIONS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NAME, ADDRESS, TELEPHONE OF  
CONTRACTOR: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

AUTHORIZED  
SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

NAME (PRINTED CLEARLY OR TYPED): \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF CONTRACTOR CERTIFICATION





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## SUBCONTRACTOR CERTIFICATION

COMPLETE THIS CERTIFICATE, INCLUDING SIGNATURE BY PERSON DIRECTLY RESPONSIBLE FOR WORK ON THIS PROJECT, AND SUBMIT TO THE GENERAL CONTRACTOR WITHIN 5 DAYS OF RECEIVING NOTICE TO PROCEED FROM GENERAL CONTRACTOR.

1. As required by the General Conditions of the Contract FOR construction, the undersigned certifies that a thorough review has been made of all of the Contract Documents, including, but not limited to the Agreement, General and Supplementary Conditions, Drawings, Specifications, and Addenda (if any) for the Work. The undersigned also certifies that Contractor and subcontractor have related and coordinated requirements for the entire Work.
2. The undersigned acknowledges his/her obligation to identify below discrepancies, errors, omissions, conflicts, code violations, and improper use of materials discovered in the Contract Documents. Except as noted below, the undersigned certifies, to the best of his/her knowledge, information, and belief that no such discrepancies, errors, omissions, conflicts, code violations, or improper use of materials occur in the Contract Documents.
3. Except as noted below, the undersigned has no objection to, or reservation about, the materials to be furnished or the conditions under which they will be installed, and is satisfied that contractual responsibilities for units of Work for which undersigned is responsible can be completed in a workmanlike manner without extensive modifications or additional expense.

EXCEPTIONS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

UNITS OF WORK FOR WHICH UNDERSIGNED IS RESPONSIBLE:

\_\_\_\_\_  
\_\_\_\_\_

NAME, ADDRESS, TELEPHONE OF  
SUBCONTRACTOR: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

AUTHORIZED

SIGNATURE: \_\_\_\_\_ DATE \_\_\_\_\_

NAME (PRINTED CLEARLY OR TYPED) \_\_\_\_\_

TITLE: \_\_\_\_\_

END OF SUBCONTRACTOR CERTIFICATION





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**INTENTIONALLY**

**SUBMITTAL SCHEDULE**

Section	Shop Dwgs	Prod. Data/List	Samples Mock-ups	Extend. Guarantee	Op/Maint. Manuals	Tests	Extra Mat'l	Certs.	Other
01 1100									
01 1400									
01 2300									
01 2500									
01 2613									
01 3100									
01 3119									
01 3200									
01 3300									
01 3520									
01 3540									
01 4100									
01 4200									
01 4300									
01 4339									
01 4500									
01 4520									
01 5000									
01 5739									
01 6000									
01 7123									
01 7329									
01 7419									
01 7423									
01 7700									
01 7836									
01 7839									
01 8113									
01 9113									
02 4000									
03 3000									
03 3600									
03 3816									
03 4816									
03 4819									
03 4830									
03 4900									
03 5415									

**SUBMITTAL SCHEDULE**

Section	Shop Dwgs	Prod. Data/List	Samples Mock-ups	Extend. Guarantee	Op/Maint. Manuals	Tests	Extra Mat'l	Certs.	Other
03 5600									
04 2113									
04 2200									
05 1200									
05 1213									
05 3100									
05 4000									
05 5000									
05 5010									
05 5100									
05 5813									
05 7000									
06 1643									
06 2013									
06 4023									
06 4100									
06 6420									
07 1416									
07 1716									
07 1900									
07 2114									
07 2129									
07 2616									
07 2620									
07 4646									
07 5300									
07 5400									
07 5565									
07 6113									
07 6200									
07 6500									
07 7723									
07 8400									
07 8720									
07 9200									
07 9513									
08 1113									
08 1216									
08 1316									



### SUBMITTAL SCHEDULE

Section	Shop Dwgs	Prod. Data/List	Samples Mock-ups	Extend. Guarantee	Op/Maint. Manuals	Tests	Extra Mat'l	Certs.	Other
08 1400									
08 3100									
08 3213									
08 3323									
08 3816									
08 4213									
08 4313									
08 4330									
08 4413									
08 4500									
08 5113									
08 6200									
08 7100									
08 7113									
08 8000									
08 9110									
09 2116									
09 2216									
09 2400									
09 2900									
09 3000									
09 5113									
09 5426									
09 6453									
09 6500									
09 6813									
09 6816									
09 7200									
09 8200									
09 9000									
10 1400									
10 2213									
10 2226									
10 2813									
10 4400									
10 5113									
10 5500									
10 7113									
10 8214									

**SUBMITTAL SCHEDULE**

Section	Shop Dwgs	Prod. Data/List	Samples Mock-ups	Extend. Guarantee	Op/Maint. Manuals	Tests	Extra Mat'l	Certs.	Other
11 1200									
11 1300									
11 1630									
11 3100									
11 4000									
11 5200									
11 8226									
12 2116									
12 2400									
12 3623									
12 3661									
12 5219									
12 9300									
12 9313									
13 1101									
13 1102									
13 1103									
13 1104									
13 1105									
13 1106									
13 1107									
13 1108									
14 2100									
14 2400									
14 9182									
20 0548									
21 0517									
21 0518									
21 0548									
21 1313									
22 0553									
22 0719									
22 0800									
22 1116									
22 1119									
22 1123									
22 1316									
22 1319									
22 1323									

### SUBMITTAL SCHEDULE

Section	Shop Dwgs	Prod. Data/List	Samples Mock-ups	Extend. Guarantee	Op/Maint. Manuals	Tests	Extra Mat'l	Certs.	Other
22 1413									
22 1423									
22 3400									
22 3450									
22 4000									
22 4613									
23 0500									
23 0513									
23 0514									
23 0516									
23 0519									
23 0523									
23 0529									
23 0548									
23 0553									
23 0593									
23 0713									
23 0719									
23 0800									
23 0900									
23 0993									
23 2113									
23 2123									
23 2300									
23 2500									
23 2516									
23 3113									
23 3300									
23 3416									
23 3423									
23 3433									
23 3713									
23 3723									
23 4100									
23 5100									
23 5216									
23 6500									
23 8119									
23 8126									



<b>SUBMITTAL SCHEDULE</b>									
Section	Shop Dwgs	Prod. Data/List	Samples Mock-ups	Extend. Guarantee	Op/Maint. Manuals	Tests	Extra Mat'l	Certs.	Other
23 8127									
23 8128									
23 8146									
26 0501									
26 0519									
26 0524									
26 0526									
26 0529									
26 0533									
26 0543									
26 0553									
26 0570									
26 0573									
26 0800									
26 1219									
26 2213									
26 2413									
26 2416									
26 2716									
26 2726									
26 2811									
26 2816									
26 3100									
26 3214									
26 3623									
26 5110									
26 5610									
27 0000									
28 3100									
31 1000									
31 2000									
31 2333									
32 0513									
32 1100									
32 1216									
32 1300									
32 1316									
32 1413									
32 1723									



Standard Specification

SECTION 01 33 29.08 BUY CLEAN CALIFORNIA REPORTING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Section includes general requirements and procedures for compliance with Buy Clean California Act per California Public Contract Code, Sections 3500-3505.
- B. Contractor is requested to submit current facility-specific environmental product declaration for each eligible material proposed to be used on the Project.

1.2 DEFINITIONS

- A. Environmental Product Declaration (EPD): Type III environmental impact label, as defined by the International Organization for Standardization (ISO) standard 14025, or similarly robust life cycle assessment methods that have uniform standards in data collection consistent with ISO standard 14025, industry acceptance, and integrity.
- B. Eligible Materials: Any of the following:
  - 1. Carbon steel rebar.
  - 2. Flat glass.
  - 3. Mineral wool board insulation.
  - 4. Structural steel.

1.3 SUBMITTALS

- A. General: Buy Clean California submittals are requested to be submitted along with other required submittal items for eligible materials as described in the Specifications.
- B. Facility-specific Environmental Product Declaration: For each eligible material proposed to be used on the Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 33 29.08



## **SECTION 01 3520 DESIGN ASSIST PROCEDURES**

### 1.1 SUMMARY

A. Section includes requirements of Contractor for design-assist work including, but not necessarily limited to, those identified in the various Sections of the Specifications and the following:

1. Contractor's Responsibility
2. Coordination with Architectural Design Intent

B. The following require design assistance:

1. Pre-Fabricated metal stairs including guardrails and the application of concrete filled metal pans and precast treads.
2. Pedestrian Bridges.
3. Other railing and guardrails.
4. Fixed sunshades.
5. Fiber reinforced cementitious wall siding and furring rain screen system.
6. Translucent canopy system.
7. Storefronts and curtain walls.
8. Fire sprinkler system.
9. Fire alarm system.

B. Design-assist procedures are specified to assist Contractor in coordinating design-assist work.

### 1.2 CONTRACTOR'S RESPONSIBILITY

A. Contractor acknowledges that it shall be responsible for the design, method of construction, and coordination and integration with other trades to achieve the architectural design intent of the Contract Documents, of those portions of the design-assist work including sizing, sequence, placement and details of construction.

B. Contractor guarantees the following:

1. Design-assist work shall be constructed in compliance with building codes and ordinances in effect and shall be fit and proper for its intended use.
2. Where relevant, design and method of construction of the design-assist work shall not incorporate or employ the use of any product, process or technique which may be protected by common law or statutory patent, copyright or trade secret rights unless Contractor or subcontractor shall be the lawful owner or licensee of same.

C. Contractor shall indemnify and hold harmless University, University's Representative, Architect and its consultants, and agents and employees of any of them from and against claims, damages and expenses resulting from breach or failure by Contractor to perform fully any of the forgoing obligations and specifically agrees to indemnify and hold University harmless from any and all claims of the Contractor's employees, agents, subcontractors, suppliers or third parties and to make good any damages to the Work, and attorneys' fees

and costs of additional work by University's Design Professional resulting from the inadequacies of the design, techniques or methods of construction of the design-assist Work.

- D. The design and the drawings and specifications for the techniques and method of construction of the design-assist work shall be prepared and shall result in work which is fit to perform its intended purpose.
- E. For design-assist work, Contractor shall provide plans, specifications, and calculations that are prepared, stamped, and signed by qualified, registered, licensed engineers authorized to practice their professions under the laws of the State of California. The plans, specifications, and calculations shall be acceptable to the University's Representative.
- F. Prior to commencement of the design-assist work at the Project Site, Contractor shall provide the University with copies of current insurance policies covering the errors or omissions of persons designing the design-assist work with maximum deductibles and limits per occurrence as mutually agreed by the University and Contractor, together with an endorsement providing for a 30-day notice to University prior to cancellation or material reduction in coverage.

- G. Maintain insurance at least the period equal to the applicable statute of limitations for claims arising out of latent defects in works of improvement to real property, if such insurance is not written on an "occurrence" basis during the time the design-assist work is designed and constructed.

1.3 COORDINATION WITH ARCHITECTURAL DESIGN INTENT

A. Ceilings:

- 1. Coordinate the work of all trades involved to ensure clearances for fixtures, ducts, piping, ceiling suspension systems and other above-ceiling work as necessary to maintain finished ceiling heights.
- 2. Paint all exposed items at ceilings. Paint air grilles to match adjacent ceiling finish.
- 3. Locate light fixtures, sprinkler heads, and diffuser grilles in the center of ceiling panels.

B. Areas Where Structure Is Exposed:

- 1. Install sprinkler lines, ductwork, conduit, plumbing, process piping, lighting and all other overhead items at regular intervals, parallel to and/or perpendicular with building column grid lines.
- 2. Align all hangers, wires, braces, struts, chains, junction boxes, etc. in any given line aligned with one another, and install in the same fashion, for a neat, uniform appearance.

- C. Review proposed layouts with University's Representative and other trades in the field prior to commencing work. Layouts which have not been so reviewed will be subject to change at no additional expense to the University if found unsatisfactory. Areas subject to such review include but are not necessarily limited to exposed structure areas.

- D. Do not locate sprinkler lines, piping, ductwork, conduit, access panels, and cleanouts in "Special Feature Areas" and finishes, including walls and ceilings, except as otherwise specifically shown on the Drawings.

- 1. Engineering design and construction shall be by alternative route and not necessarily direct route method.
- 2. Special Feature Areas include:
  - a. Reception and Lobby areas:
    - Building J public areas
    - Building H public areas
    - Building K public areas
    - Building N public areas
  - b. Open stairways and special building pedestrian circulation routes.

END OF SECTION



## University of California - Approved TSDFs

This document is a list of permitted treatment, storage, and disposal facilities (TSDFs) that have been deemed acceptable for use in managing hazardous waste generated by the University of California (UC) or at UC facilities. Neither UC nor any of its employees makes any warranty, express or implied, as to the merchantability or fitness for a particular purpose of the goods or services provided by the TSDFs listed above. Except as stated above, reference to the TSDFs in this document does not necessarily constitute or imply its endorsement or recommendation by UC and UC expresses no opinion as to any TSDF that does not appear in this document. This document shall not be used for advertising or product endorsement purposes or for any other use not expressly authorized in writing by UC.

TSDF name	Street	City	State	Zip phone	EPA ID
Altamont Landfill	10840 Altamont Pass Road	Livermore	CA	94550 (925) 455-7306	CAD981382732
AERC INC (MTI)	30677 Huntwood Avenue	Hayward	CA	94544 (510) 429-1129	CAD982411993
Azusa Land Reclamation Co.	1201 W. Gladstone	Azusa	CA	91702 (626) 334-0719	CAD009007626
Bethlehem Apparatus	890 Front Street	Hellertown	PA	18055 (610) 838-7034	PAD002390961
Chemical Waste Management (CWM) - Kettleman Hills	35251 Old Skyline Roac	Kettleman	CA	93239 (559) 386-9711	CAT000646117
Chemical Waste Management (CWM) - TWI	7 Mobile Drive	Sauget	IL	62201 (618)271-2804	ILD098642424
Chem-Nuclear Systems, Inc (Barnwell)	140 Stoneridge Drive	Columbia	SC	29210 (803) 758-1826	SCD048372429
Clean Harbors (Aragonite), LOC Inc.	P.O. Box 22890	Aragonite	UT	84122 (801) 323-8100	UTD981552177
Clean Harbors (Chicago)	11800 S. Stony Island Ave.	Chicago	IL	60617 (800)678-4844	ILD000608471
Clean Harbors (Deer park), Inc	2027 Battleground Road	Deer Park	TX	77536 (713) 930-2300	TXD055141378
Clean Harbors (Kimball, Incinerator Facility)	2247 S. Highway 71	Kimball	NE	69145 (308)235-4012	NED981723513
Clean Harbors (Lokern)	2500 West Lokern Rd.	Buttonwillow	CA	93206 (805) 762-6200	CAD980675276
Clean Harbors (Los Angeles), Inc.	5756 Alba Street	Los Angeles	CA	90058 (213) 585-5063	CAD050806850
Clean Harbors (Phoenix)	1340 West Lincoln Street	Phoenix	AZ	85007 (602)258-6155	AZD049318009
Clean Harbors (Sacramento)	6000 - 88th Street	Sacramento	CA	95828 (916) 386-4999	CAD000084517
Clean Harbors (San Jose)	1040 Commercial St. Suite 109	San Jose	CA	95112 (408) 453-6046	CAD059494310
Clean Harbors (Spring Grove Resources Recovery)	4829 Spring Grove Ave.	Cincinnati	OH	45232 (513)681-5738	OHD000816629
Crosby & Overton, Inc.	1630 W 17th Street	Long Beach	CA	98013 (562) 432-5445	CAD028409019
DeMenno/Kerdoon	22000 N. Alameda Street	Compton	CA	90222 (310)537-7100	CAT080013352
Diversified Scientific Services (DSSI)	P.O. Box 863	Kinston	TN	37831 (615) 376-0084	TND982109142
Duratek	1560 Bear Creek Road	Oak Ridge	TN	37831 (423) 481-0222	TND982157570
ENSCO	309 American Circle	El Dorado	AR	71730 (870) 862-0272	ARD069748192
ENSCO West	1737 East Denni Street	Wilmington	CA	90744 (310) 835-9997	CAD044429835
Envirocare of Utah, Inc	US I-80, Exit 49	Clive	UT	84029 (801) 532-1330	UTD982598898
Environmental Management & Controls (EMC)	3106 South Faith Home Road	Turlock	CA	95380 (209)-667-1102	Radioactive Material License # 3546-5C
Envirosafe	hwy 78 Missile Base Roac	Grand View	ID	82624 (208)834-2275	IDD073114654
Heritage Environmental Services, Inc	7901 West Morris Street	Indianapolis	IN	46231 (317) 243-0811	IND093219012
Heritage Environmental Services, LLC	5122 East Story Road	Coolidge	AZ	85228 (520)723-4167	AZD081705402
Heritage Landfill	4370 W.CR 1275N	Roachdale	IN	46172 (317)243-0811	IND980503890
Kinsbursky Brothers Incorporated	1314 Lemon Street	Anaheim	CA	92801 (714)738-8516	CAD088504881
Mercury Waste Solutions, Inc.	21211 Durand Avenue	Union Grove	WI	53182 414-878-2599	WIR 000 000 356
Merry X-Ray	131 South Maple #1	S. San Fran	CA	94080 (650)6742-6630	CAL000512065
ONYX (formerly AETS)	1125 Hensley Street	Richmond	CA	94801 (510) 233-8001	CAT080014079
Onyx (formerly CWM OSCO)	1704 W. First Street	Azusa	CA	91702 (626) 815-2215	CAD008302903
Onyx (Superior Special Services, Inc.)	5736 West Jefferson	Phoenix	AZ	85043 (602) 233-2955	AZD983473539
Perma-Fix (Quadrex)	1940 NW 67th Street	Gainesville	FL	32653 (405) 468-2000	FLD980711071
Philip Environmental (Burlington)	20245 - 77th Avenue, south	Kent	WA	98032 (206) 872-8030	WAD991281767
Philip Environmental (Georgetown)	734 Lucile Street	Seattle	WA	98108 (206) 762-3362	WAD000812909
Philip Environmental (Rho-Chem)	425 Isis Avenue	Inglewood	CA	90301 (213) 776-6233	CAD008364432
Photo Waste Recycling Co., Inc.	2980 Kerner Boulevard	San Rafael	CA	94901 (415)459-8807	CAD981429673
Photo Waste Recycling Co., Inc.	12898 Bradley Avenue, Suite B	Sylmar	CA	91342 (818)362-0668	CAD000121946
Ramos Environmental Services Inc.	1515 South River Road	W. Sacramento	CA	95691 (916)-371-5747	CAD044003556
Romic Environmental Technologies Corp	2081 Bay Road	East Palo Alto	CA	94303 (650)-324-1638	CAD009452657
Romic Environmental Technologies Corp (Southwest)	6760 West Allison Road	Chandler	AZ	85226 (602) 796-1040	AZD009015389
Ross Environmental Services	36790 Giles Road	Grafton	OH	44044 (440) 748-5800	OHD 048415665
Stericycle, Inc. (Formerly BFI)	4135 West Swift Avenue	Fresno	CA	93722 (559)275-0991	None
Stericycle, Inc. (Formerly BFI)	90 North 1100 West	North Salt Lake	UT	84054 (801) 295-1555	UTD988078150
Systech Environmental Corp.	South Cement Road	Fedonia	KS	66736 (316) 378-4451	KSD980633259
SET Environmental INC. (Treatment One)	5743 Chestwood	Houston	TX	77087 (713)645-8710	TXD055735388
U.S. Filter Recovery Services (Norris Environmental)	5375 South Boyle Ave.	Los Angeles	CA	90058 (213) 277-1500	CAD097030993
Von Roll America (WTI)	1250 Saint George Street	East Liverpool	OH	43920 (800) 403-4888	OHD980613541
Waste Control Specialists (WCS)	1710 West Broadway	Andrews	TX	79714 (713) 944-5900	TXD988088464

Pacific Resource Recovery Services Big Bear CA CAD008252405  
 Yellow Highlight indicates TSDF pending approval.

**SECTION 01 3543  
ENVIRONMENTAL PROCEDURES**

PART 1 – GENERAL

1.1. SUMMARY

- A. This Section includes:
  - 1. Hazardous Materials Procedures
  - 2. Toxic Materials Procedures
  - 3. University of California – Approved TSDFs (Attached to end of Section.)
- B. Submittals:
  - 1. Submit Material Safety Data Sheets (MSDS) for all materials, whether existing or incorporated into the work, which are identified as potentially hazardous but not required to be abated.

1.2. HAZARDOUS MATERIALS PROCEDURES

- A. Except as otherwise specified, in the event Contractor encounters on the Project site material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or other hazardous materials which have not been rendered harmless, Contractor shall immediately stop Work in the area affected and report the condition to University and University's Representative in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of University and Contractor if in fact the material is asbestos, PCB, or other hazardous materials and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos, PCB, or other hazardous materials, or when such materials have been rendered harmless.
- B. If material has been encountered on site and the Contractor has reported the condition to the University's Representative, then the University Representative shall contact UCR Environmental Health and Safety office (EH&S) and **Ambient Environmental**, the University's hazardous material consultant to conduct an on-site assessment of the material and if it is found to be hazardous then **Ambient Environmental** shall prepare a plan to remove it off site and dispose of it at a University of California approved Treatment, Storage, and Disposal Facility (TSDF). See the list of University of California – Approved TSDFs attached to the end of this Section.

1.3. TOXIC MATERIALS PROCEDURES- NOT USED

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

**SECTION 01 3546  
INDOOR AIR QUALITY (IAQ) PROCEDURES**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

- A. This Section includes, without limitation, the following:
  - 1. IAQ Submittals
  - 2. Quality Assurance
  - 3. IAQ Management During Construction
  - 4. Sequence of Finish Installation
- B. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. Indoor Air Quality Procedures include:
  - 1. IAQ Management Plan During Construction:
    - a. Prepare plan to comply with the requirements for LEED EQ 3.1 as specified in Section 01 8113, "Sustainable Design Requirements" and in this Section.
    - b. Procedures to prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.
  - 2. Sequence of Finish Installation: Scheduling/sequencing requirements and procedures necessary to optimize Indoor Air Quality (IAQ) levels for the completed Project.
- B. Related Work Specified in Other Sections:
  - 1. Section 01 8113, "Sustainable Design Requirements (for LEED Certification)" for additional requirements.
  - 2. Section 01 5000, "Construction Facilities and Temporary Controls" for environmental-protection measures during construction and location of waste containers at Project site.
  - 3. Section 01 7419, "Construction Waste Management" for handling requirements of construction waste.
  - 4. Application Sections for indoor air sampling prior to occupancy. (Sections to be identified)

**1.3 IAQ SUBMITTALS**

- A. IAQ Construction Management Plan. Submit 5 copies of plan within 30 days of date established for commencement of the Work.
  - 1. Include a schedule of all IAQ-related construction activities in the IAQ Construction Management Plan submittal.
  - 2. Update plan as required during the construction process to reflect Project conditions.
- B. Meeting Minutes: Submit minutes from Contractor meetings related to the execution and verification of the IAQ Construction Management Plan.
- C. Project Photographs: Submit to document IAQ measures implemented.
- D. Product Data: Submit cut sheets of filtration media proposed for use.



- E. LEED Submittal: LEED letter template for Credit EQ 3.1, signed by Contractor, with copy of plan and a statement that requirements for the credit have been met.

#### 1.4 QUALITY ASSURANCE

- A. Comply with the requirements of LEED Credit EQ 3.1, "Construction IAQ Management Plan During Construction."
- B. Contractor's Plan shall meet or exceed the recommended design approaches of SMACNA's "IAQ Guidelines for Occupied Buildings Under Construction," (1995 Edition, Chapter 3).
- C. IAQ Management Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
  - 1. Review methods and procedures related to IAQ management during construction.
  - 2. Review IAQ management requirements for each trade.

### PART 2 - PRODUCTS

### PART 3 - EXECUTION

#### 3.1 IAQ MANAGEMENT DURING CONSTRUCTION

- A. General: Contractor's IAQ Construction Management Plan shall include procedures to prevent indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.
  - 1. Prepare and submit an Indoor Air Quality (IAQ) Management Plan to comply with the requirements for LEED EQ 3.1, as specified in Section 01 81 13, "Sustainable Design Requirements" and in this Section.
  - 2. Contractor's detailed plan shall be based on the particular characteristics of the Project, and include the items listed in this Section as a minimum.
  - 3. The IAQ Management Plan shall highlight the five requirements of the Sheet Metal and Air Conditioning National Design/Builders Association (SMACNA), "IAQ Guidelines for Occupied Buildings Under Construction," 1995, Chapter 3 and shall embody the principles and practices set forth hereinafter.
  - 4. Subcontractors and their employees shall be provided instruction and training in the IAQ Management Plan.
- B. Plan Implementation:
  - 1. Implement waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
  - 2. Comply with Section 01 5000 for operation, termination, and removal requirements.

C. Monitoring of IAQ Plan:

1. Hold weekly Contractor Site Co-ordination Meetings with the superintendents of all trade contractors. Review the appropriate components of the IAQ Construction Management Plan as a regular action topic at these meetings, and update the Plan as required. Document the implementation of the Plan in the meeting minutes. As a recording format, use SMACNA IAQ Guidelines Appendix C (Planning Checklist) and Appendix D (Inspection Checklist) as a guide.
2. Take a specific series of record photographs at the appropriate stages to document adherence with the IAQ requirements. Submit at least 18 photographs (six photos taken on three different occasions during construction) along with identification of the SMACNA approach featured by each photo, in order to show consistent adherence to the LEED Credit requirements.

D. HVAC Protection:

1. Store HVAC equipment in a clean, dry location. Until HVAC equipment (ducting, registers, air handler VAV boxes components, fans, and motors) has been installed, it shall be kept covered and secured with plastic film or in a location where it will not be exposed to moisture, dust, or other contaminants.
2. Seal off all louvers and air intake/discharge points to prevent construction dust and debris from entering.
3. Seal off all ductwork openings and air outlets with plastic sheeting to protect the duct system from dust and debris. Do not re-open until the end of activities that produce dust or pollution, such as drywall sanding, concrete cutting, masonry work, wood sawing, and so forth.
4. Seal all HVAC inlets and outlets. Use of the HVAC system shall be avoided during construction until drywall construction is complete. Temporary ventilation may be installed to remove contaminants. All air inlets and outlets shall be sealed securely with tape during construction. These include, but not limited to, outside air inlets, grilles, diffusers, supply ducts, return ducts, ceiling plenums, VAV (variable-air volume) plenum intakes, exhaust ducts, and window ventilator or air conditioning units. Openings shall be sealed with plastic film and tape that can be removed cleanly.
5. Seal HVAC components during installation. For ducting runs that require several days to install, sections shall be sealed off as they are completed. Seals shall be removed prior to continuing the ducting run. Other components of the HVAC system shall be subjected to the same requirements to protect them from contamination.
6. Use temporary filtration media. If the HVAC system is to be used while construction work is being done, temporary filtration media shall be installed on all intakes. Such filtration media shall have a minimum filtration efficiency (Minimum Efficiency Reporting Value-MERV per ASHRAE 52.2) of 8 or higher. For air intakes into parts of a building that are very sensitive to dust contamination, such as computer rooms, filtration media with a MERV rating of 13 or higher is required. New filtration with a MERV rating of 13 or higher shall be installed after construction.
7. If, for some unforeseen reason, there should arise a circumstance wherein the return air system is required to be used during the construction phase, install temporary MERV 8 filters or higher (as determined by ASHRAE Standard 52.2-1999) at each return air opening and provide frequent inspection and maintenance. If inspections by University Representatives reveal that the ductwork has become contaminated due to inadequate protection, the ductwork shall be cleaned professionally prior to the first phase of occupancy, using procedures established in ACR 2005 published by the National Air Duct Cleaners Association.
8. Under no circumstances shall air be returned from a construction area and then re-circulated through the permanent supply ductwork, unless and until the level of construction in the relevant area involves final finishes and trim and the construction has reached a point of complete building dry-in with no sanding and is free from dust, debris, and contaminants.
9. Do not use fan rooms to store construction or waste materials, and keep them clean and neat.

10. Inspect filters regularly. When the HVAC system is being used during construction and temporary filters are installed, filters shall be inspected weekly and replaced as needed.
  11. Avoid contaminated air entry into enclosed parts of the building. When outdoor construction activities generate dust, combustion emissions, or other contaminants, operable windows and outside air supplies to enclosed portions of the building shall be closed.
- E. Source Control:
1. Limit construction traffic and motor idling in the vicinity of air intake louvers when the HVAC systems are activated. Restrict motor vehicles to the loading dock area, well-removed from air intakes, preventing emissions from being drawn into the building.
  2. Use electric or natural gas alternatives for gasoline and diesel equipment where possible and practical.
  3. Cycle equipment off when not being used or needed.
  4. Avoid the use of materials and products with high VOC and/or particulate levels. Use products and installation methods with low VOCs such as paints, sealers, sealants, filler materials, insulation, adhesives, caulking and cleaners. Comply with the requirements in other specification sections.
  5. Keep containers of wet products closed as much as possible. Cover and seal waste materials which can release odor or dust.
  6. Protect all materials, especially absorbent materials such as insulated ductwork, against moisture during delivery to and storage at the job site. Store materials inside the structure in a dry and clean environment pending installation. Building materials shall be kept dry to avoid the introduction of moisture into the building interior.
  7. Avoid the use of moisture-damaged materials. Any porous materials that have been wetted shall be dried thoroughly before installation. Any porous materials that have been damaged, remained wet longer than 48 hours, or show signs of visible mold shall be discarded.
  8. Ensure that the construction process will not result in moisture intrusion. In the event of rain or groundwater gaining entry to the building interior during construction, notify the University.
  9. Avoid tracking pollutants into work areas.
    - a. Once the framing and mechanical system installation starts, access to the building interior shall be controlled to minimize the tracking in of contaminants.
    - b. Material deliveries and construction waste removal shall be routed via the most direct route to the building exterior of the building rather than through the space.
    - c. Provide rough track-off grates or matting at the entryway to remove moisture and contaminants from workers shoes.
    - d. Prevent the ingress of rodents and pests.
    - e. Use procedures to ensure that there is no smoking inside the building.
- F. Pathway Interruption:
1. Use dust curtains or temporary enclosures to prevent dust from migrating to other areas when applicable. During construction, isolate areas of work to prevent contamination of clean or occupied areas.
  2. Keep pollutant sources as far away as possible from ductwork and areas occupied by workers when feasible.
  3. Isolate work areas and/or create pressure differentials to prevent the migration of contaminants.
  4. Use portable fan systems to exhaust contaminated air directly to the outside of the building, and discharge the air in a means to prevent it from re-entering.
- G. Housekeeping:
1. Minimize accumulation of dust and other contaminants. Construction practices shall be used that minimize the production of dust and other contaminants from construction activities. Use integral dust-collection systems on drywall sanders, cut-off saws, and



- routers. Confine dust-generation activities to areas where clean-up can be carried out easily and contaminants will not be tracked to other areas.
2. Suppress Dirt. Wetting agents or sweeping compounds shall be used to deep dust from becoming airborne.
  3. Clean up dust. Wet clothes, damp mops, wet scrubbers, and vacuum cleaners with high-efficiency particulate (HEPA) filters shall be used to clean up dust generated by construction activities.
    - a. Cleaning frequency shall be increased when dust accumulation is noted.
    - b. Institute cleaning activities of building areas on a daily basis, and of HVAC equipment as required.
  4. Keep all coils, air filters, dampers, fans, and ductwork clean during installation, and clean them as required prior to performing the testing, adjusting and balancing of the systems.
  5. Clean up spills. All spills and excess applications of solvent-containing products should be cleaned up using approved methods as soon as practicable. Water spills shall be mopped up promptly.
  6. Keep work area dry. Avoid accumulations of water inside the building, and promptly remove any that may occur.
    - a. Especially protect porous materials such as insulation and ceiling tiles from exposure to moisture.
    - b. The entire area shall be kept as dry as practicable by promptly repairing any leaks that allow rainwater entry and mopping up any water accumulation.
    - c. Use dehumidification if necessary for prompt drying of wetted spaces. Unvented combustion (e.g., propane or diesel "salamander" space heaters) shall not be used.
  7. Seal containers containing volatile liquids. Containers of fuel, paints, finishes, and solvents shall be kept tightly sealed and preferably stored outside of the building when not in use.
- H. Scheduling:
1. Comply with the scheduling requirements of Article, "Sequence of Finish Installation" of this Section.
    - a. Schedule the installation of porous materials only after closing in building.
    - b. Porous materials, such as insulation, fireproofing, and drywall shall not be installed in a building open to the weather.
    - c. To avoid potential contamination of porous or absorbent materials such as ceiling tiles, install furnishings after interior finishes (drywall, paint, and floor finishing) have cured.
  2. Phased Completion: Implement IAQ control measures in each tenant area until construction in that area is complete. Do not allow contaminants from an area under construction to enter the HVAC ductwork systems or to migrate to completed areas.
  3. Filters:
    - a. Install new MERV 13 filters at the central fan system, immediately prior to the first phase of building occupancy.
    - b. Install new MERV 13 filters at fan systems serving limited areas immediately prior to occupancy for each respective area.
- I. Ventilation:
1. Provide adequate ventilation during curing period. To aid in curing of interior finishes and other products used during construction and to remove pollutants after drywall installation is complete, provide adequate ventilation with 100% outside air, and proper filtration. In humid periods or when very high-moisture materials are present, supplementary dehumidification may be required during this curing period.
  2. Flush-Out: Comply with the requirements of LEED credit EA 3.2.

### 3.2 SEQUENCE OF FINISH INSTALLATION

- A. Sequence of Finish Installation: Project schedule shall address construction scheduling/sequencing requirements and procedures necessary to optimize Indoor Air Quality (IAQ) levels for the completed Project.
1. Scheduling: Contractor's Project Schedule for finish applications should allow for:
    - a. Dissipation of high emissions from finishes that off-gas perceptible quantities of deleterious material during curing.
    - b. Separation of off-gassing effects from the installation of adsorptive materials that would act as a "sink" for storage and subsequent release of these unwanted substances into building spaces and mechanical systems after project occupancy.
  2. When Contractor's "Project Schedule" requires less than optimal sequencing of finish installation, related to IAQ, provide supplemental filtered "fresh air" ventilation of work areas during construction and restrict / control the use of permanent building mechanical systems prior to Owner acceptance of building to prevent contamination of systems by construction wastes and other deleterious substances.
- B. Finish Types:
1. Type 1 Finishes: Materials and finishes which have a potential for short-term levels of off-gassing from chemicals inherent in their manufacturing process, or which are applied in a form requiring vehicles or carriers for spreading which release a high level of particulate matter in the process of installation and/or curing. Type 1 Finishes include, but are not limited to the following:
    - a. Composite wood products, specifically including particleboard from which millwork, wood paneling, doors or furniture may be fabricated.
    - b. Adhesives, sealants, and glazing compounds, specifically those with petrochemical vehicles or carriers.
    - c. Wood preservatives, finishes, and paint.
    - d. Control and/or expansion joint fillers.
    - e. All hard finishes requiring adhesive installation.
    - f. Gypsum board and associated finish processes.
    - g. Sealants and associated filler materials.
  2. Type 2 Finishes: "Fuzzy" materials and finishes which are woven, fibrous, or porous in nature and tend to adsorb chemicals off-gassed by Type 1 finishes or may be adversely affected by particulates. These materials become "sinks" for deleterious substances which may be released much later, or collectors of contaminants that may promote subsequent bacterial growth. Type 2 Finishes include, but are not limited to the following:
    - a. Carpet and padding.
    - b. Fabric wallcovering.
    - c. Insulation exposed to the airstream.
    - d. Acoustic ceiling materials.
    - e. Fabric covered acoustic wall panels.
    - f. Upholstered furnishings.
  3. Materials that can be categorized as both Type 1 and Type 2 materials shall be considered to be Type 1 materials.
- C. Optimal Order of Installation: Apply all Type 1 interior finishes throughout the entire controlled air zone of each enclosed building or building segment and allow such finishes to completely cure according to intervals and times stated in respective finish manufacturer's printed instructions before commencing installation of any Type 2 materials in the same area.
1. Do not store any Type 2 materials in areas where installation or curing of Type 1 materials is in progress.

- D. Materials Test Data - Required For Substitutions Only:
1. All manufacturers/producers of materials listed below that are proposed for substitution on this Project are required to provide test data for their materials which show permanent, in-place Indoor Air Quality performance in accordance with requirements of this Specification.
  2. Material Safety Data Sheets: Review all MSDS's of materials to be submitted for testing as well as MSDS's for other products where specifically requested in this Project Manual and identify those classified as "Prohibited Materials".
  3. Prohibited Materials:
    - a. Any building materials or products that emit pollutants included on the International Agency for Research on Cancer (IARC) "List of Chemical Carcinogens", the "Carcinogen List" of the National Toxicology Program, and the "Reproductive Toxin List" of the "Catalog of Teratogenic Agents" must have approval in writing from the Owner's Representative before that building material or product may be used on this Project.
    - b. Carcinogens: Use of materials emitting carcinogens will not be permitted unless a suitable substitute is not available. Do not proceed with procurement of any carcinogen emitting product or material without prior review and written approval of the University's Representative.

END OF SECTION



## SECTION 01 4100 REGULATORY REQUIREMENTS

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. Section includes:
  - 1. Applicable Codes, Regulations, and Authorities
  - 2. Regulatory Notifications
  - 3. Permit Requirements, Notifications, and Certificates
  - 4. Fees
- B. References in the Specifications to "code" or to "building code," not otherwise identified, shall mean the foregoing specified codes, together with the additions, changes, amendments, and interpretations adopted by the enforcing agency and in effect on the date of these Contract Documents. Nothing on the Drawings or in the Specifications shall be interpreted as requiring or permitting work that is contrary to these rules, regulations, and codes.
- C. Where other regulatory requirements are referenced in these Specifications, the affected work shall meet or exceed the applicable requirements of such references.
- D. Nothing stated in this Section of the Specifications or other Sections of the Specifications, the other Contract Documents or shown on the Drawings shall be construed as allowing Work that is not in strict compliance with all applicable Federal, State, regional, and local statutes, laws, regulations, rules, ordinances, codes and standards.
- E. Regulatory requirements referred to shall have full force and effect as though printed in these Specifications.
- F. Discrepancies between these codes/rules/etc. and the Contract Documents shall be brought to the attention of the University's Representative for resolution. Unless otherwise directed by the University's Representative, if a conflict exists between referenced regulatory requirements and the Contract Documents, comply with the one establishing the more stringent requirements.

#### 1.2. APPLICABLE CODES, REGULATIONS, AND AUTHORITIES

- A. All applicable federal, state, and local laws and the rules and regulations of governing utility districts and the various other authorities having jurisdiction over the construction and completion of the Project, including the latest rules and regulations of the state fire marshal, OSHA, and the California Labor Code, shall apply to the Contract throughout, and they shall be deemed to be included in the Contract the same as though printed in these Specifications.
- B. Codes and regulations that apply to this Project include, but are not limited to, the following including additions, changes, and interpretations adopted by the enforcing agency in effect as of the date of these Contract Documents.
  - 1. California Code of Regulations (CCR):
    - a. Title 8, Industrial Relations
    - b. Title 17, Public Health
    - c. Title 19, Public Safety
    - d. Title 20, Public Utilities and Energy
    - e. Title 21, Public Works

- f. Title 22, Environmental Health
  - g. Title 24: Building Standards Code
    - (1) Part 2, California Building Code
    - (2) Part 3, California Electric Code
    - (3) Part 4, California Mechanical Code
    - (4) Part 5, California Plumbing Code
    - (5) Part 6, California Energy Code
    - (6) Part 7, California Elevator Safety Construction Code
    - (7) Part 9, California Fire Code
    - (8) Part 11, California Green Building Standards Code
    - (9) Part 12, California State Reference Standards
2. In addition to the above, work shall comply with the following:
- a. California Environmental Quality Act (CEQA).
  - b. California Health and Safety Code.
  - c. California Occupational Safety and Health Act Standards (Cal-OSHA).
  - d. California Department of Transportation (Caltrans): Standard Specifications, latest edition.
  - e. National Fire Protection Association (NFPA): Standards 13, 24, 72, and 80.
  - f. Americans with Disabilities Act - Title II (ADA).
  - g. Federal Occupational Safety and Health Act (OSHA).
  - h. Federal Environmental Protection Agency – Clean Air Act.
  - i. Storm Water Pollution Prevention Act.
3. All work shall meet or exceed code and regulatory requirements.
- C. Copies of Regulations: Obtain copies of the following regulations and retain at the Project site to be available for reference by parties who have a reasonable need:
- 1. California Code of Regulations, Title 8, 9 and 19
  - 2. California Code of Regulations, Title 24, including:
    - a. Part 1, California Administrative Code
    - b. Part 2, California Building Code, Volumes 1 and 2
    - c. Part 3, California Electrical Code
    - d. Part 4, California Mechanical Code
    - e. Part 5, California Plumbing Code
    - f. Part 6, California Energy Code
    - g. Part 7, California Elevator Safety Construction Code
    - h. Part 9, California Fire Code
    - i. Part 11, California Green Building Standards Code
    - i. Part 12, California Referenced Building Standards Code
  - 2. California Health and Safety Code regulations as referenced in the specifications.
  - 1. CAL/OSHA Construction Safety Orders.
  - 2. City of Riverside “Department of Public Works Standards and Specifications.
  - 3. ~~National Electrical Code.~~ Covered by Part 3
  - 4. National Fire Protection Association standards as referenced within the specifications
  - 5. State of California, Department of Transportation, Division of Highways, “Materials Specifications.” [should keep this in]
  - 6. State of California, Department of Transportation, Division of Highways, “Standard Specifications.” [should keep this in]
  - 7. ~~State of California, Office of State Fire Marshal~~ Covered by Title 19 and Part 9
  - 8. California Industrial Accident Commission, Safety Bulletins .
  - 9. ~~Uniform Building Code~~
  - 10. ~~Uniform Mechanical Code~~
  - 11. ~~Uniform Plumbing Code~~
  - 12. Standard Specifications for Public Works, (Greenbook), with local agency amendments.

