

## Project Manual

# Duval County Courthouse

## Roof Remediation, Exterior Windows, & Electrical

### San Diego, Texas



### ARCHITEXAS Project No. 2433

June 19, 2025

Issued for Bid

Owner

**Duval County**

400 East Gravis Avenue

San Diego, Texas 78384

Architect

**ARCHITEXAS**

**Architecture, Planning and Historic Preservation, Inc.**

1023 Springdale Rd Ste 11E

Austin, TX 78721

512.444.4220

MEP Engineer

**Brown Consulting Engineers Inc.**

3505 Olsen Road, Suite 110

Amarillo, TX 79109

806.354.0141

# Duval County Courthouse Roof Remediation, Exterior Windows, & Electrical

San Diego, Texas

THE ARCHITECT'S SEAL AND SIGNATURE ON THE DRAWING  
AND PROJECT MANUAL CERTIFIES THAT THE DOCUMENTS  
WERE DONE BY THE ARCHITECT OR UNDER HIS RESPONSIBLE  
SUPERVISION FOR THIS PROJECT.



Susan Frocheur, Registered Architect NCARB

June 19, 2025

Date

Seal



6/19/2025

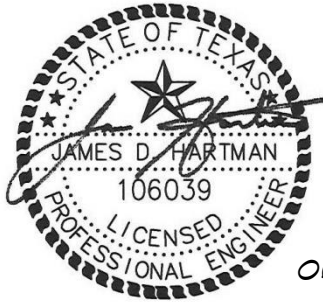
NOTE: All portions of this Project Manual are considered by ARCHITEXAS – Architecture, Planning, and Historic Preservation, Inc. to be trade secrets and proprietary information which if released, would give advantage to competitors. As such, these records are exempt from disclosure under Section 3(A)(4) and 3(A)(10) of the Texas Open Records Act.

**DIVISION 26  
ELECTRICAL SPECIFICATIONS**

**Duval County Courthouse  
Roof Remediation, Exterior Windows, & Electrical**

**San Diego, Texas**

| <b>Section</b> | <b>Title</b>   | <b>Pages</b> |
|----------------|--|--------------|
| 26 05 00       | Common Work Results for Electrical .....                 | 14           |
| 26 05 19       | Low-Voltage Electrical Power Conductors and Cables ..... | 5            |
| 26 05 26       | Grounding and Bonding for Electrical Systems.....        | 5            |
| 26 05 29       | Hangers and Supports for Electrical Systems.....         | 6            |
| 26 05 33       | Conduits and Backboxes for Electrical Systems .....      | 17           |
| 26 05 53       | Identification for Electrical Systems.....               | 3            |
| 26 05 90       | Electrical Systems Testing .....                         | 3            |
| 26 09 23       | Lighting Control Devices.....                            | 6            |
| 26 24 16       | Panelboards .....  | 3            |
| 26 27 26       | Wiring Devices.....                                      | 5            |
| 26 28 13       | Fuses.....   | 3            |
| 26 28 19       | Enclosed Switches.....                                   | 4            |
| 26 51 00       | Lighting Fixtures .....                                  | 8            |
| 26 53 00       | Lamps and Light Sources .....                            | 1            |



06/19/25

Prepared by:  
**BROWN CONSULTING ENGINEERS, INC.**  
3505 Olsen, Suite 110  
Amarillo, Texas 79109  
(806) 354-0141  
TEXAS REGISTERED ENGINEERING FIRM F-683

## TABLE OF CONTENTS

### FRONT END

- 00013 Request for Competitive Sealed Proposal (Advertisement)
- 00016 Request for Competitive Sealed Proposals
- 00020 Proposal Form, Including Offeror Information
- 00030 Proposal Bond
- 00040 Prevailing Wage Rates

### CONTRACTING REQUIREMENTS

- 00611 Performance Bond
- 00612 Payment Bond
- 00700 General Conditions
- 00800 Supplemental Conditions

### DIVISION 1 – GENERAL REQUIREMENTS

- 01110 Summary of work
- 01210 Allowances
- 01226 Unit Prices
- 01230 Alternates
- 01250 Contract Modification Procedures
- 01290 Payment Procedures
- 01310 Project Management and Coordination
- 01320 Construction Progress Documentation
- 01330 Submittal Procedures
- 01356 Restoration Project Procedures
- 01400 Quality Requirements
- 01450 Testing Laboratory Services
- 01500 Temporary Facilities and Controls
- 01580 Project Identification and Signs
- 01600 Product Requirements
- 01631 Substitution Request Form
- 01730 Selective Demolition
- 01732 Cutting and Patching
- 01770 Closeout Procedures

### DIVISION 2 – SITE CONSTRUCTION

- 02300 Earthwork
- 02754 Portland Cement Paving
- 02924 Sodding

### DIVISION 3 – CONCRETE

- 03300 Cast-in-Place Concrete

### DIVISION 4 – MASONRY

- 04069 Restoration Mortar
- 04905 Masonry Restoration
- 04931 Chemical Cleaning of Masonry

### DIVISION 6 – WOOD AND PLASTICS

- 06100 Rough Carpentry

### DIVISION 7 – THERMAL AND MOISTURE PROTECTION

- 07211 Batt Insulation
- 07541 Polyvinyl-Chloride (PVC) Roofing
- 07620 Sheet Metal Flashing and Trim
- 07840 Fire Stopping



## TABLE OF CONTENTS

07920 Joint Sealers and Lead Weathercaps

### **DIVISION 8 – DOORS AND WINDOWS**

08110 Steel Doors and Frames  
08215 Stile and Rail Wood Doors  
08295 Wood Door Restoration  
08310 Access Doors and Frames  
08520 Wood Window Restoration  
08710 Door Hardware  
08800 Glazing

### **DIVISION 9 – FINISHES**

09215 Veneer Plaster  
09250 Gypsum Board Assemblies  
09281 Gypsum Plaster Restoration  
09300 Tile  
09910 Painting and Finishing

### **DIVISION 10 – SPECIALITIES**

10160 Metal Toilet Compartments  
10425 Signage  
10810 Toilet Accessories

### **DIVISION 25 – MECHANICAL AND PLUMBING**

Refer to Drawing Sheets MP001 & MP001 for mechanical and plumbing specifications

### **DIVISION 26 – ELECTRICAL**

26 05 00 Common Work Results for Electrical  
26 05 19 Low-Voltage Electrical Power Conductors and Cables  
26 05 26 Grounding and Bonding for Electrical Systems  
26 05 29 Hangers and Supports for Electrical Systems  
26 05 33 Conduits and Backboxes for Electrical Systems  
26 05 53 Identification for Electrical Systems  
26 05 90 Electrical Systems Testing  
26 09 23 Lighting Control Devices  
26 24 16 Panelboards  
26 27 26 Wiring Devices  
26 28 13 Fuses  
26 28 19 Enclosed Switches  
26 51 00 Lighting Fixtures  
26 53 00 Lamps and Light Sources

### **APPENDIX**

1. Lead Paint Removal Work Plan prepared by Champion Environmental Consulting dated June 19, 2025. Note this is base scope of work.
2. Limited Lead Based Paint Inspection Report prepared by Champion Environmental Consulting dated March 4, 2021.
3. Asbestos Abatement Project Design prepared by Champion Environmental Consulting dated June 19, 2025. Note this is base scope of work.
4. Limited Asbestos Survey prepared by Champion Environmental Consulting dated March 4, 2021.

## **TABLE OF CONTENTS**

5. Parsons Commercial Roofing, Inc., Scope of Work for roofing replacement work for the Duval County Courthouse undertaken in 2011.
6. Section 04069 – Restoration Mortar, Brick re-pointing mortar mix, approved submittal from prior project.
7. Section 04069 – Restoration Mortar, Stone re-pointing mortar mix, approved submittal from prior project.
8. Draft AIA Document A101-2017 Standard Form of Agreement Between Owner and Contractor
9. Draft AIA Document A201-2017 General Conditions of the Contract for Construction

## **END OF TABLE OF CONTENTS**

# REQUEST FOR COMPETITIVE SEALED PROPOSALS

Duval County requests competitive sealed proposals for construction of:

## **Project No. 2433**

### **Duval County Courthouse: Roof Remediation, Exterior Windows & Electrical**

100% Performance and Payment Bonds required.

5% Proposal Guaranty required.

PROPOSAL DEADLINE: 2:00 p.m. San Diego, Texas time, on Thursday, July 17, 2025, at Duval County Judge's Office, 400 East Gravis Avenue, Texas 78384, (361) 279-6204. Proposals will thereafter be publicly opened and the names of the offerors and any monetary proposals made by the offerors will be read aloud.

Proposal Instructions, copies of drawings, specifications and contract documents, addenda (if any) and other documents related to this Request for Proposals will be available at the location indicated below. They may be viewed electronically; complete or partial sets can be purchased.

Request and pick up printed documents at:

Miller IDS Planroom

Download documents at:

[www.planroom.millerids.com](http://www.planroom.millerids.com)

Request and pick up printed documents at:

1007 East 7<sup>th</sup>

Austin, Texas 78702

(512) 381-5292

Email: [planroom@millerids.com](mailto:planroom@millerids.com)

Questions or concerns regarding this Request for Proposals must be directed to: Susan Frocheur, RA NCARB, ARCHITEXAS, by phone at: (512) 444-4220, or by email at:

[sfrocheur@architexas.com](mailto:sfrocheur@architexas.com).

PRE-PROPOSAL CONFERENCE: 1:00 p.m. San Diego, Texas time, on June 26, 2025 at: 400 East Gravis Avenue, Duval County Courthouse, San Diego, Texas 78384. Duval County may consider an Offeror's attendance of the pre-proposal conference in its determination of best value of each Proposal submitted.

Duval County reserves the right to reject any and all proposals.

# **REQUEST FOR COMPETITIVE SEALED PROPOSALS**

## **INSTRUCTIONS TO OFFERORS**

Duval County ("Owner") requests competitive sealed proposals for a Contractor to perform the construction of the Work described below in connection with Owner's Duval County Courthouse, Drainage, Structural & Electrical Rehabilitation (the "Project"). Owner is interested in receiving proposals from General Contractors with experience in successfully completing projects that are similar in scope, size and complexity to the Work and meeting any specialized requirements set forth below.

### **1. PROJECT**

1.1 Scope of Work. The selected Offeror must furnish all labor, materials and equipment required for the construction of the following improvements (the "Work"):

#### **Roof Remediation, Exterior Windows & Electrical**

To be constructed at the following location ("Project Site"):

**Duval County Courthouse, 400 East Gravis Avenue, San Diego, Texas 78384**

1.2 Estimated Project Budget: \$914,000

1.3 Minimum Qualifications. Because of the nature of the Work, the selected Offeror must meet the following qualifications and/or must have any licenses or certifications specified below (collectively, the "Minimum Qualifications"):

Offerors must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work.

### **2. REQUEST FOR PROPOSALS**

2.1 This Request for Competitive Sealed Proposals ("Request for Proposals") consists of the following documents:

- Advertisement for Request for Proposals;
- Instructions to Offerors;
- Proposal Form;
- Any Contract Documents referenced in this Request for Proposals;
- Any addenda to this Request for Proposals issued by Owner or Architect;
- Attached forms; and
- Proposal Bond Form.

### 3. **DRAWINGS, SPECIFICATIONS, CONTRACT DOCUMENTS AND ADDENDA**

3.1 Copies of Drawings, Specifications, Contract Documents, and Addenda (if any) and other documents related to this Request for Proposals, are available for purchase at Miller Blueprint at the location indicated in Section 3.2 below. Drawings, Specifications, Contract Documents, and Addenda (if any) can also be downloaded from **Miller Blueprint Planroom**. The Drawings, Specifications and Addenda (if any) may also be available for viewing at various local plan rooms and at the Duval County website below:

<https://www.co.duval.tx.us/page/rfp>

3.2 Printed copies of Drawings, Specifications, Contract Documents, and Addenda (if any) can be requested and picked up at the following location in accordance with Section 3.1 above:

Miller IDS Planroom

Download documents at:

[www.planroom.millerids.com](http://www.planroom.millerids.com)

Request and pick up printed documents at:

1007 East 7<sup>th</sup>

Austin, Texas 78702

(512) 381-5292 or 800-252-3469

Email: [planroom@millerids.com](mailto:planroom@millerids.com)

### 4. **FORMAT FOR PROPOSALS**

4.1 Each proposal ("Proposal") submitted by an offeror ("Offeror") must contain the following:

- The completed Proposal Form (including the Offeror information in Section D thereof);
- The Proposal Guaranty described in Section 13.