D. 2010 ADA Accessibility Standards for Accessible Design

1.3. REGULATORY NOTIFICATIONS

- A. Submit all required notifications to Federal, State of California, State in which disposal facility is located if not in California, regional, and local agencies with regulatory responsibilities associated with the Work activities that are included in the Contract. All notifications shall be served in writing, in the form required by the agency requiring notification, and in a timely manner so as not to negatively impact the Project schedule. Serve notifications at least 10 business days in advance (or earlier if required by agency) of activity requiring notice. The Contractor shall serve all required notifications in writing to all governmental and quasi-government agencies having notification requirements pertaining to any portion of the Work included in the Project.
- B. Contractor shall file a Notice of Intent for coverage under State General Construction Activity Storm water Permit National Pollutant Discharge Eliminate System (NPDES). Contractor shall comply with applicable permit requirements including the project Storm Water Pollution Prevention Plan.

1.4. PERMIT REQUIREMENTS, NOTIFICATIONS, AND CERTIFICATES

- A. Permits, Licenses, and Certificates: For the University's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgment, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- B. Underground Service Alert (USA) Notifications: Prior to commencing clearing, excavation and trenching, coordinate with Underground Service Alert of Southern California for field verification and marking of utilities within the limits of Project site. Contractor shall be responsible for outlining limits of excavation with white chalk paint prior to coordination with USA. Coordination shall require 2 business days advance notification prior to start of excavation work. Provide USA notification permit number to the University's Representative prior to starting site Work.
- C. In no event, shall the Contractor install materials that contain asbestos, PCB, lead or other known hazardous materials unless prior approval is obtained from the University.
- D. Regulated Carcinogens by Title 8 California Code of Regulations (CCR), Subchapter 7, Group 16 (Control of Hazardous Substances), Article 110 (Regulated Carcinogens).
  - 1. Products containing chemicals regulated as carcinogens by the State of California are not allowed for use on University projects.
  - 2. Case-by-case exceptions may be considered for products containing the following Cal/OSHA recognized carcinogens:
    - Methylene Chloride, 5202
    - Cadmium, 1532, 5207
    - Inorganic Arsenic, 5214
    - Formaldehyde, 5217
    - Benzene, 5218



3. Case-by-case exceptions may only be made when suitable alternative products are not available. Such exceptions are subject to written approval by the University's Representative.
4. Exceptions require that the Contractor shall have an established carcinogen program as required by Cal/OSHA (§5203. Carcinogen Report of Use Requirements) and shall submit to University's Representative, a copy of the Cal/OSHA Confirmation of Report for Cal/OSHA carcinogens.
5. When exceptions are granted, the Contractor is responsible for providing to the University's Representative a copy of the semi-annual Confirmation of Report received from Cal/OSHA or, in lieu of that, a copy of the Contractor's semi-annual report as submitted to Cal/OSHA at periods not to exceed 6 months, or at project closeout, whichever occurs first.

E. Fire Department and Additional Notifications, Manifests, and Requirements: As required by University and coordinated by Contractor with the University's Representative.

1.5. FEES – Not Used

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 4200 REFERENCES

### PART 1 – GENERAL

#### 1.1. SUMMARY

##### A. Section includes:

1. Specification Format and Content Explanation
2. Definitions
3. Reference Standards
4. Abbreviations and Acronyms

#### 1.2. SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the 49-division format and CSI/CSC's "Master Format" numbering system.
- B. Specification Content: These Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words shall be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
  2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
    - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon is used within a sentence or phrase.

#### 1.3. DEFINITIONS

- A. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," "detailed" and "specified" are used to help the user locate the reference. Location is not limited.
- B. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the University's Representative or University, requested by the University's Representative or University, and similar phrases.
- C. "Approved": The term "approved," when used in conjunction with the University Representative's action on the Contractor's submittals, applications, and requests, is limited to the University Representative's duties and responsibilities as stated in the Conditions of the Contract.
- D. "Regulations," "building code," "code": The terms "regulations," "building code", and "code" include laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

- E. “Furnish”: The term “furnish” means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- F. “Install”: The term “install” describes operations at the Project site including the actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning, and similar operations.
- G. “Provide”: The term “provide” means to furnish and install, complete in place, operating, tested, approved, and ready for the intended use.
- H. “Installer”: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
  - 1. Unless specified otherwise in other Sections, the term “experienced,” when used with the term “installer,” means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
  - 2. Trades: Using a term such as “carpentry” does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter.” It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
- I. “Project site” is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- J. “Testing Agencies”: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- K. “Similar”: The term “similar” means in the general sense and not necessarily identical.
- L. See also the Instructions to Bidders and General Conditions.

#### 1.4. REFERENCE STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
  - 1. Requirements for packaging, packing, marking, and preparation for shipment or delivery included in referenced federal specifications are not mandatory for products provided for this Work.
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents except where a specific publication date or issue is included with the reference in other Sections of these Specifications.
  - 1. When a named or proposed product complies with a referenced standard of different publication date or issue than required by these Specifications, submit the product as a substitute under provisions of Division 1 Section “Substitutes.” Provide a detailed written summary of changes in product or workmanship quality and performance as a



result of the product complying with a different version of a standard from the version referenced.

- C. **Conflicting Requirements:** Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different but apparently equal to the University’s Representative for a decision before proceeding.
  - 1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicate numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the University’s Representative for a decision before proceeding.
  - 2. Where a product is specified by both brand name and reference to 1 or more standards, provide that product only if it actually complies with the required standards. Listing of a product by brand or trade name in these Specifications is not a warranty that the product complies with the standards which may also be listed. If a named product does not comply with 1 or more of the required standards and no alternative product is listed which does comply, submit a substitute product under provisions of Division 1 Section “Substitutes” which complies with the required standards.
- D. **Copies of Standards:** Each entity engaged in construction on the Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source and make them available on request.

1.5. ABBREVIATIONS AND ACRONYMS

- A. **Trade Abbreviations and Association Names:** Trade association names and titles of general standards are frequently abbreviated. The following abbreviations and acronyms, as referenced in the Contract Documents, mean the associated names. Names and addresses are subject to change and are believed, but not assured, to be accurate and up-to-date as the date of the Contract Documents.
- B. **Federal Government Agencies:** Names and titles of Federal Government standards- or specification-producing agencies are often abbreviated. The following abbreviations and acronyms referenced in the Contract Documents indicate names of standards- or specification-producing agencies of the Federal Government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.
- C. The following are commonly used abbreviations which may appear in the Project Manual. Refer to Construction Specifications Institute Document TD-2-4 “Abbreviations” for explanation of other abbreviations.

C	degree Centigrade
Co.	Company
Corp.	Corporation
F	degree Fahrenheit
ft.	foot (feet)
ga.	gage or gauge
gal.	gallon(s)

in.	inch(es)
Inc.	Incorporated
HVAC	Heating, Ventilating and Air Conditioning
lb(s).	pound(s)
o.c.	on center
psi	pounds per square inch
psf	pounds per square foot
sq.	square
yd.	yard(s)

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## **SECTION 01 4300 INSPECTION OF WORK**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes, without limitation, the following:
  - 1. Access to the Work
  - 2. Testing and Approval
  - 3. University's Inspectors
  - 4. Inspection Requests
  - 5. Inspection Request Form
  - 6. Nonconforming Work Notice
- B. The University will provide a Project Inspector or Inspector of Record (IOR) for this project. Contractor shall not cover any work requiring inspection until the IOR has inspected and approved the subject work. For uncovering of work, refer to General Conditions, Article 12.

#### **1.2 ACCESS TO THE WORK**

- A. In addition to the requirements of the General Conditions, University, University's Representative and their representatives shall at all times have access to the Work wherever it is in preparation or progress and Contractor shall provide safe and proper facilities for such access and for inspection. The inspection and written acceptance of material and workmanship, unless otherwise stated in these Specifications, shall be final except as provided in Article 12.2 of the General Conditions.

#### **1.3 TESTING AND APPROVAL**

- A. In addition to the requirements of the General Conditions, if any law, ordinance or public authority or the Specifications or University's Representative's instructions require any work to be specially tested or approved (including use of ionizing radiation for radiography), Contractor shall give University's Representative timely notice of its readiness for inspection, and if the inspection is by another authority, other than University's Representative, of the date fixed for such inspection.
- B. Re-examination of questioned work may be ordered by University's Representative.

#### **1.4 UNIVERSITY'S INSPECTORS**

- A. The IOR shall report to University's Representative. The IOR shall observe construction in progress and shall have the following responsibilities and limitations on authority.
  - 1. Act under the direction of University's Representative.
  - 2. Observe installation and work in progress as a basis for determining conformance of the work, materials and equipment with the Contract Documents. IOR will report any discrepancies observed to University's Representative and Contractor. Only University's Representative has the final authority to make approvals or rejections.
  - 3. Only University's Representative shall interpret the requirements of the Contract Documents. If any item is ambiguous, University's Representative shall make a written interpretation. If Contractor requests changes or modifications to the Contract Documents, University's Representative shall make a written determination on the requested changes or modifications.



4. Prepare and submit an inspection report to University's Representative for each inspection performed.
  5. Review application for payments.
  6. Assist University's Representative in reviewing the test and inspection results of testing laboratories.
  7. The IOR is not authorized to permit deviations from the requirements of the Contract Documents unless such deviation has been approved by University's Representative in writing.
  8. The IOR shall not supervise, coordinate, or direct the Work. The IOR has no responsibility or control over Contractor's construction means, methods, techniques, sequences, procedures, or coordination of any portions of the Work, or over any safety programs in connection with the Project.
- B. The failure of University, University's Representative and its representatives and consultants, or University's IOR to observe or inspect the Work, or to detect deficiencies in the Work, or to inform Contractor of any deficiencies which may be discovered, shall not relieve Contractor, its subcontractors regardless of tier, or suppliers from their responsibility for construction means, methods, techniques, sequences and procedures, construction safety, nor from their responsibilities to carry out the work in accordance with the Contract Documents and to detect and correct defective work as defined in the General Conditions.

#### 1.5 INSPECTION REQUESTS

- A. Contractor shall request inspection of completed portions of the Work through University's Representative. Contractor shall submit a request for inspection using University's Inspection Request Form attached to the end of this Section.
1. Contractor shall submit an Inspection Request **at least 3 working days prior** to the time the work will be ready for inspection.
  2. For work to be inspected by a third party testing laboratory, whether Contractor's or University's, Contractor shall submit an Inspection Request **at least 3 working days prior** to the time the work will be ready for inspection.
  3. For work not in conformance with the Contract Documents, the IOR shall submit to the Contractor a Nonconforming Work Notice.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

- 2.1 Refer to the Inspection Request Form attached at the end of this Section.
- 2.2 Refer to the Nonconforming Work Notice form attached at the end of this Section.

END OF SECTION

**NONCONFORMING WORK NOTICE**

**NUMBER:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**TO:**

**FROM:**

---

SPEC. SEC. REF.: \_\_\_\_\_ PARA: \_\_\_\_\_ DWG REF: \_\_\_\_\_ DETAIL: \_\_\_\_\_

**DESCRIPTION OF DEFECTIVE CONDITION (IOR):** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**REPORTED BY (IOR):** \_\_\_\_\_

---

CORRECTIVE ACTION SHOULD BE TAKEN AS SOON AS POSSIBLE AND COORDINATED WITH THE INSPECTOR OF RECORD (IOR). IF FURTHER INFORMATION IS NEEDED, ADVISE THE UNIVERSITY'S REPRESENTATIVE IMMEDIATELY.

**DESCRIPTION OF CORRECTIVE ACTION TAKEN (CONTRACTOR):** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ACCEPTED BY (CONTRACTOR):** \_\_\_\_\_ **DATE:** \_\_\_\_\_

---

**UCR USE ONLY**

**ACCEPTANCE OF CORRECTED DEFECTIVE CONDITION (IOR):** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**ACCEPTED BY (IOR):** \_\_\_\_\_ **DATE:** \_\_\_\_\_

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COPIES:  UNIVERSITY  CONSULTANT  CONTRACTOR

**LEFT BLANK**

**INTENTIONALLY**



## INSPECTION REQUEST

### INSPECTION REQUEST INSTRUCTIONS USING CFORMS

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1. \*Log into <http://ucr.cforms.net>
2. Complete Automated Inspection Request Form
3. Select your Permit # from the drop down menu and request the inspection you are in need of
4. An e-mail will be sent to the IOR for that project, advising them that you are requesting inspection
5. Once that inspection is conducted, the IOR will input the disposition into CForms (approved, disapproved, corrections, etc.) and may add photos, documents, etc.
6. Results of the inspection is known immediately by those assigned to the project via email.  
Inspectors can also upload photos and other documents and attach them to the inspection file in CForms
7. Completed "As-Built" plans of project shall be provided to Inspector of Record (IOR) prior to final inspection signature
8. Once the work is completed, request a final inspection and a final inspection will be conducted. If approved, the permit will be signed as approved and complete.

\*Access to CForms must be granted by Inspection Group prior to accessing CForms.

## SECTION 01 4500 QUALITY CONTROL

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for quality-control services, without limitation, the following:
  - 1. Contractor's Responsibilities
  - 2. Tests and Inspections
  - 3. Test Reports
  - 4. Geotechnical Engineer and Other Inspection and Testing
  - 5. Repair and Protection
- B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by University's Representative.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
  - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
  - 2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-control services, required by University's Representative, are not limited by provisions of this Section.
- E. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.

#### 1.2 DEFINITIONS

- A. The term "University's Testing Laboratory" means a testing laboratory retained and paid for by the University for the purpose of performing the testing services required by the Contract Documents except where specifically noted to be done by contractor, reviewing material and product reports, and performing other services as determined by University's Representative.
- B. The term "Contractor's Testing Laboratory" means a testing laboratory retained and paid for by Contractor to perform the testing services which are required by the Contract Documents to be performed by Contractor. Contractor's Testing Laboratory shall be an organization other than University's Testing Laboratory and shall be acceptable to University's Representative. It may be a commercial testing organization or the testing laboratory of a trade association. Contractor's Testing Laboratory shall have performed testing of the type specified for at least five (5) years and shall maintain a separate General and Professional Liability Insurance, (Errors and Omissions,) in amount not less than one million dollars (\$1,000,000) each.

- C. Tests, inspections, and acceptances of portions of the Work required by the Contract Documents or by Applicable Code Requirements shall be made at the appropriate times. Contractor shall give University's Representative timely notice of when and where tests and inspections are to be made and/or required regardless whose Testing Laboratory will perform the tests and inspections.
- D. If such procedures for testing, inspection, or acceptance reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, Contractor shall bear all costs made necessary by such failure including those of repeated procedures and compensation for University's Representative's services and expenses.
- E. If University's Representative is to observe tests, inspections, or make acceptances required by the Contract Documents, University's Representative will do so promptly upon 3 days advance written notice and, where practicable, at the normal place of testing.
- F. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### 1.3 CONTRACTOR'S RESPONSIBILITIES

- A. Secure and deliver to Contractor's Testing Laboratory adequate quantities of representative samples of materials proposed for use as specified.
- B. Submit to University's Testing Laboratory the preliminary design mixes proposed to be used for concrete and other materials which require review by University's Testing Laboratory.
- C. Submit copies of product test reports as specified.
- D. Furnish incidental labor and facilities, as required:
  - 1. To provide University's Testing Laboratory access to the Work to be tested.
  - 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.
- E. Provide written notice to University's Representative sufficiently in advance (a minimum of 3 days) of operations to allow for University's Testing Laboratory assignment of personnel and scheduling of tests.
- F. When tests or inspections are not performed after such notice, Contractor shall reimburse University for University's Testing Laboratory personnel and travel expenses incurred.

### 1.4 TESTS AND INSPECTIONS

- A. Certain portions of the Work will be tested, inspected, or both, at various stages. Nothing in any prior acceptance or satisfactory test result shall govern, if at any subsequent time the Work, or portion thereof, is found not to conform to the requirements of the Contract Documents.
- B. If initial tests or inspections made by University's Testing Laboratory's Geotechnical Engineer reveal that any portion of the Work does not comply with Contract Documents, or if University's Representative determines that any portion of the Work requires additional testing or inspection, additional tests and inspections shall be made as directed.
- C. If such additional tests or inspections establish that such portion of the Work fails to comply with the Contract Documents, all costs of such additional tests and inspections, and all



other costs resulting from such failure, including compensation for University's Representative and University Representative's Consultants shall be deducted from the Contract Sum.

- D. Fixtures, equipment, materials, and other items removed, demolished, abandoned, or capped and left in place, shall be tested to verify that there is no damage caused after the items have been covered by construction.

## 1.5 TEST REPORTS

- A. University's Testing Laboratory and Contractor's Testing Laboratory shall submit five (5) copies of all reports to University's Representative, indicating observations and results of tests and indicating compliance or non-compliance with the Contract Documents.

## 1.6 GEOTECHNICAL ENGINEER AND OTHER INSPECTION AND TESTING

- A. The University shall retain and pay the expenses of a Geotechnical Engineer and materials testing, inspection and observation services consultant ("TIO Consultant") to perform inspection, testing, and observation functions specified by the University. Geotechnical Engineer and such other TIO Consultant shall communicate only with University and University's Representative. University's Representative shall then give notice to Contractor, with a copy to the University, of any action required of Contractor.

## PART 2 - PRODUCTS (Not Applicable)

## PART 3 - EXECUTION

### 3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.
- C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION

## SECTION 01 4516 CONTRACTOR'S QUALITY CONTROL PROGRAM

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. This Section includes, without limitation, the following:
  - 1. Quality Control Program
  - 2. Submittals
  - 3. Qualifications of Quality Control Manager
  - 4. Reporting Procedures
  - 5. Implementation
  
- B. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section describes the requirements for implementation of a Quality Control Program by the Contractor to assure performance of the Work in conformance with the provisions of the Contract Documents.
  
- B. Related Work Specified Elsewhere:
  - 1. Testing and Inspection Services of Quality Control are specified in Section 01 4500, "Quality Control."

#### 1.3 QUALITY CONTROL PROGRAM

- A. The Contractor shall prepare and submit within thirty (30) days after the issuance of Notice to Proceed, the Quality Control Program (QCP) they intend to implement for the Work for approval by the University. This Program shall be tailored to the specific requirements of the Work and shall become an active part of the construction procedures. The Quality Control Program shall include the procedures, instructions, reports and forms to be used throughout the performance of the Work. The University reserves the right to review and reject all or part of the Quality Control Program as proposed by the Contractor. The Contractor shall revise and resubmit as appropriate until satisfactory to the University. The basic objectives of the Quality Control Program are as follows:
  - 1. To ensure that all Work adheres strictly to all provisions of the Contract Documents and governing agencies.
  - 2. To produce good quality workmanship.
  - 3. To prevent deficiencies through pre-construction quality control coordination.
  - 4. To detect and correct deficiencies in a timely manner.
  - 5. To provide an auditable record of all tests, inspections, procedures, non-compliance and corrections, and any other pertinent data as required by the University.
  
- B. The Contractor shall notify the University in writing of any proposed change to their Quality Control system and changes shall not be permitted if they would, in the opinion of the University, result in nonconformance with the Contract requirements.
  
- C. The Contractor may select either an outside "agency" or in-house personnel to administer the program. In either case, the Quality Control staff on-site shall be responsible only for Quality Control and the Quality Control Manager shall report directly to the Contractor's highest ranking

Corporate Officer involved in the Work. Quality Control staff members shall interface with the University, its Inspectors and Consultants, as required and appropriate.

#### 1.4 SUBMITTALS

- A. The Quality Control Program submittal shall include, as a minimum, the following:
1. The Quality Control organization chart, beginning with the Quality Control Manager, shall include Quality Control personnel as may be necessary to accomplish complete and adequate inspection of the Work.
  2. Names and qualifications of personnel and firms selected to implement the Quality Control Program on-site and off-site.
  3. Authority and responsibility of the Quality Control Staff.
  4. Methods of Quality Control inspection including subcontractor's work and describing name of qualified testing laboratory to be used, if applicable.
  5. Documents to be used to record inspections and tests, including those specified in the Contract.
  6. Formats for documentation and reports.
  7. Model agenda for Quality Control Meetings
  8. A letter signed by the Responsible Managing Officer of the Contractor's firm outlining the authority of the Quality Control Manager to include, among other things, the authority as described herein. Clerical personnel sufficient to accomplish timely submittal of Quality Control Reports and other required documentation shall be provided.

#### 1.5 QUALIFICATION OF QUALITY CONTROL MANAGER

- A. The minimum qualifications required of the Quality Control Manager are as follows:
1. Has recent construction experience in projects of similar size and nature.
  2. Has ten (10) years' experience performing construction-related work on Type I or II buildings.
  3. Has seven (7) years' experience performing Quality Control services on Type I or II multi story projects. At least 3 years must be on projects in California.
- OR
4. Has recent construction experience in projects of similar size and nature.
  5. Possess current certification issued by State of California OSHPD Class A level or DSA Class 1 level.
  6. Has seven (7) years' experience performing Quality Control work or inspection services on multi story Type I or II projects. At least 3 years must be on projects in California.
- OR
7. Possess an undergraduate degree in architecture, civil engineering or construction management.
  8. Has five years (5) performing Quality Control services or inspection experience on Type I or II multi story buildings. At least 3 years must be on projects in California.
  9. Possess at least four special inspector current certifications issued by ICC.
- B. Responsibilities and Duties of the Quality Control Staff:
1. The Quality Control Manager shall have the authority to stop work, reject work, order work removed, initiate remedial work, propose solutions, and reject material not in compliance with the Contract Documents.
  2. Responsibilities of the Quality Control Manager shall include, but are not limited to the following:
    - a. Present on-site during all working hours and assigned "full time" to this Project. Contractor shall designate alternate individual(s) to assume responsibilities in the temporary absence of the Quality Control Manager or when overtime work is being performed.
    - b. Have complete familiarity with the Drawings and Specifications.
    - c. Establish and implement Quality Control Programs for the Contractor and with the various Subcontractors and monitor their conformance.



- d. Present samples, mock-ups and test panels to be used as standards of quality for review by the University and their Consultants.
- e. Inspect existing conditions prior to the start of new work segments.
- f. Perform in-progress and follow-up inspections on each work segment to ensure compliance with the Contract Documents. Accompany the University and their Consultants on such inspections.
- g. Coordinate required tests, inspections, and demonstrations with the University's IOR inspectors, consultants and any other authority having jurisdiction.
- h. Inspect all materials and equipment arriving at the job site to ensure conformance to the provisions of the Contract Documents. Prepare and submit to the University written reports as required by the Contract Documents.
- i. Identify, report and reject defective Work or Work not in conformance with the Contract Documents. Monitor the repair or reconstruction of rejected Work.
- j. Develop checklists to be used for the inspection of each Division of the Work.
- k. Retain specialists or outside firms for inspection of Work in areas where additional technical knowledge is required (mechanical, electrical, electronics, controls, communications, security, welding, structural, security hardware, etc.).
- l. Schedule additional site visits where appropriate.
- m. Verify and report that all materials and equipment manufactured off-site are in conformance with the Contract Documents.
- n. Prior to the start of each Division, Section and/or major item of Work required by the Contract Documents, conduct a preconstruction Quality Control meeting with responsible field and office representative and the University and their Consultants. Provide the University and their Consultants minutes of these meetings within forty-eight (48) hours.
- o. Work closely with the University to ensure optimum Quality Control. Attend Project meetings as required by the University.

## 1.6 REPORTING PROCEDURES

- A. As a minimum, develop forms, logs and reporting procedures consisting of the following:
  - 1. A Quality Control meeting shall be held at least monthly between the University, Consultants and the Quality Control Manager during which only Quality related topics will be reviewed.
  - 2. A monthly written report published at month end providing an overview of Quality Control activities, problems found and/or solved, status of remedial work, status of mock-ups, anticipated problems and planned activities for the coming month, etc.
  - 3. Deficiency reports: Plan of action by the Contractor for correcting any known contract deficiencies including delay in scheduled progress.
  - 4. Weekly reports (including reports from Contractor and Subcontractors) to the University describing:
    - a. Equipment and material received.
    - b. Tests and inspections performed with submittal information.
    - c. Deficiencies noted and/or corrected.
    - d. Quality Control concerns and problems.
    - e. Record keeping (as required).

## 1.7 IMPLEMENTATION

- A. The Contractor's Quality Control program shall be adequate to cover all operations, including both on-site and off-site and will be keyed to the proposed sequence of work and shall include as a minimum at least three (3) phases of inspection for all definable items or segments of work, as follows:
  - 1. Preparatory inspection shall be performed prior to beginning any work on any definable segment of the Work and shall include a review of Contract requirements; verification that all materials and/or equipment have been tested, submitted, and accepted; verification that provisions have been made to provide required control testing; examination of the work

area to ascertain that all preliminary work has been completed; and a physical examination of materials and equipment to assure that they conform to accepted shop drawings or submittal data and that all material and/or equipment are available. As a part of this preparatory work, Contractor's Quality Control organization will review and verify that all documents, including but not limited to; shop drawings, submittal data, method of Quality Control, product data sheets, test reports, affidavits, certification and manufacturer's instructions have been submitted and accepted by the University as required herein. Each submittal to the University shall bear the date and the signature of the Contractor's Quality Control Manager indicating that he has reviewed the submittal and certified it to be in compliance with Drawings and Specifications or showing the required changes.

2. Initial Inspection: To be performed as soon as a representative segment of the particular item of work has been accomplished and to include examination of the quality or workmanship and a review of control testing for compliance with Contract requirements, exclusion of defective or damaged materials, omissions, and dimensional requirements.
3. Follow-up Inspection: To be performed daily or as frequently as necessary to ensure continuing compliance with Contract requirements, including control testing, until completion.
4. The Contractor shall maintain daily current records with information as described above, in an appropriate format of all inspections and tests that the required inspection or tests have been performed. These records must cover both conforming and defective items and must include a statement that all supplies and materials, incorporated in the Work, are in full compliance with the terms of the Contract. Two legible copies must be furnished to the University. The report will cover all work performed or completed subsequent to the previous report.

END OF SECTION

## SECTION 01 4520 CONCRETE MOISTURE TESTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Administrative Requirements
2. Information Submittals
3. Quality Assurance
4. Field Conditions
5. Materials for Test Procedures
6. Preparation
7. Testing: Testing for moisture vapor emission at concrete floors scheduled to receive applied floor coverings. Testing required at:
  - a. New concrete floor slabs on grade.
  - b. New elevated concrete floors where floor coverings are to be installed.
  - c. New wood flooring over concrete sub floor.
8. Installation Control Measures

#### 1.2 ADMINISTRATIVE REQUIREMENTS

- ##### A. Submittal Procedures: In accordance with Section 01 3300, "Submittals."

#### 1.3 INFORMATIONAL SUBMITTALS

##### A. Quality Control:

1. Qualifications of personnel or laboratory to perform testing.
2. Results of substrate moisture testing for each location and maximum allowable levels specified in respective Specification Sections for the intended floor finish.

#### 1.4 QUALITY ASSURANCE

- ##### A. If areas of concrete are not within the floor covering manufacturer's maximum allowable emission rate and slab area fails the moisture test, do not proceed with installation and notify the University's Representative.

#### 1.5 FIELD CONDITIONS

##### A. Ambient Conditions:

1. Area to be tested shall match that of the finished floor covering.
9. Doors, windows, and roofing shall be installed and the temperature of the building interior environment shall be controlled.
10. Interior temperature shall be 75 degrees F, plus or minus 10 degrees F (23.9 degrees C plus or minus 5.5 degrees C).
4. Relative humidity shall be 50 percent, plus or minus 10 percent.
5. Maintain the above conditions for 48 hours prior to and throughout the duration of the tests.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS FOR TEST PROCEDURES

##### A. Acceptable MVER Tests:



1. Calcium chloride test kits shall be pre-packaged and of commercial consistency; American Moisture Test, Inc., Tustin, CA, or equal. Kit shall include sealed dish of anhydrous calcium chloride, a metering dome with gasket, and instructions.
2. Relative humidity (RH) probe that has been verified for accuracy within the past year.

B. Alkalinity Tests: Test kit by American Moisture Test, Inc., Tustin, CA, or equal pH meter.

## PART 3 – EXECUTION

### 3.1 PREPARATION

- A. Clean concrete surfaces of any residues resulting from pour of concrete which will affect the moisture vapor drive.
- B. Plastic dome of test kit shall be sealed airtight to prevent ambient humidity from influencing the test results.

### 3.2 TESTING

- A. Perform tests on concrete slabs to determine moisture vapor emission based on the Moisture Vapor Emission Rate (MVER) content in accordance with ASTM F1869 or F2170, and alkalinity in accordance with ASTM F710. No testing shall be performed during non-acclimated periods. Results of these tests will be used to determine suitability of substrate to receive flooring materials. Perform two sets of tests, at 60 days and again at 14 days before the start of flooring installation.
- B. Test Kit: Comply with ASTM F1869 and the following.
  1. Verify temperature of slab is up to service temperature.
  2. Duration of MVER test shall be 60 to 72 hours.
  3. Dish shall be measured one-hour before and one-hour after testing with weight calculated within 0.1 grams.
- C. RH Probe: Comply with ASTM F2170 and the following.
  1. Verify concrete slabs are up to service temperature at least 48 hours prior to testing.
  2. Depth of probes shall be 40 percent on slabs drying from the top only and 20 percent for slabs drying from both sides.
  3. Probe shall be allowed to acclimate and checked for drift less than 1 percent relative humidity over a 5 minute period.
  4. Elapsed time for test shall be 72 hours.
- D. Alkalinity Testing: Comply with ASTM F710 and the following.
  1. Verify that concrete surfaces are clean and that curing and sealing compounds have been removed.
  2. Place a 1 inch diameter amount of manufacturer's recommended liquid on concrete surface and allow to settle for 60 seconds.
  3. Insert meter into liquid and allow to calculate results.
- E. Unless otherwise approved in writing by University's Representative, tests shall be performed by an independent testing agency.
- F. Number of test kits shall be determined by the square footage of each flooring material. Provide minimum of three test kits for the first 1,000 square feet (93 square meters), and one test kit per each additional 1,000 square feet (93 square meters), with consideration to separation of test

areas. At slab on grade conditions test within 2 feet of toilet rough-in's to determine any piping penetration failures.

- G. Where calcium chloride test results are satisfactory but there is reason to suspect that unacceptable moisture levels below the upper two centimeters of the concrete may still exist, a relative humidity probe shall be used to test the full depth of the slab.

### 3.3 INSTALLATION OF CONTROL MATERIALS

- A. If areas of concrete are not within the floor covering manufacturer's maximum allowable emission rate and slab area fails the moisture test, comply with the requirements specified in Section 07 2620, "Concrete Vapor Emission Control".

END OF SECTION

## **SECTION 01 5100 TEMPORARY UTILITIES**

### **PART 1 – GENERAL**

#### **1.1. SUMMARY**

##### **A. Section includes:**

1. Installation
2. Temporary Electricity
3. Temporary Water
4. Temporary Lighting
5. Temporary Heating, Cooling, and Ventilating
6. Temporary Telecommunications

#### **1.2. INSTALLATION**

- A.** Use qualified personnel for installation of temporary utilities. Locate utilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify utilities as required.
- B.** Provide each utility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until utilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C.** Utility Service Connection: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
  2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
  3. Obtain easements to bring temporary utilities to the site where the University's easements cannot be used for that purpose.
  4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the University or University's Representative. Neither the University nor University's Representative will accept cost or use charges as a basis of claims for Change Orders.
- D.** Submittals:
1. Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
  2. Implementation and Termination Schedule: Within 15 days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility. Temporary Utilities: Prepare a schedule indicating dates for taking over the responsibility of the existing temporary utilities that the University already has in place from the first phase and termination of each temporary utility. At the earliest feasible time, when acceptable to the University, change over from use of temporary service to use of permanent service.
- E.** Quality Assurance:



1. Comply with industry standards and applicable laws and regulations of the University including, but not limited to, the following:
  - a. Potentially hazardous materials.
  - b. Health and safety regulations.
  - c. Utility company regulations.
  - d. Police, fire department, and rescue squad rules.
  - e. Environmental protection regulations.
2. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
  - a. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
3. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.
4. Construction Facilities and general construction activities shall comply with the energy use guidelines in Title 24 of the California Administrative Code.

### 1.3. TEMPORARY ELECTRICITY

- A. Temporary Electric Power Service: Electric power will be furnished by the University at cost of \$0.087/KWH. Provide weatherproof, grounded electric power service and distributions system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload-protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.
  1. Contractor Responsibilities:
    - a. The University is providing temporary power equipment for the Contractor's use at the management trailer compound. The equipment includes; power skid, meter, quad-plex wire, panel board and Nema enclosure. Install project site electric power service with a meter at the point of connection designated by the University's Representative. Refer to the diagram for locating temporary power connections at the end of this section.
    - b. Maintain connections and extensions in a safe manner and utilize so as to not constitute a hazard to persons or property.
    - c. Connections and extensions will be subject to OSHA regulatory requirements. Immediately remove or remedy connections and extensions that represent safety hazards or cause undue interruption of University's normal operations.

### 1.4. TEMPORARY WATER

- A. Water Service: Water for use in construction, testing, and irrigation will be furnished by the University at a cost of \$1.12/CCF (748 gallons).
  1. Contractor Responsibilities:
    - a. Provide meter and all connections and extensions required.
    - b. Maintain connections and extensions in a safe manner and utilize so as to not constitute a hazard to persons or property.
    - c. Connections and extensions will be subject to approval of the University. Immediately remove or remedy connections and extensions that represent

safety hazards or cause undue interruption of University's normal operations.

1.5. TEMPORARY LIGHTING

- A. Temporary Lighting: Provide temporary lighting with local switching as required to supplement existing lighting.
- B. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.

1.6. TEMPORARY HEATING, COOLING, AND VENTILATING

- A. Temporary Heat: Provide temporary heat required by construction activities. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.
- B. Maintain temperature at less than 60 degrees F (16 degrees C) in permanently enclosed portions of the building and areas where finished Work has been installed.
- C. Heating Facilities: Except where the University's Representative authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel-oil heaters with individual space thermostatic control. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.

1.7. TEMPORARY TELECOMMUNICATIONS- NOT USED

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 5300 TEMPORARY CONSTRUCTION

### PART 1 – GENERAL

#### 1.1. SUMMARY

##### A. Section includes:

1. Temporary Stairs, Scaffold, and Runways
2. Trenching and Shoring
3. Temporary Bridges
4. Temporary Decking
5. Temporary Overpasses
6. Temporary Ramps
7. Temporary Runarounds

#### 1.2. TEMPORARY STAIRS, SCAFFOLD, AND RUNWAYS

- A. Provide all scaffolds, stairs, hoist plant, runways, platforms, and similar temporary construction as may be necessary for the performance of the Contract. Such facilities shall be of the type and arrangement as required for their specific use, substantially constructed throughout and strongly supported, well secured and complying with all applicable rules and regulations of the Industrial Accident Commission of the State of California and all applicable laws and ordinances. Refer to Section 01 41002, Regulatory Requirements.
- B. Arrange for construction equipment access to areas which may be partly blocked by existing obstructions.

#### 1.3. TRENCHING AND SHORING

- A. All Work shall be in full accordance, but not necessarily limited to the following codes and regulations: Titles 8, 19, 21, 22 and 24, State of California, California Code of Regulations (CCR), California Occupational Safety and Health Administration (OSHA).
- B. Protection. Pursuant to Labor Code Sections 6705 and 6707, Contractor shall include in its base bid all costs incident to the provision of adequate sheeting, shoring, bracing or equivalent method for the protection of Life and Limb which shall conform to the applicable Federal and State Safety Orders.
- C. Before beginning excavation five feet or more in depth, Contractor shall submit to University's Representative a detailed plan showing the design or shoring, bracing, sloping, or other provisions to be made for worker protection from the hazards of caving ground during the excavation. The proposed plan shall comply with the State of California Construction Safety Orders, Title 8 and Title 24 of the California Code of Regulations (CCR). If the detailed plan varies from such shoring system standards, it shall be prepared by a registered civil or structural engineer registered in the State of California, University's Representative's determination of the matter shall be final and conclusive on Contractor. The cost of required engineering services shall be borne by Contractor and shall be deemed to have been included in the amount bid for the Work as stated in the Agreement.
- D. Neither the review nor approval of any plan showing the design of shoring, bracing, sloping, or other provisions for worker protection, shall relieve Contractor from its obligation to comply with Construction Safety Orders Standards and Title 24 CCR for the design and construction of such protective Work, and Contractor shall indemnify University and University's Representative from any and all claims, liability, costs, action and causes of action arising out of or related to the failure of such protective systems.



Contractor shall defend University, its officers, employees, and agents and University's Representative in any litigation of proceeding brought with respect to the failure of such protective systems.

- E. Comply with State of California Construction Safety Orders, Article 6 - Excavations, Trenches, Earthwork - whether or not the excavation, trench, or earthwork is five feet or more in depth.

1.4. TEMPORARY BRIDGES- NOT REQUIRED

1.5. TEMPORARY DECKING- NOT REQUIRED

1.6. TEMPORARY OVERPASSES- NOT REQUIRED

1.7. TEMPORARY RAMPS- NOT REQUIRED

1.8. TEMPORARY RUNAROUNDS- NOT REQUIRED

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

**SECTION 01 5500  
VEHICULAR ACCESS AND PARKING**

**PART 1 – GENERAL**

**1.1. SUMMARY**

**A. Section includes:**

1. Temporary Access Roads
2. Haul Routes
3. Temporary Parking Areas
4. Temporary Roads
5. Traffic Control
6. Staging Areas

**B. Submittals:**

1. Submittals shall be submitted in accordance with Section 01 3300, "Submittals."
  - a. Submit Traffic Control Plan for Project Construction prior to the start of construction activities for approval by University's Representative.
  - b. Submit Pedestrian Access Plan for Project Construction prior to the start of construction activities for approval by University's Representative.

**1.2. TEMPORARY ACCESS ROADS**

- A. Per the University's Representative.**

**1.3. HAUL ROUTES**

- A. Per the University's Representative.**

**1.4. TEMPORARY PARKING AREAS**

- A. Parking:** Limited parking for workers employed on the Work may be provided on the Project Site to the extent that space for that purpose is available without interference with activities of University or activities related to performance of the Work. Refer to Section 01 3540 "Environmental Mitigation".

1. All vehicles are required to display a parking permit while parked on campus. Transportation and Parking Services will sell parking permits to contractors, their employees and sub-contractors in parking lots where spaces are currently available for purchase. 2014-15 monthly permit rates are \$40/Gold, \$47/Blue and \$64/Red. All rates are subject to change. Monthly permits are available at the Parking Service Building located at 683 Linden Street. Daily permits can be purchased in the Parking Service Building, at information kiosks at campus entrances, and in posted visitor parking lots. Parking permits are lot specific. All vehicles entering the campus are required to adhere to the University's parking policies and the California Vehicle Code. .
2. Contractor may use available space within its Project Site fence limits for parking without a permit.
3. Provide 3 parking spaces within Contractor's Project Site fence limits for University's Representative and its Consultants use.

**1.5. TEMPORARY ROADS- NOT USED**

## 1.6. TRAFFIC CONTROL

A. Prior to the start of construction activities, determine the routing of construction vehicles and the measures necessary to control traffic during construction. Provide measures including, but not limited to, the following:

1. Contractor is responsible for controlling construction traffic on and adjacent to the site, including public right-of-ways. Comply with requirements of authorities having jurisdiction for traffic controls in public right-of-ways.
  - a. Provide necessary measures including, but not limited to, flag personnel, barricades, sufficient lights, reflectors, warning signals, warning signs indicating closures, directional, and detour instructions.
2. Route construction equipment, trucks, and similar vehicles through the campus to Big Springs Road and existing public streets to and from the site as approved by the University's Representative and as specified in Section 01 3540 Environmental Mitigation.
3. Schedule deliveries to minimize disruption of University traffic and duration of on-site storage.