4.2 The Proposal information must be typed or neatly printed on the Proposal Form.

4.3 The Offeror information in Section D of the Proposal Form must be typed or neatly printed on Section D of the Proposal Form or on letter-size ("8½ x 11") paper if additional sheets are used. If preprinted materials, flyers or other information about the Offeror is used, it should be referenced in the submittal and included as labeled attachments.

4.4 The Proposal Form and other forms included in the Proposal should be stapled or bound together in a binder, so that that the pages can be easily opened and laid flat for copying.

4.5 One (1) original of the complete Proposal must be submitted. An original is a Proposal containing the original signature of a person authorized to sign on behalf of the Offeror.

4.6 The Proposal must be submitted in a sealed envelope which states on the outside the following information:

“Competitive Sealed Proposal for Duval County Courthouse, Drainage, Structural & Electrical Rehabilitation”

- Proposal Deadline: July 17, 2025
- Name and mailing address of the Offeror

## **5. PLACE FOR SUBMITTING PROPOSALS**

5.1 Proposals must be submitted by mail or hand delivery to:

Duval County Courthouse  
Attn: Judge Arnoldo Cantu  
400 East Gravis Avenue  
San Diego, Texas 78384

5.2 Proposals sent by Facsimile (Fax) or Electronic Mail (E-mail) or Proposals submitted to any other address other than the Place for Submitting Proposals described in Section 5.1 above will **NOT** be accepted.

## **6. DEADLINE FOR RECEIVING PROPOSALS**

6.1 Proposals must be received at the Place for Submitting Proposals described in Section 5 above, **no later than 2:00 p.m., San Diego, Texas time, on July 17, 2025** (“Proposal Deadline”). The clock used at the Place for Submitting Proposals shall conclusively determine the time that proposals are received.

6.2 Proposals received after the Proposal Deadline will be returned unopened.

6.3 The Proposal Deadline may be extended by Addendum to this Request for Proposals.

## **7. PRE-PROPOSAL CONFERENCE**

7.1 A pre-proposal conference will be held at 1:00 p.m., San Diego, Texas time, on June 26, 2025, at the Duval County Courthouse, 400 E Gravis Avenue, San Diego, TX 78384.

## **8. TIME AND PLACE OF OPENING OF PROPOSALS**

8.1 Proposals which have been timely received will be publicly opened at the Place for Submitting Proposals immediately after the Proposal Deadline, and the names of the Offerors and any monetary proposals made by the Offerors will be read aloud.

## 9. **METHOD OF SELECTING CONTRACTOR**

9.1 Not later than the 30<sup>th</sup> day after the date on which Proposals are opened, Owner will evaluate and rank each Proposal submitted in relation to the Selection Criteria set out below. Owner will select the Offeror that, in the opinion of Owner, submits the Proposal that offers the best value for Owner based on the Selection Criteria and the weighted value for each Selection Criteria and on Owner's ranking evaluation. The Offeror that offers the best value may or may not be the Offeror that submits the lowest proposal for the cost of construction.

9.2 The Architect will make a recommendation to Owner as to the selection ranking of the Offerors. The County will select the Offeror that submits the Proposal that offers the best value for Owner and will authorize the negotiation and execution of the contract. If Owner is unable to negotiate a satisfactory contract with the selected Offeror, Owner shall, formally and in writing, end negotiations with that Offeror and proceed to the next Offeror in the order of the selection ranking until a contract is reached or all proposals are rejected. The County reserves the right to reject any and all proposals.

## 10. **SELECTION CRITERIA**

10.1 Offerors will be evaluated based on the following selection criteria and weighted value for each criterion (collectively, "Selection Criteria"):

| <u>Selection Criteria</u>                         | <u>Weighted Value</u> |
|---|-----------------------|
| • Construction Cost as Proposed                   | 40%                   |
| • Relevant Experience and Past Performance        | 30%                   |
| • Proposed Personnel/Resources                    | 15%                   |
| • Financial Condition                             | 5%                    |
| • Safety Record                                   | 5%                    |
| • Offeror's attendance of pre-proposal conference | 5%                    |

## 11. **QUESTIONS REGARDING THIS REQUEST FOR PROPOSALS**

11.1 Any questions or concerns regarding this Request for Proposals must be directed to the "Contact Person" as follows:

Honorable Arnoldo Cantu  
Duval County Judge  
361.279.6204  
[arnoldo.cantu@co.duval.tx.us](mailto:arnoldo.cantu@co.duval.tx.us)

Owner specifically requests that Offerors restrict all contact and questions regarding this Request for Proposals to the Contact Person.

11.2 Questions must be received by the Contact Person no later than 4 business days prior to the Proposal Deadline.

11.3 If the Contact Person determines that a response is required to any question received by the Contact Person, an answer will be provided to such question through an Addendum to this Request for Proposals.

11.4 An effort will be made to provide a copy of all Addenda issued to each Offeror who is on the list of having received a Request for Proposal. However, it is the obligation of each Offeror to make sure prior to submitting a Proposal, that it has received all Addenda in connection with this Request for Proposals. Copies of Addenda issued to this Request for Proposals can be obtained from the Contact Person as provided in Section 11.1.

11.5 Only those responses to inquiries which are made by formal written Addenda shall be binding. Oral and other interpretations or clarifications will be without legal effect and shall not be binding on Owner or the Architect. The Offeror must acknowledge receipt of all Addenda in its Proposal. However, each Offeror will be bound by the terms of all Addenda, and its Proposal will be construed to include the information contained in the Addenda, whether or not Offeror has received them or acknowledged receipt.

## **12. WITHDRAWAL OF PROPOSALS**

12.1 Prior to the Proposal Deadline, an Offeror may withdraw its Proposal, and may, if it chooses, submit a new Proposal, if the new Proposal is submitted before the expiration of Proposal Deadline. The request for withdrawal of a Proposal must be in writing and signed by an authorized representative of the Offeror.

12.2 After the Proposal Deadline, an Offeror may not withdraw its Proposal for a period of 90 days after Proposal opening, unless withdrawal is required by applicable law or permitted by Owner.

12.3 Each Proposal received will be presumed to be accurate and free from error, unless clear and convincing evidence to the contrary is presented.

## **13. PROPOSAL GUARANTY**

13.1 Each Proposal must be accompanied by a Proposal Guaranty in the amount of five percent (5%) of the largest possible total Proposal (i.e. the sum of the Base Proposal and all additive Alternates).

13.2 The Proposal Guaranty shall be in the form of (i) a cashier's check written on a Bank with one or more branch offices located in Texas, payable to the order of Duval County (and should be dated no earlier than one month before the deadline for Proposal submission) or (ii) a



Proposal Bond in the form included with this Request for Proposals issued by a corporate surety authorized to do business in the State of Texas, that is listed on the U.S. Treasury list of approved sureties.

13.3 The Proposal Guaranty will be held until the selected Offeror has signed the Contract and provided the required insurance and payment and performance bonds and Safety Program Manual and Safety Plan as provided in these instructions.

13.4 Should the selected Offeror fail or refuse to sign the Contract and/or provide the required insurance and payment and performance bonds and Safety Program Manual and Safety Plan as provided in these instructions, then the Offeror's Proposal Guaranty will be forfeited to Duval County as liquidated damages and not as a penalty.

#### **14. SUBSTITUTION OF MATERIALS**

14.1 Offerors may request a substitution of materials or equipment specified in the Contract Documents. However, any such request must be submitted in writing to the Contact Person five days before the Proposal Deadline. If the Architect approves the substitution, it will respond by Addendum as described in Section 11. A failure to respond will constitute a denial of the request. Sufficient information should accompany the request to enable the Architect to promptly render a decision on a proposed substitution of materials or equipment.

#### **15. POST-PROPOSAL INFORMATION**

15.1 By submitting a Proposal, the Offeror agrees to provide evidence upon request of Owner that the Offeror satisfies the Minimum Qualifications set out in Section 1.3 above.

15.2 By submitting a Proposal, the Offeror agrees to promptly furnish any additional information required by Owner in order to evaluate the Proposals.

#### **16. REJECTION OF PROPOSALS**

16.1 Proposals may be rejected if they do not contain the information required by this Request for Proposals or if they do not contain the information stated in Section 4.1 hereof.

16.2 Proposals may be rejected if the Minimum Qualifications specified in Section 1.3 above are not met.

16.3 Proposals may be rejected if they contain qualifications, conditions to performance, or if they are incomplete, or for any other reason authorized by law.

16.4 Owner reserves the right to waive any minor informality or irregularity in the Proposal or Proposal process, and to reject any and all Proposals.

**17. BOND AND INSURANCE REQUIREMENTS**

17.1 Insurance meeting the requirements set out in the Supplementary Conditions must be furnished by the selected Offeror within 5 days after the Contract is signed by the Offeror.

17.2 If the Contract amount is over \$25,000, the selected Offeror must provide payment and performance bonds each in the amount of 100% of the Contract Price within 5 days after the Contract is signed by the Offeror. Bonds must be provided by a Treasury-listed corporate Surety authorized to do business in the State of Texas.

17.3 The Offeror's attention is directed to Article 11 of the Supplementary Conditions which expressly sets out the Worker's Compensation Insurance requirements for the Project. The Contractor and each subcontractor must maintain Worker's Compensation Insurance coverage as required in Subsection 10.4 and the Contractor is required to provide a certificate of coverage for each subcontractor prior to that subcontractor beginning Work on the Project Site, showing that coverage is being provided for all of its employees for the duration of the Work. Subsection 10.4 is incorporated herein for all purposes.

**18. SAFETY PLAN REQUIREMENTS**

18.1 The selected Offeror must submit a Safety Plan for the Project meeting the requirements set out in the General Conditions not later than 5 days after the Offeror signs the Contract.

**19. PREVAILING WAGE RATES**

19.1 The Contractor and each Subcontractor who performs work under the Contract must pay, at a minimum, the applicable prevailing wage rates to a worker employed by it in the performance of the Work.

**20. EXAMINATION OF SITE AND CONTRACT DOCUMENTS**

20.1 Each Offeror is required to visit the Project Site and to fully acquaint itself with the conditions and limitations as they exist at the Project Site, including the effect that weather conditions may have on the Project Site. Each Offeror shall also fully acquaint itself with the existing and anticipated sources and supplies of labor and materials, and shall also thoroughly examine the Contract Documents. Failure of the Offeror to visit the Project Site and acquaint itself with the conditions of the Work and the Contract Documents shall in no way relieve the Offeror from any obligations with respect to its Proposal.

**21. PUBLIC INFORMATION**

21.1 Owner considers all information, documentation and other materials requested to be submitted in response to this solicitation to be of a non-confidential and/or non-proprietary nature and therefore shall be subject to public disclosure under the Texas Public Information Act (TEX. GOV'T CODE, Chapter 552.001, *et seq.*) after a contract is awarded.

21.2 Offerors are hereby notified that Owner strictly adheres to all statutes, court decisions, and opinions of the Texas Attorney General with respect to disclosure of public information.