B. Traffic Control Plan for Project Construction.

1. Contractor and all subcontractors shall ensure that the construction site and access road speed limits are established and enforced during the Contract Time until Substantial Completion. Post and enforce traffic speed limits of 15 miles per hour or less on all unpaved roads.
2. Contractor and all subcontractors shall comply with the Traffic Control Plan for project construction prepared by Contractor and approved by University's Representative prior to the commencement of construction activities.
3. To the extent reasonable, Contractor and all subcontractors shall maintain at least one unobstructed lane in both directions on campus roadways. At any time only a single lane is available, Contractor and all subcontractors shall provide a temporary traffic signal, signal carriers (i.e., flag persons), or other appropriate traffic controls, as approved by University's Representative, to allow travel in both directions. If construction activities require the complete closure of a roadway segment, contractor and all subcontractors shall provide appropriate signage indicating alternative routes as approved by University's Representative.
4. To maintain adequate access for emergency vehicles when construction activities would result in roadway closures, Contractor shall give 14-days notice to the University's Representative, so that the University's Representative can consult with the UCPD, EH&S, and Riverside Fire Dept. as appropriate to disclose closures and identify alternative travel routes.
5. The hauling and disposal of any excess clean soil excavated from or already stockpiled on the site will be the responsibility of the contractor to transport and stockpile it at the UCR Ag Ops area located near Lot 13 as directed by the University Representative. Refer to Section 31 2000 Earth Moving for additional information regarding the collection and disposal of unsatisfactory material and debris.
6. All construction traffic will access the Project Site from the west and through the campus. Construction traffic will avoid using Valencia Hill Drive, Watkins Drive and Big Springs Road. There are two existing, posted construction traffic warning signs at the corner of Watkins Drive and Valencia Hill Drive which shall remain in place and maintained by the Contractor for the duration of the Project and will be the Contractor's responsibility to remove and dispose of the signs at the completion of the Work.

C. Pedestrian Access Plan for Project Construction.



1. Contractor and all subcontractors shall comply with the Pedestrian Access Plan for project construction prepared by the Contractor and approved by University's Representative, prior to the commencement of construction activities.

1.7. STAGING AREAS

- A. Per the University's Representative

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

## SECTION 01 5600 TEMPORARY BARRIERS AND ENCLOSURES

### PART 1 – GENERAL

#### 1.1. SUMMARY

A. This Section includes:

1. General Cleaning and Protection
2. Temporary Fire Protection
3. Temporary Barricades, Warning Signs, Signals and Lights
4. Temporary Fencing
5. Temporary Protective Walkways

#### 1.2. GENERAL CLEANING AND PROTECTION

- A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.
- B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.
- C. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:
1. Excessive static or dynamic loading.
  2. Excessive internal or external pressures.
  3. Excessively high or low temperatures.
  4. Thermal shock.
  5. Excessively high or low humidity.
  6. Air contamination or pollution.
  7. Water or ice.
  8. Solvents.
  9. Chemicals.
  10. Light.
  11. Radiation.
  12. Puncture.
  13. Abrasion.
  14. Heavy traffic.
  15. Soiling, staining, and corrosion.
  16. Bacteria.
  17. Rodent and insect infestation.
  18. Combustion.
  19. Electrical current.
  20. High-speed operation.
  21. Improper lubrication.
  22. Unusual wear or other misuse.
  23. Contact between incompatible materials.
  24. Destructive testing.
  25. Misalignment.
  26. Excessive weathering.

27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.
30. Vandalism.

### 1.3. TEMPORARY FIRE PROTECTION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the University's Representative.
- B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," and requirements of the University.
  1. Locate fire extinguishers where convenient and effective for their intended purpose.
  2. Store combustible materials in containers in fire-safe locations.
  3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in all buildings and anywhere on site.
  4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

### 1.4. TEMPORARY BARRICADES, WARNING SIGNS, SIGNALS AND LIGHTS

- A. Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
  1. Enclose excavations and openings with proper barricades.
  2. Clearly identify hazards on and adjacent to the Project site. Maintain clearly visible and, if applicable, audible identification on a continuous 24-hour-per-day basis.
  3. Illuminate barricades, warning signs, obstructions, and other hazards at night. Provide adequate light for clear visibility from sunset to sunrise.
  4. Where appropriate, provide audible warning signals.

### 1.5. TEMPORARY FENCING

- A. Shall be included by the Contractor and shall encircle the entire building.

### 1.6. TEMPORARY PROTECTIVE WALKWAYS

- A. Not included.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION



**SECTION 01 5639  
TREE AND PLANT PROTECTION****PART 1 – GENERAL****1.1. SUMMARY**

A. Provide all labor, materials, equipment, tools, services and miscellaneous and incidental work to provide all tree and plant protection as indicated on the drawings and as specified including:

1. Quality Assurance.
2. Job Conditions.
3. Guarantee.
4. Protection of Trees and Plants: Protection and welfare of all existing trees and plants within and adjacent to the Contract Limits which are noted to remain, including trimming, cabling, and repair of such and plants as necessary on the Drawings and as specified.
5. Trimming of Trees.
6. Irrigation System: Protection of any existing irrigation system servicing trees and plants to remain.
7. Repair Compensation.
8. Maintenance: Contractor shall submit tree maintenance plan for University's Representative approval.

B. Definitions

1. "Injury" is defined, without limitation, as any bruising, scarring, tearing, or breaking of roots, branches, or trunk.
2. "Drip line" is defined as the outermost limits of the tree canopy.

**1.2. QUALITY ASSURANCE**

- A. General Responsibility: The Contractor shall be directly responsible for protection and welfare of existing trees and plants within the Contract Limits which are noted to remain. This responsibility shall continue throughout the full construction period until the entire project is completed and accepted by the University's Representative and through completion of the guarantee period. Completely coordinate with all work.
- B. Qualifications of workmen: Trimming shall be performed only by a licensed arborist. Provide at least one person approved by the University's Representative who shall be present at all times during tree protection and trimming operations, who shall be thoroughly familiar with the type of work involved, and who shall direct all protection and trimming work.
- C. Reference Standards: Published specifications, standards, tests, or recommended methods of trade, industry, or governmental organizations apply to work of this section.
- D. International Society of Arboriculture (ISA) "Guide for Establishing Values of Trees and Other Plants," prepared by the Council of Tree and Landscape Appraisers (CTLA).

- E. "Cabling, Bracing and Guying Standards for Shade Trees", as published by the National Arborist Association (NAA), 174 RT 101, Bedford, New Hampshire, 03102.

### 1.3. JOB CONDITIONS

- A. Prior to performing any work of this Contract, Contractor shall call for a site meeting with the University's Representative and University's Representative's Consultant. This meeting shall occur prior to construction of any nature on site. The purpose of the meeting shall be to establish the conditions of all existing trees to be preserved or relocated upon receipt of the site by the Contractor. Failure to call for said meeting implies acceptance by the Contractor of trees to be preserved in their existing condition.
- B. Sequencing Schedule: Coordinate and cooperate with other trades to enable the work to proceed as rapidly and efficiently as possible.

### 1.4. GUARANTEE

- A. Contractor shall guarantee that all plants covered by the provisions of this Section will be healthy and in flourishing condition of active growth 1 year from the date of Final Completion.
- B. During the warranty period the Contractor shall be liable for damages to all trees covered by the provisions of this Section and shall pay compensation to the University.
- C. Contractor will not be held responsible for failures due to neglect by the University, vandalism, etc., during the warranty period. Report such conditions to the University's Representative.

## PART 2 – PRODUCTS (Not Applicable)

## PART 3 – EXECUTION

### 3.1 PROTECTION OF TREES AND PLANTS

- A. Water: Provide ample water supply of potable quality and sufficient quantity for all operations required under this Section.
- B. The existing trees to be preserved presently are in excellent condition. Trees and plants shall not be allowed to deteriorate and shall be maintained in a healthy and vigorous condition during the course of construction and maintenance period.
- C. During the course of construction the Contractor shall take all necessary precautions, as outlined herein, to protect the existing trees to be preserved from injury or death. Protection shall be given to the roots, trunk, and foliage of all existing trees to remain.
- D. Trees and plants, subject to the provisions of this Section, which have been injured shall be repaired immediately by an approved, certified arborist. Repair shall include removal of rough edges and sprung bark and severely injured branches as directed by the University's Representative.
- E. Tree protection fencing shall be installed for the protection of existing trees to be preserved. No construction, demolition, or work of any nature will be allowed within the fenced area without prior written approval by the University's Representative.
  - 1. Tree Protection Fence: 8-foot high chain link fence, sturdy and capable of acting as a barrier against objects, vehicles, etc., and designed so as to allow for relocations as required and shall have gate access to inside for care of tree. It shall be continuously maintained and repaired as necessary. Metal shall be galvanized.
  - 2. Install tree protection fencing around trees to be preserved at a distance required from the base of the trunk to the drip line of the tree. Fencing shall remain until landscape

- work has commenced, and it shall then be removed as directed by the University's Representative.
3. During the course of construction, relocation of the fence may be required to facilitate construction. The Contractor shall do so as directed by the University's Representative at no additional expense to the University.
  4. Approval by the University's Representative for work within the fenced area shall not release the Contractor from any of the provisions specified herein for the protection of existing trees and plants to be preserved.
  5. During the course of construction of approved work within the fenced area, no roots larger than two inches in diameter shall be cut without prior written approval by the University's Representative.
- F. During construction the existing site surface drainage patterns shall not be altered within the area of drip line.
- G. Contractor shall not alter the existing water table within area of drip line.
- H. Take necessary measures to maintain healthy living conditions for existing trees and plants to be preserved. Such measures shall include but not be limited to periodic washing of leaves for the removal of dust, irrigation, etc.
- I. Do not permit the following within drip line of any existing tree to be preserved.
1. Storage or parking of automobiles or other vehicles.
  2. Stockpiling of building materials or refuse of excavated materials.
  3. Skinning or bruising of bark.
  4. Use of trees as support posts, power poles, or signposts; anchorage for ropes, guy wires, or power lines; or other similar functions.
  5. Dumping of poisonous materials on or around trees and roots. Such material includes but is not limited to paint, petroleum products, contaminated water, or other deleterious materials.
  6. Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches, and other miscellaneous excavation without prior written approval by the University's Representative.
  7. Damage to trunk, limbs, or foliage caused by maneuvering vehicles or stacking material or equipment too close to the tree.
  8. Compaction of the root area by movement of trucks or grading machines; storage of equipment, gravel, earth fill, or construction supplies; etc.
  9. Excessive water or heat from equipment, utility line construction, or burning of trash under or near shrubs or trees.
  10. Damage to root system from flooding, erosion, and excessive wetting and drying resulting from dewatering and other operations.
- J. Excavation Around Trees and Plants:
1. Excavation within drip lines of trees and plants shall be done only where absolutely necessary.
  2. Where trenching for utilities is required within drip lines, tunneling under and around roots shall be by hand digging. Main lateral roots and taproots shall not be cut. Smaller roots that interfere with installation of new work may be cut with prior approval.
  3. Where excavation for new construction is required within drip line of trees, hand excavation shall be employed to minimize damage to root system. Roots shall be relocated in backfill areas wherever possible. If large, main lateral roots are encountered, they shall be exposed beyond excavation limits as required to bend and relocate without breaking. If encountered immediately adjacent to location or new construction and relocation is not practical, roots shall be cut approximately 6 inches back from new construction.



4. Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or roots shall be packed with wet peat moss or four layers of wet, untreated burlap and temporarily supported and protected from damage until permanently relocated and covered with backfill. The cover over the roots shall be wetted to the point of runoff daily.
5. Branching structure shall be thinned in accordance with NAA "Pruning Standards and Practices" to balance loss to root system. Thinning shall not exceed 30 percent of existing branching structure.

### 3.2 TRIMMING OF TREES

- A. In company with the University's Representative and registered arborist ascertain the limbs and roots which are to be trimmed, and clearly mark them to designate the approved point of cutting.
- B. A consulting arborist, registered by the American Society of Consulting Arborists (ASCA), shall be engaged to direct removal of branches from trees and large shrubs which are to remain if required to clear for new construction.
- C. Dead and damaged trees that are determined by the University's Representative and arborist to be incapable of restoration to normal growth pattern shall be removed.
- D. Cut evenly, using proper tools and skilled workmen, to achieve neat severance with the least possible damage to the tree.
- E. In the case of root cuts, apply wet burlap or other protection, approved as noted herein, to prevent drying out, and maintain in a wet condition as long as necessary for temporary protection.

### 3.3 IRRIGATION SYSTEM

- A. Protect the existing, temporary irrigation system from damage. Conduct weekly inspections throughout the term of the project to test the irrigation system timers, lines and spray heads and make any repairs and or improvements as necessary to maintain the health of the existing grass and trees. Contractor shall remove any and all trash, debris, tumbleweeds, etc., which may accumulate within the protected areas of the existing landscape areas along Valencia Hill and Big Springs Rd.
- B. Contractor to provide regular lawn mowing and edging of all protected areas inside construction fencing every two weeks.

### 3.4 REPAIR COMPENSATION

- A. Damage to existing tree crowns or roots over 1-inch in diameter shall be immediately reported to University's Representative in writing, and, at the direction of the University's Representative, repaired immediately at the Contractor's expense by an approved certified arborist.
- B. A certified arborist shall direct repair of trees damaged by construction operations. Repairs shall be made promptly after damage occurs to prevent progressive deterioration of damaged trees.
- C. Any tree to remain which is damaged or destroyed owing to the Contractor's negligence or failure to provide adequate protection shall be compensated for in accordance with the following schedule of values using "tree caliper" method (greatest trunk diameter, measured 18 inches above ground):
  1. For trees and shrubs with diameters up to and including 6 inches, compensation shall be the actual cost of replacement with item similar in species, size, and shape, including:

- a. Actual cost of item boxed out of ground.
  - b. Transportation or delivery of boxed item to site.
  - c. Planting and staking.
  - d. Maintenance, including watering, fertilizing, pruning, pest control, and other care to bring replacement to same general condition of original item.
2. For trunks up to:
- |  |         |
|--|---------|
| 7".....                                      | \$1,500 |
| 8".....                                      | \$2,000 |
| 9".....                                      | \$2,500 |
| 10".....                                     | \$3,000 |
| 11".....                                     | \$3,500 |
| 12".....                                     | \$4,000 |
| 13".....                                     | \$4,500 |
| 14".....                                     | \$5,000 |
| 15".....                                     | \$5,500 |
| 16".....                                     | \$6,000 |
| 17".....                                     | \$6,500 |
| 18" and over, add for each caliper inch..... | \$ 700  |

D. Damaged tree limbs or trees which have died as a result of injury during construction shall remain the property of the University and shall remain or be removed by the Contractor as directed by the University's Representative.

3.5 MAINTENANCE

- A. Contractor shall be responsible to perform periodic inspections of existing trees to be preserved and submit written proposals to the University's Representative for additional maintenance work as may be required to ensure the health and general well-being of the trees. Contractor shall retain, at the direction of the University's Representative additional specialists as may be required to perform this work.
- B. Root Hormone: Apply as follows:
  - 1. Construct tree basins at rims or outer edge of the tree box so that applied water will remain on top of the root-ball.
  - 2. Apply root hormone at the rate of 2 ounces of root hormone dissolved in a 2-gallon bucket of water, poured on top of the root-ball and contained thereon by the basin rims. Immediately after root hormone application, fill the tree basin with water and allow it to settle within the soil. Repeat application, fill the tree basin with water and allow it to settle within the soil. Repeat application of water twice.
- C. Mulching: Trees shall be mulched with 1-inch nitrolized fir bark immediately after completion of the root hormone application and its irrigation into the rootball.
- D. Irrigation: During construction the existing trees to be preserved shall, at the direction of the University's Representative, be given deep watering (be irrigated). Quantities and lengths of time are variable and shall depend upon seasonal rainfall.

END OF SECTION

**SECTION 01 5700  
TEMPORARY CONTROLS****PART 1 – GENERAL****1.1. SUMMARY****A. This Section Includes:**

1. Control of Construction Water
2. Dust Control, Air Pollution, and Odor Control
3. Noise Control
4. Temporary Erosion and Sediment Control (SWPPP)
5. Temporary Environmental Controls
6. Temporary Pest Control
7. Biological Resources
8. Cultural Resources
9. Aesthetics
10. Air Quality

**1.2. CONTROL OF CONSTRUCTION WATER**

- A. Provide impermeable floor coverings and suitable dams to prevent damage by water used for the Work. Immediately clean up and remove all surplus water and water spilled in non-working areas. Do not allow water to overflow gutters, flood streets or parking lots.

**1.3. DUST CONTROL, AIR POLLUTION, AND ODOR CONTROL****A. The Contractor shall employ measures to prevent the creation of dust, air pollution and odors.**

1. Unpaved areas where vehicles are operated shall be periodically wetted down or given an equivalent form of treatment as defined in South Coast Air Quality Management District (SCAQMD) Rule 403 to eliminate dust formation.
2. All volatile liquids including fuels or solvents shall be stored in closed containers.
3. No open burning of debris, lumber or other scrap will be permitted.
4. Equipment shall be maintained in a manner to reduce gaseous emission.
5. Low sulfur fuel shall be used for construction equipment.
6. Stockpiles of excavated materials shall be covered with material approved by University's Representative.
7. Contractor shall provide street sweeping whenever silt from construction site is carried over to adjacent streets.

**B. Provide measures, including regular watering, necessary to minimize air-borne dust.**

1. Exposed surfaces should be watered twice daily.
2. Stockpiles of excavated materials should be covered.
3. A berm shall be erected on the downslope of the project site to prevent silt-laden water from running off site.
4. Trucks carrying excavated materials from the site shall be covered and shall have their tires and undercarriages washed prior to exiting the site as required to remove material that may fall or blow off later.
5. Paving of exposed dirt surfaces should be done as quickly as is reasonably possible.



6. Streets affected by fugitive dust shall be swept regularly.
  7. The Contractor shall assign a person to be responsible for monitoring dust levels, reviewing conditions with the University's Representative, and suggesting appropriate additional control measures when required.
  8. Uncovered soil shall be bound by grass or similar ground cover as soon as is reasonably possible.
  9. Excavation should not be conducted when surface winds exceed 11 miles per hour.
  10. Unnecessary idling of construction vehicles and equipment shall be avoided.
- C. All contractors, and overseen by the General Contractor, shall implement dust control measures consistent with South Coast Air management District (SCAQMD) Rule 403 – Fugitive Dust during the construction phases on the project development.
1. Apply water and/or non-toxic chemical soil stabilizers according to manufacturer's specifications to all inactive construction areas (previously graded areas that have been inactive for 10 or more days).
  2. Replace ground cover in disturbed areas as quickly as possible.
  3. Enclose, cover, water twice daily, or apply approved chemical soil binders to exposed piles with 5 percent or greater silt content.
  4. Water active grading sites at least twice daily.
  5. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed over 25 mile per hour over a 30-minute period.
  6. All trucks hauling dirt, sand, soil, or other loose material are to be covered or should maintain at least two feet of freeboard (i.e., minimum vertical distance between top of the load and top of the trailer) in accordance with section 23114 of the California Vehicle Code.
  7. Sweep streets at the end of the day if visible soil material is carried over to adjacent roads.
  8. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving project site for each trip.
  9. Apply water three times daily of chemical soil stabilizers according to manufacturer's specifications to all unpaved parking or staging areas or unpaved road surfaces.

#### 1.4. NOISE CONTROL

- A. ~~Noise control shall be maintained by the contractor in all areas of construction, guarding against any undue noise which may impair proper use of existing facilities. Activities with the highest noise potential shall be scheduled for the times when background ambient noise levels are highest (i.e., during peak commute hours). Contractor shall use noise suppressed equipment available and/or shall muffle/control noise on equipment to the maximum extent possible. Noisy construction-related operations (e.g. mixing concrete) shall be accomplished on-site to the extent feasible. Those noisy, construction-related operations shall be performed on those areas of the site furthest from noise sensitive receptors i.e. residence halls, off-site community, etc."~~

**OR**

Noise control shall be maintained by the contractor in all areas of construction, guarding against any undue noise, which may impair proper use of existing facilities. Contractor shall use noise suppressed equipment available and control noise on equipment to the maximum extent possible.

B. The following noise control procedures shall be employed:

1. ~~Maximum Noise: The Contractor shall use equipment and methods during the course of this work that are least disruptive to adjacent offices or residences. Noise levels for trenchers, graders, trucks and pile drivers shall not exceed 90 dBA at 50 feet as measured under the noisiest operating conditions. For all other equipment, noise levels shall not exceed 85 dBA at 50 feet.~~

**OR**

Noise control shall be maintained by the contractor in all areas of construction, guarding against any undue noise, which may impair proper use of existing facilities. Contractor shall use noise suppressed equipment available and control noise on equipment to the maximum extent possible.

2. ~~Equipment: Jack hammers shall be equipped with exhaust mufflers and steel muffling sleeves. All diesel equipment shall have exhaust muffled. Air compressors shall be of a quiet type such as a "whisperized" compressor.~~

**OR**

Equipment: Jack hammers shall be equipped with exhaust mufflers and steel muffling sleeves. All diesel equipment shall have exhaust muffled. Air compressors shall be of a quiet type such as a "whisperized" compressor. Require contractors to use the quietest among alternative equipment or to muffle/control noise from available equipment to the maximum extent possible.

~~AND/OR~~

~~Require Mufflers and Other Noise Attenuators on Project Construction Equipment: All contractors, and overseen by the General Contractor, shall ensure that noise-producing construction equipment and vehicles using internal combustion engines will be equipped with mufflers; air-inlet silencers where appropriate; and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) will be equipped with shrouds and noise control features that are readily available for that type of equipment. Stationary construction equipment, material and vehicle staging shall be placed to direct noise away from sensitive receptors.~~

~~AND OR~~

~~Require Use of Electrically Powered Equipment: All contractors, and overseen by the General Contractor, shall ensure that work use electrically powered equipment instead of pneumatic or internal combustion-powered equipment, where feasible.~~

3. Operations: Machines shall not be left idling. Electric power shall be used in lieu of internal combustion engine power wherever possible. Equipment shall be maintained to reduce noise from vibration, faulty mufflers, or other sources.

**OR**

~~Operations: Machines shall not be left idling. Electric power shall be used in lieu of internal combustion engine power wherever possible. Equipment shall be maintained to reduce noise from vibration, faulty mufflers, or other sources.~~

4. ~~Scheduling: Noisy operations shall be scheduled so as to minimize the disturbance and duration to adjacent neighborhoods and nearby student Housing complexes.~~

**OR**

Scheduling: Noisy operations shall be scheduled so as to minimum their disturbance to occupied adjacent areas and duration at any given location. Schedule activities with highest noise potential for times when background ambient noise levels are highest.

~~5. Location: Consider noise sensitive areas around the site when planning locations of operations which cause higher levels of noise, and perform those tasks in less sensitive areas when possible. Schedule work that will generate vibrations, uncontrolled dust, noise levels in excess of 65 dBA, interior 85 dBA, exterior and potentially hazardous conditions for time periods that are the least disruptive to the University and the surrounding residential neighborhood.~~

6. Use of High Vibration Construction Equipment near **Lothian Residence Hall**

~~a. All contractors, and overseen by the General Contractor, shall schedule construction activity entailing use of high-vibration generating equipment within 75 feet of Residence Halls during periods when students are not in residence, to the extent feasible.~~

~~Prohibit Noise-producing Signals: All contractors, and overseen by the General Contractor, shall prohibit the use of noise-producing signals, including horns, whistles, alarms, and bells, except for safety purposes only. Public address or music systems will also be prohibited.~~

#### 1.5. TEMPORARY EROSION AND SEDIMENT CONTROL

- A. Exposed earth surfaces shall be watered to minimize dust generation as necessary according to weather conditions.
- B. During winter construction, an erosion and sediment-transport control plan incorporating standard erosion control practices shall be implemented prior to the first day of earth moving activities.

- 1. Erosion control shall include retaining sediments within project site by the use of catch basins; using interceptor ditches and benches to prevent gulying of slopes; and preparing and implementing erosion control plans.

#### C. Storm Water Pollution Prevention Plan (SWPPP):

- 1. ~~This project has an active SWPPP permit and the university has retained a SWPPP management consultant for this project. The contractor shall take over the contract of the SWPPP consultant for the SWPPP management of the project for the duration of the schedule until substantial completion. Contact **David Beckwith, President, David Beckwith & Associates** at (714) 349-7007. The details of the SWPPP for Glen Mor 2 and its implementation can be viewed online at the California State Water Resources Board's SMARTS website (type "University of California, Riverside").~~
- 2. Refer to Section 01 2100 Allowances for the description of the SWPPP allowance.
- 3. For additional information see Section 31 1000 "Site Clearing".
- 4. Protection Against Inclement Weather: Brace, secure, and cover all parts of the Work to prevent damage by inclement weather. Refer to Section 3.9 Storm Water Control for SWPPP information.
- 5. Protect the Work from damage due to nuisance water such as rainwater, surface runoff, and irrigation water. Comply with requirements of the University's Representative regarding routing and disposal of nuisance water.



~~D. Storm Water Control~~

- ~~1. This project already has an open SWPPP permit on file. Refer to Section 01 1400 "Contractor's Use of the Project Site" for more detailed SWPPP information.~~
  - ~~a. Provide engineering, drawings, etc., to meet the requirements.~~
- ~~2. Erect berm and other appropriate measures to prevent water from running off site and staging area.~~
- ~~3. Erect berm and other appropriate measures to prevent water from entering the site and staging area.~~
- ~~4. Temporary Storm Water Pollution Control: Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.~~

1.6. TEMPORARY ENVIRONMENTAL CONTROLS

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce levels of harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.
- B. See also Section 01 3543, Environmental Procedures.

1.7. TEMPORARY PEST CONTROL

- A. The Owner shall be responsible for pest control.

1.8. BIOLOGICAL RESOURCES

- A. Pre-Construction Surveys for Burrowing Owls will be conducted (by University representatives) **not more than 30 days prior to ground disturbance and/or construction related activities**. No ground disturbance and/or construction related activities shall begin until survey complete and any avoidance measures identified and implemented.
- B. Pre-Construction Nesting Bird Surveys will be conducted (by University representatives) **within a maximum of 7 days prior to initiation of ground disturbance activities** when vegetation removal will occur between February 15 and September 15. No ground disturbance activities shall occur until survey complete and any avoidance measures identified and implemented.
  1. Prior to initiation of ground disturbance activities, disturbance limits adjacent to or within the Arroyo shall be clearly staked by University representatives, including disturbance limits associated with Arroyo improvements. Access to the Arroyo shall be limited to existing roads and shall be fenced to ensure unnecessary encroachment to the Arroyo does not occur.
- C. Minimize Temporary Impacts
  1. Biological Resources to be avoided during construction, include identified California Dept. of Fish and Game (CDFG) jurisdictional streambeds and riparian habitats, and shall be

avoided if practicable. No impacts on the Arroyo shall occur outside of staked disturbance limits.

2. At a minimum, the following areas shall be avoided:
  - a. Riparian vegetation adjacent to the path/culvert removal.
  - b. Riparian vegetation located at the northwest side of the south abutment temporary work area for Bridge 2.
  - c. CDFG jurisdictional streambed located on the south side of the bank re-contouring area.
  - d. The mature cottonwood tree near the Valencia Hill culvert extension work limit.
    - (1) The following measures will be implemented to minimize disturbance to the cottonwood tree at the Valencia Hill culvert work area:
      - (2) Establishment and demarcation of a tree protection zone. This should be accomplished under the guidance of an International Society of Arboriculture (ISA) certified arborist and employ a protective barrier consisting of 3-foot- high orange construction fencing. The preferred protection zone shall encompass a buffer of 5 feet beyond the drip line, or 15 feet from trunks, whichever is greater. Where the proposed improvements extend into the preferred protection zone, placement of the protective barrier shall minimize encroachment into the preferred protection zone to the maximum extent practical.
      - (3) Pruning of tree roots, limbs and canopy prior to start of construction, under the guidance of an ISA certified arborist and in accordance with ISA pruning standards (for instance, cuts made clean and to the bark collar of the closest joint on the branch). Pruning should occur during the dormant period (approximately November to March).
      - (4) Construction of the Valencia Hill culvert extension shall be monitored by an ISA certified arborist. The arborist may require implementation of best management practices to minimize disturbance within the work limits, including but not limited to padding of vehicles, minimizing soil removal or addition, and use of protective matting.
      - (5) Upon completion of construction, the tree shall be evaluated by an ISA certified arborist. Evaluations shall occur quarterly for one full year to monitor for signs of failure (including canopy dieback, reduced size or number of leaves, premature fall color). If in the opinion of the arborist, the tree is not showing signs of failure, it shall be determined that the avoidance measures have been successful and no further action shall be required.
      - (6) If post-construction monitoring indicates the tree has failed, the measures provided for below shall be implemented to replace the lost functions and values:
      - (7) In the event the mature cottonwood tree at the Valencia Hill culvert extension is determined to have failed the re-vegetation plan shall include the following measures to replace the lost functions and values:

- (8) Replacement planting of three coast live oaks on the upper bank within the removed canopy area. Replacement trees shall be at least 6 inch caliper and 10 feet in height.
  - (9) Replacement planting of Fremont's cottonwood (15 gallon minimum) along the stream channel within the area immediately downstream of the extended culvert. The total number of replacement trees (live oak and cottonwood) shall provide a minimum 1:1 replacement ratio based on the 85-inch diameter at breast height (DBH) measurement of the existing cottonwood tree. It is expected compliance with this measure would require planting of approximately 25 to 30 cottonwood trees.
- e. To reduce disturbance of Natural and Naturalistic Open Space areas:
- (1) Unnecessary driving in sensitive or otherwise undisturbed areas shall be avoided. New roads or construction access roads would not be created where adequate access already exists.
  - (2) Removal of native shrub or brush shall be avoided, except where necessary.
  - (3) Drainages shall be avoided, except where required for construction. Limit activity to crossing drainages rather than using the lengths of drainage courses for access.
  - (4) Excess fill or construction waste shall not be dumped in washes.
  - (5) Vehicles or other equipment shall not be parked in washes or other drainages.
  - (6) Overwatering shall be avoided in washes and other drainages.
  - (7) Wildlife including species such as fox, coyote, snakes, etc. shall not be harassed. Harassment includes shooting, throwing rocks, etc.
- D. Worker Education Program
1. All contractors, and overseen by the General Contractor, shall participate in a worker education program for all construction personnel prior to personnel initiating ground disturbance activities, which will include a discussion of the importance of the Arroyo and areas within the Arroyo to be avoided (including parking and staging of equipment), a discussion of native wildlife with the potential to occur, and education on not harassing native wildlife.
- E. Biological Monitoring During Construction
1. All contractors, and overseen by the General Contractor, shall cooperate with and follow required direction from the qualified biologist who shall monitor the project for compliance with best management practices.
- F. Exotic species



1. Any exotic species removed shall be properly handled to prevent sprouting or re-growth. Construction equipment shall be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds before mobilizing to the work of construction. Cleaning of any equipment shall occur at least 300 feet from the Arroyo area and before leaving the work area during the course of construction.

#### 1.9. CULTURAL RESOURCES

##### A. Protection and Recovery of Buried Artifacts

1. If an archaeological resource is discovered during construction, all soil-disturbing work within 100 feet of the find shall cease and the University Representative shall be notified and shall contact a qualified archaeologist within 24 hours of discovery to inspect the site. If a resource within the project area of potential effect is determined to qualify as a unique archaeological resource (as defined by CEQA), the University shall devote adequate time and funding to salvage the material. Any archaeologically important artifacts recovered during monitoring shall be cleaned, catalogued, and analyzed, with the results presented in a report of finding that meets professional standards.
2. In the event of the discovery of a burial, human bone, or suspected human bone, all excavation or grading in the vicinity of the find shall halt immediately and the area of the find shall be protected and the University immediately shall notify the Riverside County Coroner of the find and comply with the provisions of P.R.C. Section 5097 with respect to Native American involvement, burial treatment, and re-burial, if necessary.

#### 1.10. AESTHETICS

- ##### A. Strict adherence to the approved Detailed Planting Plans to Maintain Existing View Corridors.

#### 1.11. AIR QUALITY

- ##### A. All construction vehicles and equipment containing an internal combustion engine and operating on the project site shall meet EPA-certified Tier 2 emission standards or higher. Contractor shall maintain on-going verification records of equipment certification as new equipment is delivered to the site for University Representatives to review for compliance.
- ##### B. Low NOx diesel fuel and construction equipment shall be used to the extent that is readily available at the time of construction. Contractor shall maintain on-going, updated records for University Representatives to review for compliance.
- ##### C. The following Air Quality reduction procedures shall be implemented throughout the construction process:
- a. Compliance with all SCAQMD rules and regulations.
  - b. Maintenance programs to assure vehicles remain in good operating condition.
  - c. Avoid unnecessary idling of construction vehicles and equipment.
  - d. Use of alternative fuel vehicles.
  - e. Provision of electrical power to site to eliminate the need for on-site generators.
- ##### D. All off-road equipment operating on project site, as well as on-road heavy-duty vehicles (including hauling and material delivery trucks) traveling to and from the project site will be fitted

with an oxides catalyst. Contractor shall maintain on-going verification records of equipment certification as equipment is delivered to the site for University Representatives to review for compliance.

- E. Limited on-campus parking outside the project site boundaries will be made available for construction workers. The University will provide contractors' workers with limited, free, on-campus parking in a designated portion of Lot 13 across Big Springs Rd from the project site.
1. Confine parking to the construction site or specifically designated areas of Lot 13. Vehicles parked elsewhere are subject to Campus parking fees or fines. Campus parking permits are available through Parking Services of **\$56.00** per month (check with Parking Services for daily and weekly rates) per vehicle. Rate is subject to change.
  2. Contractor may use available space within its Project fence limits for parking without a permit.
  3. Provide 3 parking spaces within the staging area for University's Representative and its Consultants use.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

**SECTION 01 5800  
TEMPORARY SIGNAGE**

**PART 1 – GENERAL**

**1.1. SUMMARY**

A. This Section includes:

1. Temporary Project Signage.
2. Temporary Interior Signage.

**1.2. TEMPORARY PROJECT SIGNAGE**

- A. Project Identification: Two (2) 8' x 4' post mounted temporary project identification signs are already in place at two locations on the site. The Contractor shall make minor text revisions of the name of the UCR Vice Chancellor, the project's construction firm and the time of occupancy. Verify the actual copy with University Representative.
- B. Contractor shall make minor changes to the required text on the (2) Project identification signs. The text shall match the existing (black times Roman) font and dimensions on the sign. **All Stars Signs of Escondido** is a pre-approved supplier to UC Riverside project signs although any vendor can be used. Contractor to change the name of the Vice Chancellor, change the name of the project construction firm and change the time of occupancy. Verify the actual copy with University Representative.
- C. Provide signs for traffic direction and warnings such as "Construction Project" and "Keep Out" to facilitate control of personnel and vehicles. Use only the minimum number necessary, to 2' x 4' maximum size.
- D. ~~Provide 3 signs along the construction fence facing \_\_\_\_\_ and 3 signs along \_\_\_\_\_ with the telephone number for the Neighbor Complaint HotLine.~~
- E. After text changes have been made, reinstall signs securely on existing wood posts. Maintain in good condition throughout the construction period and remove upon completion, including concrete footings, if any.
- F. Contractor shall submit all name and title changes on the existing signs to University's Representative for approval prior to installation. Contractor shall review completed project sign with University Representative, prior to installation.

**1.3. TEMPORARY INTERIOR SIGNAGE- NOT REQUIRED**

**PART 2 – PRODUCTS (Not Applicable)**

**PART 3 – EXECUTION (Not Applicable)**

**END OF SECTION**



## SECTION 01 7100 EXAMINATION AND PREPARATION

### PART 1 – GENERAL

#### 1.1. SUMMARY

A. This Section includes:

1. Mobilization
2. Acceptance of Conditions
3. Construction Layout
4. Construction Surveying
5. Protection of Adjacent Construction
6. Non-Destructive Concrete Examination

#### 1.2. MOBILIZATION- NOT USED

#### 1.3. ACCEPTANCE OF CONDITIONS

1. Prior to commencing the Work, the Contractor and University's Representative shall tour together the Project site (and areas immediately surrounding the site) to examine and record damage to existing buildings and improvements constructed under a prior contract. As such the Contractor accepts the work constructed on site "as-is" and must finish what is installed into a complete and functional system.
2. This record shall serve as a basis for determination of subsequent damage due to Contractor's operations and shall be signed by all parties making the tour. Any cracks, sags, or damage to the adjacent buildings, improvements and landscaping elements not noted in the original survey, but subsequently discovered, shall be reported to University's Representative within 15 days from Notice to Proceed.
3. The Contractor shall prepare a report of the survey, including:
  - a. DVD recording of existing conditions.
  - b. 8" x 10" glossy photographs of significant features requested by University's Representative.
  - c. Key plan with references to video/photographs
4. The Contractor and University Representative shall periodically monitor conditions of existing buildings and installations for signs of movement, settlement, or other damage related to construction.
5. Contractor is solely responsible for repairing damage to existing construction and finishes and for replacing damaged components, which cannot be repaired.
6. Contractor is solely responsible for maintaining and watering existing landscaping within the Project site and for replacing landscaping elements, which are damaged or destroyed during the course of the Work.

#### 1.4. CONSTRUCTION LAYOUT

#### 1.5. CONSTRUCTION SURVEYING

#### 1.6. PROTECTION OF ADJACENT CONSTRUCTION

1.7. NON-DESTRUCTIVE CONCRETE EXAMINATION

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

**SECTION 01 7123  
FIELD ENGINEERING**

**PART 1 – GENERAL**

**1.1. SUMMARY**

- A. This Section specifies administrative and procedural requirements for field-engineering services including, but not limited to, the following:
  - 1. Surveys, Lines, and Levels Examination.
  - 2. Surveys, Lines, and Levels Performance.

**PART 2 – PRODUCTS (Not Applicable)**

**PART 3 – EXECUTION**

**3.1 EXAMINATION**

- A. Identification: The University's Design Professional or its designee will identify existing control points including horizontal and vertical control points.
- B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks, before proceeding to lay out the Work. Locate and protect existing benchmarks and control points. Preserve permanent reference points during construction.
  - 1. Do not change or relocate benchmarks or control points without prior written approval. Promptly report lost and destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.
  - 2. Promptly replace lost or destroyed Project control points. Base replacements on the original survey control points.
- C. Establish and maintain a minimum of 2 permanent benchmarks on the site, referenced to data established by survey control points.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- D. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work Contractor shall employ and pay for underground utilities service company to investigate and verify the existence and location of all underground utilities and other construction.
  - 1. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping.
  - 2. The Drawings show, if applicable, existing above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, hot water and other utilities, which are known to the University.
  - 3. Existing installations shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Sum.
  - 4. If any other structures or utilities are encountered, request University's Representative to provide direction on how to proceed with the Work.



5. If any structure or utility is damaged, take appropriate action to ensure the safety of persons and property. Repair damage and restore utility to service at no cost to the University.
6. Obtain University Representative approval at least 30 days prior to any service shutdown or cutover. All utility shut downs shall be kept to a minimum. Contractor shall coordinate for all shut downs to occur during weekend hours without change to the contract sum. Identify date, time and expected duration (no more than 8 hours duration) of all utility shutdowns. There will be no shut downs for sewer services, must do bypass.

### 3.2 PERFORMANCE

- A. Work from lines and levels established by the property survey. Establish benchmarks and markers to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
  1. Advise entities engaged in construction activities of marked lines and levels provided for their use.
  2. As construction proceeds, check every major element for line, level, plumb, movement, settlement, or other damage.
- B. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.
- C. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with, and obtain required approvals from University's Representative.

END OF SECTION

## SECTION 01 7329 CUTTING AND PATCHING

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes general administrative and procedural requirements for cutting and patching, including without limitation, the following:
  - 1. Submittals
  - 2. Quality Assurance
  - 3. Warranty
  - 4. Materials
  - 5. Inspection
  - 6. Preparation
  - 7. Performance
  - 8. Cleaning
- B. Requirements of this Section apply to mechanical and electrical installations. Refer to Specification Divisions 20-28 for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.
- C. Refer to other applicable Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- D. Cutting and Patching, in addition to requirements of the General Conditions, includes removing, altering, and repairing portions of the Work as required to accomplish the following:
  - 1. Make several parts fit properly.
  - 2. Uncover work to provide for installation of ill-timed work.
  - 3. Remove and replace defective work.
  - 4. Remove samples of installed work as specified or requested by the University's Representative for testing.
  - 5. Install new construction penetrations of or connections to existing construction.

#### 1.2. SUBMITTALS

- A. Cutting and Patching Proposal: Submit written notice to the University's Representative requesting permission to proceed with cutting which could affect structural safety of the project 10 days in advance of starting cutting. Request approval to proceed. Include the following information, as applicable, in the proposal:
  - 1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
  - 2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
  - 3. List products to be used and firms or entities that will perform Work.
  - 4. Indicate dates when cutting and patching will be performed.
  - 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. All utility shut downs shall be kept to a minimum. Contractor shall coordinate for all shut downs to occur during weekend hours without change to the contract sum. Identify date, time and expected duration (no more than 8 hours duration) of all utility shutdowns. There will be no shut downs for sewer services, must do bypass.

6. Approval by the University's Representative to proceed with cutting and patching does not waive the University's Representative right to later require complete removal and replacement of unsatisfactory work.

B. Changed Conditions Notice: Submit written recommendations to the University's Representative should conditions of work or schedule indicate change of materials or methods, including the following:

1. Conditions indicating change.
2. Recommendations for alternative materials and methods.
3. Information required for substitution.

### 1.3. QUALITY ASSURANCE

A. Requirements for Structural Work:

1. Obtain approval of the cutting and patching proposal before cutting and patching structural elements including, but not limited to, the following:

- a. Foundation construction.
- b. Structural concrete.
- c. Miscellaneous structural metals.
- d. Piping and equipment.