## **22. DEADLINE FOR SIGNING CONTRACT AND OWNER'S RIGHTS IF DELAY**

22.1 The timely completion of this Project is essential. Owner has the right to consider negotiations with the selected Offeror for the Contract incomplete until and unless the Contract is signed and the bonds, insurance and Safety Plan are submitted in accordance with the following deadlines. In order to avoid unnecessary delays in the Project, **the selected Offeror must:**

- .1 sign the Contract no later than 10 days after the selected Offeror has been notified that it is the successful Offeror, and**
- .2 provide its Safety Plan for the Project and provide all required bonds and insurance within 5 days after the selected Offeror signs the Contract.**

22.2 If the selected Offeror fails to meet one or more of these deadlines, then in addition to any and all other rights and remedies to which Owner is entitled, Owner shall have the right to:

- .1 terminate its negotiations with the selected Offeror and begin negotiations with the next ranked Offeror; or**
- .2 proceed with the Contract with selected Offeror but treat each day beyond the 10-day deadline in which the Contract is unsigned by the Offeror, and/or each day beyond the 5 day deadline in which one or more of the required documents has not been submitted, as a day of unexcused delay under the Contract.**

## **23. WAIVER OF CLAIMS**

**23.1 EACH OFFEROR BY SUBMISSION OF A PROPOSAL TO THIS REQUEST FOR PROPOSALS WAIVES ANY CLAIMS IT HAS OR MAY HAVE AGAINST THE ARCHITECT, ITS CONSULTING ENGINEERS, OR ANY OTHER CONSULTANTS, AND THEIR RESPECTIVE EMPLOYEES, OFFICERS, MEMBERS, DIRECTORS AND PARTNERS, AND DUVAL COUNTY, ITS EMPLOYEES, OFFICERS, AGENTS, REPRESENTATIVES, AND THE MEMBERS OF ITS GOVERNING BODY, CONNECTED WITH OR ARISING OUT OF THIS REQUEST FOR PROPOSALS, INCLUDING, THE ADMINISTRATION OF THE REQUEST FOR PROPOSALS, THE PROPOSAL EVALUATIONS, AND THE SELECTION OF THE OFFEROR. SUBMISSION OF A PROPOSAL INDICATES OFFEROR'S ACCEPTANCE OF THE EVALUATION TECHNIQUE AND OFFEROR'S RECOGNITION THAT SOME SUBJECTIVE JUDGMENTS MUST BE MADE BY OWNER DURING THE SELECTION PROCESS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, EACH OFFEROR ACKNOWLEDGES THAT OWNER SHALL DOCUMENT THE BASIS OF ITS SELECTION AND SHALL MAKE THE EVALUATIONS PUBLIC, AND EACH OFFEROR WAIVES ANY CLAIM IT HAS OR MAY HAVE AGAINST THE ABOVE-NAMED PERSONS, DUE TO INFORMATION CONTAINED IN SUCH EVALUATIONS.**

**24. CONFLICT OF INTEREST QUESTIONNAIRE**

24.1 Offeror is advised to determine if it is required under Chapter 176 of the Texas Local Government Code to file a completed conflict of interest questionnaire with Duval County. If Offeror is required by law to complete the questionnaire, the Conflict of Interest Questionnaire (Form CIQ) should be completed and submitted with the proposal.

## PROPOSAL FORM

To: Duval County  
San Diego, Texas

Re: RFP for Duval County Courthouse: **Roof Remediation, Exterior Windows & Electrical**  
Architexas Project No. 2433

The undersigned offeror ("Offeror") submits this Proposal for the performance of the Work of construction, alteration or repair (the "Work") described as follows:

**Duval County Courthouse: Roof Remediation, Exterior Windows & Electrical  
Architexas Project No. 2433**

The undersigned Offeror has carefully examined and considered the Project Site and relevant conditions and circumstances for the Work, information and requirements set out in the Request for Proposals, the Drawings and Specifications, and the requirements of the proposed Contract Documents, including the Agreement for Construction, the General Conditions and the Notice of Prevailing Wage Rates, in making this Proposal. Capitalized terms used but not otherwise defined in this Proposal Form shall have the same meanings as designated in the Request for Proposals.

**A. Proposal Terms**

Based on the foregoing, the undersigned Offeror hereby offers and proposes to perform the Work, in accordance with the Contract Documents, for the Contract Amount based on the Pricing Schedule set forth below, within the Substantial Completion Date required by Duval County.

**1. Pricing Schedule**

Express in words and numbers.

Base Proposal \_\_\_\_\_  
\_\_\_\_\_ (\$ \_\_\_\_\_ )

**2. Substantial Completion Date**

Offeror will achieve Substantial Completion of the work within the following calendar days after a Notice to Proceed is issued:

\_\_\_\_\_  
\_\_\_\_\_ Days ( \_\_\_\_\_ )

**3. Liquidated Damages**

Duval County shall have the right under the Contract to assess liquidated damages in the amount of \$200 per day for each and every calendar day beyond the Substantial Completion Date set out in the Contract that the Work fails to be substantially complete

\_\_\_\_\_  
Days (\_\_\_\_\_)

**4. Overhead and Profit for Changes in the Work:** The following percentages shall be used to determine the amount of overhead and profit to be added to Offeror's costs for changes in the Work ordered by the Owner:

A. For Work performed by Contractor's own forces:

Overhead: \_\_\_\_\_ percent Profit: \_\_\_\_\_ percent

B. For Work performed by a subcontractor and supervised by Contractor:

Overhead: \_\_\_\_\_ percent Profit: \_\_\_\_\_ percent

**5. Allowances:** Offeror acknowledges the following allowances:

|  |                  |          |
|--|------------------|----------|
| A. Allowance No. 1 – Window Restoration          | \$ <u>7,500</u>  | Lump Sum |
| B. Allowance No. 2 – Masonry Restoration         | \$ <u>15,000</u> | Lump Sum |
| C. Allowance No. 3 – Concrete Slab Repairs       | \$ <u>5,000</u>  | Lump Sum |
| D. Allowance No. 4 – Modification to MEP Piping  | \$ <u>7,500</u>  | Lump Sum |
| E. Allowance No. 5 – Gyp. Bd. Furr Out/Furr Down | \$ <u>5,000</u>  | Lump Sum |

**6. Unit Prices:** Offeror proposes the following unit prices:

A. Unit Price No. 1 – Window Repairs

1. Brick Mold Replacement \$ \_\_\_\_\_/per window unit
2. Sill Replacement \$ \_\_\_\_\_/per window unit
3. Wood Dutchman Repair at Frame or Blind Stop  
\$ \_\_\_\_\_/per location
4. Frame or Blind Stop Replacement in lieu of Wood Dutchman Repair  
\$ \_\_\_\_\_/per window unit
5. Sash Replacement, Upper or Lower \$ \_\_\_\_\_/per sash