B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems

- a. Primary operational systems and equipment.
- b. Fire protection systems.
- c. Communication systems.
- d. Electrical wiring systems.
- e. Security systems

C. Visual Requirements: Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patch in a visually unsatisfactory manner.

### 1.4. WARRANTY

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

## PART 2 – PRODUCTS

### 2.1. MATERIALS

A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

## PART 3 – EXECUTION



### 3.1 INSPECTION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action and notify University's Representative before proceeding.
  - 1. Before proceeding, meet at the Project Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
  - 2. Provide drawings and calculations signed by a licensed California Structural Engineer for shoring, bracing and support to maintain structural integrity.
  - 3. Protect other portions of the Project.
  - 4. Protect Project from the element.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

### 3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
  - 1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
  - 4. Comply with requirements applicable Division 2 Sections where cutting and patching requires excavating and backfilling.
  - 5. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
    - 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
    - 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - 3. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- 3.4 CLEANING
- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION

## SECTION 01 7400 CLEANING AND WASTE MANAGEMENT

### PART 1 – GENERAL

#### 1.1. SUMMARY

- A. This Section includes:
1. Progress Cleaning and Site Maintenance
  2. Construction Waste Management and Disposal
  3. Final Cleaning
  4. Contractor C&D Waste Monitoring Form and Green Waste Monitoring Form, copies of which are attached at the end of this Section.
- B. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
- C. Environmental Requirements: Conduct cleaning and waste-disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and antipollution regulations.
1. Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in streams, storm or sanitary drains.
  2. Burning or burying of debris, rubbish, or other waste material on the premises is not permitted.
  3. Comply with requirements of Southern California Air Quality Management District in effect at the time of construction.
  4. Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of lawfully.
- D. Submittal: Prior to requesting inspection for Substantial Completion and Final Completion, submit written certification to the University's Representative that final cleaning has been performed in accordance with the Contract Documents.

#### 1.2. PROGRESS CLEANING AND SITE MAINTENANCE

- A. Collection and Disposal of Waste: Contractor shall furnish all labor, equipment, containers, transportation, materials, supplies and related expenses to provide the University with comprehensive waste collection and waste recycling services for the Project. Contractor shall collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 degrees F (27 degrees C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly.
1. Do not burn waste materials. Do not bury debris or excess materials on the University's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems or streams. Remove waste materials from the site and dispose of lawfully.
  2. Where extra materials of value remain after completion of associated Work, they become the University's property. Dispose of these materials as directed by the University's Representative.



3. Provide on-site containers for collection of waste materials, debris, and rubbish, and empty at least weekly. Maintain containers in such condition so as to ensure they are clean and sanitary, to prevent odor and insect infestation, and ensure no unsightly presentation. Perform maintenance on the containers as required to ensure proper function for the intended purpose.
  4. Handle waste materials in a controlled manner. Do not drop or throw materials from heights.
  5. Remove combustible debris from the building daily and store in covered, non-combustible containers located not less than 40 feet from any building.
- B. Cleaning During Construction Period: Comply with regulations of the University and safety standards for cleaning.
1. Schedule cleaning operations so that dust and other contaminants resulting from cleaning operations will not settle on wet paint, or other coatings or finishes during their cure period.
  2. Comply with manufacturer's instructions for cleaning the surfaces and parts of finishes and equipment. Use only those cleaning materials and procedures recommended by the manufacturer of the item to be cleaned.
  3. Provide cleaning during construction as necessary to ensure operations can proceed on schedule and that finish materials can be installed properly and viewed for determination of aesthetic characteristics.

### 1.3. CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

- A. The University has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible shall be employed to enable the University to meet a minimum 95% percent diversion of construction and demolition (C&D) waste (including green waste) from the landfill.
- B. Contractor shall be responsible for monitoring and maintaining a written log using the C&D Waste Monitoring Form and Green Waste Monitoring Form, copies of which are attached at the end of this Section, to report when actual container deliveries and waste pickups occur, the types of C&D waste material included, weight of each type (in Tons) diverted or landfilled and total percentage of waste diverted from landfill, and any other data required to be reported on the respective forms. Contractor shall submit completed forms with the required data to University's Representative, or designee, **with each Application for Payment**. Such written information shall be used as backup to support payment of Contractor's scheduled value for Division 1, General Requirements.
- C. C&D waste is a combination of concrete, lumber, plaster, cardboard, glass, various metals, paper, PVC, ABS, HDPE, PP, PDPE, PET, white foam, paint buckets, carpet, green waste, and dirt.
1. C&D waste accepted for recycling:
    - a. Card Board.
    - b. Mixed metals.
    - c. PVC Pipe.
    - d. ABS Pipe.
    - e. H.D.P.E. Pipe.
    - f. Carpet.
    - g. Carpet Pad.
    - h. Mixed Plastics.
    - i. Glass.

- j. Bottles & Cans – CRV.
- k. H.D.P.E Plastics.
- l. H.D.P.E Pipe.
- m. Foam – White.
- n. Paper – Mixed.
- o. Plastic Buckets – Paint (empty) & Landscapers.
- p. Drywall.
- q. Wood.
- r. Particle Board.
- s. Green Waste:
  - (1) Green Waste refers to waste resulting from removal of vegetation; it is a combination of brush, branches, leaves, flowers, shrubs and small trees and other items listed on the Green Waste Monitoring Form.
  - (2) Green Waste accepted for recycling and/or compost:
    - (a) Grass Clippings.
    - (b) Trees – Tree trunks shall be cut into 4' and 10" pieces.
    - (c) Branches – Branches shall be cut into 4' and 10" pieces.
    - (d) Tree Trimmings – All other material other than trunks, branches, and leaves.
    - (e) Wood.
    - (f) Mulch.
    - (g) Brush.
    - (h) Leaves.
    - (i) Flowers.
    - (j) Shrubs.
    - (k) Palm Fronds.
- t. Inert Material – Soil, Asphalt, Brick, Concrete

#### 1.4. FINAL CLEANING

- A. This Section includes the administrative and procedural requirements for final cleaning at Substantial Completion and Final Inspection.
- B. Provide final-cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial cleaning and maintenance program. Comply with manufacturer's instructions.
- C. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for the entire Project or a portion of the Project.
  - 1. Clean the Project Site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and foreign substances.
  - 2. Sweep paved areas broom clean. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  - 3. Remove petrochemical spills, stains, and other foreign deposits.
  - 4. Remove tools, construction equipment, machinery, and surplus material from the site.
  - 5. Remove snow and ice, if any, to provide safe access to the building.
  - 6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

7. Remove debris and surface dust from limited access spaces, including trenches, equipment vaults, manholes and similar spaces.
  8. Broom clean concrete floors in unoccupied spaces.
  9. Remove labels that are not permanent labels.
  10. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  11. Wipe surfaces of electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  12. Remove grease, dust, dirt, stains, and other marks from surfaces exposed-to-view.
  13. Leave the Project clean.
- D. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests. Comply with regulations of local authorities.
- E. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.
- F. Where extra materials of value remain after completion of associated Work, they become the University's property. Dispose of these materials as directed by the University's Representative at no additional cost to the University.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION







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**SECTION 01 7700  
CONTRACT CLOSEOUT**

**PART 1 – GENERAL**

**1.1. SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
  - 1. Substantial Completion
  - 2. Final Inspection Acceptance
  - 3. Closeout Procedures
  - 4. Instruction and Evaluation of University's Personnel
  - 5. Training Tools and Materials
  - 6. Qualifications of Instructors
  - 7. Operation and Maintenance Manuals and Instructions
  - 8. Spare Parts and Extra Stock Materials
  - 9. Warranties
  
- B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 33.

**1.2. SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
  - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
    - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
    - b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
  - 2. Advise the University of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance and service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases enabling the University unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Submit record drawings, operation and maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra stock, and similar items.
  - 7. Make final changeover of permanent locks and transmit keys and key schedule to the University. Advise the University's personnel of changeover in security provisions.
  - 8. Complete startup testing of systems and instruction of the University's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
  - 9. Complete final cleanup requirements, including touchup painting.
  - 10. Touch up and otherwise repair and restore marred, exposed finishes.
  - 11. Adjust and balance all systems and adjust all valves.
  - 12. Check fluid and gas carrying pipe systems, roofs, flashings, gutters, and

- downspouts for leaks. Repair or replace as necessary.
13. Lubricate all moving parts of machinery and equipment as recommended by the manufacturers of the machinery and equipment.
  14. Submit certification required in Section 01 7400 for "Final Cleaning."

B. Inspection Procedures: On receipt of a request for inspection, the University's Representative will either proceed with inspection or advise the Contractor of incomplete or incorrect work. The University's Representative will prepare the Punchlist following inspection or advise the Contractor of what must be completed or corrected before the certificate will be issued.

1. The University's Representative will repeat inspection when requested and assured that the Work is substantially complete.
2. Results of the completed inspection will form the basis of requirements for final acceptance.
3. Allow 3 weeks for the University's Representative to prepare the list of items to be corrected.

### 1.3. FINAL INSPECTION ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the University Representative's final inspection list of items to be completed or corrected, endorsed and dated by the University's Representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the University's Representative.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the University took possession of and assumed responsibility for corresponding elements of the Work.
5. Submit consent of surety to final payment.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
8. Completed Punchlist.

B. Reinspection Procedure: The University's Representative will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the University's Representative.

1. Upon completion of reinspection, the University's Representative will prepare a certificate of final acceptance. If the Work is incomplete, the University's Representative will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, reinspection will be repeated and related costs of University's Representative and University Representative's Consultants will be deducted from final retention payment.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

### 3.1 CLOSEOUT PROCEDURES

- A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the University's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:
1. Operation and Maintenance manuals.
  2. As-Built documents.
  3. Spare parts and materials.
  4. Tools.
  5. Lubricants.
  6. Fuels.
  7. Identification systems.
  8. Control sequences.
  9. Hazards.
  10. Cleaning.
  11. Warranties and bonds.
  12. Maintenance agreements and similar continuing commitments.
- B. As part of instruction for operating equipment, demonstrate the following procedures:
1. Startup.
  2. Shutdown.
  3. Emergency operations.
  4. Noise and vibration adjustments.
  5. Safety procedures.
  6. Economy and efficiency adjustments.
  7. Effective energy utilization.

### 3.2 INSTRUCTION AND EVALUATION OF UNIVERSITY'S PERSONNEL

- A. Perform hands-on demonstrations and instruction for University's designated personnel in the operation, adjustment and maintenance of products, equipment, and systems, as required and at agreed upon times.
- B. Instruction Before Final Inspection: Before Final Inspection, and after work under this contract is completed, tested and prior to acceptance by the University; and not less than five (5) days after submittal of the Operation and Maintenance Data, operate all the systems for a period of three (3) 8-hour periods during which time a qualified factory trained representative familiar with the items installed shall instruct and supervise the University's Personnel in the operation and maintenance of the equipment and systems. This instruction period is in addition and subsequent to any period of operation, testing and adjustment called for elsewhere in these specifications.
- C. Instruction by Manufacturer's Representatives: Any instructions from manufacturer's representatives required under other sections of this specification shall be conducted during this period. This instruction period shall be conducted after completion of all piping and equipment labeling required by the Contract.
- D. Time of Instructions: Make all arrangements and notices for operation and instruction periods through the University's Representative.
- E. Seasonal Operation: For equipment requiring seasonal operation, perform demonstrations and instructions for each required season and at agreed upon times.
- F. Evaluation: During and after demonstrations and instructions for University's designated personnel, evaluate their ability to perform the necessary maintenance and operation



functions required to properly operate and maintain each piece of equipment. Make sure that at the end of the training session, the University's designated personnel are reasonably proficient in the operations and maintenance of products, systems, and equipment.

### 3.3 TRAINING TOOLS AND MATERIALS

- A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance. For all systems requiring operation and maintenance training from factory representative, written authorization from the University is required. All systems of more than one manufacturer, a factory representative from each will be required.
- B. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

### 3.4 QUALIFICATIONS OF INSTRUCTORS

- A. Instructions for the University's Personnel. For instruction of the University's operating and maintenance personnel, use experienced instructors thoroughly trained and experienced in the operation and maintenance of the building equipment or system involved.

### 3.5 OPERATION AND MAINTENANCE MANUALS AND INSTRUCTIONS

- A. Assemble and furnish a minimum of 3 complete sets (unless otherwise indicated in a specific section) of all mechanical and electrical systems data, except that noted to be mounted in frames, in three-ring loose-leaf binders, complete with index, with indexed dividers permanently attached and exterior labels on cover and back of binders.
- B. Data Required:
  - 1. Manufacturers' Manuals: Provide complete installation, operation, maintenance, and service manuals and printed instructions and parts lists for all materials and equipment, where such printed matter is regularly available from the manufacturer. This includes but is not limited to such service manuals as may be sold by the manufacturer covering the operation and maintenance of items, and complete replacement parts lists sufficiently detailed for parts replacement ordering to manufacturer. Bound publications need not be assembled in binders.
  - 2. Equipment Nameplate Data: A typewritten list of all mechanical and electrical equipment showing all equipment nameplate data exactly. Identify equipment by means of names, symbols, and numbers used in the Contract Documents.
  - 3. System Operating Instructions: Typewritten instructions covering operation of the entire system as installed (not duplicating manufacturers' instructions for operating individual components). Include schematic flow and control diagrams as appropriate and show, locate, or list system valves, control-elements, and equipment components using identification symbols and numbers. List rooms, area of equipment served, and show proper settings for valves, controls, and switches.
  - 4. System Maintenance Instructions: Typewritten instructions covering routine maintenance of systems. List each item of equipment requiring inspection, lubrication, or service and briefly describe such maintenance, including types of lubricants and frequency of service. It is not intended that these instructions duplicate manufacturers' detailed instructions. Give name, address, and phone number of nearest firm authorized or qualified to service equipment or provide parts.
  - 5. Warranty, Bonds, and Service Contracts: Provide a copy of each warranty, bond, and service contract issued. These should be accompanied by a sheet which outlines procedures to take in the event of failure and the circumstances which might affect the validity of warranties or bonds.

6. Wall Mounted Data: Frame one set of typewritten system instructions and diagrams as required under Paragraphs 3. and 4. above, covered with plexiglass and mount in locations as directed by the University's Representative.

### 3.6 SPARE PARTS AND EXTRA STOCK MATERIALS

A.

### 3.7 WARRANTIES

A. General Provisions:

1. This subsection includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers' standard warranties on products and special warranties.
  - a. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.
  - b. Refer to Divisions 2 through 33 for specific requirements for warranties on products and installations specified to be warranted.
  - c. Certifications and other commitments and agreements for continuing services to University are specified elsewhere in the Contract Documents.
2. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
3. Effective Date: Warranties shall begin on the date of Final Acceptance unless specifically designated differently or a different date is mutually agreed upon in writing by the parties involved.
4. General Conditions require all items to be under warranty for a period of one (1) year from date of final completion (Notice of Completion) unless otherwise indicated. Warranties for more than one year required by individual Sections require a written warranty by Contractor and Subcontractor. Refer to individual Section of the Specifications to verify if longer warranties are required.

B. Definitions:

1. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the University.
2. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the University.

C. Warranty Requirements

1. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

2. **Reinstatement of Warranty:** When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
3. **Replacement Cost:** Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Regents have benefited from use of the Work through a portion of its anticipated useful service life.
4. **Regents' Recourse:** Expressed warranties made to the Regents are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Regents can enforce such other duties, obligations, rights, or remedies.
  - a. **Rejection of Warranties:** The Regents reserve the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  - b. The Regents reserve the right to refuse to accept Work for the Project where a special guarantee, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented so that entities required to countersign such commitments are willing to do so.
5. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the University reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.
6. **Disclaimers and Limitations:** Manufacturer's disclaimers and limitations on standard product warranties shall not relieve the Contractor of the Contractor's warranty on the Work that incorporates the products, and shall also not relieve suppliers, manufacturers, and subcontractors required to counter-sign special warranties with the Contractor.

#### D. Warranty Submittals

1. Submit written warranties to the University's Representative prior to the date certified for Substantial Completion. If the University Representative's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, or a designated portion of the Work, submit written warranties upon request of the University's Representative.
  - a. When a designated portion of the Work is completed and occupied or used by the University, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the University's Representative within 10 days of completion of that designated portion of the Work.
2. Forms for special warranties are included at the end of this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Submit a draft to the University, through the University's Representative, for approval prior to final execution.
  - a. Refer to Divisions 2 through 33 for specific content requirements and particular requirements for submitting special warranties.
3. **Form of Submittal:** At Final Completion compile 3 copies of each required warranty, in the form included at the end of this Section, properly executed by the Contractor, or by the



Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

4. Assemble required guarantees, bonds, and service and maintenance contracts.
5. Number of original signed copies required: Three (3) sets, each on 8-1/2 inch x 11 inch sheets, 3-hole punched in 3-ring binders. Fold larger sheets to fit into binders. Submit in commercial quality, 3-ring binders, with durable, cleanable plastic covers. Each set of binders shall include:
  - a. Cover: Identify each binder on the cover with typed or printed title, "WARRANTIES", University's Project Name and Number, Name of General Contractor, and binder number, such as "Set 1, Volume 1 of 2", etc.
  - b. Table of Contents: in a spreadsheet/table format, neatly typed and in orderly sequence by CSI number, based on Specifications Table of Contents in the Bidding-Contract Documents, with the following information:
    - (1) CSI Number.
    - (2) Name of Product or Work item.
    - (3) Brief Scope Description.
    - (4) Firm name, address, telephone number, and name of principal with email address.
    - (5) Date of beginning of guarantee, bond, or service and maintenance contract.
    - (6) Duration and expiration date of warranty or service and maintenance contract.
  - c. When warranted, construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.
  - d. Except when a special warranty is required by the provisions of a specific Section of these Specifications, or a standard warranty is not offered as a matter of record by the manufacturer of a specified product, submit the manufacturer's standard warranty for each product incorporated in the Work.
  - e. When a manufacturer does not offer a standard warranty, provide a written form listing the product and indicating "Standard Product Warranty Not Available."
6. Special Warranty Forms: Attached at the end of this Section.

END OF SECTION

**GUARANTEE**

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Location: \_\_\_\_\_

Project Number: \_\_\_\_\_

GUARANTEE FOR \_\_\_\_\_ (the "Contract"), between  
The (Specification SECTION and Contract No.)

The Regents of the University of California ("University") and

\_\_\_\_\_  
("Contractor")  
\_\_\_\_\_  
(Name of Contractor or Subcontractor)

hereby guarantees to University that the portion of the Work described as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

which it has provided for the above referenced Project, is of good quality; free from defects; free from any liens, claims, and security interests; and has been completed in accordance with Specification SECTION and the other requirements of the Contract.

The undersigned further agrees that, if at any time within \_\_\_\_\_ months after the date of the guarantee the undersigned receives notice from University that the aforesaid portion of the Work is unsatisfactory, faulty, deficient, incomplete, or not in conformance with the requirements of the Contract, the undersigned will, within 10 days after receipt of such notice, correct, repair, or replace such portion of the Work, together with any other parts of the Work and any other property which is damaged or destroyed as a result of such defective portion of the Work or the correction, repair, or replacement thereof; and that it shall diligently and continuously prosecute such correction, repair, or replacement to completion.

In the event the undersigned fails to commence such correction, repair, or replacement within 10 days after such notice, or to diligently and continuously prosecute the same to completion, the undersigned, collectively and separately, do hereby authorize University to undertake such correction, repair, or replacement at the expense of the undersigned; and Contractor will pay to University promptly upon demand all costs and expenses incurred by University in connection therewith.

SUBCONTRACTOR

Signed: \_\_\_\_\_ Title: \_\_\_\_\_  
Typed Name: \_\_\_\_\_  
Name of Firm: \_\_\_\_\_  
Contractor License Classification and Number: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone Number: \_\_\_\_\_

CONTRACTOR

Signed: \_\_\_\_\_ Title: \_\_\_\_\_  
Typed Name: \_\_\_\_\_  
Name of Firm: \_\_\_\_\_

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**SPECIAL WARRANTY FORM**

When required in Sections of the Specifications, Special Warranties shall be in the following form and written on Contractor's own letterhead:

"Warrant \_\_\_\_\_  
 (portion of work warranted)

Project: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

We, the undersigned hereby warrant to the Regents of the University of California ("Regents") that the portion of the work identified, which we have installed in the above-named Project has been performed in accordance with the Contract Documents and that the work, as installed, will fulfill the requirements of the warranty included in this Specification. We agree to repair or replace any or all of our work, together with any other work which may be damaged or displaced by so doing, that may prove to be defective in its workmanship, materials, operation, or failure to conform to Contract provisions and requirements within a period of year(s) from date of Substantial Completion of the stipulated below for the above-named Project, without any expense whatever to the said Regents, ordinary wear and tear and unusual abuse or neglect excepted. In the event of our failure to comply with the above-mentioned conditions within ten (10) calendar days after being notified in writing by the Regents, we collectively or separately do hereby authorize the Regents to proceed to have said defects repaired and made good at our expense, including all collection cost and reasonable attorney fees, and we will honor and pay the costs and charges therefore upon demand."

WARRANTY PERIOD: \_\_\_\_\_ STARTING: \_\_\_\_\_ TERMINATING \_\_\_\_\_

Name of General Contractor  
 \_\_\_\_\_

Name of Subcontractor  
 \_\_\_\_\_

Signature of General Contractor  
 \_\_\_\_\_

Signature of Subcontractor  
 \_\_\_\_\_

Address  
 \_\_\_\_\_

Address  
 \_\_\_\_\_

Phone Number  
 \_\_\_\_\_

Phone Number  
 \_\_\_\_\_

State License Number  
 \_\_\_\_\_

State License Number  
 \_\_\_\_\_

Name of Manufacturer  
 \_\_\_\_\_

Manufacturer Phone Number  
 \_\_\_\_\_

Signature of Manufacturer  
 \_\_\_\_\_

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**SECTION 01 7839  
AS-BUILT DOCUMENTS****PART 1 – GENERAL****1.1. SUMMARY**

- A. This Section includes administrative and procedural requirements for As-Built Documents, including without limitation, the following:
1. As-Built Drawings
  2. As-Built Specifications
  3. As-Built Product Data
  4. As-Built Sample Submittal
  5. Miscellaneous As-Built Submittals
  6. Recording
- B. As-Built Documents required include the following:
1. Marked-up copies of Drawings.
  2. Marked-up copies of Shop Drawings.
  3. Newly prepared drawings.
  4. Marked-up copies of Specifications, Addenda, and Change Orders.
  5. Marked-up Product Data submittals.
  6. Samples.
  7. Field records for variable and concealed conditions.
  8. Record information on Work that is recorded only schematically.
  9. Operation and Maintenance Data submittals.
  10. Miscellaneous submittals.
- C. Maintenance of Documents and Samples: Store As-Built Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use As-Built Documents for construction purposes. Maintain As-Built Documents in good order, legible condition, and in a clean, dry, secure, fire-safe location. Make As-Built Documents and Samples available at all times for the University's Representative's inspections.
1. Maintain 1 set of all As-Built Documents at the Project site for the entire duration of construction.
  2. Clearly label each document or item "AS-BUILT DRAWING," "AS-BUILT SAMPLE," "AS-BUILT SPECIFICATION," or similarly as appropriate and applicable.
- D. Do not conceal Work requiring verification for As-Built Documents until such information has been verified and recorded.



## 1.2. AS-BUILT DRAWINGS

- A. Markup Procedure: During construction, maintain a clean, undamaged set of blue- or black-line white prints of Contract Drawings and Shop Drawings for As-Built Document purposes.
1. Mark these Drawings to show the actual installation where the installation varies from the installation shown originally. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Items required to be marked include, but are not limited to, the following:
    - a. Dimensional changes to the Drawings.
    - b. Revisions to details shown on the Drawings.
    - c. Depths of foundations below the first floor. Indicate foundation elevations relative to first floor elevation.
    - d. Horizontal locations and vertical depths of underground utilities and appurtenances, including both site utilities and those under buildings and structures, referenced to permanent surface improvements.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Changes made by change order or field order.
    - h. Changes made following the University Representative's written orders and pertinent graphic and written responses to RFI's.
    - i. Details not on original Contract Drawings.
  2. Mark As-Built prints of Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.
  3. Mark As-Built sets with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
  4. Mark important additional information that was either shown schematically or omitted from original Drawings. Mark new information that is important to the University but was not shown on Contract Drawings or Shop Drawings.
  5. Note field order numbers, alternate numbers, change order numbers, RFI numbers, ASI numbers, and similar identification.
  6. Identify and date each drawing; include the printed designation "AS-BUILT DRAWING" in a prominent location on each drawing
- B. Responsibility for Markup: The individual or entity who obtained As-Built data, whether the individual or entity is the installer, subcontractor, or similar entity, shall prepare the markup on As-Built drawings.
1. Accurately information in an understandable drawing technique.
  2. Record data as soon as possible after obtaining it, but within 24 hours maximum. Record and check the markup prior to enclosing concealed installations.
  3. At time of Substantial Completion, submit As-Built drawings to the University's Representative for the University's records. Organize into sets and bind and label sets for the University's continued use. Bind each set with durable-paper cover sheets. Include appropriate identification, including titles, dates, and other information on the cover sheets.
- C. Newly Prepared As-Built Drawings: Prepare new drawings instead of following procedures specified for preparing As-Built drawings where new drawings are required, and the University's

Representative determines that neither original Contract Drawings nor Shop Drawings are suitable to show the actual installation.

- D. Consult with the University's Representative for the proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. When completed and accepted, integrate newly prepared Drawings with procedures specified for organizing, copying, binding and submittal of As-Built drawings.

### 1.3. AS-BUILT SPECIFICATIONS

- A. During the construction period, maintain 3 copies of the Specifications, including addenda and modifications issued, for As-Built Document purposes.
  - 1. Mark the Specifications to indicate the actual installation where the installation varies from that indicated in Specifications and modifications issued. Note related project record drawing information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.
    - a. In each Specification Section where products, materials, or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
    - b. Record the name of the manufacturer, supplier, installer, and other information necessary to provide a record of selections made and to document coordination with As-Built Product Data submittals and maintenance manuals.
    - c. Note related As-Built Product Data, where applicable. For each principal product specified, indicate whether As-Built Product Data has been submitted in maintenance manual instead of submitted as As-Built Product Data.
    - d. Use pen and black ink so marks will reproduce clearly.
  - 2. Upon completion of markup, submit As-Built Specifications to the University's Representative for the University's records.

### 1.4. AS-BUILT PRODUCT DATA

- A. During the construction period, maintain one copy of each Product Data submittal for As-Built Document purposes.
  - 1. Mark Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Product Data submitted. Include significant changes in the product delivered to the site and changes in manufacturer's instructions and recommendations for installation.
  - 2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
  - 3. Note related change orders and markup of As-Built Drawings, where applicable.
  - 4. Upon completion of markup, submit a complete set of As-Built Product Data to the University's Representative for the University's records.
  - 5. Where As-Built Product Data is required as part of maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as As-Built Product Data.

### 1.5. AS-BUILT SAMPLE SUBMITTAL

- A. Immediately prior to date of Substantial Completion meet with the University's Representative and the University's personnel at the site to determine which of the Samples maintained during the construction period shall be transmitted to the University for record purposes. Comply with the University Representative's instructions for packaging, identification marking, and delivery to the University's Sample storage space. Dispose of other Samples in a manner specified for disposing surplus and waste materials.

### 1.6. MISCELLANEOUS AS-BUILT SUBMITTALS

- A. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous As-Built records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the University's Representative for the University's records.

- 1. Categories of requirements resulting in miscellaneous As-Built Documents include, but are not limited to, the following:

- a. Field records on excavations and foundations.
- b. Field records on underground construction and similar work.
- c. Survey showing locations and elevations of underground lines.
- d. Invert elevations of drainage piping.
- e. Surveys establishing building lines and levels.
- f. Authorized measurements utilizing unit prices or allowances.
- g. Records of plant treatment.
- h. Ambient and substrate condition tests.
- i. Certifications received in lieu of labels on bulk products.
- j. Batch mixing and bulk delivery records.
- k. Testing and qualification of tradesmen.
- l. Documented qualification of installation firms.
- m. Load and performance testing.
- n. Inspections and certifications by governing authorities.
- o. Leakage and water-penetration tests.
- p. Final inspection and correction procedures.
- q. Field test reports.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

### 3.1 RECORDING

- A. Post changes and modifications to the As-Built Documents as they occur. Do not wait until the end of the Project. The University's Representative and IOR will periodically review As-Built Documents to determine compliance with this requirement.
- B. Current updated As-Built Documents shall be made available to the University's Representative and IOR for review at the time of submitting applications for payment.
- C. Per the General Conditions, the University has the right to withhold payment until As-Built Documents are completed and current to date as of the latest application for payment

END OF SECTION

## SECTION 01 9113 GENERAL COMMISSIONING REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes general requirements that apply to implementation of commissioning without regard to systems, subsystems, and equipment being commissioned:

1. Commissioning Team
2. University's Responsibilities
3. Contractor's Responsibilities
4. CxA's Responsibilities
5. Commissioning Documentation
6. Submittals
7. Quality Assurance
8. Title 24 Acceptance Testing
9. Start-up, Pre-Functional Checklists and Initial Checkout
10. Functional Performance Testing
11. Operation and Maintenance Training Requirements
12. Costs of Commissioning Work
13. Equipment and System Schedule

B. Related Sections:

- a. Division 1 Section "Sustainable Design Requirements" for LEED Documentation related to commissioning.
- b. Audio visual equipment
- c. Fire suppression systems
- d. Plumbing systems
- e. HVAC systems, including Controls or Integrated Automation.
- f. Lighting and other electrical systems.
- g. Communications and Data systems.
- h. Safety and security systems.

C. Basis of Design (BOD) and Owner's Project Requirements (OPR) documentation prepared by University contains requirements that apply to this Section. This information is available to Bidders upon request.

D. Comply with the Acceptance Testing requirements of Title 24 Energy Code and ACM (Alternative Calculation Method) Approval Manual. Additional requirements are given in Part 3 of this Section.

#### 1.2 DEFINITIONS

A. Commissioning Process: The basic purpose of building commissioning is to provide documented confirmation that building systems function in compliance with criteria set forth in the Project Documents to satisfy the owner's operational needs.

B. Basis of Design (BOD) document: A document that records concepts, calculations, decisions, product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.

C. CxA: Commissioning Authority.



- D. University Project Requirements (OPR): A written document, prepared by the University, that details the functional requirements of Project and expectations of how it will be used and operated. This document includes Project and design goals, measurable performance criteria, budgets, schedules, success criteria, and supporting information.
- E. Systems, Subsystems, and Equipment: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, and equipment.
- F. TAB: Testing, Adjusting, and Balancing.
- G. Title 24: California Code of Regulations, Title 24, Part 1 - Building Energy Efficiency Standards (latest edition).

### 1.3 COMMISSIONING TEAM

- A. Members Appointed by Contractor: Individuals, each having authority to act on behalf of the entity he or she represents, explicitly organized to implement the commissioning process through coordinated actions. The commissioning team shall consist of, but not be limited to, representatives of Contractor, including Project superintendent and subcontractors, installers, suppliers, and specialists deemed appropriate by the CxA.
- B. Members Appointed by University:
  - 1. CxA: The designated person, company, or entity that plans, schedules, and coordinates the commissioning team to implement the commissioning process. Owner may engage the independent CxA under a separate contract.
  - 2. Representatives of the facility user and operation and maintenance personnel.
  - 3. Architect and engineering design professionals.

### 1.4 UNIVERSITY'S RESPONSIBILITIES

- A. Provide the OPR documentation to the CxA and Contractor for use in developing the commissioning plan; systems manual; operation and maintenance training plan; and testing plans and checklists.
- B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities including, but not limited to the following:
  - 1. Coordination meetings.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Testing meetings.
  - 14. Demonstration of operation of systems, subsystems, and equipment.
- B. Provide the BOD documents, prepared by University or its consultants, to the CxA and Contractor for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

### 1.5 CONTRACTOR'S RESPONSIBILITIES

- A. Provide utility services required for the commissioning process.
- B. Contractor is responsible for construction means, methods, job safety, and/or management function related to commissioning on the job site.
- C. Contractor shall assign representatives with expertise and authority to act on behalf of the Contractor and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:
  - 1. Participate in construction-phase coordination meetings.

2. Participate in maintenance orientation and inspection.
  3. Participate in operation and maintenance training sessions.
  4. Participate in final review at acceptance meeting.
  5. Certify that Work is complete and systems are operational according to the Contract Documents, including calibration of instrumentation and controls.
  6. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
  7. Review and comment on final commissioning documentation.
- D. Contractor shall integrate all commissioning activities into Contractor's master construction schedule.
- E. Subcontractors shall assign representatives with expertise and authority to act on behalf of subcontractors and schedule them to participate in and perform commissioning team activities including, but not limited to, the following:
1. Participate in construction-phase coordination meetings.
  2. Participate in maintenance orientation and inspection.
  3. Participate in procedures meeting for testing.
  4. Participate in final review at acceptance meeting.
  5. Provide schedule for operation and maintenance data submittals, equipment startup, and testing to CxA for incorporation into the commissioning plan. Update schedule on a weekly basis throughout the construction period.
  6. Provide information to the CxA for developing construction-phase commissioning plan.
  7. Participate in training sessions for University's operation and maintenance personnel.
  8. Provide updated Project Record Documents to the CxA on a daily basis.
  9. Gather and submit operation and maintenance data for systems, subsystems, and equipment to the CxA, as specified in Division 01 Section "Operation and Maintenance Data."
  10. Provide technicians who are familiar with the construction and operation of installed systems, who shall execute the test procedures developed by the CxA, and who shall participate in testing of installed systems, subsystems, and equipment.

## 1.6 CxA'S RESPONSIBILITIES

- A. Organize and lead the commissioning team.
- B. Conduct a commissioning design review of the OPR, BOD, and design documents prior to mid-construction documents phase and back-check the review comments in the subsequent design submissions, in accordance with LEED credit EA3 "Enhanced Commissioning".
- C. Prepare a construction-phase commissioning plan. Collaborate with design team, University, Contractor and with subcontractors to develop test and inspection procedures. Include design changes and scheduled commissioning activities coordinated with overall Project schedule. Identify commissioning team member responsibilities, by name, firm, and trade specialty, for performance of each commissioning task.
- D. Work with the University to schedule commissioning activities. All parties will address scheduling issues in a timely manner in order to expedite the commissioning process.
- E. Review and comment on submittals from Contractor for compliance with the OPR, BOD, Contract Documents, and construction-phase commissioning plan. Review and comment on performance expectations of systems and equipment and interfaces between systems relating to the OPR and BOD.

- F. Convene commissioning team meetings on a monthly basis for the purpose of coordination, communication, and conflict resolution; discuss progress of the commissioning processes. Responsibilities include arranging for facilities, preparing agenda and attendance lists, and notifying participants. The CxA shall prepare and distribute minutes to commissioning team members and attendees within five (5) workdays of the commissioning meeting.
- G. At the beginning of the construction phase, conduct an initial construction-phase coordination meeting for the purpose of reviewing the commissioning activities and establishing tentative schedules for operation and maintenance submittals; operation and maintenance training sessions; TAB Work; and Project completion.
- F. Observe and inspect construction and report progress and deficiencies. In addition to compliance with the OPR, BOD, and Contract Documents, inspect systems and equipment installation for adequate accessibility for maintenance and component replacement or repair.
- G. Prepare Project-specific test and inspection procedures and checklists.
- H. Schedule, direct, witness, and document tests, inspections, and systems startup.
- I. Compile test data, inspection reports, and certificates and include them in the systems manual and commissioning report.
- J. Certify date of acceptance and startup for each item of equipment for start of warranty periods.
- K. Review Project Record Documents for accuracy. Request revisions from Contractor to achieve accuracy. Project Record Documents requirements are specified in Division 01 Section "Project Record Documents."
- L. Review and comment on operation and maintenance documentation and systems manual outline for compliance with the OPR, BoD, and Contract Documents. Operation and maintenance documentation requirements are specified in Division 01 Section "Operation and Maintenance Data."
- M. Review Contractor's operation and maintenance training program. Operation and maintenance training is specified in Division 01 Section "Demonstration and Training."
- N. Obtain the services of a professional agency to video the training sessions where required by individual Specification Sections.
- O. Video construction progress including hidden shafts.
- P. Prepare commissioning reports.
- Q. Assemble the final commissioning documentation, including the commissioning report and Project Record Documents.

#### 1.7 COMMISSIONING DOCUMENTATION

- A. Index of Commissioning Documents: CxA shall prepare an index to include storage location of each document.
- B. Commissioning Plan: A document, prepared by CxA, that outlines the schedule, allocation of resources, documentation requirements of the commissioning process, and shall include, but is not limited to the following:

1. Plan for delivery and review of submittals, systems manuals, and other documents and reports. Identification of the relationship of these documents to other functions and a detailed description of submittals that are required to support the commissioning processes. Submittal dates shall include the latest date approved submittals must be received without adversely affecting commissioning plan.
  2. Description of the organization, layout, and content of commissioning documentation (including systems manual) and a detailed description of documents to be provided along with identification of responsible parties.
  3. Identification of systems and equipment to be commissioned.
  4. Description of schedules for testing procedures along with identification of parties involved in performing and verifying tests.
  5. Identification of items that must be completed before the next operation can proceed.
  6. Description of responsibilities of commissioning team members.
  7. Description of observations to be made.
  8. Description of requirements for operation and maintenance training, including required training materials.
  9. Description of expected performance for systems, subsystems, equipment, and controls.
  10. Schedule for commissioning activities with specific dates coordinated with overall construction schedule.
  11. Identification of installed systems, subsystems, and equipment, including design changes that occurred during the construction phase.
  12. Process and schedule for documenting changes on a continuous basis to appear in Project Record Documents.
  13. Process and schedule for completing prestart and startup checklists for systems, subsystems, and equipment to be verified and tested.
  14. Step-by-step procedures for testing systems, subsystems, and equipment with descriptions for methods of verifying relevant data, recording the results obtained, and listing parties involved in performing and verifying tests.
- C. Pre-Functional Checklists: CxA shall develop pre-functional checklists for all equipment to be commissioned. Further requirements are specified in Part 3 of this Section.
- D. Functional Performance Testing: CxA shall develop functional performance test procedures for all equipment and systems to be commissioned. Further requirements are specified in Part 3 of this Section.
- E. Certificate of Readiness: Certificate of Readiness shall be signed by Contractor, Subcontractor(s), and installer(s) certifying that systems, subsystems, equipment, and associated controls are ready for testing. Completed test checklists signed by the responsible parties shall accompany this certificate.
- F. Test and Inspection Reports: CxA shall record test data, observations, and measurements on test checklists. Photographs, forms, and other means appropriate for the application shall be included with data. CxA shall compile test and inspection reports and test and inspection certificates and include them in systems manual and commissioning report.
- G. Corrective Action Documents: CxA shall document corrective action taken for systems and equipment that fail tests. Include required modifications to systems and equipment and revisions to test procedures, if any. Retest systems and equipment requiring corrective action and document retest results.
- H. Issues Log: CxA shall prepare and maintain an issues log that describes design, installation, and performance issues that are at variance with the OPR, BoD, and Contract Documents. Identify and track issues as they are encountered, documenting the status of unresolved and resolved issues.



1. Creating an Issues Log Entry:
  - a. Identify the issue with unique numeric or alphanumeric identifier by which the issue may be tracked.
  - b. Assign a descriptive title of the issue.
  - c. Identify date and time of the issue.
  - d. Identify test number of test being performed at the time of the observation, if applicable, for cross-reference.
  - e. Identify system, subsystem, and equipment to which the issue applies.
  - f. Identify location of system, subsystem, and equipment.
  - g. Include information that may be helpful in diagnosing or evaluating the issue.
  - h. Note recommended corrective action.
  - i. Identify commissioning team member responsible for corrective action.
  - j. Identify expected date of correction.
  - k. Identify person documenting the issue.
  
2. Documenting Issue Resolution:
  - a. Log date correction is completed or the issue is resolved.
  - b. Describe corrective action or resolution taken. Include description of diagnostic steps taken to determine root cause of the issue, if any.
  - c. Identify changes to the OPR, BOD, or Contract Documents that may require action.
  - d. State that correction was completed and system, subsystem, and equipment is ready for retest, if applicable.
  - e. Identify person(s) who corrected or resolved the issue.
  - f. Identify person(s) documenting the issue resolution.
  
- I. Commissioning Report: CxA shall document results of the commissioning process including unresolved issues and performance of systems, subsystems, and equipment. The commissioning report shall indicate whether systems, subsystems, and equipment have been completed and are performing according to the OPR, BOD, and Contract Documents. The commissioning report shall include, but is not limited to, the following:
  1. Lists and explanations of substitutions; compromises; variances in the OPR, BOD, and Contract Documents; record of conditions; and, if appropriate, recommendations for resolution. This report shall be used to evaluate systems, subsystems, and equipment and shall serve as a future reference document during University occupancy and operation. It shall describe components and performance that exceed requirements of the OPR, BOD, and Contract Documents and those that do not meet requirements of the OPR, BOD, and Contract Documents. It may also include a recommendation for accepting or rejecting systems, subsystems, and equipment.
  2. OPR and BOD documentation.
  3. Commissioning plan.
  4. Testing plans and reports.
  5. Corrective modification documentation.
  6. Issues log.
  7. Completed test checklists.
  8. Listing of off-season test(s) not performed and a schedule for their completion.
  
- J. Systems Manual: CxA shall gather required information and compile systems manual. Systems manual shall include, but is not limited to, the following:
  1. OPR and BOD, including system narratives, schematics, and changes made throughout the Project.
  2. Project Record Documents as specified in Division 01 Section "Project Record Documents."

3. Final commissioning plan.
4. Commissioning report.
5. Operation and maintenance data as specified in Division 01 Section "Operation and Maintenance Data."

## 1.8 SUBMITTALS

The CxA shall submit the following:

- A. Commissioning Plan Prefinal Submittal: Submit three (3) hard copies of pre-final commissioning plan. Deliver one copy to Contractor, one to Owner, and one to University Consultant. Present submittal in sufficient detail to evaluate data collection and arrangement process. One copy, with review comments, will be returned to the CxA for preparation of the final construction-phase commissioning plan.
- B. Commissioning Plan Final Submittal: Submit three (3) hard copies and two sets of electronically formatted information of final commissioning plan. Deliver one hard copy and one set of discs to University, and one copy to University Consultant. The final submittal must address previous review comments. The final submittal shall include a copy of the pre-final submittal review comments along with a response to each item.
- C. Test Checklists and Report Forms: Submit sample checklists and forms to Contractor quality-control manager and subcontractors for review and comment. Submit three (3) copies of each checklist and report form.
- D. Certificates of Readiness.
- E. Test and Inspection Reports.
- F. Corrective Action Documents.
- G. Pre-final Commissioning Report Submittal: Submit three (3) hard copies of the pre-final commissioning report. Include a copy of the preliminary submittal review comments along with CxA's response to each item. CxA shall deliver one copy to University and one copy to University Consultant. One copy, with review comments, will be returned to the CxA for preparation of final submittal.
- H. Final Commissioning Report Submittal and LEED™ Documentation: Submit three (3) hard copies and three (3) sets of electronically formatted information of the final commissioning report. The final submittal must address previous review comments and shall include a copy of the pre-final submittal review comments along with a response to each item.
- I. Recommissioning Management Manual: Develop an indexed Recommissioning Management Manual to be delivered to the Owner with the final commissioning report. Include all components listed in the LEED Reference Guide.
- J. LEED™ Documentation. Compile LEED™ Documentation. Format as required by USGBC for submittal under LEED™ rating system.

## 1.9 QUALITY ASSURANCE

- A. Training Instructor Qualifications: Contractor shall provide factory-authorized service representatives, experienced in training, operation, and maintenance procedures for installed systems, subsystems, and equipment.
- B. Test Equipment Calibration: Comply with test equipment manufacturer's calibration procedures and intervals. Recalibrate test instruments (per NIST requirements if applicable) immediately whenever instruments have been repaired following damage or

dropping. Affix calibration tags to test instruments. Instruments shall have been calibrated within six months prior to use.

CxA shall coordinate the following:

- A. **Coordinating Meetings:** Conduct regular coordination meetings of the commissioning team at least monthly to review progress on the commissioning plan, to discuss scheduling conflicts, and to discuss upcoming commissioning process activities.
- B. **Pretesting Meetings:** Conduct pretest meetings of the commissioning team to review startup reports, pretest inspection results, testing procedures, testing personnel and instrumentation requirements, and manufacturers' authorized service representative services for each system, subsystem, equipment, and component to be tested.
- C. **Testing Coordination:** Coordinate sequence of testing activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
  - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 1.2 TITLE 24 ACCEPTANCE TESTING

- A. Comply with the requirements of Title 24, and Appendix NJ of the Nonresidential Alternative Calculation Method (ACM) Approval Manual.
  - 1. The installing Contractor shall be responsible for reviewing the plans and specifications to assure they conform to the Acceptance Requirements. This is typically done prior to signing a Certificate of Compliance.
  - 2. The installing Contractor shall be responsible for providing all necessary instrumentation, measurement and monitoring, and undertaking all required acceptance requirement procedures. They shall be responsible for correcting all performance deficiencies and again implementing the acceptance requirement procedures until all specified systems and equipment are performing in accordance with the Standards.
  - 3. The installing Contractor shall be responsible for documenting the results of the acceptance requirement procedures including paper and electronic copies of all measurement and monitoring results. They shall be responsible for performing data analysis, calculation of performance indices and crosschecking results with the requirements of the Standard. They shall be responsible for issuing a Certificate of Acceptance. The University shall not release a final Certificate of Occupancy until a Certificate of Acceptance is submitted that demonstrates that the specified systems and equipment have been shown to be performing in accordance with the Standards.
  - 4. The installing Contractor upon completion of undertaking all required acceptance requirement procedures shall record their State of California Contractor's License number or their State of California Professional Registration License Number on each Certificate of Acceptance that they issue.

### 1.3 START-UP, PRE-FUNCTIONAL CHECKLISTS AND INITIAL CHECKOUT

- A. The following procedures apply to all equipment to be commissioned.
- B. **General.** Pre-functional Checklists are developed and completed for all major equipment and systems being commissioned. The checklist captures equipment nameplate and

characteristics data, confirming the as-built status of the equipment or system. These checklists also ensure that the systems are complete and operational, so that the functional performance testing can be scheduled. The checklists are created by the CxA and completed (filled out) by the installing Contractor.

- C. Start-up and Initial Checkout Plan. The CxA shall assist the commissioning team members responsible for startup of any equipment in developing detailed start-up plans for all equipment. The primary role of the CxA in this process is to ensure that there is written documentation that each of the manufacturer-recommended procedures have been completed.
- D. Pre-functional Checklists. The CxA shall create pre-functional checklists, based primarily on the manufacturer's startup and initial checkout procedures are created. Each checkout item shall have a place to document that proper installation has occurred. Once the pre-functional checklist is completed by the installing Contractor, this signifies that the equipment is properly installed per manufacturer's procedures, and the controls and TAB are complete and the equipment is ready for final functional performance testing. The Contractor determines which Sub-contractor is responsible for executing and documenting each of the line item tasks.
- E. Sensor Calibration. Calibration of all sensors shall be included as part of the pre-functional checklists performed by the Contractors.
- F. Execution of Pre-functional Checklists and Startup.
  - 1. Sub-contractors and vendors schedule startup and checkout with the University, Contractor, and CxA.
  - 2. The CxA shall observe, at minimum, the procedures for each piece of primary equipment, unless there are repetitive multiple units, (in which case a sampling strategy may be used as approved by the University).
  - 3. For lower-level components of equipment in non-sensitive areas of the Project, (e.g., VAV boxes, reheat coils), the CxA shall observe a sampling of the pre-functional and start-up procedures.
  - 4. The Contractor and vendors shall execute startup and provide the CxA with a signed and dated copy of the completed start-up and pre-functional checklists.
  - 5. Only individuals that have direct knowledge and witnessed that a line item task on the pre-functional checklist was actually performed shall initial or check that item off.
- G. Deficiencies, Non-Conformance and Approval in Checklists and Startup.
  - 1. The Contractor shall clearly list any outstanding items of the initial start-up and pre-functional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the CxA within two days of test completion.
  - 2. The CxA reviews the report and recommends approval to the University. The CxA shall work with the Contractor and vendors to correct and retest deficiencies or uncompleted items. The CxA will involve the University and others as necessary.

#### 1.4 FUNCTIONAL PERFORMANCE TESTING

- A. Objectives and Scope. The objective of functional performance testing is to demonstrate that each system is operating according to the documented design intent and Contract Documents. In general, each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response. Verifying each sequence in the sequences of operation is required. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc. shall also be tested.



- B. **Development of Test Procedures.** Before test procedures are written, the CxA shall obtain all requested documentation and a current list of change orders affecting equipment or systems, including an updated points list, program code, control sequences and parameters. The CxA shall develop specific test procedures and forms to verify and document proper operation of each piece of equipment and system. Prior to execution, the CxA shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment and warranty protection. The CxA shall review University-contracted or factory testing which the CxA is not responsible to oversee and shall determine what further testing may be required to comply with the Contract Documents. Redundancy of testing shall be minimized.

The test procedure forms developed by the CxA shall include the following information:

1. System and equipment or component name(s).
2. Equipment location and ID number.
3. Date.
4. Project name and University Project Number.
5. Participating parties.
6. Reference to the specification section describing the test requirements.
7. A copy of the specific sequence of operations.
8. Instructions for setting up the test.
9. Special cautions, alarm limits, etc.
10. Specific step-by-step procedures to execute the test.
11. Acceptance criteria of proper performance with a Yes / No check box.
12. A section for comments.
13. Signatures and date block for the CxA.

- C. **Test Methods.**

1. Functional performance testing and verification may be achieved by manual testing (persons manipulate the equipment and observe performance) or by monitoring the performance and analyzing the results using the control system's trend log capabilities or by stand-alone data loggers. The CxA will determine which method is most appropriate.
2. Setup. Each function and test shall be performed under conditions that simulate actual conditions as close as is practically possible. The Contractor executing the test shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions. At completion of the test, the Contractor shall return all affected building equipment and systems, due to these temporary modifications, to their pre-test condition.
3. Sampling. Multiple identical pieces of non-life-safety or non-critical equipment may be functionally tested using a sampling strategy. The sampling strategy will be developed by the CxA and approved by the University. If, after three attempts at testing the specified sample percentage, failures are still present, then all remaining units are tested at the Contractor's expense.

- D. **Coordination and Scheduling.** The Contractor shall provide sufficient notice to the CxA regarding their completion schedule for the pre-functional checklists and startup of all equipment and systems. The CxA will schedule functional tests through the University Representative and Contractor. The CxA shall direct, witness and document the functional testing of all equipment and systems. The Contractor shall execute the tests.

- E. **Problem Solving.** The CxA will recommend solutions to problems found; however the burden of responsibility to solve, correct and retest problems is with the Contractor and University consultants.

1.5 OPERATION AND MAINTENANCE TRAINING REQUIREMENTS

- A. Training Preparation Conference: Before operation and maintenance training, CxA shall convene a training preparation conference to include Owner's operation and maintenance personnel, Contractor, and subcontractors. In addition to requirements specified in Division 01 Section "Demonstration and Training," perform the following:
  1. Review the OPR and BoD.
  2. Review installed systems, subsystems, and equipment.
  3. Review instructor qualifications.
  4. Review instructional methods and procedures.
  5. Review training module outlines and contents.
  6. Review course materials (including operation and maintenance manuals).
  7. Inspect and discuss locations and other facilities required for instruction.
  8. Review and finalize training schedule and verify availability of educational materials, instructors, audiovisual equipment, and facilities needed to avoid delays.
  9. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.
- B. Training Modules: Develop an instruction program that includes individual training modules for each system, subsystem, and equipment as specified in Division 01 Section "Demonstration and Training."

1.6 COSTS OF COMMISSIONING WORK

- A. The cost of the CxA shall be borne by the University.
- B. The cost to the Contractor and Subcontractors to comply with the specified requirements and to support the work of the CxA shall be included in the Contractor's and Subcontractor's bid price.
- C. If a device, piece of equipment, sequence, or system fails a test, corrections shall be made and a second test shall be performed. If the second test is not successful, then the CxA's cost for a third test or subsequent tests shall be reimbursed to the CxA by the Contractor.

1.7 EQUIPMENT & SYSTEM SCHEDULE

- A. The following equipment shall be commissioned in this Project.

System	Equipment	Note	Req'd by LEED
HVAC System	Chillers		X
	Boilers		X
	Pumps		X
	Cooling towers		X
	Variable frequency drives		X
	Air handlers		X
	Packaged AC units		X
	Terminal units for Court Rooms and other high occupancy rooms		X
	Terminal units for Office areas	2	X
System	Equipment	Note	Req'd by LEED
HVAC System	Unit heaters		X
	Heat exchangers		X
	Exhaust fans		X
	Supply fans		X
	Return fans		X
	Chilled beams		X

Building Energy Management System (EMS)	Sequences of Operation, Monitored Points, Control Points, and Alarms		X
	Metering/Monitoring Devices and Equipment		X
	Software Commissioning, GUI presentation commissioning, system access performance criteria, software tools/source code commissioning, instrument data sheets, middleware commissioning, Internet Protocol commissioning		
Lighting and Shade Control System	Sequences of Operation, Monitored points, control points, user controls		X
Electrical System	Sweep or scheduled lighting controls	2	X
	Daylight dimming controls		X
	Lighting occupancy sensors		X
	Electrical grounding		
Plumbing System	Domestic water heaters		X
Security Alarm Systems	Security cameras and monitoring system personal duress alarm system; Intercom system; Paging System.		
Security Electronics	Security plumbing fixture water management system.		
Seminar/Conference Rooms	Door Controls.		
	Fire alarm system.		
	Distributed radio antenna system.		
	Access control system.		
	Room acoustics.		
Fire/Life Safety Systems	Sound masking system.		
	Assisted listening.		
	Video projection.		
	Audio system.		
	Lighting and lighting controls.		X
	All devices		
Communication System	Alarm drivers		
	HVAC/Fire System Integration		
	Event Notifying and Reporting Systems		

Notes:

1. Centralized equipment should be fully commissioned.

PART 2 - Items which represent multiple, identical repetitive equipment may be tested on a "sampling" or "spot-check" basis, 20% of total.

END OF SECTION

DIVISION 2 – EXISTING CONDITIONS

SECTION 024119 SELECTIVE DEMOLITION

DIVISION 3 – CONCRETE

SECTION 033000 CAST-IN-PLACE CONCRETE

DIVISION 5 – METALS

SECTION 051200 STRUCTURAL STEEL FRAMING

SECTION 055000 METAL FABRICATIONS

SECTION 055213 PIPE AND TUBE RAILINGS

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 078100 APPLIED FIREPROOFING

SECTION 079200 23 JOINT SEALANTS

DIVISION 8 – OPENINGS

SECTION 081113 HOLLOW METAL DOORS AND FRAMES

SECTION 084229 SLIDING AUTOMATIC ENTRANCES

SECTION 087100 DOOR HARDWARE

SECTION 088000 GLAZING

DIVISION 9 – FINISHES

SECTION 093000 TILING

SECTION 095100 ACOUSTICAL CEILINGS

SECTION 096550 RESILIENT FLOORING

SECTION 099000 PAINTING AND COATING

DIVISION 26 – ELECTRICAL



SECTION 260000 GENERAL ELECTRICAL REQUIREMENTS

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

SECTION 283111 DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Items indicated to be removed and salvaged remain Owner's property. Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner[ **ready for reuse**]. Include fasteners or brackets needed for reattachment elsewhere.
- B. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements. Submit before Work begins.
- C. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- D. It is not expected that hazardous materials will be encountered in the Work. If hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with EPA regulations and with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

### PART 3 - EXECUTION

#### 3.1 DEMOLITION

- A. Maintain services/systems indicated to remain and protect them against damage during selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building.
- B. Locate, identify, shut off, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.
- D. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- E. Protect walls, ceilings, floors, and other existing finish work that are to remain. Erect and maintain dustproof partitions. Cover and protect furniture, furnishings, and equipment that have not been removed.
- F. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
- G. Provide temporary weather protection to prevent water leakage and damage to structure and interior areas.
- H. Requirements for Building Reuse:
  - 1. Maintain existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and nonstructural roofing material) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
  - 2. Maintain existing interior nonstructural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
- I. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
- J. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill. Do not burn demolished materials.
- K. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

## SECTION 03300 - CAST-IN-PLACE CONCRETE

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data, concrete mix designs, and submittals required by ACI 301.
- B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Synthetic Fiber: ASTM C 1116/C 1116M, Type III, polypropylene fibers, 1/2 to 1-1/2 inches (13 to 38 mm) long.
- B. Vapor Retarder: Reinforced sheet, ASTM E 1745, Class A. See Section 07260 Reinforced Vapor Retarders for Under Slabs.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

### PART 2 - EXECUTION

#### 2.1 CONCRETING

- A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch (3.2 mm) for concrete exposed to view and Class C, 1/2 inch (13 mm) for other concrete surfaces.
- B. Place vapor retarder on prepared subgrade, with joints lapped 6 inches (150 mm) and sealed.
- C. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.
- E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.



- F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.
- G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.
- H. Slab Finishes: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:
  - 1. Scratch finish for surfaces to receive mortar setting beds.
  - 2. Float finish for surfaces to receive waterproofing, roofing, or other direct-applied material.
  - 3. Troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish coatings.
  - 4. Trowel and fine-broom finish for surfaces to receive thin-set tile.
  - 5. Nonslip-broom finish to exterior concrete platforms, steps, and ramps.
- I. Cure formed surfaces by moisture curing for at least seven days.
- J. Begin curing concrete slabs after finishing. Keep concrete continuously moist for at least seven days.
- K. Owner will engage a testing agency to perform field tests and to submit test reports.
- L. Protect concrete from damage. Repair and patch defective areas.

END OF SECTION 03300

## SECTION 051200 - STRUCTURAL STEEL FRAMING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes the following:

1. Structural steel.
2. Grout.

#### 1.2 DEFINITIONS

A. Structural Steel: Elements of structural-steel frame, as classified by AISC's "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.

#### 1.3 SUBMITTALS

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

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.
5. For structural-steel connections indicated to comply with design loads, include structural analysis data signed and sealed by the qualified California licensed professional engineer responsible for their preparation.
6. Do not proceed with fabrication of steel until University's Representative reviews shop drawings. University review of shop drawings will be for general concept and design and character of details, not for accuracy of dimensions. A maximum submission of 60 structural steel shop drawings will be reviewed in any 15-working day period. Larger submittals will require additional review time.
7. Direct copies of the Contract Documents will not be accepted as a submission.

C. Welding certificates.

D. Qualification Data: For qualified Installer, fabricator, and testing agency.

E. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:

1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.

3. Direct-tension indicators.
4. Tension-control, high-strength bolt-nut-washer assemblies.
5. Shear stud connectors.
6. Shop primers.
7. Nonshrink grout.

F. Source quality-control test reports.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ASCE.
- B. Fabricator Qualifications: A qualified fabricator who participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.
- C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement [P1] [P2] [P3] or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."
- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8/D1.8M. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.
- B. Comply with applicable provisions of the following specifications and documents:
  1. AISC 303.
  2. AISC 341 and AISC 341s1.
  3. AISC 360.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from erosion and deterioration.
  1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
  2. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

#### 1.6 COORDINATION

- 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 anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

## PART 2 - PRODUCTS

### 2.1 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A 992/A 992M.
- B. Channels, Angle Shapes: ASTM A 36/A 36M.
- C. Plate and Bar: ASTM A 36/A 36M unless noted otherwise.
- D. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
- E. Corrosion-Resisting, Cold-Formed Hollow Structural Sections: ASTM A 847/A 847M, structural tubing.
- F. Steel Pipe: ASTM A 53/A 53M, Type E or Type S, Grade B.
  - 1. Weight Class: Standard unless noted otherwise.
  - 2. Finish: Black except where indicated to be galvanized.
- G. Welding Electrodes: Comply with AWS requirements.

### 2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, (ASTM A 563M, Class 8S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers; all with plain finish.
  - 1. Direct-Tension Indicators: ASTM F 959, Type 325 (ASTM F 959M, Type 8.8), compressible-washer type with plain finish.
- B. High-Strength Bolts, Nuts, and Washers: ASTM A 490 (ASTM A 490M), Type 1, heavy-hex steel structural bolts or tension-control, bolt-nut-washer assemblies with splined ends; ASTM A 563, Grade DH, (ASTM A 563M, Class 10S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers with plain finish.
  - 1. Direct-Tension Indicators: ASTM F 959, Type 490 (ASTM F 959M, Type 10.9), compressible-washer type with plain finish.
- C. Zinc-Coated High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade DH (ASTM A 563M, Class 10S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers.
  - 1. Finish: Hot-dip or mechanically deposited zinc coating.
  - 2. Direct-Tension Indicators: ASTM F 959, Type 325 (ASTM F 959M, Type 8.8), compressible-washer type with mechanically deposited zinc coating, baked epoxy-coated finish.



- D. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, heavy-hex head assemblies consisting of steel structural bolts with splined ends, heavy-hex carbon-steel nuts, and hardened carbon-steel washers.
  - 1. Finish: Plain.
- E. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1/D1.1M, Type B.
- F. Unheaded Anchor Rods: ASTM F 1554, Grade 36, UNO.
  - 1. Configuration: Straight.
  - 2. Nuts: ASTM A 563 (ASTM A 563M) heavy-hex carbon steel.
  - 3. Plate Washers: ASTM A 36/A 36M carbon steel.
  - 4. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
  - 5. Finish: Plain.
- G. Headed Anchor Rods: ASTM F 1554, Grade 36 (UNO), straight.
  - 1. Nuts: ASTM A 563 (ASTM A 563M) heavy-hex carbon steel.
  - 2. Plate Washers: ASTM A 36/A 36M carbon steel.
  - 3. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
  - 4. Finish: Plain
- H. Threaded Rods: ASTM A 36/A 36M.
  - 1. Nuts: ASTM A 563 (ASTM A 563M) heavy-hex carbon steel.
  - 2. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened.
  - 3. Finish: Plain.
- I. Clevises and Turnbuckles: Made from cold-finished carbon steel bars, ASTM A 108, Grade 1035.
- J. Eye Bolts and Nuts: Made from cold-finished carbon steel bars, ASTM A 108, Grade 1030.
- K. Sleeve Nuts: Made from cold-finished carbon steel bars, ASTM A 108, Grade 1018.

## 2.3 PRIMER

- A. Primer: SSPC-Paint 25, Type I, iron oxide, zinc oxide, raw linseed oil, and alkyd.
- B. Primer: SSPC-Paint 25 BCS, Type I, iron oxide, zinc oxide, raw linseed oil, and alkyd.
- C. Primer: SSPC-Paint 23, latex primer.
- D. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer.
- E. Galvanizing Repair Paint: **ASTM A 780**.

## 2.4 GROUT

- A. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404, Size No. 2. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- B. Metallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, metallic aggregate grout, mixed with water to consistency suitable for application and a 30-minute working time.
- C. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## 2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.
  - 1. Camber structural-steel members where indicated.
  - 2. Identify high-strength structural steel according to ASTM A 6/ A 6M and maintain markings until structural steel has been erected.
  - 3. Mark and match-mark materials for field assembly.
  - 4. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
  - 5. Provide for attachment of work to structural steel.
- B. Thermal Cutting: Thermal cutting is subject to approval from University's Representative. Perform thermal cutting, when so approved, by machine to greatest extent possible.
  - 1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- A. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning, with SSPC-SP 2, "Hand Tool Cleaning, or SSPC-SP 3, "Power Tool Cleaning" as required.
- B. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.
- C. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural steel. Straighten as required to provide uniform, square, and true members in completed wall framing.
- D. Welded Door Frames: Build up welded door frames attached to structural steel. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk, cross-recessed head machine screws, uniformly spaced not more than 10 inches o.c., unless otherwise indicated.

- E. Holes: Provide holes required for securing other work to structural steel and for passage of other work through steel framing members.
1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
  2. Base-Plate Holes: Cut, drill, or punch holes perpendicular to steel surfaces.
  3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

## 2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
1. Joint Type: [**Snug tightened**] [**Pretensioned**] [**Slip critical**].
- B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
1. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
  2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.
  3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances.
    - a. Grind butt welds flush.
    - b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

## 2.7 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
  2. Surfaces to be field welded.
  3. Surfaces to be high-strength bolted with slip-critical connections.
  4. Surfaces to receive sprayed fire-resistive materials.
  5. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
1. SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2. Apply two coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

- D. Painting: Apply a 1-coat, nonasphaltic primer complying with SSPC-PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5 mils.

## 2.8 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/ A 123M.

1. Fill vent holes and grind smooth after galvanizing.

## 2.9 SOURCE QUALITY CONTROL

- A. University will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

- C. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

- D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
3. Ultrasonic Inspection: ASTM E 164.
4. Radiographic Inspection: ASTM E 94.

- E. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.



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

### 3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.
  - 1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

### 3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Baseplates, Bearing Plates, and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
  - 1. Set plates for structural members on wedges, shims, or setting nuts as required.
  - 2. Weld plate washers to top of baseplate.
  - 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
  - 4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
  - 1. Level and plumb individual members of structure.
  - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.
- G. Do not use thermal cutting during erection unless approved by University's Representative. Finish thermally cut sections within smoothness limits in AWS D1.1.
- H. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

- I. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

### 3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
  - 1. Joint Type: Snug tightened
  - 2. Orient bolt heads in same direction on architecturally exposed structural steel.
- B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
  - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
  - 2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.

### 3.5 FIELD QUALITY CONTROL

- A. Testing Agency: University may engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections if applicable.
- B. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Welded Connections: Field welds will be visually inspected according to AWS D1.1.
  - 1. In addition to visual inspection, field welds will be tested according to AWS D1.1 and the following inspection procedures, at testing agency's option:
    - a. Liquid Penetrant Inspection: ASTM E 165.
    - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
    - c. Ultrasonic Inspection: ASTM E 164.
    - d. Radiographic Inspection: ASTM E 94.
- D. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1 for stud welding and as follows:
  - 1. Perform bend tests if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
  - 2. Conduct tests on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.
- E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

### 3.6 REPAIRS AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Touchup Painting: After installation, promptly clean, prepare, and prime or re-prime field connections, rust spots, and abraded surfaces of prime-painted joists and accessories and abutting structural steel.
  - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
  - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 09 Section "High-Performance Coatings".

END OF SECTION 051200

## SECTION 055000 - METAL FABRICATIONS

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Shop Drawings.

### PART 2 - PRODUCTS

#### 2.1 METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Bars: Hot-rolled, carbon steel complying with ASTM A 29/A 29M, Grade 1010.
- C. Steel Tubing: ASTM A 500.
- D. Steel Pipe: ASTM A 53, standard weight (Schedule 40), black finish.
- E. Cast Iron: ASTM A 48/A 48M or ASTM A 47/A 47M.
- F. Aluminum Plate and Sheet: **ASTM B 209** (**ASTM B 209M**), Alloy 3003-H14.
- G. Aluminum Extrusions: **ASTM B 221** (**ASTM B 221M**), Alloy 6063-T6.
- H. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.

#### 2.2 GROUT

- A. Nonshrink, Nonmetallic Grout: ASTM C 1107; recommended by manufacturer for exterior applications.

#### 2.3 FABRICATION

- A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.
- B. Welding: Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. At exposed connections, finish welds and surfaces smooth with contour of welded surface matching those adjacent.



1. Where welding cannot be concealed behind finished surfaces, finish joints to comply with NOMMA's "Voluntary Joint Finish Standards" for [**Type 1 welds: no evidence of a welded joint**] [**Type 2 welds: completely sanded joint, some undercutting and pinholes okay**] [**Type 3 welds: partially dressed weld with spatter removed**] [**Type 4 welds: good quality, uniform undressed weld with minimal splatter**].
- C. Comply with AWS for recommended practices in shop brazing. Braze behind finished surfaces without distorting or discoloring exposed side. Clean exposed brazed joints of flux, and dress exposed and contact surfaces.
1. Where brazing cannot be concealed behind finished surfaces, finish joints to comply with NOMMA's "Voluntary Joint Finish Standards" for [**Type 1 welds: no evidence of a welded joint**] [**Type 2 welds: completely sanded joint, some undercutting and pinholes okay**] [**Type 3 welds: partially dressed weld with spatter removed**] [**Type 4 welds: good quality, uniform undressed weld with minimal splatter**].
- D. On units indicated to be cast into concrete or built into masonry, provide welded steel strap anchors, **1/8 by 1-1/2 inches (3.2 by 38 mm)**, with a minimum **6-inch (150-mm)** embedment and **2-inch (50-mm)** hook, not less than **8 inches (200 mm)** from ends and corners of units and **24 inches (600 mm)** o.c.
- E. Fabricate nosings from cast [**iron**] [**aluminum**] with an integral abrasive finish.
1. Manufacturers: [**One of the following:**]
    - a. Amstep Products
    - b. Balco Inc.
    - c. Wooster Products Inc.
  2. Apply bituminous paint to concealed surfaces of units set into concrete.
- F. Fabricate perforated sheet metal panel (**for interior soffit**):
1. Manufacturers: [**One of the following:**]
    - a. McNichols Co., Inc.
    - b. Ametco Manufacturing Corporation
    - c. Marco Specialty Steel, Inc.
  2. Mill finish, 20 gauge, 1/4" round hole, 1" centers to centers, straight pattern.
- G. Fabricate perforated sheet metal panel (**for exterior guard panel assemblies**):
1. Manufacturers: [**One of the following:**]
    - a. Hendrick Manufacturing
    - b. Marco Specialty Steel, Inc.
    - c. Remaly Manufacturing Company, Inc.
  2. Mill finish, 10 gauge, custom punching, hole pattern as shown on drawings.

## 2.4 STEEL AND IRON FINISHES

- A. Hot-dip galvanize steel fabrications at exterior locations.
- B. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3, "Power Tool Cleaning," and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
- C. **Organic Powder Finish: Single coat Standard Polyester powder finish complying with AAMA 2603 and containing Standard Polyester resin. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.**
  - 1. Color and Gloss: As selected by Architect

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Provide anchorage devices and fasteners where needed to secure items to in-place construction.
- B. Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack.
- C. Fit exposed connections accurately together to form hairline joints or, where indicated, with uniform reveals and spaces for sealants and joint fillers.
- D. Install perforated sheet metal panel with hole pattern centered, balanced, and aligned. Sheet shall be perfectly flat with superior degree of flatness
- E. Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

END OF SECTION 055000

## SECTION 055213 - PIPE AND TUBE RAILINGS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Steel pipe railings.

#### 1.3 COORDINATION

- 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 satisfy structural performance requirements.

#### 1.4 ACTION SUBMITTALS

- A. Sustainable Design Submittals:
  - 1. Product Data: For recycled content, indicating postconsumer and preconsumer recycled content and cost.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each type of exposed finish required.
  - 1. Sections of each distinctly different linear railing member, including handrails, top rails, posts, and balusters, including finish.

2. Fittings and brackets.
3. Assembled Sample of railing system, made from full-size components, including top rail, post, handrail, and infill. Sample need not be full height.
  - a. Show method of connecting and finishing members at intersections.

D. Delegated-Design Submittal: For railings, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1. Rails & posts are indicated to be steel tubing with specific outside diameter. Several tube thicknesses, or use of additional reinforcing bar inside tube, may be employed in order to meet required structural performance for handrails and guards, which shall be as shown on shop drawings, accompanied by supporting structural calculation & be submitted to University's Representative for review & approval.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Welding certificates.
- C. Mill Certificates: Signed by manufacturers of stainless-steel products certifying that products furnished comply with requirements.
- D. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.
- E. Product Test Reports: For pipe and tube railings, for tests performed by a qualified testing agency, according to ASTM E 894 and ASTM E 935.
- F. Evaluation Reports: For post-installed anchors, from ICC-ES.

#### 1.6 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
  1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.



## 1.8 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer to design railings, including attachment to building construction.
- B. Structural Performance: Railings, including attachment to building construction, 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.

### 2.2 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: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

### 2.3 STEEL AND IRON

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513.
  - 1. Provide galvanized finish for exterior installations and where indicated.

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

D. Finishes

1. Surface Preparation: Remove loose scale, rust, grease, oil, moisture

## 2.4 FASTENERS

A. Fasteners for Anchoring Railings 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.

## 2.5 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Shop Primers: Provide primers that comply with **Section 099000 "Painting and Coating"**.

C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

D. Intermediate Coats and Topcoats: Provide products that comply with Section 099123 "Interior Painting."

E. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Sakrete Non-Shrink Grout
- b. SikaGrout 212
- c. Quickrete Non-Shrink Precision Grout

## 2.6 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. Shop assemble railings 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. 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.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that are exposed to weather in a manner that excludes water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with welded connections unless otherwise indicated.
- H. 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. **Railing system Joint Construction: Type 2. (Refer to ANSI/NAAMM Pipe Railing System Manual.)**
  - 2. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 3. Obtain fusion without undercut or overlap.
  - 4. Remove flux immediately.
  - 5. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
  - 6. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.
- I. Form Changes in Direction as Follows:
  - 1. By bending or by inserting prefabricated elbow fittings.
- J. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- K. Close exposed ends of railing members with fully welded flat end cap. .

## 2.7 FINISHES

- A. Surface Preparation: Remove loose scale, rust, grease, oil, moisture or other foreign materials to properly prepare the surface for subsequent coating application.

1. Remove loose mill scale, rust and dirt following SSPC-SP2 for hand cleaning and SSPC-SP3 for power tool cleaning.
- B. Galvanizing: Products fabricated from shapes, plates, bars and strips shall be galvanized in accordance with ASTM A 123
- C. Paint: Minimum one coat of rust-inhibitive primer standard with the manufacturer.
- D. Touch-up for Galvanized Surfaces: Use paint primer-meeting FS-TT-P-64:1.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

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

#### 3.2 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.
- C. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
  1. Set posts plumb within a tolerance of **1/16 inch in 3 feet (2 mm in 1 m)**.
  2. 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 (6 mm in 3.5 m)**.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.

#### 3.3 RAILING CONNECTIONS

- A. 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.



### 3.4 ANCHORING POSTS

#### A. Existing Concrete:

1. 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 anchoring cement mixed and placed to comply with anchoring material manufacturer's written instructions.
2. Anchoring material flush with adjacent surface.
3. Provide metal escutcheon at base of posts with primed finish.

#### B. New Concrete:

1. As shown on drawings.

### 3.5 ADJUSTING AND CLEANING

- A. Clean by washing thoroughly with clean water and soap and rinsing with clean water.
- B. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 requirements for touching up shop-painted surfaces.
  1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.

### 3.6 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.

END OF SECTION 055213

## SECTION 078100 - APPLIED FIREPROOFING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and research/evaluation reports.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS, GENERAL

- A. Provide products identical to those tested for fire resistance per ASTM E 119 or UL 263 by a testing agency acceptable to authorities having jurisdiction.
- B. Asbestos: Provide products containing no detectable asbestos.

#### 2.2 SPRAYED FIRE-RESISTIVE MATERIALS

- A. Products: One of the following:
  - 1. Carboline Company, subsidiary of RPM International, Fireproofing Products Div.; AD Southwest Fireproofing Type 5GP
  - 2. Grace, W. R. & Co. - Conn.; Grace Construction Products; Monokote MK-6 Series
  - 3. Isolatek International; Cafco 300.
- B. Material Composition: As follows:
  - 1. Cementitious fireproofing consisting of factory-mixed, dry formulation of gypsum or portland cement binders, additives, and lightweight mineral or synthetic aggregates mixed with water at Project site.
- C. Physical Properties: Minimum values unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, as follows:
  - 1. Dry Density: 15 lb/cu. ft. (240 kg/cu. m), or greater if required to attain fire-resistance ratings indicated, per ASTM E 605.
  - 2. Bond Strength: 150 lbf/sq. ft. (7.2 kPa) per ASTM E 736.
  - 3. Corrosion Resistance: No evidence of corrosion per ASTM E 937.
  - 4. Effect of Impact on Bonding: No cracking, spalling, or delamination per ASTM E 760.
  - 5. Air Erosion: Maximum weight loss of 0.025 g/sq. ft. (0.270 g/sq. m) in 24 hours per ASTM E 859.

- D. **Auxiliary Materials:** Provide auxiliary materials that are compatible with applied fireproofing and substrates and are approved by a testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistance designs indicated.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Clean substrates of substances that could impair bond of fireproofing, including dirt, oil, grease, release agents, rolling compounds, loose mill scale, and incompatible primers, paints, and encapsulants.
- B. Extend fireproofing in full thickness over entire area of each substrate to be protected. Unless otherwise recommended in writing by fireproofing manufacturer, install body of fireproofing in a single course. Spray apply fireproofing to maximum extent possible.
- C. Apply fireproofing in thicknesses and densities not less than those required to achieve fire-resistance ratings designated for each condition, but not less than **0.375-inch (9-mm)** thickness, and **15-lb/cu. ft. (240-kg/cu. m)** dry density.
- D. Apply sealer/topcoat to fireproofing.
- E. **Testing Agency:** Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION 078100

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and color Samples.
- B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (4.4 deg C).

### PART 2 - PRODUCTS

#### 2.1 JOINT SEALANTS

- A. Low-Emitting Materials: Sealants shall comply with the following limits for VOC content:
  - 1. Architectural Sealants: 250 g/L.
  - 2. Nonmembrane Roof Sealants: 300 g/L.
  - 3. Single-Ply Roof Membrane Sealants: 450 g/L.
  - 4. Other Sealants: 420 g/L.
  - 5. Sealant Primers for Nonporous Substrates: 250 g/L.
  - 6. Sealant Primers for Porous Substrates: 775 g/L.
  - 7. Modified Bituminous Sealant Primers: 500 g/L.
  - 8. Other Sealant Primers: 750 g/L.
- B. Low-Emitting Materials:
  - 1. Exterior reactive sealants shall have a VOC content of not more than 50 g/L or 4 percent by weight, whichever is greater.
  - 2. Other exterior caulks and sealants shall have a VOC content of not more than 30 g/L or 2 percent by weight, whichever is greater.
  - 3. Interior sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.
- D. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:
  - 1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.



E. Sealant for Interior Use at Perimeters of Door and Window Frames:

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

F. Acoustical Sealant:

1. Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.

2.2 MISCELLANEOUS MATERIALS

- A. Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.
- D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with ASTM C 1193.
- B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 079200

## SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Shop Drawings.

### PART 2 - PRODUCTS

#### 2.1 HOLLOW METAL DOORS AND FRAMES

- A. Manufacturers: One of the following:

1. Amweld Building Products, LLC.
2. Ceco Door Products; an Assa Abloy Group company.
3. Deansteel Manufacturing Company, Inc.
4. Steelcraft; Allegion plc.

- B. Fire-Rated Doors and Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. At vertical exit enclosures and exit passageways, provide doors that that have a temperature rise rating of 450 deg F (250 deg C).

- C. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784 and installed in compliance with NFPA 105.

- D. Doors: Complying with SDI A250.8 for level and model and SDI A250.4 for physical-endurance level indicated, 1-3/4 inches (44 mm) thick unless otherwise indicated.

1. Interior Doors: Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).
2. Exterior Doors: Level 2 and Physical Performance Level B (Heavy Duty) Model 1 (Full Flush, metallic-coated steel sheet faces).
  - a. Thermal-Rated (Insulated) Doors: Provide all hollow metal doors with thermal-resistance value (R-value) of not less than 2.9 when tested according to ASTM C 1363.
3. Hardware Reinforcement: Fabricate according to SDI A250.6 with reinforcement plates from same material as door face sheets.

- E. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.
  - 1. Steel Sheet for Interior Frames: **0.053-inch- (1.3-mm-)** minimum thickness.
  - 2. Steel Sheet for Exterior Frames: **0.067-inch- (1.7-mm-)** minimum thickness, metallic coated.
  - 3. Interior Frame Construction: Full profile welded.
  - 4. Exterior Frame Construction: Full profile welded.
  - 5. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
  - 6. Frame Anchors: Not less than **0.042 inch (1.0 mm)** thick.
- F. Glazing Stops: Nonremovable stops on outside of exterior doors and on secure side of interior doors; screw-applied, removable, glazing stops on inside, fabricated from same material as door face sheet in which they are installed.
- G. Door Louvers: Sight proof per SDI 111C.
  - 1. Fire-Rated Automatic Louvers: Actuated by fusible links and listed and labeled.
- H. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.
- I. Grout Guards: Provide where mortar might obstruct hardware operation.
- J. Prepare doors and frames to receive mortised and concealed hardware according to SDI A250.6 and BHMA A156.115.
- K. Reinforce doors and frames to receive surface-applied hardware.
- L. Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer complying with SDI A250.10 acceptance criteria.

## 2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, free of scale, pitting, or surface defects.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, **G60 (Z180 or)A60 (ZF180)**.
- D. Frame Anchors: ASTM A 879/A 879M, **4Z (12G)** coating designation; mill phosphatized.
  - 1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install hollow metal frames to comply with SDI A250.11.
  - 1. Fire-Rated Frames: Install according to NFPA 80.
- B. Install doors to provide clearances between doors and frames as indicated in SDI A250.11.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying rust-inhibitive primer. Use galvanizing repair paint for metallic coated surfaces.

END OF SECTION 081113



## SECTION 084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data, Shop Drawings, and color Samples.

### PART 2 - PRODUCTS

#### 2.1 ALUMINUM-FRAMED STOREFRONTS

- A. Manufacturers: One of the following:
- B. Basis-of-Design Product: Product indicated on Drawings or a comparable product of one of the following:
  - 1. Arcadia, Inc.
  - 2. Kawneer North America; an Alcoa company.
  - 3. United States Aluminum.
- C. Performance Requirements:
  - 1. Limit deflection of framing members normal to wall plane to 1/175 of clear span or an amount that restricts edge deflection of individual glazing lites to **3/4 inch (19 mm)**, whichever is less.
  - 2. Limit deflection of framing members parallel to glazing plane to L/360 of clear span or **1/8 inch (3.2 mm)**, whichever is smaller.
  - 3. Structural Testing: Systems tested according to ASTM E 330 at 150 percent of inward and outward wind-load design pressures do not evidence material failures, structural distress, deflection failures, or permanent deformation of main framing members exceeding 0.2 percent of clear span.
  - 4. Air Infiltration: Limited to 0.06 cfm/sq. ft. (0.03 L/s per sq. m) of system surface area when tested according to ASTM E 283 at a static-air-pressure difference of 6.24 lbf/sq. ft. (300 Pa).
  - 5. Windborne-Debris Resistance: Framing system and doors pass basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886.
- D. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated; **ASTM B 209 (ASTM B 209M)** sheet; **ASTM B 221 (ASTM B 221M)** extrusions.
- E. Glazing: As specified in Section 088000 "Glazing."