B. Unit Price No. 2 – Masonry Repairs

1. Brick Repointing \$ \_\_\_\_\_/per S.F.
2. Brick Patching Repair \$ \_\_\_\_\_/per location
3. Stone Repointing \$ \_\_\_\_\_/per L.F.
4. Stone Patching Repair \$ \_\_\_\_\_/per location.
5. Stone Crack Repair \$ \_\_\_\_\_/per location
6. Stone Replacement
  - a. Stone Type A \$ \_\_\_\_\_/per unit
  - b. Stone Type B \$ \_\_\_\_\_/per unit
  - c. Stone Type C \$ \_\_\_\_\_/per unit
  - d. Stone Type D \$ \_\_\_\_\_/per unit

C. Unit Price No. 3 – Concrete Slab Repairs \$ \_\_\_\_\_/per S.F.

7. **Alternates:** Offeror acknowledges the following alternates:

- A. Alternate No. 1 – Prep & Paint Ext. Wood Doors \$ \_\_\_\_\_ Lump Sum
- B. Alternate No. 2 – Rehabilitate Men's Restroom \$ \_\_\_\_\_ Lump Sum
- C. Alternate No. 3 – Strip Paint Coatings from Exterior Stone Elements \$ \_\_\_\_\_ Lump Sum
- D. Alternate No. 4 – Gyp. Bd. In Lieu of Veneer Plaster \$ \_\_\_\_\_ Lump Sum

B. **Enclosed Documents.**

The following are enclosed with this completed Proposal:

1. A Proposal Guaranty in the amount of 5% of the maximum total proposed Contract Amount (*i.e.*, the sum of the Base Proposal and all additive Alternates) in the form of either a cashier's check payable to Duval County or a Proposal Bond on the required Proposal Bond Form.

C. **Offeror Representations and Certifications**

By signing and submitting this Proposal, the undersigned Offeror and person signing on its behalf certifies and represents to Duval County:

1. (i) Offeror has not offered, conferred or agreed to confer any pecuniary benefit or other thing of value as consideration for the recipient's decision, opinion, recommendation, vote or other exercise of discretion concerning this Proposal;

(ii) Offeror has not violated any state, federal or local law, regulation or ordinance relating to bribery, improper influence, collusion or the like, and Offeror will not in the future offer, confer, or agree to confer any pecuniary benefit or other thing of value to any officer, Trustee, agent or employee of Duval County in return for the person's having exercised official discretion, power or duty with respect to this Proposal.

2. All information contained in this Proposal, including the information provided in Section D below is, to the best of the undersigned's knowledge and belief, true, complete and accurate.
3. **OFFEROR WAIVES ANY CLAIM IT HAS OR MAY HAVE AGAINST THE ARCHITECT, ITS CONSULTING ENGINEERS, OR ANY OTHER CONSULTANTS, AND THEIR RESPECTIVE EMPLOYEES, OFFICERS, MEMBERS, DIRECTORS AND PARTNERS, AND DUVAL COUNTY, ITS EMPLOYEES, OFFICERS, AGENTS, REPRESENTATIVES, AND THE MEMBERS OF ITS GOVERNING BODY, CONNECTED WITH OR ARISING OUT OF THIS REQUEST FOR PROPOSALS, INCLUDING, THE ADMINISTRATION OF THE REQUEST FOR PROPOSALS, THE PROPOSAL EVALUATIONS, AND THE SELECTION OF THE OFFEROR. SUBMISSION OF A PROPOSAL INDICATES OFFEROR'S ACCEPTANCE OF THE EVALUATION TECHNIQUE AND OFFEROR'S RECOGNITION THAT SOME SUBJECTIVE JUDGMENTS MUST BE MADE BY DUVAL COUNTY DURING THE SELECTION PROCESS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, OFFEROR ACKNOWLEDGES THAT DUVAL COUNTY SHALL DOCUMENT THE BASIS OF ITS SELECTION AND SHALL MAKE THE EVALUATIONS PUBLIC, AND OFFEROR WAIVES ANY CLAIM IT HAS OR MAY HAVE AGAINST THE ABOVE-NAMED PERSONS, DUE TO INFORMATION CONTAINED IN SUCH EVALUATIONS.**
4. Offeror has received the following Addenda to the Request for Proposals, but agrees and understands that it will be responsible for performing the Work in accordance with all terms and conditions in all Addenda issued in connection with the Request for Proposals, and that its Proposal will be construed to include all requirements of all such Addenda, whether or not identified below:  
  
Addenda No. \_\_\_\_\_  
Addenda No. \_\_\_\_\_  
Addenda No. \_\_\_\_\_
5. Offeror (or its subcontractors/suppliers, as applicable) meets all of the Minimum Qualifications specified in Section 1.3 of the Request for Proposals.



D. **Offeror Information**

All of the following information must be provided by Offeror. Use additional sheets if necessary. If additional sheets are used, clearly indicate the question number to which you are responding. Responses must be typed or printed neatly. Illegible responses will not be considered. The Offeror is also sometimes hereinafter referred to below as the "organization" or the "company."

**1. General Information**

1.1 Name of Offeror: \_\_\_\_\_

1.2 Name of Project: \_\_\_\_\_

1.3 Address of office from which Offeror will conduct the Work:

\_\_\_\_\_  
\_\_\_\_\_

1.4 Offeror's Contact Person for this Work:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax.: \_\_\_\_\_

Email: \_\_\_\_\_

1.5 Offeror's Home Office Address: \_\_\_\_\_

\_\_\_\_\_

1.6 Does any relationship exist between the Offeror, its officers, principals, or employees and any of Duval County's officers, or employees?