- F. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
- G. Fasteners and Accessories: Compatible with adjacent materials, corrosion resistant, nonstaining, and nonbleeding. Use concealed fasteners except for application of door hardware.
- H. Aluminum Finish: Class II, clear anodic finish; complying with AAMA 611

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Isolate metal surfaces in contact with incompatible materials, including wood, by painting contact surfaces with bituminous coating or primer, or by applying sealant or tape recommended by manufacturer.
- B. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within the system to exterior.
- C. Set continuous sill members and flashing in full sealant bed as specified in Section 079200 "Joint Sealants" to produce weathertight installation.
- D. Install framing components true in alignment with established lines and grades to the following tolerances:
  - 1. Variation from Plane: Limit to **1/8 inch in 12 feet (3 mm in 3.7 m)**; **1/4 inch (6 mm)** over total length.
  - 2. Alignment: For surfaces abutting in line, limit offset to **1/16 inch (1.5 mm)**. For surfaces meeting at corners, limit offset to **1/32 inch (0.8 mm)**.
  - 3. Diagonal Measurements: Limit difference between diagonal measurements to **1/8 inch (3 mm)**.
- E. Install doors without warp or rack. Adjust doors and hardware to provide tight fit at contact points and smooth operation.

END OF SECTION 084113

## SECTION 08422923 - SLIDING AUTOMATIC ENTRANCES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes the following types of automatic entrances:
  - 1. Exterior, bi-parting, sliding automatic entrances.
  - 2. Size to fit opening between existing posts.

#### 1.2 DEFINITIONS

- A. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.
- B. Safety Device: Device that prevents a door from opening or closing, as appropriate.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide automatic entrance door assemblies capable of withstanding structural loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Operating Range: Minus 30 deg F (Minus 34 deg C) to 130 deg F (54 deg C).
- C. Opening-Force Requirements for Egress Doors: Not more than 50 lbf (222 N) required to manually set door in motion if power fails, and not more than 15 lbf (67 N) required to open door to minimum required width.
- D. Closing-Force Requirements: Not more than 30 lbf (133 N) required to prevent door from closing.

#### 1.4 SUBMITTALS

- A. Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work.
- B. Color Samples for selection of factory-applied color finishes.
- C. Closeout Submittals:
  - 1. Owner's Manual.
  - 2. Warranties.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained for installation and maintenance of units required for this Project.
- B. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility certified under ISO 9001 and with company certificate issued by AAADM.
- C. Certifications: Automatic sliding door systems shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:
  - 1. ANSI/BHMA A156.10.
  - 2. NFPA 101.
  - 3. Underwriter's Laboratories 325 (UL) listed.
  - 4. IBC
  - 5. BOCA
- D. Source Limitations: Obtain automatic entrance door assemblies through one source from a single manufacturer.
- E. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated.
- F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- G. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrances serving as a required means of egress.

## 1.6 PROJECT CONDITIONS

- A. Field Measurements: General Contractor shall verify openings to receive automatic entrance door assemblies by field measurements before fabrication and indicate measurements on Shop Drawings.
- B. Mounting Surfaces: General Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.
- C. Other trades: General Contractor shall advise of any inadequate conditions or equipment.

## 1.7 COORDINATION

- A. Templates: Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing automatic entrances to comply with indicated requirements.
- B. Electrical System Roughing-in: Coordinate layout and installation of automatic entrance door assemblies with connections to power supplies, and remote activation devices.



## 1.8 WARRANTY

- A. Automatic Entrances shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.
- B. During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.
- C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

## PART 2 - PRODUCTS

### 2.1 AUTOMATIC ENTRANCES

- A. Manufacturer: One of the following:
  - 1. Stanley Access Technologies; **Dura-Glide™ 2000 Series**
    - a. Contact: Stanley Access Technologies, 4230 Airport Drive, Suite 107, Ontario CA 91761; Attn: Mike Swinnerton; Phone: 909-664-0157, Fax: 877-598-0702, Email: Michael.Swinnerton@sbdinc.com.
  - 2. Horton Automatics Inc.; Series 2001
  - 3. Dorma Automatics, Inc.; ESA 200 Series

### 2.2 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
  - 1. Headers, stiles, rails, and frames: 6063-T6.
  - 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
  - 3. Sheet and Plate: ASTM B 209.
- B. Sealants and Joint Fillers: Manufacturer's standard, performed within this Section of Specifications.

### 2.3 AUTOMATIC ENTRANCE DOOR ASSEMBLIES

- A. General: Provide manufacturer's standard automatic entrance door assemblies including doors, sidelights, framing, headers, carrier assemblies, roller tracks, door operators, activation and safety devices, and accessories required for a complete installation.
- B. Sliding Automatic Entrances:

1. Configuration: Two sliding leaves and two partial panels; bi-parting.
2. Traffic Pattern: Two-way.
3. Emergency Breakaway Capability: Sliding leaves only.
4. Mounting: Surface applied.
5. Custom Opening Width: Fit between existing steel posts and aluminum vertical mullion enveloping steel posts that form clear openings. Verify dimensions in filed.

## 2.4 COMPONENTS

- A. Framing Members: Manufacturer's standard extruded aluminum reinforced as required to support imposed loads.
1. Nominal Size: 1 3/4 inch by 4 1/2 inch (45 by 115 mm).
  2. Concealed Fastening: Framing shall incorporate a concealed fastening pocket, and continuous flush insert cover, extending full length of each framing member.
- B. Stile and Rail Doors and Sidelights: Manufacturer's standard 1 3/4 inch (45 mm) thick glazed doors with extruded-aluminum tubular stile and rail members. Incorporate concealed tie-rods that span full length of top and bottom rails or mechanically fasten corners with reinforcing brackets that are welded.
1. Glazing Stops and Gaskets: Snap-on, extruded-security aluminum stops and preformed gaskets.
  2. Stile Design: Medium stile; 3 1/2 inch (95 mm) nominal width.
  3. Bottom Rail Design: Minimum 10 inch (254 mm) nominal height.
  4. Muntin Bars: Horizontal tubular rail member for each door; 4 1/4 inch (108 mm) nominal height.
- C. Glazing: Provide glazing for sliding automatic entrances as follows:
1. Provide safety glass complying with ANSI Z97.1 and CPSC 16 CFR 1201 for Category II materials.
  2. Glass: 1 inch (25 mm) insulated glazing units, with fully tempered panes in all panels. Insulated glass panes shall incorporate a 1/2 inch (13 mm) dehydrated air space.
    - a. Inboard lites shall be 1/4 inch (6 mm) clear.
    - b. Outboard lites shall be 1/4 inch (6 mm) equal to or better than PPG Solarban® 60 Low-E on surface #2; clear.
    - c. Units shall be hermetically sealed with a dual seal.
- D. Headers: Fabricated from extruded aluminum and extending full width of automatic entrance door units to conceal door operators, carrier assemblies, and roller tracks. Provide hinged or removable access panels for service and adjustment of door operators and controls. Secure panels to prevent unauthorized access.
1. Mounting: Concealed, with one side of header flush with framing.

2. Capacity: Capable of supporting up to 220 lb (100 kg) per panel, up to four panels, over spans up to 14 feet (4.3 m) without intermediate supports.
  3. Continuous single piece for both sliding doors, or with fine hair line joint with concealed clips at center between the two sliding doors, visually appear as single continuous piece.
- E. Carrier Assemblies and Overhead Roller Tracks: Manufacturer's standard carrier assembly that allows vertical adjustment of at least 1/8 inch (3 mm); consisting of urethane with precision steel lubricated ball-bearing wheels, operating on a continuous roller track. Support panels from carrier assembly by 2 inch (51 mm) diameter anti-riser wheels with factory adjusted cantilever and pivot assembly. Minimum two ball-bearing roller wheels and two anti-rise rollers for each active leaf. Minimum load wheel diameter shall be 2 1/2 inch (64 mm).
- F. Thresholds: Manufacturer's standard thresholds as indicated below:
1. Continuous standard tapered extrusion single bevel. Full length of door assembly in fully opened position.
  2. All thresholds to conform to details and requirements for code compliance
- G. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.
- H. Signage: Provide signage in accordance with ANSI/BHMA A156.10.

## 2.5 DOOR OPERATORS

- A. General: Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, operation under normal traffic load for type of occupancy indicated.
- B. Electromechanical Operators: Self-contained overhead unit powered by a minimum of 1/4 horsepower, permanent-magnet DC motor with gear reduction drive, microprocessor controller; and encoder.
1. Operation: Power opening and power closing.
  2. Features:
    - a. Adjustable opening and closing speeds.
    - b. Adjustable back-check and latching.
    - c. Adjustable braking.
    - d. Adjustable hold-open time between 0 and 30 seconds.
    - e. Obstruction recycle.
    - f. On/Off switch to control electric power to operator.
    - g. Energy conservation switch that reduces door-opening width.
    - h. Closed loop speed control with active braking and acceleration.
    - i. Variable obstruction recycle time delay.
    - j. Self adjusting stop position.
    - k. Self adjusting closing compression force.

1. Optional Switch to open/Switch to close operation.
  3. Mounting: Concealed.
  4. Drive System: Synchronous belt type.
- C. Electrical service to door operators shall be provided under Division 16 Electrical. Minimum service to be 120 VAC, 5 amps.

## 2.6 ELECTRICAL CONTROLS

- A. Electrical Control System: Electrical control system shall include a microprocessor controller and a high-resolution position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed.
1. The high-resolution encoder shall have a resolution of not less than 1024 counts per revolution. Systems utilizing external magnets and magnetic switches are not acceptable.
  2. Electrical control system shall include a 24 VDC auxiliary output rated at 1 amp.
- B. Performance Data: The microprocessor shall collect, and store performance data as follows:
1. Counter: A non-resettable counter to track operating cycles.
  2. Event Reporting: Unit shall include non-volatile event and error recording including number of occurrences of events and errors, and cycle count of most recent events and errors.
  3. LED Display: Display presenting the current operating state of the controller
- C. Controller Protection: The microprocessor controller shall incorporate the following features to ensure trouble free operation:
1. Automatic Reset Upon Power Up.
  2. Main Fuse Protection.
  3. Electronic Surge Protection.
  4. Internal Power Supply Protection.
  5. Resettable sensor supply fuse protection
  6. Motor Protection, over-current protection
- D. Soft Start/Stop: A “soft-start” “soft-stop” motor driving circuit shall be provided for smooth normal opening and recycling.
- E. Obstruction Recycle: Provide system to recycle the sliding panels when an obstruction is encountered during the closing cycle. If an obstruction is detected, the system shall search for that object on the next closing cycle by reducing door closing speed prior to the previously encountered obstruction location, and will continue to close in check speed until doors are fully closed, at which time the doors will reset to normal speed. If obstruction is encountered again, the door will come to a full stop. The doors shall remain stopped until obstruction is removed and operate signal is given, resetting the door to normal operation.



- F. Programmable Controller: Microprocessor controller shall be programmable and shall be designed for connection to a local configuration tool. Local configuration tool shall be software driven and shall be utilized via Palm® handheld interface. The following parameters may be adjusted via the configuration tool.
1. Operating speeds and forces as required to meet ANSI/BHMA A156.10.
  2. Adjustable and variable features as specified in 2.05, B., 2.
  3. Reduced opening position.
  4. Fail Safe/Secure control.
  5. Firmware update.
  6. Trouble Shooting
    - a. I/O Status.
    - b. Electrical component monitoring including parameter summary.
  7. Software for local configuration tool shall be available as a free download from the sliding automatic entrance manufacturer's internet site.
  8. Manual programming shall be available through local interface which has a two-digit display with a selection control including three push buttons.

## 2.7 ACTIVATION AND SAFETY DEVICES

- A. Combined Activation and Safety Sensors: Combined activation and safety sensors shall, in a single housing, detect motion and presence in accordance with ANSI/BHMA A156.10. Motion shall be detected using K-band microwave technology, presence by active infrared reflection technology.
1. Mounting Height: Up to 11.5 feet (3.5 m) above finish floor
  2. Temperature Range: Between -31°F and 131°F (-35°C to 55°C) in all environmental conditions
  3. Relays: Form C, 50V at 0.3A for both activation and safety. Hold time of less than 0.5 seconds.
  4. Detection Pattern: When detection is made in the activation zone, and the entrance opens, the safety zone shall extend through the threshold on each side; creating an X-pattern. When activation and safety zones are cleared and the entrance closes the sensor will ignore the X-pattern safety zones.
  5. Combined motion and presence sensors shall be equal to or better than X-Zone Sensor by Optex.
- B. Photoelectric Beams: In addition to the threshold sensor include a minimum of two (2) doorway holding beams. Photoelectric beams shall be pulsed infrared type, including sender receiver assemblies for recessed mounting. Beams shall be monitored by electrical controls for faults and shall fail safe.
- C. Presence Sensor Monitoring: Sliding automatic entrances control system shall include a means to verify the functionality of all active presence sensors in accordance with ANSI/BHMA A156.10. A detected fault shall cause automatic operation to cease until the fault is corrected.

## 2.8 HARDWARE

- A. General: Provide units in sizes and types recommended by automatic entrance door and hardware manufacturers for entrances and uses indicated.
- B. Emergency Breakaway Feature: Provide release hardware that allows panel(s) to swing out in direction of egress to full 90 degrees from any position in sliding mode. Maximum force to open panel shall be 50 lbf (222 N) according to ANSI/BHMA A156.10. Interrupt powered operation of panel operator while in breakaway mode.
  - 1. Emergency breakaway feature shall include at least one adjustable detent device mounted in the top of each breakaway panel to control panel breakaway force.
  - 2. Limit Arms: Limit arms shall be provided to control swing of sliding panels on break-out; swing shall not exceed 90 degrees. Limit arms shall be spring loaded to prevent shock, and include adjustable friction damping.
- C. Deadlocks: Manufacturer's standard deadbolt operated by exterior cylinder and interior thumb turn; with minimum 1 inch (25 mm) long throw bolt; ANSI/BHMA A156.5, Grade 1.
  - 1. Cylinders: As specified in Division 8 Section "Door Hardware."
  - 2. Hook Latch: Laminated-steel hook, mortise type.
  - 3. Lock/Unlock Indicator: Provide lock position indicators integrated with locking system. Indicators shall be stile mounted on the secure side of the door and provide a visual display of lock position; "OPEN" in black letters when unlocked, "LOCKED" in red letters when locked.
  - 4. Two-Point Locking: Provide locking system that incorporates a device in the stile of active door leaves that automatically extends a flush bolt into overhead carrier assembly.
- D. Control Switch: Provide manufacturer's standard header mounted rocker switches and door position switch to allow for full control of the automatic entrance door. Controls to include, but are not limited to:
  - 1. One-way traffic
  - 2. Reduced Opening
  - 3. Open/Closed/Automatic
- E. Power Switch: Sliding automatic entrances shall be equipped with a two position On/Off rocker switch to control power to the door.
- F. Sliding Weather Stripping: Manufacturer's standard replaceable components complying with AAMA 701; vinyl.
- G. Weather Sweeps: Manufacturer's standard adjustable nylon brush sweep mounted to underside of door bottom.

## 2.9 FABRICATION

- A. General: Factory fabricates automatic entrance door assembly components to designs, sizes, and thickness indicated and to comply with indicated standards.
  - 1. Form aluminum shapes before finishing.
  - 2. Use concealed fasteners to greatest extent possible.
    - a. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
    - b. Reinforce members as required to receive fastener threads.
- B. Framing: Provide automatic entrances as prefabricated assemblies.
  - 1. Fabricate tubular and channel frame assemblies with manufacturer's standard mechanical or welded joints. Provide sub-frames and reinforcement as required for a complete system to support required loads.
  - 2. Perform fabrication operations in manner that prevents damage to exposed finish surfaces.
  - 3. Form profiles that are sharp, straight, and free of defects or deformations.
  - 4. Prepare components to receive concealed fasteners and anchor and connection devices.
  - 5. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.
- C. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.
- D. Door Operators: Factory fabricated and installed in headers, including adjusting and testing.
- E. Glazing: Fabricate framing with minimum glazing edge clearances for thickness and type of glazing indicated.
- F. Hardware: Factory install hardware to the greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site.

## 2.10 ALUMINUM FINISHES

- A. General: Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.
- B. Class I, Color Anodic Finish: AA-M12C22A42/A44 Mechanical Finish: as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.70 mils minimum complying with AAMA 611-98, and the following:
  - 1. Color: Champagne
  - 2. AAMA 606.1

3. Applicator must be fully compliant with all applicable environmental regulations and permits, including wastewater and heavy metal discharge.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Examine conditions for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of automatic entrances. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Do not install damaged components. Fit frame joints to produce joints free of burrs and distortion. Rigidly secure non-movement joints.
- B. Entrances: Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
  1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
  2. Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.
- C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.
- D. Glazing: Glaze sliding automatic entrance door panels in accordance with, the Glass Association of North America (GANA) Glazing Manual, published recommendations of glass product manufacturer, and sliding automatic entrance manufacturer's instructions.
- E. Sealants: Comply with requirements specified in Division 7 Section "Joint Sealants" to provide weather tight installation.

### 3.3 FIELD QUALITY CONTROL

- A. Testing Services: Factory Trained Installer shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

### 3.4 ADJUSTING

- A. Adjust door operators, controls, and hardware for smooth and safe operation, for weather-tight closure, and complying with requirements in ANSI/BHMA A156.10.



3.5 CLEANING AND PROTECTION

- A. Clean glass and aluminum surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Repair damaged finish to match original finish. Comply with requirements in Division 8 Section “Glazing”, for cleaning and maintaining glass.

END OF SECTION 08422923

## SECTION 087100 - DOOR HARDWARE

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

##### A. Submittals:

1. Hardware schedule.
2. Templates: Submit templates and "reviewed Hardware Schedule" to door and frame supplier and others as applicable to enable proper and accurate sizing and locations of cut-outs and reinforcing.
  - a. Templates, wiring diagrams and "reviewed Hardware Schedule" of electrical terms to electrical for coordination and verification of voltages and locations.

##### B. Intent of Hardware Groups

1. Should items of hardware not definitely specified be required for completion of the Work, furnish such items of type and quality comparable to adjacent hardware and appropriate for service required.
2. Where items of hardware aren't definitely or correctly specified, are required for completion of the Work, a written statement of such omission, error, or other discrepancy to Architect, prior to date specified for receipt of bids for clarification by addendum; or, furnish such items in the type and quality established by this specification, and appropriate to the service intended.

#### 1.2 QUALITY ASSURANCE

##### A. Comply with the followings.

1. Statement of qualification for distributor and installers.
2. Statement of compliance with regulatory requirements and single source responsibility.
3. Distributor's Qualifications: Firm with 3 years experience in the distribution of commercial hardware.
  - a. Distributor to employ full time Architectural Hardware Consultants (AHC) for the purpose of scheduling and coordinating hardware and establishing keying schedule.
  - b. Hardware Schedule shall be prepared and signed by an AHC.
4. Installer's Qualifications: Firm with 3 years experienced in installation of similar hardware to that required for this Project, including specific requirements indicated.

5. Regulatory Label Requirements: Provide testing agency label or stamp on hardware for labeled openings.
    - a. Provide UL listed hardware for labeled and 20-minute openings in conformance with requirements for class of opening scheduled.
    - b. Underwriters Laboratories requirements have precedence over this specification where conflicts exist.
  6. Single Source Responsibility: Except where specified in hardware schedule, furnish products of only one manufacturer for each type of hardware.
- B. Review Project for extent of finish hardware required completing the Work. Where there is a conflict between these Specifications and the existing hardware, notify the Architect in writing and furnish hardware in compliance with the Specification unless otherwise directed in writing by the Architect.

### 1.3 PROJECT CONDITIONS:

- A. Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security and similar requirements indicated, as necessary for the proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents.
- B. Review Shop Drawings for doors and entrances to confirm that adequate provisions will be made for the proper installation of hardware.

### 1.4 WARRANTY:

- A. Manufacturer's Warranty:
  1. Closers: Ten years
  2. Exit Devices: Three Years
  3. Locksets & Cylinders: Three years
  4. All other Hardware: Two years.

## PART 2 - PRODUCTS

### 2.1 HARDWARE

- A. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated. On exit devices provide label indicating "Fire Exit Hardware."
- B. Hinges:

1. Manufacturers: One of the following:
    - a. IVES, Allegion plc.
    - b. Hager Companies.
    - c. Stanley Commercial Hardware; Div. of The Stanley Works.
  2. Stainless-steel hinges with stainless-steel pins for exterior.
  3. Nonremovable hinge pins for exterior and public interior exposure.
  4. Ball-bearing hinges for doors with closers and entry doors.
  5. Three hinges for **1-3/4-inch- (45-mm-)** thick doors **90 inches (2300 mm)** or less in height; four hinges for doors more than **90 inches (2300 mm)** in height.
- C. Locksets and Latchsets:
1. Manufacturers:
    - a. Schlage Commercial Lock Division; Allegion plc. L9070, Design 06.
  2. BHMA A156.3, Grade 1 for exit devices.
  3. BHMA A156.13, Series 1000, Grade 2 for mortise locks and latches.
  4. Lever handles on locksets and latchsets.
  5. Provide trim on exit devices matching locksets.
- D. Cylinders:
1. Manufacturers:
    - a. Schlage Commercial Lock Division; Allegion plc. Schlage cylinders with Primus high security full size interchangeable core
    - b. Key locks to the University's existing master-key system.
  2. Provide cylinders for **SLIDING AUTOMATIC ENTRANCES** and other locking doors that do not require other hardware.
  3. Provide construction keying.
- E. Exit Devices:
1. Von Duprin, Allegion plc, Inpact 9447L-F.
  2. Double door application with two concealed vertical rods.
  3. Provide standard trim with lever.
- F. Closers:
1. Manufacturers: One of the following:
    - a. Arrow USA; an ASSA ABLOY Group company.
    - b. DORMA Architectural Hardware; Member of The DORMA Group North America.



- c. LCN Closers; Allegion plc.
  - 2. Mount closers on interior side (room side) of door opening, **unless noted otherwise**. Provide regular-arm, parallel-arm, or top-jamb-mounted closers as necessary.
  - 3. Adjustable delayed opening (accessible to people with disabilities) feature on closers.
- G. Door Bottom:
- 1. Manufacturers: One of the following:
    - a. Pemko; an ASSA ABLOY Group company.
    - b. Reese Enterprise, Inc.
    - c. Zero International
- H. Seals: All seals shall be finished to match adjacent frame color. Seals shall be furnished as listed in schedule. Material shall be UL listed for labeled openings.
- I. Silencers: Furnish silencers on all interior frames, 3 for single doors, 2 for pairs. Omit where any type of seals occur.
- J. Stops: Provide wall stops or floor stops for doors without closers.

## 2.2 HARDWARE FINISHES:

- 1. Hinges: Matching finish of lockset/latchset.
- 2. Locksets, Latchsets, and Exit Devices: Satin chrome plated;
- 3. Closers: Matching finish of lockset/latchset.
- 4. Other Hardware: Matching finish of lockset/latchset.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Mount hardware in locations required to comply with governing regulations and according to SDI A250.8 and DHI WDHS.3.
- B. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet.
- C. Deliver keys to the University's Representative.

### 3.2 HARDWARE SCHEDULE

- A. Hardware Set No. 1

1. Cylinder.

B. Hardware Set No. 2:

1. Hinges.
2. Mortise classroom lock (F05).
3. Cylinder
4. Closer. (interior side)
5. Door Stop.
6. Door bottom.
7. Door silencer.
8. Threshold and weather stripping.

C. Hardware Set No. 3:

1. Hinges (existing pivot).
2. Two exit devices, concealed vertical rod.
3. Two closers. (Corridor or exterior side)
4. Two Door Stop.
5. Two bottom
6. Door silencer
7. Threshold and weather stripping

END OF SECTION 087100

## SECTION 088000 - GLAZING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Samples.
- B. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated.
  - 1. GANA Publications: "Glazing Manual."
  - 2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."
- C. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.
- D. Fire-Protection-Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, whether glazing is for use in fire doors or other openings, whether or not glazing passes hose-stream test, whether or not glazing has a temperature rise rating of 450 deg F (250 deg C), and the fire-resistance rating in minutes.
- E. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

### PART 2 - PRODUCTS

#### 2.1 GLASS, GENERAL

- A. Fire-Resistance-Rated Assemblies: Provide products that comply with NFPA 80 and are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction for applications indicated.
- B. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201. Provide safety glazing labeling where safety glass is indicated.
- C. Windborne-Debris Resistance: Glazing passes basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886.

## 2.2 GLASS PRODUCTS

- A. Float Glass: ASTM C 1036, Type I, Quality-Q3.
- B. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3.
- C. Laminated Glass: ASTM C 1172, and complying with testing requirements in 16 CFR 1201 for Category II materials.
- D. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.

## 2.3 MONOLITHIC-GLASS TYPES

- A. Glass Type GL-1: Clear fully tempered float glass.
  - 1. Thickness: 6.0 mm
  - 2. Provide safety glass.

## 2.4 LAMINATED-GLASS TYPES

- A. Glass Type GL-2: Clear laminated glass with two plies of clear fully tempered float glass.
  - 1. Thickness of Each Glass Ply: 6.0 mm
  - 2. Provide safety glass.

## 2.5 INSULATING-GLASS TYPES

- A. Glass Type GL-3: Low-e-coated, clear insulating glass.
  - 1. Overall Unit Thickness: **1 inch (25 mm)**.
  - 2. Thickness of Each Glass Lite: 6.0 mm.
  - 3. Outdoor Lite: Fully tempered float glass.
  - 4. Interspace Content: Argon.
  - 5. Indoor Lite: Fully tempered float glass.
  - 6. Provide safety glass.

## 2.6 GLAZING SEALANTS

- A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.
  - 1. Products: One of the following:



- a. Dow Corning Corporation; 799.
  - b. GE Advanced Materials - Silicones; UltraGlaze SSG4000
  - c. Tremco Incorporated; Proglaze SSG
- B. Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fire-protection ratings indicated.
- C. Low-Emitting Materials: Sealants shall have a VOC content of not more than 250 g/L.
- D. Low-Emitting Materials: Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual."
- B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- C. Remove nonpermanent labels, and clean surfaces immediately after installation.

END OF SECTION 088000

## SECTION 090190.53 - EXTERIOR MAINTENANCE REPAINTING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Section includes exterior maintenance repainting work.
- B. Work under this Contract shall also include, but not necessarily be limited to:
  - 1. Protection of existing unpainted surfaces.
  - 2. High pressure washing and abrasive blasting .
  - 3. Moisture testing of substrates.
  - 4. Surface preparation of substrates as required for acceptance of paint, including cleaning, small crack repair, patching, caulking, and making good surfaces and areas to the limits defined under MPI Maintenance Repainting Manual Preparation requirements.
  - 5. Specific pre-treatments noted herein or specified in the MPI Maintenance Repainting Manual.
  - 6. Sealing / priming surfaces for repainting in accordance with MPI Maintenance Repainting Manual requirements.
  - 7. Removing existing paint (**where applicable due to condition of surfaces**).
  - 8. Patching substrates.
  - 9. Repainting.
- C. Unless otherwise noted, the following work or conditions are not included under this Section of work:
  - 1. Masonry Cleaning
- F. Submittals:
  - 1. Product Data. Include printout of MPI's "MPI Approved Products List" with product highlighted.
  - 2. Samples.
  - 3. Submit two sets of Material Safety Data Sheets (MSDS) prior to commencement of work for review and for posting at job site as required.
  - 4. Submit certification reports for ecologo paint products used.
  - 6. Submit work schedule for various stages of work for review and approval if requested.
  - 7. At project completion provide an itemized list complete with manufacturer, paint type and color coding for all colors used for University's later use in maintenance.
  - 8. At project completion provide properly packaged maintenance materials as noted herein and obtain a signed receipt.
- H. Mockups:

1. When requested, prepare and repaint a designated exterior surface area or item to requirements specified herein, with specified paint or coating showing selected colors, gloss / sheen, texture and workmanship to MPI Maintenance Repainting Manual standards for review and approval. When approved, exterior surface area and/or item shall become acceptable standard of finish quality and workmanship for similar on-site repainting work.
  2. Full-coat finish Sample of each type of coating, color, and substrate, applied where directed.
- I. Extra Materials: Deliver to Owner 1 gal. (3.8 L) of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

## 1.2 QUALITY ASSURANCE

- A. Painting Subcontractor shall have a minimum of five (5) years proven satisfactory experience and shall show proof before commencement of work that he will maintain a qualified crew of painters throughout the duration of the work. When requested, Painting Subcontractor shall provide a list of the last three comparable exterior repainting jobs including, name, location, specifying authority / project manager, start / completion dates and value of the work.
- B. Only qualified journeypersons shall be engaged in exterior repainting work. Apprentices may be employed provided they work under the direct supervision of a qualified journeyperson in accordance with trade regulations.
- C. All materials, preparation and workmanship shall conform to the standards contained in the latest edition of the Master Painters Institute (MPI) Maintenance Repainting Manual.
- D. All exterior repainting work shall be inspected by University's Representative (inspector) acceptable to the specifying authority. The painting contractor shall notify University's Representative a minimum of one week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- E. All surfaces requiring repainting shall be inspected by the Painting Subcontractor who shall notify University and General Contractor in writing of any defects or problems, prior to commencing repainting or after preparation work.
- F. Where "special" coatings or decorating systems (i.e. textured coatings or non-MPI listed products or systems) are to be used in repainting, the paint manufacturer shall provide as part of this work, certification of all surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to University.

### 1.3 REGULATORY REQUIREMENTS

- A. Conform to work place safety regulations for storage, mixing, application and disposal of all paint related materials to requirements of University.
- B. Conform to safety precautions in accordance with the latest requirements to Industrial Health and Safety Regulations, latest edition, of authorities having jurisdiction.
- C. Notify University's Representative on award of contract and make application for assignment of an Inspector using appropriate forms supplied by University as well as provide a copy of the project repainting specification, drawings, color schedule and list of proposed materials for review purposes prior to commencement of work.
- D. Fully cooperate at all times with the requirements of University in the performance of their duties, including providing access and assistance as required to complete inspection work.
- E. To reduce the amount of contaminants entering waterways, sanitary / storm drain systems or into the ground the following procedures shall be strictly adhered to:
  - 1. Retain cleaning water for water-based materials to allow sediments to be filtered out. In no case shall equipment be cleaned using free draining water.
  - 2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
  - 3. Return solvent and oil-soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
  - 4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
  - 5. Empty paint cans are to be dry prior to disposal or recycling (where available).
  - 6. Close and seal tightly partly used cans of materials including sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.
  - 7. Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

### 1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver all painting materials in sealed, original labeled containers bearing manufacturer's name, brand name, type of paint or coating and color designation, standard compliance, materials content as well as mixing and/or reducing and application requirements.
- B. Store all paint materials in original labeled containers in a secure (lockable), dry, heated and well ventilated single designated area meeting the minimum requirements of both paint manufacturer and authorities having jurisdiction and at a minimum ambient temperature of 45° F (7° C). Only material used on this project is to be stored on site.
- C. Where toxic and/or volatile / explosive / flammable materials are being used, provide adequate fireproof storage lockers and take all necessary precautions and post adequate warnings (e.g. no smoking) as required.



- D. Take all necessary precautionary and safety measures to prevent fire hazards and spontaneous combustion and to protect the environment from hazard spills. Materials that constitute a fire hazard (paints, solvents, drop clothes, etc.) shall be stored in suitable closed and rated containers and removed from the site on a daily basis.
- E. Comply with requirements of University, in regard to the use, handling, storage and disposal of hazardous materials.

#### 1.5 PROJECT / SITE REQUIREMENTS

- A. UNLESS specifically pre-approved by the specifying body, and the applied product manufacturer, perform no exterior repainting work when the ambient air and substrate temperatures are below **50° F (10° C)**.
- B. Perform no exterior repainting work unless environmental conditions are within MPI and paint manufacturer's requirements or until adequate weather protection is provided. Where required, suitable weatherproof covering and sufficient heating facilities shall be in place to maintain minimum ambient air and substrate temperatures for 24 hours before, during and after paint application.
- C. Perform no exterior repainting work when the relative humidity is above 85% or when the dew point is less than **5° F (3° C)** variance between the air / surface temperature.
- D. Perform no exterior repainting work when the maximum moisture content of the substrate exceeds:
  - 1. 12 % for concrete and masonry (clay and concrete brick / block).
  - 2. 15% for wood.
- E. Conduct all moisture tests using a properly calibrated electronic Moisture Meter.
- F. Test concrete and masonry surfaces for alkalinity as required.
- G. Apply paint only to dry, clean, and adequately prepared surfaces in areas where dust is no longer generated by construction activities such that airborne particles will not affect the quality of finished surfaces.

#### 1.6 SCHEDULING

- A. Schedule repainting operations to prevent disruption of and by other trades when applicable.
- B. Schedule repainting operations to prevent disruption of University's operations or building occupants. Obtain written authorization from University's Representative for changes in work schedule.

## 1.7 GUARANTEE

- A. Furnish a two (2) year Painting Association Guarantee or a 100% two (2) year Maintenance Bond both in accordance with MPI Maintenance Repainting Manual requirements. The Maintenance Bond shall be obtained from an approved bonding company and shall warrant that all repainting work has been performed in accordance with MPI Maintenance Repainting Manual requirements.
- B. All exterior repainting work shall be in accordance with MPI Maintenance Repainting Manual requirements and shall be inspected by the Painting Association whether using the Painting Association Guarantee or the Maintenance Bond option. The cost for such Painting Association inspections as well as either the Painting Association Guarantee or Maintenance Bond shall be included in the Base Bid Price.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. All materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be products listed in the latest edition of the MPI Approved Product List and shall be from a single manufacturer for each system used.
- B. Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in the MPI Approved Product List and shall be compatible with other coating materials as required.
- C. All materials and paints shall be lead and mercury free.
- D. Where required, paint products shall meet MPI Environmentally Friendly" ratings based on VOC (EPA Method 24) content levels.
- E. All paint materials shall have good flowing and brushing properties and shall dry or cure free of blemishes, sags, air entrapment, etc.
- F. Painting Equipment: to best trade standards for type of product and application.
- G. Spray-Painting Equipment: of ample capacity, suited to the type and consistency of paint or coating being applied and kept clean and in good working order at all times.

### 2.2 MIXING AND TINTING

- A. Unless otherwise specified or pre-approved, all paints shall be ready-mixed and pre-tinted. Re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and color and gloss uniformity.

- B. Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.
- C. Where thinner is used, addition shall not exceed paint manufacturer's recommendations.
- D. If required, thin paint for spraying in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to University's Representative.

2.3 FINISH AND COLORS

- A. Unless otherwise specified herein, all exterior repainting work shall be done in accordance with MPI Premium Grade requirements.
- B. Colors shall be as selected by University's Representative from a manufacturer's full range of colors.
- C. Color selection will be based on four (4) base colors and two (2) accent colors with a maximum of two (2) deep or bright color. No more than six (6) colors will be selected for exterior painting work on this project. Note that this does not include pre-finished items unless specifically scheduled.
- D. Exterior the same color as adjacent walls. Unless otherwise noted all doors, frames and trim shall be repainted using a G5 (semi-gloss) finish.
- E. Exterior window frames (unless pre-finished) including trim and sills shall be the same color as walls. Unless otherwise noted all window frames, trim and sills shall be repainted using a G5 (semi-gloss) finish.

2.4 GLOSS / SHEEN

- A. Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following MPI gloss / sheen standard values:

Gloss Level	Description	Units @ 60 degrees	Units @ 85 degrees
G1	Matte or Flat finish	0 to 5	10 maximum
G2	Velvet finish	10 maximum	10 to 35
G3	Eggshell finish	10 to 25	10 to 35
G4	Satin finish	20 to 35	35 minimum
G5	Semi-Gloss finish	35 to 70	
G6	Gloss finish	70 to 85	
G7	High-Gloss finish	> 85	

- B. Gloss level ratings of all painted surfaces shall be as specified herein and as noted on Finish Schedule.

2.5 PAINT

- A. Manufacturers: One of the following:
  1. Benjamin Moore & Co.
  2. Dunn-Edwards Corporation.
  3. Frazer Paint.
- B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."

PART 3 - EXECUTION

3.1 CONDITION OF SURFACES

- A. Prior to commencement of repainting work, thoroughly examine (and test as required) all exterior conditions and surfaces scheduled to be repainted and report in writing to University's Representative any conditions or surfaces that will adversely affect work of this section.
- B. The degree of surface deterioration (DSD) shall be assessed using the assessment criteria indicated in the MPI Maintenance Repainting Manual. In general, the MPI DSD ratings and descriptions are as follows:

<b>Condition</b>	<b>Description</b>
<b>DSD-0</b>	Sound Surface (may include visual (aesthetic) defects that do not affect film's protective properties).
<b>DSD-1</b>	Slightly Deteriorated Surface (may show fading; gloss reduction, slight surface contamination, minor pin holes scratches, etc.) / Minor cosmetic defects (runs, sags, etc.).
<b>DSD-2</b>	Moderately Deteriorated Surface (small areas of peeling, flaking, slight cracking, staining, etc.).
<b>DSD-3</b>	Severely Deteriorated Surface (heavy peeling, flaking, cracking, checking, scratches, scuffs, abrasion, small holes and gouges).
<b>DSD-4</b>	Substrate Damage (repair or replacement of surface required by others).

- C. Other than the repair of DSD-1 to DSD-3 defects included under this scope of work, structural and DSD-4 substrate defects discovered prior to and after surface preparation or after first coat of paint shall be made good and sanded by others ready for painting, unless otherwise agreed to by University and painter to be included in this Work.



- D. No repainting work shall commence until all such DSD-4 adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Painting Subcontractor. The Painting Subcontractor shall not be responsible for the condition of the substrate or for correcting defects and deficiencies in the substrate, which may adversely affect the painting work except for minimal work normally performed by the Painting Subcontractor and as, indicated herein. It shall always, however, be the responsibility of the Painting Subcontractor to see that surfaces are properly prepared before any paint or coating is applied. It shall also be the Painting Subcontractor's responsibility to paint the surface as specified providing that the owner accepts responsibility for uncorrected DSD-4 substrate conditions.

### 3.2 PREPARATION

- A. Prepare all exterior surfaces for repainting in accordance with MPI Maintenance Repainting Manual requirements. Refer to the MPI Maintenance Repainting Manual in regard to specific requirements for the following:
1. environmental conditions.
  2. rust stain removal.
  3. mildew removal.
  4. vertical and horizontal concrete surfaces.
  5. structural steel and miscellaneous metals.
  6. galvanized and zinc coated metal.
  7. stucco.
- B. Where required, pressure wash exterior surfaces prior to repainting in accordance with MPI standards for type of surfaces and recommended pressures to ensure complete removal of all loose paint, stains, dirt, and other foreign matter. This work shall be carried out only by qualified tradesman experienced in pressure water cleaning. The use of water hose cleaning will not be considered satisfactory, unless specifically specified. Allow sufficient drying time and test all surfaces using an electronic moisture meter before commencing work.
- C. Sand, clean, dry, etch, neutralize and/or test all surfaces under adequate illumination, ventilation and temperature requirements.
- D. Remove and securely store all miscellaneous hardware and surface fittings / fastenings (e.g. electrical lights, mechanical louvers, door and window hardware (e.g. hinges, knobs, locks, trim, frame stops) and, removable hazard / instruction labels. from wall and soffit surfaces, doors and frames, prior to repainting and replace upon completion. Carefully clean and replace all such items upon completion of repainting work in each area. Do not use solvent or reactive cleaning agents on items that will mar or remove finishes (e.g. lacquer finishes). Doors shall be removed before repainting to paint bottom and top edges and then re-hung.
- E. Protect all exterior surfaces and areas, including landscaping, walks, drives, all adjacent building surfaces (including glass, aluminum surfaces, etc.) and equipment and any labels and signage from repainting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.

- F. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.
- G. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

### 3.3 APPLICATION

- A. Do not commence repainting unless substrates and all environmental conditions are acceptable for the application of products.
- B. Apply primer, paint or stain in accordance with MPI Painting Manual Premium Grade finish requirements.
- C. Apply primer, paint or stain in a workmanlike manner using skilled and trade qualified applicators as noted under Quality Assurance.
- D. Apply primer, paint or stain within an appropriate time frame after cleaning and preparation to prevent weathering or water staining of substrate or before environmental conditions encourage flash-rusting, rusting, contamination or when the manufacturer's paint specifications require earlier applications.
- E. Primer, paint or stain coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer's recommendations.
- F. Tint each coat of paint progressively lighter to enable confirmation of number of coats.
- G. Unless otherwise approved by the painting inspection agency, apply a minimum of four coats of paint where deep or bright colors are used to achieve satisfactory results.
- H. Sand and dust between each coat to provide an anchor for next coat and to remove defects (runs, sags, etc.) visible from a distance up to **39 inches (1000 mm)**.
- I. Do not apply finishes on exterior surfaces that are not sufficiently dry. Unless manufacturer's directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.