☐ YES ☐ NO

If yes, please explain. \_\_\_\_\_

1.7 Principal Business:

\_\_\_\_\_ General Construction

\_\_\_\_\_ Mechanical/Electrical/Plumbing

\_\_\_\_\_ Demolition

\_\_\_\_\_ Interior Finish-out

\_\_\_\_\_ Other \_\_\_\_\_

(Please specify)

1.8 Licensing/Certifications for Prime Contractors:

List trade categories in which your organization is legally qualified to do business in San Diego, Texas, and indicate registration or license numbers, as applicable.

---

---

1.9 Minimum Qualifications:

To the extent not otherwise described in Section 1.8 above, describe your organization's compliance with all Minimum Qualifications set forth in Section 1.3 of the Request for Proposals and include all necessary attachments evidencing same.

---

---

1.10 Work to be Performed on this Project by Offeror's Own Forces:

List the general categories of work that your organization intends to perform on this Project using its own forces.

---

---

**2. Organization**

2.1 How many years has your organization been in business as a contractor?

\_\_\_\_\_ Years

2.2 How many years has your organization been in business under its present business name?

\_\_\_\_\_ Years

2.3 Under what other or former names has your organization operated?

\_\_\_\_\_  
Name Years

\_\_\_\_\_  
Name Years

- 2.4 If your organization is a corporation, answer the following:
- 2.4.1 Date of incorporation: \_\_\_\_\_
- 2.4.2 State of incorporation: \_\_\_\_\_
- 2.4.3 President's name: \_\_\_\_\_
- 2.5 If your organization is a limited liability company, answer the following:
- 2.5.1 Date of organization: \_\_\_\_\_
- 2.5.2 State of organization: \_\_\_\_\_
- 2.5.3 President's, Manager's or Managing Member's name: \_\_\_\_\_  
\_\_\_\_\_
- 2.6 If your organization is a partnership, answer the following:
- 2.6.1 Date of organization: \_\_\_\_\_
- 2.6.2 Type of Partnership: \_\_\_\_\_
- 2.6.3 Name(s) of general partner(s):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 2.7 If your organization is individually owned, answer the following:
- 2.7.1 Date of organization: \_\_\_\_\_
- 2.7.2 Name of owner: \_\_\_\_\_
- 2.8 For all business entities other than publicly held corporations, please provide the following:
- 2.8.1 Award to Nonresident Bidders
- Is your business organized under the laws of the State of Texas?
- ☐ YES ☐ NO
- What is the location of your principal place of business?  
\_\_\_\_\_
- Proposals from nonresident contractors shall be evaluated according to Tex. Gov. Code § 2252.002.
- 2.9 Is your company currently for sale or involved in any transaction to expand or to become acquired by another business entity? If yes, please explain the impact both in organizational and directional terms.

### 3. Relevant Experience

- 3.1 On the attached Table A, list all projects your company has in progress and provide all additional information requested.
- 3.2 On the attached Table B, list all county government projects that your company has completed in the past five (5) years, and provide all additional information requested.
- 3.3 On the attached Table C, list all non-county government projects your company has completed in the past five (5) years and provide all additional information requested.

### 4. Past Performance

Claims and Suits. (If the answer to any of the questions below is yes, please attach details not to exceed one page for each of the following questions.)

- 4.1 Has your organization ever failed to complete any work awarded to it? (If yes, attach details.)

☐ YES ☐ NO

- 4.2 Are there any judgments, claims, arbitration proceedings or suits (past, pending or outstanding) against your organization or its officers arising out of or in connection with your company's performance under a contract for construction management and/or construction services? (If yes, attach details, including a description of how such suits or claims were resolved, if applicable.)

☐ YES ☐ NO

- 4.3 Has your organization filed any lawsuits or requested arbitration with regard to construction contracts within the last five years? (If yes, attach details.)

☐ YES ☐ NO

- 4.4 Has your organization been assessed liquidated damages on a project in the last five (5) years? (If yes, attach details.)

☐ YES ☐ NO

- 4.5 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If yes, attach details.)

☐ YES ☐ NO

4.6 Trade References. Provide the following information for three trade references:

Company name: \_\_\_\_\_ Contact person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_  
\_\_\_\_\_

Company name: \_\_\_\_\_ Contact person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_  
\_\_\_\_\_

Company name: \_\_\_\_\_ Contact person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_

## 5. Personnel

5.1 On the attached Table D, list the names of the key individuals [Project Manager, Construction Superintendent, Assistant Superintendent (if applicable)] of your organization which are proposed to be assigned to this Project and provide the additional information requested on Table D. For each key individual listed on Table D, provide a resume (not to exceed 2 pages) which includes the key individual's construction experience and a description of his/her qualifications and experience relative to the Project.

## 6. Financial

6.1 Bank References. Provide the following information for one Bank reference:

Company name: \_\_\_\_\_ Contact person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6.2 Surety:

6.2.1 Name of your organization's bonding company:

\_\_\_\_\_

6.2.2 Name, address and phone number of agent:

Company name: \_\_\_\_\_ Contact person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_  
\_\_\_\_\_

6.3 Financial Statement. All statements submitted will be used exclusively by Duval County in the evaluation of the award of the contract on the underlying project. Statements will be kept confidential to the extent permitted by law.

6.3.1 Attach an audited or reviewed financial statement, including an independent auditor's report, balance sheet, income statement, and the related notes to the financial statement. Financial statements that are more than one year old are not acceptable.

6.3.2 Name and address of firm preparing attached financial statement, and date thereof:

Company name: \_\_\_\_\_ Contact person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone: \_\_\_\_\_  
\_\_\_\_\_

6.3.3 If financial statements for an affiliate of the organization are also attached, will such organization act as guarantor of the contract for construction?

☐ YES ☐ NO

6.4 State whether your company is currently in default on any loan agreement or financing agreement with any bank, financial institution, or other entity? If yes, specify date(s), details, circumstances, and prospects for resolution.

6.5 State whether your company is currently contemplating or has pending a petition in bankruptcy for debt relief, or whether a creditor has threatened to file an involuntary petition against Offeror.

**7. Safety Record**

7.1 Please provide the following information in connection with your organization's safety record:

7.1.1 A one page maximum discussion of your company's approach to maintaining a safe work environment.

7.1.2 A one page maximum discussion of your company's history of worker's compensation claims or other claims relating to project safety for the past 5 years.