### 3.4 EXTERIOR FINISH / COATING SYSTEMS

- A. Repaint exterior surfaces in accordance with the following MPI Maintenance Repainting Manual requirements.
- B. **Concrete Vertical Surfaces:** (including horizontal soffits)
  - 1. REX 3.1A Latex G1 finish.

C. **Concrete Horizontal Surfaces:** (decks, stairs, parking and court areas, driveways, etc.)

1. REX 3.2H Clear waterborne floor sealer.

D. **Structural Steel and Metal Fabrications:**

1. REX 5.1A Quick dry enamel G5 finish.

E. **Galvanized Metal:** (not chromate passivated)

1. REX 5.3A Latex G4 finish.

F. **Stucco:** (walls and soffits)

1. REX 9.1A Latex G1 finish.

3.5 FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE

A. All surfaces, preparation and paint applications shall be inspected.

B. Repainted exterior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent to University's inspector:

1. brush / roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
2. evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.
3. damage due to touching before paint is sufficiently dry or any other contributory cause.
4. damage due to application on moist surfaces or caused by inadequate protection from the weather.
5. damage and/or contamination of paint due to wind blown contaminants (dust, sand blast materials, salt spray, etc.).

C. Repainted exterior surfaces shall be considered unacceptable if any of the following are evident under natural lighting conditions:

1. visible defects are evident on vertical surfaces when viewed at 90 degrees to the surface from a distance of **39 inches (1000 mm)**.
2. visible defects are evident on horizontal surfaces when viewed at 45 degrees to the surface from a distance of **39 inches (1000 mm)**.
3. visible defects are evident on soffit and other overhead surfaces when viewed at 45 degrees to the surface
4. when the final coat on any surface exhibits a lack of uniformity of sheen across full surface area.

- D. Repainted surfaces rejected by University's inspector shall be made good at the expense of the Contractor. Small affected areas may be touched up; large affected areas or areas without sufficient dry film thickness of paint shall be repainted. Runs, sags of damaged paint shall be removed by scraper or by sanding prior to application of paint.

### 3.6 PROTECTION

- A. Protect all newly repainted exterior surfaces from rain and snow, condensation, contamination, dust, salt spray and freezing temperatures until paint coatings are completely dry. Curing periods shall exceed the manufacturer's recommended minimum time requirements.
- B. Erect barriers or screens and post signs to warn, limit or direct traffic away or around work area as required.

### 3.7 CLEAN-UP

- A. Remove all paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
- B. Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.
- C. Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of University.
- D. Clean equipment and dispose of wash water / solvents as well as all other cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints, thinners, paint removers/strippers in accordance with the safety requirements of University.

END OF SECTION 090190.53



## SECTION 093000 - TILING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Samples.
- B. Obtain tile of each type and color or finish from same production run for each contiguous area
- C. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling ceramic tile packages.

### PART 2 - PRODUCTS

#### 2.1 CERAMIC TILE

- A. Ceramic tile that complies with Standard grade requirements in ANSI A137.1, "Specifications for Ceramic Tile."
- B. Tile Type CT-1: Factory-mounted glass mosaic tile.
  - 1. Manufacturers:
  - 2. Basis-of-Design Product: Datile Glass Mosaic, Waves GH01, or a comparable product of one of the following:
    - a. American Olean; Division of Dal-Tile International Inc.
    - b. Daltile; Division of Dal-Tile International Inc.
    - c. Portobello America, Inc.
  - 3. Module Size: **3/4 by 3/4 inch (19 by 19 mm)**

#### 2.2 INSTALLATION MATERIALS

- A. Low-Emitting Materials: Adhesives and fluid-applied waterproofing membranes shall have a VOC content of 65 g/L or less.
- B. Low-Emitting Materials: Adhesives and fluid-applied waterproofing membranes shall comply with Green Seal's GS-36 and with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

- C. Setting and Grouting Materials: Comply with material standards in ANSI's "Specifications for the Installation of Ceramic Tile" that apply to materials and methods indicated.
1. Thin-Set Mortar Type: Glass Tile Premium.
    - a. Manufacturers: One of the following:
      - 1) [Bostik, Inc.](#)
      - 2) [Custom Building Products.](#)
      - 3) [Laticrete International, Inc.](#)
  2. Grout Type: Polymer modified.
    - a. Manufacturers: One of the following:
      - 1) [Bostik, Inc.](#)
      - 2) [Custom Building Products.](#)
      - 3) [Laticrete International, Inc.](#)

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
- B. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- C. Lay tile in grid pattern unless otherwise indicated. Align joints where adjoining tiles on floor, base, walls, and trim are the same size.
- D. Interior Wall Tile Installation Method(s):
  1. Over Concrete and Masonry: TCA W202 (thin-set mortar)

END OF SECTION 093000

## SECTION 095100 - ACOUSTICAL CEILINGS

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

##### A. Submittals:

1. Product Data
2. Samples
  - a. Samples: Minimum 6 inch x 6 inch samples of each specified acoustical panel; 8 inch long samples of exposed wall molding and each color of suspension system, including main runner and 4 foot cross tees.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Standard: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- B. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

#### 2.2 ACOUSTICAL PANELS AP-1

- A. Basis-of-Design Product: Armstrong World Industries, Inc., ULTIMA Tegular: 1911.
- B. Classification: As follows, per ASTM E 1264:
  1. Type and Form: Type: IV, Form: 2.
  2. Pattern: E.
  3. Surface-Burning Characteristics: Class A
- C. Color: White.
- D. Thickness: 3/4 inch
- E. Modular Size: 24 by 24 inches (610 by 610 mm).

## 2.3 CEILING SUSPENSION SYSTEM

- A. Ceiling Suspension System: Direct hung; ASTM C 635, heavy-duty structural classification.
  - 1. Basis-of-Design Product: Armstrong World Industries, Inc. Prelude XL, 15/16" exposed tee.
- B. Attachment Devices: Sized for 5 times the design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated. Comply with seismic design requirements.
- C. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
  - 1. Size: Provide yield strength at least 3 times the hanger design load (ASTM C 635, Table 1, Direct Hung), but not less than 0.135-inch- (3.5-mm-) diameter wire.
- D. Seismic Struts: Manufacturer's standard product designed to accommodate seismic forces.
- E. Seismic Clips: Manufacturer's standard seismic clips designed to secure panels in place.
- F. Hold-Down Clips: Manufacturer's standard product; provide at 24-inch (610-mm) spacing on cross tees.)
- G. Access: Identify upward and downward access tile with manufacturer's standard unobtrusive markers for each access unit.

## 2.4 MISCELLANEOUS MATERIALS

- A. Acoustical Tile Adhesive: Type recommended by acoustical tile manufacturer, bearing UL label for Class 0-25 flame spread.
  - 1. Adhesive shall have a VOC content of 50 g/L or less.
  - 2. Adhesive shall comply with Green Seal's GS-36 and with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.



### 3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.
- C. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

### 3.3 INSTALLATION

- A. Install acoustical ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
  - 1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.
- B. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
- C. Install acoustical tiles in coordination with suspension system with edges resting on flanges of main runner and cross tees, and exposed moldings and trim. Place splines or suspension system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.
  - 1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.
- D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect.
- E. Arrange directionally patterned acoustical units as indicated on Drawings.

### 3.4 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage.

1. Latex paint to match tiles and suspended acoustical ceilings should be used to hide minor scratches and nicks in the surface and to cover field tegularized edges that are exposed to view.
  
- C. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095100

## SECTION 096500 - RESILIENT FLOORING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

##### A. Submittals:

1. Product Data: Submit manufacturer's product data and installation instructions for each product.
2. Samples:
  - a. 8 x 10 inches samples of high performance resilient sheet vinyl flooring
  - b. Minimum 4-inch length of Welding Threads
  - c. Minimum 2-inch length of Metal Edge strips
  - d. Samples showing the required colors for wall base, corners, and applicable accessories.
3. Shop Drawings: Submit dimensioned drawings with placement details. Include the following information:
  - a. Seam layout

##### B. Extra Materials:

1. Resilient Sheet Flooring: Deliver to Owner at least 10 **linear feet**, in roll form and in full roll width, for each type and color of resilient sheet flooring installed.

#### 1.2 CLOSEOUT SUBMITTALS

##### A. Closeout Submittals: Submit following:

1. Warranty: Warranty documents specified
2. Maintenance Data: Maintenance data for installed products include:
  - a. Methods of initial maintenance to be performed 48 hours after installation
  - b. Methods for maintaining installed products

#### 1.3 QUALITY ASSURANCE

##### A. Installer Qualifications:

1. Installation procedures should be in strict accordance with manufacturer's published technical documentation and shall not begin until the work of all other trades has been completed.

- B. Provide types of wall base and accessories supplied by one manufacturer, unless noted otherwise, including leveling strips, moldings and adhesives.
- C. Pre-installation Meetings: Conduct preinstallation meeting to verify project requirements, manufacturer's installation instructions, maintenance guidelines and manufacturer's warranty requirements.

#### 1.4 DELIVERY, STORAGE & HANDLING

- A. Ordering:
  - 1. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Delivery, Storage and Protection:
  - 1. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
  - 2. Store materials in clean, dry and temperature-controlled environment.
  - 3. Remove rolls from shipping pallet immediately and store standing on end.
  - 4. Wrap opened rolls tightly and face out to avoid material distortion. Store standing on end.
  - 5. Maintain storage temperature range of 65 - 85 degrees F (18 - 29 degrees C).
  - 6. Ensure materials and adhesives are correct for job, and that pattern, color, style and lot numbers match those called for in finish schedule as specified for project.
- C. Install wall base and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the wall base.
- D. Waste Management and Disposal:
  - 1. Remove from site and dispose of packaging materials at appropriate recycling facilities.

#### 1.5 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's 10-year product warranty document executed by authorized company official.
- B. The resilient sheet vinyl shall be covered against manufacturing defects by a one (1) year warranty and as a result of normal foot traffic; wear is covered by a ten (10) year warranty. Manufacturer's warranty is in addition to, and does not limit, other rights Owner may have under Contract Documents.



## PART 2 - PRODUCTS

### 2.1 RESILIENT BASE WB-1

- A. Basis-of-Design Product: Burke Mercer Flooring Products; Division of Burke Industries, Inc.
- B. Color and Pattern: As selected by Architect
- C. ASTM F 1861, Type TS (rubber, vulcanized thermoset).
- D. Group (Manufacturing Method): I (solid)
- E. Style: Cove (base with toe).
- F. Minimum Thickness: **0.125 inch (3.2 mm)**.
- G. Height: **4 inches (102 mm)**.
- H. Lengths: Coils in manufacturer's standard lengths.
- I. Outside Corners: Preformed, pre-mitered outside corners..
- J. Inside Corners: Job formed, mitered at corners using a standard compound or sliding compound miter saw.
- K. Finish: As selected.

### 2.2 RESILIENT MOLDING ACCESSORY TR-1

- A. Basis-of-Design Product: Johnsonite.
- B. Color: As selected by Architect.
- C. Profile and Dimensions: As selected by Architect.

### 2.3 VINYL COMPOSITION FLOOR TILE VCT-1:

- A. Basis-of-Design Product: Mohawk Group, Antiek C0015.
- B. Color and Pattern: 131 Bisque.
- C. Classification: ASTM F 1700, Class III, Type B - Embossed
- D. Fire-Test Response: Critical radiant flux classification of Class I, not less than 0.45 W/sq. cm per ASTM E 648.

- E. Smoke Density: ASTM E662 - Passes
- F. Thickness: 0.1 inch (2.5 mm).
- G. Size: 48 in x 9 in (1219 x 228 mm).
- H. Seaming Method: Standard (butted).

#### 2.4 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement- or blended hydraulic cement-based formulation provided or approved by flooring manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit floor covering and substrate conditions indicated.
  - 1. Basis-of-Design Product: Forbo Sustain 885m
- C. Low-Emitting Materials: Adhesives shall comply with Green Seal's GS-36 and with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- D. Primer Purpose: Made and designed to encapsulate substrate provided or recommended by underlayment manufacturer and approved by manufacturer.
- E. Chemical-Bonding Compound: Manufacturer's product for chemically bonding seams.
  - 1. Low-Emitting Materials: Chemical-bonding compound shall have a VOC content of 510 g/L or less.
  - 2. Low-Emitting Materials: Chemical-bonding compound shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- F. Metal Edge Strips: Extruded aluminum with mill finish of narrowest width as standard with manufacturer, of height required to protect exposed edges of sheet vinyl, and in maximum available lengths to minimize running joints.
- G. Integral-Flash-Cove-Base Accessories: ~~1-inch-~~ (25.4-mm-) radius cove strip and square metal cap; both provided or approved by floor covering manufacturer.
  - 1. Provide metal inside and outside corners and end stops.
- H. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and manufacturer's product specifications.
- B. Prepare concrete substrates according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
- C. Smooth wall surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, drywall joints, and other defects as recommended by the manufacturer.
- D. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations. Avoid organic solvents.
- E. Unroll sheet floor coverings and allow them to stabilize before cutting and fitting.
- F. Maintain uniformity of resilient sheet flooring direction, and match edges for color shading at seams.
- G. **Layout the length of the flooring piece parallel to the length of the room.**
- I. Wall Base:
  - 1. Adhesively install resilient wall base and accessories.
  - 2. Install wall base in maximum lengths possible without gaps at seams and with tops of adjacent pieces aligned. Apply to walls, columns, pilasters, casework, cabinets in toe spaces and other permanent fixtures in rooms or areas where base is required.
  - 3. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
  - 4. Do not scratch wall base during installation.
  - 5. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.
  - 6. Pre-mitered Corners: Install pre-mitered corners before installing straight pieces.
  - 7. Job-formed Corners:
    - a. Inside Corners: Install pre-mitered corners first. Seat the bottom of the wall base snugly to the floor on either side of the corner. Anaerobic adhesive (Super Glue) may be used to adhere the two mitered pieces together prior to adhering to the wall. This can eliminate any slight gapping. Butt straight pieces of maximum lengths on either side of the pre-mitered corners. Make sure heights of the corner returns and the straight base match up.
- J. Install reducer strips at edges of floor coverings that would otherwise be exposed.

- K. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor covering before applying liquid floor polish.
  - 1. Apply a minimum of two coat(s).

### 3.2 FIELD QUALITY CONTROL

- 1. Inspect completed assembly for proper level and alignment.
- 2. Repair or replace damaged products prior to Substantial Completion.

### 3.3 CLEANING AND PROTECTION

- A. After installation, remove excessive adhesive pursuant to manufacturer's published instructions.
- B. Clean resilient materials pursuant to manufacturer's published instructions.
- C. On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.
- D. Protect installed resilient flooring product from damage during construction by providing adequate protective covering such as Masonite or Homasote panels in order to protect vinyl from damage caused by ladders and construction traffic.
- E. Install and maintain entry matting with a non-staining backing to reduce tracked-in dirt and contaminants.

### 3.4 MAINTENANCE

- A. Consult manufacturers, suppliers and janitorial services as to the suitability of a specific product for maintenance.
- B. Wait several days, at least 48 hours, after installation before cleaning a new installation to allow time for the wall base to bond firmly. During this period the wall base should be protected against traffic.
- C. Initial maintenance is essential for increased longevity of vinyl flooring. Ensure initial maintenance is completed 48 hours after installation. Depending on resilient floor covering style, this may include;

END OF SECTION 096500



## SECTION 099000 - PAINTING AND COATING

### PART 1 - GENERAL

#### 1.1 SECTION REQUIREMENTS

- A. Submittals:
  - 1. Product Data
  - 2. Samples.
- B. Mockups: Full-coat finish Sample of each type of coating, color, and substrate, applied where directed.
- C. Extra Materials: Deliver to Owner **1 gal. (3.8 L)** of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

### PART 2 - PRODUCTS

#### 2.1 PAINT

- A. Manufacturers: One of the following:
  - 1. Benjamin Moore & Co.
  - 2. Dunn-Edwards Corporation.
  - 3. Frazee Paint.
- B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."
  - 1. Exterior Painting Materials:
    - a. Block Filler, Latex: MPI #4.
    - b. Primer, Galvanized, Water Based: MPI #134.
    - c. Primer, Latex: MPI #6.
  - 2. Interior Painting Materials:
    - a. Primer, Alkyd, Anticorrosive: MPI #79.
    - b. Alkyd, Interior, Gloss (Gloss Level 6): MPI #48.
- C. Material Compatibility: Provide materials that are compatible with one another and with substrates.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
  - D. Use interior paints and coatings that comply with the following limits for VOC content:
    1. Nonflat Paints, Coatings: 150 g/L.
    2. Primers, Sealers, and Undercoaters: 200 g/L.
    3. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250g/L.
  - E. Colors: As selected.
- 2.2 INTERIOR HIGH PERFORMANCE COATING APPLICATION - CONCRETE FLOOR PAINT
- A. Manufacturers: One of the following:
    1. Rust-Oleum Corporation; S60 Water-Based Epoxy Maintenance Coating.
    2. Sherwin-Williams Company; Armorseal 8100.
    3. No known equal.

### PART 3 - XECUTION

#### 3.1 PREPARATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.
- C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

#### 3.2 APPLICATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Paint exposed surfaces, new and existing, unless otherwise indicated.
  1. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.
  2. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  3. Paint the back side of access panels.
  4. Color-code mechanical piping in accessible ceiling spaces.

5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.
- C. Apply paints according to manufacturer's written instructions.
  1. Use brushes only for exterior painting and where the use of other applicators is not practical.
  2. Use rollers for finish coat on interior walls and ceilings.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
  1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- E. Apply stains and transparent finishes to produce surface films without color irregularity, cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other imperfections. Use multiple coats to produce a smooth surface film of even luster.

### 3.3 EXTERIOR PAINT APPLICATION SCHEDULE

- A. Steel:
  1. Semigloss, Alkyd: Two coats over alkyd anticorrosive primer: MPI EXT 5.1D.
- B. Galvanized Metal:
  1. Semigloss Latex: Two coats over waterborne galvanized-metal primer: MPI EXT 5.3H.
- C. Stucco:
  1. Flat Latex: Two coats: MPI EXT 9.1A.

### 3.4 INTERIOR PAINT APPLICATION SCHEDULE

- A. Gypsum Board or Plaster:
  1. Gloss Level 2 Latex: Two coats over latex primer/sealer: MPI INT 9.2A.
- B. Steel:
  1. Semigloss, Quick-Dry Enamel: Two coats over quick-drying alkyd metal primer: MPI INT 5.1A.
  2. Semigloss Latex: Two coats over alkyd anticorrosive primer: MPI INT 5.1Q.

C. Galvanized Metal:

1. Semigloss Latex: Two coats over waterborne galvanized-metal primer: MPI INT 5.3J.

3.5 INTERIOR HIGH PERFORMANCE COATING APPLICATION SCHEDULE

A. Concrete, Traffic Surfaces:

1. Water-based Epoxy: Two coats: MPI INT 3.2C.

END OF SECTION 099000



## SECTION 260000 - GENERAL ELECTRICAL REQUIREMENTS

### PART 1 - GENERAL

#### 1.1 SCOPE

- A. Work of this section includes everything necessary for or incidental to completing the electrical work, to provide a complete and operable electrical system, except as herein specifically excluded.

#### 1.2 GENERAL REQUIREMENTS

- A. Electrical System Characteristics: 120/208V. 3PH, 4W.
- B. Guarantee: Furnish a written guarantee for a period of one-year from date of acceptance.
- C. Codes and Regulations: Work done under this Section shall comply with the latest edition of the following: California Electrical Code, State of California Title 24, State Building Standards, Occupational Safety and Health Administration (OSHA) requirements, State of California Title 17 and to all local codes having jurisdiction. In the case where the codes have different levels of requirements, the most stringent rule shall apply.
- D. Wherever a discrepancy in quantity or size of conduit, wire, equipment, devices, circuit breakers, etc., (all materials), arises on the Drawing and/or Specifications, the Contractor shall be responsible for providing and installing all material and services required by the strictest condition noted on Drawings and/or in Specifications to insure complete and operable systems as required by the Owner and Engineer.
- E. The General and Supplementary Conditions, as well as Special Conditions apply in addition to items in the Electrical Section. Special attention is directed to the following sections:
  - 1. Drawings and Specifications at the site.
  - 2. Shop drawings and samples.
  - 3. Record drawings.
  - 4. Cutting and Patching.
  - 5. Cleaning up.
  - 6. Guarantee.
  - 7. Tests.
- F. Additional Work: Refer to furniture vendor drawings and specifications for additional Electrical requirements.
- G. Testing:

1. Scan:
    - a. Infrascan test of the distribution branch circuit panels affected by the remodel shall be required.
    - b. Infrascan certified reports shall be submitted on completion to the Owner and Engineer.
    - c. Scans shall be performed by an independent testing laboratory with total connected loads in operation.
  2. Megger:
    - a. New or re-used branch circuits - phase, neutral and ground conductors.
    - b. New or re-used insulated bonding conductors.
  3. All circuits shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.
  4. Grounding System: Shall be tested by an independent testing laboratory to meet resistance specified in Part 3.1, D.3 of these Specifications. It shall be this Contractor's responsibility to make adjustments, as required, to upgrade non-complying systems to proper and safe operation.
  5. All certified testing reports shall be submitted to the Owner at completion of project.
- H. All Core Cutting, Drilling, and Patching:
1. For the installation of work under this Section, the aforementioned shall be performed under this Section of the Specifications and the Architectural/Structural sections of the Specifications.
  2. No holes will be allowed in any structural members without the written approval of the Structural Engineer.
  3. For penetrations of concrete slabs or concrete footings, the work will be as directed in the Concrete Section of Specifications.
  4. The contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.
  5. Penetrations shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.
- I. Verifying Drawings and Job Conditions:
1. This Contractor shall examine all Drawings and Specifications in a manner to be fully cognizant of all work required under this Section.
  2. This Contractor shall visit the site and verify existing conditions. Where existing conditions differ from Drawings, adjustment shall be made and allowances included for all necessary equipment to complete all parts of the Drawings and Specifications.
- J. Shop Drawings/Product Submittals:

1. Drawings shall be submitted in six (6) bound sets accompanied by Letter of Transmittal, which shall give a list of the number and dates of the drawings submitted. Drawings shall be complete in every respect and bound in sets.
  2. The Drawings submitted shall be marked with the name of the project, numbered consecutively and bear the approval of the Contractor as evidence that the Drawings have been checked by the Contractor. Any Drawings submitted without this approval will be returned to the Contractor for resubmission.
  3. If the shop drawings show variations from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in his letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper adjustment which may be caused by the substitution. Complete working samples shall be submitted with all requests for substitution.
  4. Shop drawings/product data shall be submitted on the following but not limited to:
    - a. Lighting fixtures and drivers.
    - b. Circuit breakers and mounting hardware.
    - c. Switches/Occupant sensors/Disconnect switches.
    - d. Receptacles.
    - e. Fuses.
    - f. Pull boxes.
    - g. Conduit and fittings.
    - h. Wire/conductors.
    - i. Conduit supports.
  5. Shop drawings shall include scaled site plans and floor plans indicating the location of all equipment, devices, interconnecting wire/cable, wiring diagrams and sequence of operation.
  6. Shop drawings shall include copies of the contractor's current C-10 license.
- K. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of blueprints. These shall be corrected daily and show every change from the original Drawings. This set of prints shall be kept on the job site and shall be used only as a record set. This shall not be construed as authorization for the Contractor to make changes in the layout without definite instruction in each case. Upon completion of the work, a set of reproducible Contract Drawings shall be obtained from the General Contractor and all changes as noted on the record set of prints shall be incorporated thereon with black ink in a neat, legible, understandable and professional manner. Refer to the Supplementary General Conditions for complete requirements.

### 1.3 WORK IN COOPERATION WITH OTHER TRADES

- A. Examine the Drawings and Specifications and determine the work to be performed by the site utilities contractor, mechanical and plumbing contractor and other trades. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, disconnects, relays, and other devices for the required operation of all systems or equipment whether shown on plan or not.

- B. Provide power and control circuits, conduit and wire as indicated on the furniture vendor drawings, as required for complete and operable systems.
- C. The electrical contractor shall be responsible for providing and installing specialty back-boxes for all systems. The electrical contractor shall patch, repair and refinish walls, ceilings or floors disturbed by the installation of the subject back boxes.

#### 1.4 TESTING AND ADJUSTMENT

- A. Upon completion of all electrical work, this Contractor shall test all circuits, switches, motors, breakers, motor starter(s) and their auxiliary circuits and any other electrical items to insure perfect operation of all electrical equipment.
- B. Equipment and parts in need of correction and discovered during such testing shall be immediately repaired or replaced with all new equipment and that part of the system shall then be retested. All such replacement or repair shall be done at no additional cost to the Owner.
- C. All circuit shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.
- D. All certified testing reports shall be submitted to the Engineer at completion of project.

#### 1.5 IDENTIFICATION

- A. Provide typed, updated, panel directories for all panels affected by the remodel. The description for each circuit shall match the load(s) served and as identified on the Drawings.
- B. Identification of Outlet Wall Plates: Outlet wall plates shall be engraved with the serving panel and circuit number on the front of the plate.

#### 1.6 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

- A. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four (4) copies of operating and maintenance and servicing instructions, as well as four (4) complete wiring diagrams for the following item(s) or equipment:
  - 1. Circuit breakers.
  - 2. Switches.
  - 3. LED drivers.
  - 4. Occupant sensors, power packs, relay packs.
- B. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Two (2) copies shall be presented to the Electrical Engineer and four (4) copies to the Owner.



## 1.7 ELECTRICAL CONTRACTOR'S RESPONSIBILITY

- A. It shall be the Electrical Contractor's responsibility to obtain a complete set of Drawings and Specifications. He shall check the Drawings of the other trades and shall carefully read the entire Specifications and determine his responsibilities.
- B. Contractor shall carry a valid State of California contractor's license.

## 1.8 FINAL INSPECTION AND ACCEPTANCE

- A. After all requirements of the Specifications and/or the Drawings have been fully completed, representatives of the Owner will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system to the full satisfaction of each representative.
- B. Final acceptance of the work will be made by the Owner after receipt of approval and recommendation of acceptance from each representative.

## 1.9 RECORD DRAWINGS

- A. Contractor shall furnish one set of reproducible record drawings before final payment of retention.

## 1.10 SUBSTITUTIONS

- A. Substitution to specified equipment shall be submitted and received by the Engineer fifteen (15) days after the bid date for review and approval.
- B. To receive consideration, requests for substitutions must be accompanied by documentary proof of its equality with the specified material. Documentary proof shall be in letter form and identify the specified values/materials alongside proposed equal values/materials. In addition, catalog brochures and samples must be included in the submittal.
- C. In the event that authorization is given for a substitute equal to bid, after award of contract the Contractor shall submit to the Engineer certified quotations from suppliers of both the specified and proposed equal material for price comparison and delivery dates.
- D. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, arranged by Change Order.
- E. The Contractor warrants that substitutions proposed for specified items will fully perform the functions required.
- F. Substitutions or requests for substitution shall not be accepted and rejected for failure to comply with items A-E above.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Materials and Equipment: All electrical materials and equipment shall be new and shall be listed by Underwriter's Laboratories and bear their label, or listed and certified by a nationally recognized testing authority where UL does not have an approval. Custom made equipment must have complete test data submitted by the manufacturer attesting to its safety. In addition, the materials and equipment shall comply with the requirements of the following:
1. American Society of Testing Materials (ASTM).
  2. Insulated Cable Engineers Association (ICEA).
  3. National Electrical Manufacturer's Association (NEMA).
  4. National Fire Protection Association (NFPA).
  5. American National Standard Institute (ANSI).
- B. Branch Circuit Panelboards – Circuit Breakers:
1. Provide thermal-magnetic bolt-on type 40 deg C. circuit breakers complete with required mounting hardware and accessories. Circuit breakers manufacturer shall match existing panelboard. Equipment manufactured by third party OEM is not acceptable.
  2. Circuit breaker short circuit rating shall be equal to or greater than the highest AIC rated circuit breaker in the panel.
  3. Circuit breakers shall be the number of poles and current capacity as indicated on the panel schedule with terminals/lugs UL listed for 75°C. Circuit breakers shall be fully coordinated to ensure a local fault does not trip any upstream circuit breaker.
  4. Circuit breakers shall be provided with a device for locking circuit breaker in "OFF" position.
  5. All wiring in the panel shall be neatly arranged and laced together.
- C. Lighting Fixtures:
1. Furnish, install and connect a lighting fixture at each outlet where a lighting fixture type symbol (designated on plans) is shown as being installed. Each fixture shall be complete with all required accessories including sockets, glassware, boxes, spacers, mounting devices, fire rating enclosure, chips and drivers.
  2. LED Driver shall be Class 1, 120-277V, 50/60HZ (constant current) with surge protection in accordance with IEEE/ANSI C62.41.2 guidelines with a surge current rating of 10,000 amps. Operating temperature for interior fixtures shall range from 0°C to 35°C (32°F to 95°F). Operating temperature for exterior fixtures shall range from -40°C to 40°C (-40°F to 104°F). All defective drivers shall be replaced at no cost to the Owner.
  3. LED chips shall be as manufactured by CREE, Philips-Lumileds, Nichia, Osram or approved equal.
  4. Interior fixtures installed in individual rooms shall be provided with LED chips of the same manufacturer. Mixing of chip manufacturers will not be allowed. All fixtures in any one room must be replaced with new fixtures when the fixtures in the room display dissimilar illumination colors.

5. Exterior fixtures shall be provided with LED chips of the same manufacturer. Mixing of chip manufacturers will not be allowed. All fixtures within line of sight must be replaced with new fixtures when the fixtures in the line of sight display dissimilar illumination colors.
6. LED chips shall have 4000° Kelvin color temperature. Interior fixtures shall meet IESNA LM-79-08. Exterior fixtures shall meet IESNA LM-80-08.
7. Where indicated on the Lighting Fixture Schedule, interior light fixtures shall be provided with integral occupancy sensor and/or daylight sensor.
8. Provide two (2) programming/configuration tools for programming automatic control devices.
9. Refer to Architectural reflected ceiling plan for type of ceiling being installed in each room and provide each fixture with required mounting devices and accessories for the particular ceiling.
10. All light fixtures shall be individually supported and properly anchored to the surfaces indicated on the Architectural elevations.
11. Locations of fixtures shall be per the architectural reflected ceiling plan and shall be coordinated at time of rough-in.

D. Conduit:

1. Rigid conduit shall be full weight threaded type aluminum or steel, except where specifically required to be steel. Steel conduit shall be protected by overall zinc coating to inside and outside surfaces, applied by the hot dip, metallizing or sherardizing process.
2. Galvanized Rigid Conduit (GRC), shall be full weight threaded type aluminum or steel, except where specifically required to be steel. Steel conduit shall be protected by overall zinc coating to inside and outside surfaces, applied by the hot dip, metallizing, or sherardizing process.
3. Intermediate Metal Conduit (IMC), shall be hot-dipped galvanized in accordance with UL 1242 and meeting Federal Specification WWC-581 (latest revision).
4. Electrical Metallic Tubing (EMT), shall be zinc-coated steel with baked enamel or plastic finish on inside surfaces.
5. Flexible metal conduit shall be constructed of aluminum or hot-dipped galvanized steel strips wound spirally with interlocking edges to provide greatest flexibility with maximum strength. Interior surfaces shall be smooth and offer minimum drag to pulling in conductors. Used only as directed by the Engineer.
6. Liquid-tight conduit (Seal-Tite) shall be galvanized steel flexible conduit as above except with moisture and oil-proof jacket, pre-cut lengths and factory installed fittings. For outdoor installations and motor connection.
7. Non-Metallic Conduit:
8. Polyvinyl chloride (PVC) rigid conduit, Schedule 40, Type II for underground installation only.
9. Conduit and fitting shall be produced by the same manufacturer.
10. Electrical non-metallic tubing (ENT) is not permitted.

E. Fittings:

1. Condulet type fittings shall be smooth inside and out, taper threaded with integral insulating bushing and of the shapes, sizes and types required to facilitate installation or

- removal of wires and cables from the conduit and tubing system. These fittings shall be of metal, smooth inside and out, thoroughly galvanized, and sherardized cadmium plated.
- 2. Metallic conduit covers shall have the same finish as the fitting and shall be provided for the opening of each fitting where conductor do not pass through the cover.
- 3. Connector, coupling, locknut, bushings and caps used with rigid conduit shall be steel, threaded and thoroughly galvanized. Bushings shall be insulated.
- 4. EMT fittings, connectors and couplings, shall be steel, zinc or cadmium plated, raintight, threadless, compression or tap-on multiple point, steel locking ring type with insulated throat.
- 5. Flexible steel conduit connectors shall be malleable iron clamp or squeeze type or steel twist-in type with insulated throat. The finish shall be zinc or cadmium plating.
- 6. Die cast, set screw or indenter type fittings are not acceptable.
- 7. Conduit unions shall be "Erickson" couplings, or approved equal. The use of running threads will not be permitted.

F. 600 Volt Conductors - Wire and Cable:

- 1. All conductors shall be stranded copper. Simpull type or equal.
- 2. Type THHN/THWN thermoplastic, 600 volt, UL approved, dry and wet locations, for conductor sizes up to and including #4 AWG.
- 3. Type XHHW cross-linked synthetic polymer, 600 volt, UL approved, for dry and wet locations, for conductor sizes #2 AWG. and above.
- 4. Cross-linked synthetic polymer, XHHW, 600 volts, UL approved, for installation underground, in concrete or masonry.
- 5. Wire and cable shall be new, manufactured not more than six (6) months prior to installation, shall have size, type of insulation, voltage rating and manufacturer's name permanently marked on outer covering at regular intervals.
- 6. Wire and cable shall be factory color coded by integral pigmentation with a separate color for each phase and neutral. Each system shall be color coded and it shall be maintained throughout.
- 7. Systems Conductor Color Coding:
  - a. Power 208/120V, 3PH, 4W:
    - 1) Phase A = Black
    - 2) Phase B = Red
    - 3) Phase C = Blue
    - 4) Neutral = White
    - 5) Switchlegs = Purple (Switchlegs shall also be identified separately by numerical tags).
    - 6) Travelers = Purple with Black stripe.
  - b. Ground Conductors:
    - 1) Green
- 8. Multi-Conductor metal clad (MC) cable is not permitted.



9. All color coding for #4 conductor and above shall be as identified above, utilizing phase tape at each termination.
10. No conductors carrying 120 volt or more shall be smaller than #12 AWG.

G. Outlet Boxes:

1. For fixtures, boxes shall be galvanized, steel, knockout type equipped with 3/8" fixture studs and plaster rings where required.
2. Unless otherwise noted on plan or specified herein, outlet boxes shall be 4" square x 2 1/8" deep, steel, knockout type, mounted flush with in wall. Provide with plaster rings and wall plate.
3. For locations where standard boxes are not suitable due to number and size of conduit to be terminated, special boxes shall be designed to fit space or meet other requirements and submitted for approval.
4. For surface mounting or exposure to wet or damp locations, outlet boxes shall be heavy cast aluminum or cast iron with threaded hubs; covers shall be watertight with gaskets and non-ferrous screws.
5. Floor boxes shall be cast iron, fully adjustable type, with flange and brass covers suitable for the outlets/connectors specified on plan and in the project manual. Boxes shall be suitable for terminating the conduit specified on plan. Wiremold Omnibox series or approved equal for 1" conduit and smaller. Wiremold Resource RFB series or approved equal for conduits larger than 1".

H. Switches/Dimmers/Sensors:

1. Standard single pole switches shall be flush tumbler, A.C. rated, quiet type, heavy duty back or side wired with binding screws, standard rocker Hubbell #1221, 20A, 120/277V, or approved equal, color as elected by Architect. Two pole three-way and other switches shall be similar. Refer to Device Plate Section of Specifications for other requirements. Switches that are part of an automatic lighting control system shall be provided with integral, factory installed, connectors to accept the system control wiring, shall be manufactured by the automatic lighting control system manufacturer, and shall be fully compatible with the lighting control system.
2. Dimmers shall be provided with multi-function tap switch with small, raised rocker for dimmer adjustment. Dimmer shall perform the following functions: Rocker shall raise/lower light levels with the new level becoming the current preset level. Switch single tap raises lights to preset level or fades lights to off. Switch double tap raises light to full on level. Switch tap and hold slowly fades lights to off over an extended period. LEDs adjacent to tap switch indicate light level when dimmer is on, and function as locator light when dimmer is off. The contractor shall ensure the dimmers are fully compatible with the LED drivers being controlled. Dimmers that are part of an automatic lighting control system shall be provided with integral, factory installed, connectors to accept the system control wiring, shall be manufactured by the automatic lighting control system manufacturer, and shall be fully compatible with the lighting control system.
3. Switches located outdoors or in damp or wet locations shall be the same as above provided with steel locking weatherproof lift cover.

4. Switches controlling or disconnecting single phase motor loads in excess of 1/3HP shall be horsepower rated and approved for motor control service. Switches shall be complete with overload device of proper motor nameplate rating, where required.
5. Disconnect (safety) switches shall be fused, heavy duty type meeting NEMA Specifications. Switches shall be provided with rejection type fuse blocks. Provide switches with the number of poles, the voltage, current and horsepower ratings as required. Provide externally operable, quickmake, quick-break type mechanism with cover interlock and padlockable in either the open or closed position. Unless indicated otherwise, provide switches indoors in NEMA Type 1 enclosure and in NEMA Type 3R rain-tight enclosure where indicated to be outdoors or weatherproof. Provide nameplate indicating equipment served. Provide unit as manufactured by Challenger or approved equal Siemens or Westinghouse.
6. Occupant sensors shall be low voltage, dual technology type, suitable for ceiling or wall mounting. Stand-alone ceiling mounted sensors shall be provided complete with relay/power pack and slave-packs to perform the switching indicated on plan. Sensors that are part of an automatic lighting control system shall be provided with integral, factory installed, connectors to accept the system control wiring. Sensors shall provide minimum 1,000 square foot coverage and provide complete coverage of the areas indicated on plan. Stand-alone sensors shall be as manufactured by Sensor Switch, Watt Stopper or Leviton. System sensors shall be as manufactured by the automatic lighting control system manufacturer and shall be fully compatible with the lighting control system.
7. Occupant sensors located in hallways/corridors shall be programmed to automatically dim the lights to 50% when the space is unoccupied. Hallway/corridor sensors shall be capable of detecting motion within a 130'-0" area. Stand-alone sensors shall be provided complete with relay/power pack and slave-packs.
8. Wall mounted, switch type, combination sensor and dimmer shall be dual technology type with single or dual circuit to provide the control indicated on plan. Sensors shall provide minimum 900 square feet major motion and 400 square feet minor motion coverage. Sensor shall have a multi-function tap switch with small, raised rocker, for dimmer adjustment. Sensors shall be as manufactured by Sensor Switch or approved equal Lutron, WattStopper or Leviton. Custom color as selected by the Architect. The contractor shall ensure the dimmers are fully compatible with the LED drivers being controlled.
9. All switches, dimmers and sensors shall be listed and certified by the California Energy Commission.

I. Receptacles:

1. Convenience outlet shall consist of duplex convenience receptacle mounted in an outlet box in the wall, flush with the finish surface and shall be complete with plate.
2. Receptacles for convenience outlets, unless otherwise indicated, shall be industrial heavy duty type, duplex 3W grounding type, 20A, 125V, Hubbell-Bryant #5362-\*. (\*) color as selected by Architect.
3. Weatherproof receptacle shall be industrial heavy duty type, ground fault interrupter, 20 ampere, three wire grounding type, 120 volt, Hubbell-Bryant # GF-5362-I, with steel lockable lift cover U.L. listed for "wet" locations when in operation.

4. Receptacles located outdoors shall be provided with steel weatherproof box and lockable lift cover U.L. listed for “wet” locations when in operation.
5. Receptacles in indoor damp locations shall be 20A, 125V, Hubbell-Bryant #5362WR or approved equal, color as selected by Architect. Provide with steel locking lift cover, Hubbell-Bryant #96067 or approved equal.
6. Specialty receptacles, identified on plans, for use with Owner furnished equipment shall be provided complete with outlet box, wall plate and receptacle to match the configuration of the plug being provided with the subject equipment.

J. Device Plates:

1. Shall be smooth thermoplastic wall plates, for the number of gang and types of openings necessary. Color shall be as selected by the Architect.
2. Plates shall be fitted, when specified for more than two gangs.
3. All switch and receptacle plates shall be engraved with related serving panel and circuit number identification on the front.
4. Plates for interior high abuse areas shall be stainless steel.
5. Covers for exterior mounted receptacles shall be metallic, U.L. listed for wet locations when “in-use”.

K. Junction and Pullboxes:

1. For interior dry locations, boxes shall be galvanized one-piece drawn steel, knockout type, with removable, machine screw secured covers.
2. For outside, damp or interior/exterior surface mounted locations, boxes shall be heavy cast aluminum or cast iron with removable, gasketed, non-ferrous machine screw secured covers.
3. All boxes shall be sized for the number and sizes of conductors and conduits entering the box and equipped with plaster rings where required. Each conductor shall be terminated at an insulated, barriered terminal connector and completely identified with an engraved fiber identification marker, Electrovert or Underwriter's Safety Device Company.

L. Painting:

1. Panels, junction boxes, pull boxes, conduit bodies, etc., and conduit installed outdoors and in public view shall be painted with colors selected by the Architect to match the subject exterior surface. Refer to painting section of the specifications for additional requirements.

M. Seismic Design and Anchoring of Electrical Equipment:

1. Seismic anchorage of electrical equipment shall conform to C.C.R. Title 24, 2019 CBC. Anchorage details for roof/floor mounted equipment shall be as shown on plans.

## PART 3 - EXECUTION

### 3.1 PREPARATION AND INSTALLATION

#### A. Installation of Conduit and Outlet Boxes:

1. All conduit exposed or installed in concrete and masonry, shall be galvanized rigid steel conduit (GRC), or intermediate metal conduit (IMC).
2. Rigid conduit may be installed under floor slabs, under concrete sidewalls and as noted on the Drawings. Rigid conduit installed under slabs shall be 1" trade size minimum and shall be wrapped with 20 mil. polyvinyl chloride plastic tape.
3. All conduit except as hereinafter specified, installed in concrete or masonry walls, or damp or hazardous location, or subject to mechanical injury shall be heavy wall, threaded, galvanized rigid steel conduit (GRC), or intermediate metal conduit (IMC).
4. Flexible steel conduit shall only be permitted to be used for routing of conductors within the furniture raceway, and for the final connection to light fixture outlets. All flexible steel conduit runs for connection to light fixtures shall be less than 6'-0". All outdoor installation shall be made using liquid-tight flex with approved fittings. Use of flexible conduit shall be as approved by the Engineer.
5. Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or EMT and in accordance with Article 345 of CEC and UL Information card #DYBY.
6. All conduit installed in the dry walls or ceilings of the building shall be steel tube (EMT), Galvanized Rigid Steel (GRC), or Intermediate Metal Conduit (IMC).
7. MC cable is not allowed.
8. Conduit shall be run so as not to interfere with other piping fixtures or equipment.
9. The ends of all conduit shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.
10. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.
11. Underground conduit shall be, unless otherwise indicated, Schedule 40 PVC (polyvinyl chloride) installed at depth of not less than 24" below grade. Where power and communication/signal conduits are run in a common trench a (12") inch minimum separation shall be maintained between power and communication/signal conduits. The grounding wire in plastic conduit shall be rated in accordance with Article 250 of 2019 CEC.
12. All underground or imbedded conduit shall be 1" minimum trade size for steel and for PVC.
13. Where underground power feeder conduit runs stub-up, conduit shall transition to GRC underground. The contractor shall use GRC elbows and GRC risers wrapped in 20 mil. PVC tape for stub-ups. Conduit stub-ups for branch circuits and low voltage systems shall be PVC.
14. PVC conduit shall not be run in walls.
15. Where underground conduit runs penetrate floor slab, conduit shall terminate 6" above finished floor with a grounding bushing.



16. Where conductors enter a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductors shall be protected by a plastic bushing type fitting providing a smoothly rounded insulating surface.
17. All conduit underground and where concealed under floor slabs shall have joints painted with thread compound prior to makeup. No conduit shall be installed horizontally in concrete walls or floors.
18. All conduit shall be supported at intervals not less than 6'-0" and within 12" from any outlet and at each side of bends and elbows. Conduit supports shall be galvanized, heavy stamped, two hole conduit clamp properly secured.
19. Where conduit racks are used the rack shall consist of two piece conduit clamps attached to galvanized steel slotted channels, properly secured via threaded rods attached directly to the building structure.
20. Nail-in conduit supports will not be allowed. One piece set-screw type conduit clamps or perforated iron for supporting conduit will not be permitted.
21. Seismic Conduit Support:
  - a. All conduit shall be supported in such a manner that it is securely attached to the structure of the building. Attachment is to be capable of supporting the tributary weight of conduit and contents in any direction. Maximum spacing of support and braces are to be as follows:

<u>CONDUIT TYPE</u>	<u>MAXIMUM SPACING</u>
EMT, IMC	10'-0"
GRC (3/4" thru 1 1/2")	10'-0"
GRC (2" thru 2 1/2")	16'-0"
GRC (3" and larger)	20'-0"

22. All conduit runs shall be installed parallel or perpendicular to walls, structural members, or intersection of vertical planes and ceilings. Field made bends and offset shall be avoided where possible. Crushed or deformed raceway shall not be installed.
23. Open knockouts in outlet boxes only where required for inserting conduit.
24. Outlet boxes on metal studs shall be attached to metal hangers, tack welded or bolted to studs; on wood studs attachment shall be with wood screws, nails not acceptable.
25. All boxes shall be covered with outlet box protector, Appleton SB-CK. Keep dirt from entering box or panels. If dirt does get in, it shall be removed prior to pulling wires.
26. All boxes installed outdoors shall be suitable for outdoor installations, gasketed, screw cover and painted as directed by the Architect with weatherproof paint to match building.
27. All conduit entries to outdoor mounted cabinets, boxes, etc., shall be made using Myers "SCRU-TITE" hubs Series ST.
28. All conduit shall have a 200 lb test poly-propylene pull line left in place for future use in all runs tagged with a plastic tag at terminating end indicating the location of the opposite end of the conduit.
29. All rotating electrical equipment shall be supplied with flexible, liquid-tight conduit with appropriate slack and shall not exceed thirty-six (36) inches.
30. All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/rack, see note 19. Refer to note 18 for support of single conduit runs within suspended ceilings. Conduit shall not be allowed to lay on ceiling or be supported from ceiling suspension wires or other suspension system.

31. Provide complete conduit system for all line voltage systems. The Contractor shall coordinate the location of junction/pull boxes over inaccessible ceilings with the Architectural Reflected Ceiling Plan and in the filed with the ceiling contractor, and provide access panels as required to access the junction/pull box.
32. All raceways shall be installed concealed in walls, floors or ceilings. Exposed raceways will not be permitted unless specifically approved in writing by the Architect/Engineer. When approved by the Architect/Engineer exposed raceways shall be as manufactured by Wiremold, or approved equal, and shall be painted to match the finish of the wall or ceiling to which it is supported to.
33. Provide minimum 18" square ceiling access panels for devices, outlets, junction/pull boxes installed over inaccessible ceilings.

**B. Installation of Conductors:**

1. All line voltage wire, including control circuits, shall be installed in conduit.
2. All line voltage circuits and feeder wires shall be continuous from the service point to terminal or farthest outlet. No joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.
3. All low voltage wire/cables shall be continuous from the service point to terminal or farthest outlet. No joints will be allowed.
4. Thoroughly clean all conduit and wire-ways and see that all parts are perfectly dry before pulling any wires. No line voltage joint shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.
5. Install UL approved, fixture wire from all lighting fixture lamp sockets into fixture outlet or junction box.

**C. Joints in 600 Volt Conductors:**

1. Joints in 600 volt conductors smaller than No. 4 AWG shall be made with Scotchlok spring type connectors. Wires No 4 AWG and larger shall be joined together with approved type of pressure connector and taped with #33 3M tape, three (3) layers minimum to provide insulation not less than that of conductor. Connections to switch or busbar shall be made with one-piece copper lugs. Splicing of all 600 volt or less in-line connections #2 AWG through 350 MCM shall be made with 3M brand PST connector.
2. Joints/splices will not be permitted in underground pull boxes unless specifically authorized by the Engineer.

**D. Grounding:**

1. Provide grounding for entire electric installation as shown on plans and as required by applicable codes. Included as requiring grounding are:
  - a. Conduit.
  - b. Neutral or identified conductors of interior wiring system.
  - c. Switchboards and Branch Circuit Panelboards.
  - d. Non-current carrying metal parts of fixed equipment.
  - e. Telephone distribution equipment.

2. Grounding and bonding conductors shall be sized per the latest edition of the California Code of Regulations, Title 24, State of California and the CEC.
  3. Provide and install an equipment grounding conductor in all feeder and branch circuit conduits.
  4. Grounding system resistance to ground shall not exceed 25 ohm.
- E. Prefabricated Equipment: Installation of all prefabricated items and equipment shall conform to the requirements of the manufacturer's specifications and installation instruction pamphlets. Where code requirements affect installation of materials and equipment, the more stringent requirements, code or manufacturer's instructions and/or specifications, shall govern the work.

END OF SECTION

## SECTION 28311 - DIGITAL ADDRESSABLE FIRE-ALARM SYSTEM

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes:
  - 1. Manual Fire Alarm Boxes.
  - 2. Analog Sensors.
  - 3. Notification Appliances.

#### 1.2 DEFINITIONS

- A. Definitions in NFPA 72 and UL 864 are inclusive to this section.
- B. LED: Light-emitting diode.
- C. NICET: National Institute for Certification in Engineering Technologies.
- D. FACP: Main Fire Alarm Control Panel.
- E. MINIPLEX: Remote input/output panel connected to a FACP via Remote Unit Interface.
- F. NETWORK: FACP(s) interlinked via dedicated fiber connections to the GCC.
- G. GCC: Graphical Command Center – Campus FACP Network Portal.
- H. IMS: Integrated Management System – Campus FACP Network Portal.
- I. DACT: Digital Alarm Communication Transmitter – FACP Alarm Reporting media to the Campus Police Department.
- J. TAC: Notification power supply and controller for addressable horns and strobes.
- K. TPS: An addressable Notification Power supply mounted in an FACP enclosure.
- L. RPS: Remote Power Supply for conventional horns and strobes.

#### 1.3 SYSTEM DESCRIPTION

- A. Non-coded, UL 864 9<sup>th</sup> edition, UL-certified analog-addressable system with automatic sensitivity control of system smoke detectors at the main panel and the GCC.
- B. Multiplexed signal transmission, dedicated to fire service only.



#### 1.4 PERFORMANCE REQUIREMENTS

- A. Comply with NFPA 72.
- B. UL listed and labeled.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- D. Seismic Performance FACP and raceways shall withstand the effects of earthquake motions determined according to the VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEM SPECIFICATION SECTION.

#### 1.5 SUBMITTALS

- A. General Submittal Requirements:
  - 1. Submittals: Product Data and system operating description.
  - 2. Submittals to Authorities Having Jurisdiction: In addition to distribution requirements for submittals, make an identical submittal to authorities having jurisdiction. To facilitate review, include copies of annotated Contract Drawings as needed to depict component locations.
  - 3. Shop Drawings shall be prepared by persons with the following qualifications:
    - a. Trained and certified by manufacturer in fire alarm system design.
    - b. Fire alarm certified by NICET, minimum Level II.
- B. Product Data:
  - 1. Provide manufactures data sheets and CSFM listing sheets for all products.
- C. Shop Drawings:
  - 1. Fire Alarm System:
    - a. Include plans, elevations, sections, details, riser diagrams general notes, location, Scope of the Work and attachments to other work.
    - b. System Operation Description: Detailed description for this Project, including method of operation and supervision of each type of circuit and sequence of operations for manually and automatically initiated system inputs and outputs. Manufacturer's standard descriptions for generic systems are not acceptable.
    - c. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" chapter in NFPA 72.
    - d. Include voltage drop calculations for all notification appliance circuit.
      - 1) Worst case only calculations are not acceptable.

- e. Include battery-size calculation(s) with stand-by and alarm loads for all components.
  - f. Include electrical panel and circuit number for all 120VAC sources.
  - g. Device Address:
    - 1) Show the address for each addressable device shown on the plans.
    - 2) Coordinate custom device label with DCFM prior to programming labels.
  - h. System Riser Diagram: Show all equipment, terminal cans, devices, conduit routing, cable routing and cable type and quantity. Provide ladder type riser lay-out with all interconnecting conduits.
  - i. Wiring Diagrams: Provide wiring type, part number, manufacture and color code.
  - j. Power, Signal, and Control Wiring: Include diagrams for equipment and for system with all terminals and interconnections identified.
  - k. Duct Smoke Detectors: Provide performance parameters and installation details for each duct detector or in-duct detector, provide the complete range of air velocity, temperature, and humidity allowed for proper operation. Provide weatherproof detail for all roof top mounted and/or exposed detectors.
  - l. Ductwork Drawings: Show critical dimensions that relate to placement and support of sampling tubes, the detector housing, and remote status and alarm indicators. Locate detectors on plans according to manufacturer's written recommendations.
  - m. Floor Plans: Indicate final outlet locations showing address of each addressable device. Show route of cable and conduits.
  - n. Room numbers: Confirm room numbers being used in programming are the final numbers assigned by Facilities Management.
- D. Submittals to Designated Campus Fire Marshal (DCFM): In addition to distribution requirements for submittals specified in Division 01 Section "Submittals", make an identical submittal to the University. To facilitate review, include copies of annotated Contract Drawings as needed to depict component locations. Resubmit as required to make clarifications or revisions to obtain approval. On receipt of comments from Campus Fire Marshal, submit them to the University for review.
- E. Resubmittals: Make corrections and resubmit drawings as required until the plans are reviewed and approved by the Campus Fire Marshal.
- F. Delegated-Design Submittals: The Mechanical Engineer of Record will coordinate the specific location of each duct detector with the mechanical, electrical and fire alarm contractors prior to the installation of any duct mounted device.
- 1.6 QUALITY ASSURANCE
- A. Installer Qualifications:
- 1. Personnel installing wire, cable, devices or making final connections shall be trained or supervised by the manufacturer.
  - 2. Installers shall be licensed, as required, by the State of California.

B. Electrical Components, Devices, and Accessories:

1. Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to California State Fire Marshal and marked for intended use.

1.7 PROJECT CONDITIONS

A. Interruption of Existing Fire Alarm Service: Do not interrupt fire alarm service to facilities occupied by the University or others unless permitted under the following conditions and then only after arranging to provide temporary guard service according to requirements indicated:

1. Notify the University's Representative no fewer than fourteen days in advance of proposed interruption of fire alarm service.
2. Do not proceed with interruption of fire alarm service without the University's Representative written permission.

1.8 SEQUENCING AND SCHEDULING

A. Existing Fire Alarm Equipment: Maintain fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire alarm equipment "NOT IN SERVICE" until removed from the building.

PART 2 - PRODUCTS

2.1 FIRE ALARM CONTROL PANEL (FACP)

A. General: Comply with UL 864 9<sup>th</sup> editions, "Control Units for Fire-Protective Signaling Systems."

B. The following minimum FACP hardware shall be provided:

1. 120 VAC input power powered panel with 250 points capacity expandable to 2000 in groups of 250 points, 9 amps of system power with 3 built in NAC circuits, a battery charger and batteries
  - a. Point capacity is defined where (1) point equals (1) monitor (input) or (1) control (output).
2. From all battery charging circuits in the system provide battery voltage and ammeter readouts on the FCP LCD Display.
3. Municipal City Circuit Connection with Disconnect switch, 24VDC Remote Station (reverse polarity), local energy, shunt master box, or a form "C" contact output.
4. One Auxiliary electronically resettable fused 2A @24VDC Output, with programmable disconnect operation for 4-wire detector reset.

5. One Auxiliary Relay, SPDT 2A @ 32VDC, programmable as a trouble relay, either as normally energized or de-energized, or as an auxiliary control.
  6. Where required provide Intelligent Remote Battery Charger for charging up to 110Ah batteries.
  7. Power Supplies with three integral intelligent Notification Appliance Circuit Class B for system expansion.
  8. Four (4) form "C" Auxiliary Relay Circuits (Form C contacts rated 2A @ 24VDC, resistive), operation is programmable for trouble, alarm, supervisory of other fire response functions. Relays shall be capable of switching up to ½ A @ 120VAC, inductive.
  9. The FACP shall support (6) RS-232-C ports and one service port.
  10. Remote Unit Interface: supervised serial communication channel for control and monitoring of remotely located annunciator and I/O panels.
  11. Programmable DACT for either Common Event Reporting or per Point Reporting.
  12. Service Port Modem for dial in passcode access to all fire control panel information.
- C. Cabinet: Lockable steel enclosure. Arrange unit so all operations required for testing or for normal care and maintenance of the system are performed from the front of the enclosure. If more than a single unit is required to form a complete control unit, provide exactly matching modular unit enclosures.
- D. Alphanumeric Display and System Controls: Panel shall include an 80-character LCD display to indicate alarm, supervisory, and component status messages and shall include a keypad for use in entering and executing control commands.
- E. Voice Alarm: Provide an emergency communication system, integral with the FACP, including voice alarm system components, microphones, amplifiers, and tone generators. Features include:
1. Amplifiers comply with UL 1711, "Amplifiers for Fire Protective Signaling Systems." Amplifiers shall provide an onboard local mode temporal coded horn tone as a default backup tone.
  2. Test switches on the amplifier shall be provided to test and observe amplifier backup switchover. Each amplifier shall communicate to the host panel amplifier and NAC circuit voltage and current levels for display on the user interface.
  3. Each amplifier shall provide at least 3 on-board NAC circuits for speaker circuit connection.
  4. All announcements are made over dedicated, supervised communication lines. All risers shall support Class B wiring for each audio channel.
  5. Eight channel digitally multiplexed audio for systems that require more than two channels of simultaneous audio. Up to 8 channels of audio shall be multiplexed on either a style 4 twisted pair.
  6. Emergency voice communication audio controller module shall provide up to 32 minutes of message memory for digitally stored messages. Provide supervised connections for master microphone and up to 5 remote microphones.
- F. Distributed Module Operation:



1. FACP shall be capable of allowing remote location of the following modules:
  - a. Amplifiers, voice and telephone control circuits.
  - b. Addressable Signaling Line Circuits.
  - c. Initiating Device Circuits.
  - d. Notification Appliance Circuits.
  - e. Auxiliary Control Circuits.
  - f. Graphic Annunciator LED/Switch Control Modules.

## 2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements and approval of the University's Representative, provide products compatible with the existing Campus GCC and Network:

1. FACP Equipment and enclosures:
  - a. SimplexGrinnell.
  - b. WSA.
  - c. Hoffman (weatherproof applications only).
2. Wire and Cable:
  - a. Comtran Corporation.
  - b. Helix/HiTemp Cables, Inc.; a Draka USA Company.
  - c. Rockbestos-Suprenant Cable Corporation; a Marmon Group Company.
  - d. West Penn Wire/CDT; a division of Cable Design Technologies.
3. Audible and Visual Signals:
  - a. SimplexGrinnell.
  - b. Wheelock (weatherproof applications only).

## 2.3 SYSTEM OPERATIONAL DESCRIPTION

- A. Fire alarm signal initiation shall be by one or more of the following devices or systems:

1. Manual Station.
2. Analog Sensor.
3. Smoke Detector.
4. Duct Detector.
5. Heat Detector.
6. Flame Detector.
7. Beam Detector.
8. Automatic Sprinkler System Water Flow.
9. Special Extinguishing System.
10. Fire Standpipe System.
11. GCC.

12. Networked FACP.

B. Fire alarm signal shall initiate the following actions:

1. Continuously operate alarm notification appliances.
2. Identify alarm at the fire alarm control panel.
3. Transmit alarm signal to the campus police department as required.
4. Transmit alarm signal to the GCC and Network as required.
5. Unlock electric door locks as required.
6. Release fire and smoke doors and magnetic door holders as required.
7. Activate notification devices as required.
8. Activate Sprinkler Bell (waterflow only).
9. Activate general alarm horn (all but waterflow).
10. Close smoke dampers as required.
11. Recall or shunt elevators as required.
12. Record events in the system memory.
13. Record events by the Network printer.
14. Record events on the GCC and/or IMS.
15. Networked FACP action(s) as required.

C. Supervisory signal initiation shall be by one or more of the following devices and actions:

1. Valve supervisory switch.
2. Low-air-pressure switch of a dry-pipe sprinkler system.
3. Elevator shunt trip supervision.

D. System trouble signal initiation shall be by one or more of the following devices and actions:

1. Open circuits, shorts, and grounds in designated circuits.
2. Opening, tampering with or removing alarm-initiating and supervisory signal-initiating devices.
3. Loss of primary power at FACP, MINIPLEX or TAC.
4. Abnormal ac voltage at FACP, MINIPLEX or TAC.
5. Break in standby battery circuitry.
6. Failure of battery charger.
7. Abnormal position of any switch at FACP, MINIPLEX, TAC or remote annunciator.
8. Abnormal condition of any pre-action or suppression system.
9. Disabled device.
10. Loss of Network communication.

E. Walk Test: A test mode to allow one person to test alarm and supervisory features of initiating devices. Enabling of this mode shall require the entry of a password. The FACP and annunciators shall display a test indication while the test is underway. If testing ceases while in walk-test mode, after a preset delay, the system shall automatically return to normal.

F. Remote Smoke-Detector Sensitivity Adjustment: Controls shall select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and control of changes in those settings. Allow controls to be used to program repetitive, time-scheduled,

and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory, and make a print-out of the final adjusted values on the network printer.

## 2.4 ADDRESSABLE MANUAL FIRE ALARM BOXES

- A. UL 38 listed; finished in red with molded, raised-letter operating instructions in contrasting color. Station shall show visible indication of operation. Mounted on recessed outlet box; if indicated as surface mounted, provide manufacturer's surface back box.
- B. Single-action mechanism, pull-lever type. With integral addressable module, arranged to communicate individual manual-station status (normal, alarm, or trouble) to the FACP and Campus GCC.
- C. Weatherproof Fire Alarm Boxes: Provide weatherproof single-action devices with addressable module.
- D. Covers: Factory-fabricated clear plastic enclosures are not permitted to be used.

## 2.5 ADDRESSABLE ANALOG SENSORS

### A. SMOKE SENSORS

- 1. General: Comply with UL 268, "Smoke Detectors for Fire Protective Signaling Systems."
- 2. Include the following features:
  - a. Factory Nameplate: Serial number and type identification.
  - b. Operating Voltage: 24 VDC, nominal.
- 3. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore normal operation.
- 4. Plug-In Arrangement: Sensor and associated electronic components are mounted in a module that connects to a fixed base with a twist-locking plug connection. Base shall provide break-off plastic tab that can be removed to engage the head/base locking mechanism. No special tools shall be required to remove head once it has been locked. Removal of the detector head shall interrupt the supervisory circuit of the fire alarm detection loop and cause a trouble signal at the control unit.
- 5. Each sensor base shall contain an LED that will flash each time it is scanned by the Control Unit (once every 4 seconds). In alarm condition, the sensor base LED shall be on steady.
- 6. Each sensor base shall contain a magnetically actuated test switch to provide for easy alarm testing at the sensor location.
- 7. Each sensor shall be scanned by the Control Unit for its type identification to prevent inadvertent substitution of another sensor type. Upon detection of a "wrong device", the control unit shall operate with the installed device at the default alarm settings for that sensor; 2.5% obscuration for photoelectric sensor, 135-deg F and 15-deg F rate-of-rise for the heat sensor, but shall indicate a "Wrong Device" trouble condition.

8. The sensor's electronics shall be immune from false alarms caused by EMI and RFI.
  9. Sensors include a communication transmitter and receiver in the mounting base having a unique identification and capability for status reporting to the FACP. Sensor address shall be located in base to eliminate false addressing when replacing sensors.
  10. Environmental compensation, programmable sensitivity settings, status testing, and monitoring of sensor dirt accumulation for the duct sensor shall be provided by the FACP.
  11. Removal of the sensor head for cleaning shall not require the setting of addresses.
- B. Type: Smoke sensors shall be of the photoelectric or combination photoelectric / heat type.
1. Where acceptable per manufacturer specifications, ionization type sensors may be used.
- C. Bases: Relay output, Remote LED, sounder and isolator bases shall be supported alternatives to the standard base.
- D. Duct Smoke Sensor:
1. Photoelectric type, with housing and sampling tube of design and dimensions as recommended by the manufacturer for the specific duct size and installation conditions where applied. Sensor includes relay as required for fan shutdown.
  2. When required the Duct Housing shall provide a supervised relay driver circuit for driving up to 15 relays with a single "Form C" contact rated at 7A@ 28VDC or 10A@ 120VAC. This auxiliary relay output shall be fully programmable. Relay shall be mounted within 3 feet of HVAC control circuit.
  3. Duct Housing shall provide a relay control trouble indicator Yellow LED.
  4. Compact Duct Housing shall have a transparent cover to monitor for the presence of smoke. Cover shall secure to housing by means of four (4) captive fastening screws.
  5. Duct Housing shall provide two (2) Test Ports for measuring airflow and for testing. These ports will allow aerosol injection in order to test the activation of the duct smoke sensor.
  6. Duct Housing shall provide a magnetic test area and Red sensor status LED.
  7. For maintenance purposes, it shall be possible to clean the duct housing sampling tubes by accessing them through the duct housing front cover.
  8. Where indicated a NEMA 4X weatherproof duct housing enclosure shall provide for the circulation of conditioned air around the internally mounted addressable duct sensor housing to maintain the sensor housing at its rated temperature range. The housing shall be UL Listed to Standard 268A.
  9. Provide in-duct detector assembly(ies) with Photoelectric sensor:
    - a. Where sampling tube designs are not appropriate.
    - b. Where air flow coverage is from 35-600 Ft/Min.
  10. Provide a remote test switch (RTS), on all duct type detectors when the device's alarm LED is obstructed from being clearly visible from the floor or the device is mounted higher than 9' A.F.F.



- a. Mount RTS below detector in the ceiling or on the nearest sidewall as directed by the DSFM.

## 2.6 HEAT SENSORS

### A. Thermal Sensor:

1. Combination fixed-temperature and rate-of-rise unit with plug-in base and alarm indication lamp; 135-deg F fixed-temperature setting except as indicated.
2. Thermal sensor shall be of the epoxy encapsulated electronic design. It shall be thermistor-based, rate-compensated, self-restoring and shall not be affected by thermal lag.
3. Sensor fixed temperature sensing shall be independent of rate-of-rise sensing and programmable to operate at 135-deg F or 155-deg F. Sensor rate-of-rise temperature detection shall be selectable at the FACP for either 15-deg F or 20-deg F per minute.
4. Sensor shall have the capability to be programmed as a utility monitoring device to monitor for temperature extremes in the range from 32-deg F to 155-deg F.

## 2.7 CONVENTIONAL SYSTEM SMOKE DETECTORS

- A. Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at the FACP for calibration, sensitivity, and alarm condition, and individually adjustable for sensitivity from the FACP, internet and Campus GCC.
- B. A digital communication port shall comply with EIA RS232 Protocol.
- C. The system shall be powered from a regulated supply of nominally 24V DC. The battery charger and battery shall comply with the relevant Codes, Standards or Regulations. Typically, 24-hours standby battery back-up is required followed by 30 minutes in an alarm condition.
- D. Local Power Supply Standards that may apply: UL 1481 Listed (provided the power supply and standby batteries have been appropriately sized/rated to accommodate the system's power requirements).
- E. The detector shall provide a supervised input circuit with which the remote power supply trouble contact may be monitored. Activation of power supply trouble output contact shall cause detector to transmit power supply trouble status information to the attached control panel. A 47 K ohm E.O.L. resistor shall be used for monitoring circuit purposes.

## 2.8 ADDRESSABLE CIRCUIT INTERFACE MODULES

- A. Addressable Circuit Interface Modules: Arrange to monitor one or more system components that are not otherwise equipped for addressable communication. Modules shall be used for monitoring of water flow, valve tamper, non-addressable devices, and for control of evacuation indicating appliances and AHU systems.

- B. Addressable Circuit Interface Modules will be capable of mounting in a standard electric outlet box. Modules will include cover plates to allow surface or flush mounting. Modules will receive their operating power from the signaling line or a separate two wire pair running from an appropriate power supply as required.
- C. There shall be the following types of modules:
1. Type 1: Monitor Circuit Interface Module:
    - a. For conventional 2-wire smoke detector and/or contact device monitoring with Class B or Class A wiring supervision. The supervision of the zone wiring will be Class B. This module will communicate status (normal, alarm, trouble) to the FACP.
    - b. For conventional 4-wire smoke detector with Class B wiring supervision. The module will provide detector reset capability and over-current power protection for the 4-wire detector. This module will communicate status (normal, alarm, trouble) to the FACP.
  2. Type 2: Line Powered Monitor Circuit Interface Module:
    - a. This type of module is an individually addressable module that has both its power and its communications supplied by the two wire multiplexing signaling line circuit. It provides location specific addressability to an initiating device by monitoring normally open dry contacts. This module shall have the capability of communicating four zone status conditions (normal, alarm, current limited, trouble) to the FACP.
    - b. This module shall provide location specific addressability for up to five initiating devices by monitoring normally closed or normally open dry contact security devices. The module shall communicate four zone status conditions (open, normal, abnormal, and short). The two-wire signaling line circuit shall supply power and communications to the module.
  3. Type 3: Single Address Multi-Point Interface Modules:
    - a. This multipoint module shall provide location specific addressability for four initiating circuits and control two output relays from a single address. Inputs shall provide supervised monitoring of normally open, dry contacts and be capable of communicating four zone status conditions (normal, open, current limited, and short). The input circuits and output relay operation shall be controlled independently and disabled separately.
    - b. This dual point module shall provide a supervised multi-state input and a relay output, using a single address. The input shall provide supervised monitoring of two normally open, dry contacts with a single point and be capable of communicating four zone status conditions (normal, open, current limited, and short). The two-wire signaling line circuit shall supply power and communications to the module.
    - c. This dual point module shall monitor an unsupervised normally open, dry contact with one point and control an output relay with the other point, using a single

address. The two-wire signaling line circuit shall supply power and communications to the module.

4. Type 4: Line Powered Control Circuit Interface Module: This module shall provide control and status tracking of a Form "C" contact. The two-wire signaling line circuit shall supply power and communications to the module.
  5. Type 5: 4-20 mA Analog Monitor Circuit Interface Module: This module shall communicate the status of a compatible 4-20 mA sensor to the FACP. The FACP shall annunciate up to three threshold levels, each with custom action message; display and archive actual sensor analog levels; and permit sensor calibration date recording.
- D. All Circuit Interface Modules shall be supervised and uniquely identified by the control unit. Module identification shall be transmitted to the control unit for processing according to the program instructions. Modules shall have an on-board LED to provide an indication that the module is powered and communicating with the FACP. The LEDs shall provide a troubleshooting aid since the LED blinks on poll whenever the peripheral is powered and communicating.

## 2.9 ADDRESSABLE ALARM NOTIFICATION APPLIANCES

### A. Addressable Notification Appliances:

1. The Contractor shall furnish and install Addressable Notification Appliances and accessories to operate on compatible signaling line circuits (SLC).
2. Addressable Notification appliance operation shall provide power, supervision and separate control of horns and strobes over a single pair of wires. The controlling channel (SLC) digitally communicates with each appliance and receives a response to verify the appliance's presence on the channel. The channel provides a digital command to control appliance operation. SLC channel wiring shall be unshielded twisted pair (UTP), with a capacitance rating of less than 60pf/ft. and a minimum 3 twists (turns) per foot.
3. Class B (Style 4) notification appliances shall be wired without requiring traditional in/out wiring methods; addressable "T" Tapping shall be permitted. Up to 63 appliances can be supported on a single channel.
4. Each Addressable notification appliance shall contain an electronic module and a selectable address setting to allow it to occupy a unique location on the channel. This on-board module shall also allow the channel to perform appliance diagnostics that assist with installation and subsequent test operations. A visible LED on each appliance shall provide verification of communications and shall flash with the appliances address setting when locally requested using a magnetic test tool.
5. Addressable Controller:
  - a. Addressable Controller shall supervise Channel (SLC) wiring, communicate with and control addressable notification appliances. It shall be possible to program the High/Low setting of the audible (horn) appliances by channel from the addressable controller.

6. Horn:
  - a. Addressable horn shall be listed to UL 464. Horn appliances shall have a High/Low Setting, programmable by channel from the addressable controller or by appliance from the host FACP. The horn shall have a minimum sound pressure level of 83 or 89 dBA @ 24VDC. The horn shall mount directly to a standard single gang, double gang or 4" square electrical box, without the use of special adapter or trim rings.
  - b. Appliances shall be wired with UTP conductors, having a minimum of 3 twists per foot.
  
7. Visible/Only:
  - a. Addressable strobe shall be listed to UL 1971. The V/O shall consist of a xenon flash tube and associated lens/reflector system. The wall mount V/O enclosure shall mount directly to standard single gang, double gang or 4" square electrical box, without the use of special adapters or trim rings. The ceiling mount V/O shall mount to a single gang electrical box.
  - b. Appliances shall be wired with UTP conductors, having a minimum of 3 twists per foot. V/O appliances shall be provided with different minimum flash intensities of 15cd, 75cd and 110cd. Provide a label inside the strobe lens to indicate the listed candela rating of the specific Visible/Only appliance.
  
8. Audible/Visible:
  - a. Addressable combination Audible/Visible (A/V) Notification Appliances shall be listed to UL 1971 and UL 464. The strobe light shall consist of a xenon flash tube and associated lens/reflector system. Provide a label inside the strobe lens to indicate the listed candela rating of the specific strobe. The horn shall have a minimum sound pressure level of 83 or 89 dBA @ 24VDC. The audible/visible enclosure shall mount directly to standard single gang, double gang or 4" square electrical box, without the use of special adapters or trim rings.
  - b. Appliances shall be wired with UTP conductors, having a minimum of 3 twists per foot.
  - c. The appliance shall be capable of two-wire synchronization with one of the following options:
    - 1) Synchronized Strobe with Horn on steady.
    - 2) Synchronized Strobe with Temporal Code Pattern on Horn.
    - 3) Synchronized Strobe with March Time cadence on Horn.
    - 4) Synchronized Strobe firing to NAC sync signal with Horn silenced.
  
9. Isolator Module:
  - a. Isolator module provides short circuit isolation for addressable notification appliance SLC wiring. Isolator shall be listed to UL 864. The Isolator shall mount directly to a minimum 2 1/8" deep, standard 4" square electrical box, without the use of special adapter or trim rings.



- b. Power and communications shall be supplied by the Addressable Controller channel SLC; dual port design shall accept communications and power from either port and shall automatically isolate one port from the other when a short circuit occurs.
- c. The following functionality shall be included in the Isolator module:
  - 1) Report faults to the host FACP.
  - 2) On-board Yellow LED provides module status.
  - 3) After the wiring fault is repaired, the Isolator modules shall test the lines and automatically restore the connection.

**B. TrueAlert Addressable Appliances NAC Power Extender:**

- 1. The TrueAlert Addressable Controller shall be a stand-alone panel capable of powering a minimum of 3 TrueAlert Signaling line circuits. Each channel shall be rated for 2.5 amps and support up to 63 TrueAlert addressable notification appliances. Power and communication for the notification appliances shall be provided on the same pair of wires.
- 2. Addressable SLC notification appliance circuits shall be Class B Style 4. Unless noted elsewhere.
- 3. The internal power supply & battery charger shall be capable of charging up 12.7 Ah batteries internally mounted or 18Ah batteries mounted in an external cabinet.
- 4. The NAC extender panel may be mounted close to the host control panel or can be remotely located.

## 2.10 REMOTE INDICATORS

**A. Remote status and test switches with LED indicating lights.**

- 1. LED is connected to flash when the associated device is being polled by the FACP.
- 2. The LED and LED test switch are mounted on a plate and designed to flush mount to a single-gang electrical.

## 2.11 MAGNETIC DOOR HOLDERS AND CLOSERS

**A. Description:**

- 1. Units are equipped for wall or floor mounting as indicated and are complete with matching door plate.
- 2. Interfaced to the FACP to shut down on alarm.
- 3. Wall-Mounted Units: Flush mounted, unless otherwise indicated.
- 4. Rating:
  - a. Unit shall operate from a 120VAC, a 24VAC or a 24VDC source, and develops a minimum of 25 lbs. holding force.

**B. Material and Finish: Chrome or brushed aluminum unless noted otherwise.**

- C. Door holders are to be installed by the door hardware contractor.
- D. Door Closers are to be supplied and installed by the door hardware contractor.

## 2.12 WIRE, CABLE, AND FIBER

- A. Wire and cable for fire alarm systems shall be UL listed and labeled as complying with NFPA 70, Article 760.
- B. Signaling Line Circuits: Twisted, shielded pair, sized as recommended by system manufacturer.
- C. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 degrees C, color-coded insulation.
  - 1. Low-Voltage Communication Circuits: No. 18 AWG, minimum.
  - 2. Low-Voltage Power Circuits: No. 14 AWG, minimum.
  - 3. Line-Voltage Circuits: No. 12 AWG, minimum.
  - 4. Multi-conductor Armored Cable: NFPA 70 red Lightweight Steel Type MC, copper conductors, TFN/THHN conductor insulation, copper drain wire, copper armor with red identifier stripe, UL listed for fire alarm and cable tray installation, plenum rated, and complying with requirements in UL 2196 for a 2-hour rating.

## PART 3 - EXECUTION

### 3.1 EQUIPMENT INSTALLATION

- A. Comply with the latest edition of NFPA 72 and UL 864 requirements for installation of fire-alarm system.
- B. Equipment Mounting: Install fire alarm cabinets and enclosures as recommended by the manufacturer.
- C. Install seismic bracing: Comply with the requirements in Division 26 section regarding vibration and seismic control for electrical systems.
- D. Smoke or Heat Detector Spacing:
  - 1. Smooth ceiling spacing shall not exceed the rating of the detector.
  - 2. Spacing of heat detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas, shall be determined according to Appendix A in NFPA 72.
  - 3. Spacing of heat detectors shall be determined based on guidelines and recommendations in NFPA 72.
- E. Smoke detector location: Locate detectors not closer than 3 feet from air-supply diffuser or return-air opening. Locate detector not closer than 12 inches from any part of a lighting fixture.

- F. Duct Smoke Detectors: Comply with NFPA 72, NFPA 90A and the manufacture recommendations. Install sampling tubes so they extend the full width of the duct.
- G. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm in the dwelling or suite causes all the smoke alarm in the dwelling or suit to sound a temporal pattern.
- H. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-tamper switch that is not readily visible from normal viewing position.
- I. Audible Alarm-Indicating Devices: Install not less than 6 inches below the ceiling. Install horns on flush-mounted back boxes. Weatherproof devices are to be mounted on weatherproof surface back box.
- J. Visible Alarm-Indicating Devices (strobes): Install so that the entire lens is more than 80 inches but less than 96 inches above the finished floor.
  - 1. Exception: Wall mounted strobes in sleeping areas shall be mounted at least 24 inches below the ceiling and within 16ft of the occupant's pillow.
- K. Combination Audible/Visual Devices: Mount at visible device heights.

### 3.2 FIBER AND WIRING INSTALLATION

- A. Install wiring according to the following:
  - 1. NECA 1.
  - 2. TIA/EIA 568-A.
  - 3. NFPA, CBC, FCC, RFI/EMI.
- B. Wiring Method:
  - 1. Install wiring in metal raceway according to Division 26 Section "Raceways and Boxes for Electrical Systems."
  - 2. Fire alarm circuits and equipment control wiring associated with the fire alarm system shall be installed in a dedicated raceway system. This system shall not be used for any other wire or cable.
- C. Wiring Method:
  - 1. Fire-Rated Cables: Use of 2-hour fire-rated fire alarm cables, NFPA 70 Types MI and CI, is not permitted.
  - 2. Signaling Line Circuits: Power-limited fire alarm cables shall be installed in the same cable or raceway as signaling line circuits.
- D. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by manufacturer. Install conductors parallel with or at right angles to sides and

back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

- E. Cable Taps: Use numbered terminal strips in junction, pull, and outlet boxes, cabinets, or equipment enclosures where circuit connections are made.
- F. Color-Coding: Color-code fire alarm conductors as shown on the fire alarm plans. Use one color-code for alarm circuit wiring and a different color-code for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. **Provide fire alarm conduits, J-boxes and covers red in color and use compression type fitting.**
- G. Wiring to Remote Alarm Transmitting Device:
  - 1. 3/4-inch conduit between the FACP and the transmitter.
  - 2. Install number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function.

### 3.3 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals according to Division 26.
- B. Operating instructions: Frame in a location visible from the FACP.
- C. Paint power-supply disconnect switch red and label "FIRE ALARM."

### 3.4 FIELD QUALITY CONTROL

- A. Final acceptance testing shall be witnessed by the University's Representative.
- B. A final pre-test shall be witnessed by the University's Representative.
- C. Manufacturer's Field Service:
  - 1. Engage a factory-authorized installation representative to assist during the installation, pre-testing and adjust of the fire alarm system and field devices, components and equipment.
  - 2. Include a manufacturer's field representative during all final acceptance testing.
- D. Perform the following field tests and inspections and prepare test reports:
  - 1. Before requesting final acceptance testing and approval of the installation, submit a written statement using the form for Record of Completion shown in NFPA 72.



2. Perform each electrical test and visual and mechanical inspection listed in NFPA 72. Certify compliance with test parameters. All tests shall be conducted under the direct supervision of a NICET technician certified under the Fire Alarm Systems program at Level II.
3. Visual Inspection: Conduct a visual inspection before any testing. Use as-built drawings and system documentation for the inspection. Identify improperly located, damaged, or nonfunctional equipment, and correct before beginning tests.
4. Testing: Follow procedure and record results complying with requirements in NFPA 72. Detectors that are outside their marked sensitivity range shall be replaced.
5. Test and Inspection Records:
  - a. Prepare according to NFPA 72, including demonstration of sequences of operation by using the matrix-style form in Appendix A in NFPA 70.
  - b. Provide report results in writing on computer generated forms.

### 3.5 ADJUSTING

- A. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project outside normal occupancy hours for this purpose.
- B. Follow-Up Tests and Inspections: After date of Substantial Completion, test the fire alarm system complying with testing and visual inspection requirements in NFPA 72.

END OF SECTION 28111