**8. Attendance of Pre-Proposal Conference**

8.1 As an offeror, did your company attend the pre-proposal conference?

☐ YES ☐ NO

Attendee(s):

---

---

---

---

Executed as of this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Offeror: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip Code: \_\_\_\_\_

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Telephone: \_\_\_\_\_

## House Bill 89 VERIFICATION

I, \_\_\_\_\_, (Person name), the undersigned representative of \_\_\_\_\_ (Company or Business Name, hereinafter referred to as company) **being an adult over the age of eighteen (18) years of age, after being duly sworn by the undersigned notary, do hereby depose and verify under oath that the company named-above, under the provisions of Subtitle F, Title 10, Government Code Chapter 2270:**

- 1. Does not boycott Israel currently; and**
- 2. Will not boycott Israel during the term of the contract the above-named Company, business or individual with Duval County, Texas.**

*Pursuant to Section 2270.001, Texas Government Code:*

- 1. "Boycott Israel" means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and*
- 2. "Company" means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.*

\_\_\_\_\_  
DATE

\_\_\_\_\_  
SIGNATURE OF COMPANY  
REPRESENTATIVE

On this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,  
personally appeared \_\_\_\_\_,  
the above-named person, who after by me being duly sworn, did swear and  
confirm that the above is true and correct.

NOTARY SEAL

\_\_\_\_\_  
NOTARY SIGNATURE



**Table A** **All Projects in Progress**

|  | Project Name | Owner | Owner' s Contact Person and Phone Number | Architect | Architect' s Contact Person and Phone Number | Contract Amount | Percent Complete | Scheduled completion date |
|--|--------------|-------|--|-----------|--|-----------------|------------------|---------------------------|
| 1  |              |       |  |           |  |                 |                  |                           |
| 2  |              |       |  |           |  |                 |                  |                           |
| 3  |              |       |  |           |  |                 |                  |                           |
| 4  |              |       |  |           |  |                 |                  |                           |
| 5  |              |       |  |           |  |                 |                  |                           |
| 6  |              |       |  |           |  |                 |                  |                           |
| Total Value of All Projects in Progress: \$_____ |              |       |  |           |  |                 |                  |                           |

**Table B All county government projects completed in the past 5 years.**

|   | Project Name | Owner | Owner' s Contact Person and Phone Number | Architect | Architect' s Contact Person and Phone Number | Original Contract Amount | Total Change Order Amount | Final Contract Amount | Date of Completion | % of work completed with Own Forces | Liquidated Damages (Yes or No) |
|---|--------------|-------|--|-----------|--|--------------------------|---------------------------|-----------------------|--------------------|-------------------------------------|--------------------------------|
| 1 |              |       |  |           |  |                          |                           |                       |                    |                                     |                                |
| 2 |              |       |  |           |  |                          |                           |                       |                    |                                     |                                |
| 3 |              |       |  |           |  |                          |                           |                       |                    |                                     |                                |
| 4 |              |       |  |           |  |                          |                           |                       |                    |                                     |                                |
| 5 |              |       |  |           |  |                          |                           |                       |                    |                                     |                                |
| 6 |              |       |  |           |  |                          |                           |                       |                    |                                     |                                |

Total Value of All County Projects Completed in the Past 5 Years:

\$ \_\_\_\_\_

**Table C**                      **All Non-County projects completed in the past 5 years.**

|   | Project Name | Owner | Owner' s Contact<br>Person and Phone<br>Number | Architect | Architect' s Contact<br>Person and Phone<br>Number | Original Contract<br>Amount | Total Change<br>Order Amount | Final Contract<br>Amount | Date of Completion | % of work<br>completed with<br>Own Forces | Liquidated Damages<br>(Yes or No) |
|---|--------------|-------|--|-----------|--|-----------------------------|------------------------------|--------------------------|--------------------|---|-----------------------------------|
| 1   |              |       |  |           |  |                             |                              |                          |                    |   |                                   |
| 2   |              |       |  |           |  |                             |                              |                          |                    |   |                                   |
| 3   |              |       |  |           |  |                             |                              |                          |                    |   |                                   |
| 4   |              |       |  |           |  |                             |                              |                          |                    |   |                                   |
| 5   |              |       |  |           |  |                             |                              |                          |                    |   |                                   |
| 6   |              |       |  |           |  |                             |                              |                          |                    |   |                                   |
| Total Value of All Non-County Projects Completed in the Past 5 Years: |              |       |  |           |  |                             |                              |                          |                    | \$ _____                                  |                                   |

**Table D                      Personnel**

| <u>Key Individuals</u>                | <u>Number of years<br/>with this<br/>Company</u> | <u>Commitment for<br/>duration of the<br/>Project<br/>(Yes or No)</u> |
|---------------------------------------|--|---|
| Project Manager:<br>_____             |  |   |
| [Name]                                |  |   |
| Construction Superintendent:<br>_____ |  |   |
| [Name]                                |  |   |
| Assistant Superintendent:<br>_____    |  |   |
| [Name]                                |  |   |

Number of county projects this team of key individuals has completed together: \_\_\_\_\_

Number of non-county projects this team of key individuals has completed together: \_\_\_\_\_

List below the names of all county and non-county projects that at least two of the key individuals listed above have worked on together within the past five years:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Attach one additional page if needed)

## PROPOSAL BOND

KNOW ALL BY THESE PRESENTS: that the undersigned Principal and Surety are firmly bound to Duval County ("Owner") in the principal sum of

\_\_\_\_\_  
Dollars (\$\_\_\_\_\_).

Now the condition of this bond is this: that, whereas the undersigned principal has submitted to Duval County a proposal to enter into a certain contract whereunder principal undertakes to perform the following-described work of construction, alteration or repair:

Base work includes limited site work including removal of abandoned utility poles and lines, installation of subgrade utility lines, sidewalks, and sodding. Exterior rehabilitation and restoration work generally includes replacement of stone copings, limited membrane roofing work, limited masonry restoration work including masonry cleaning, stone and brick repairs, restoration of wood window and door assemblies, and painting. Electrical work includes removal of abandoned electrical elements, upgrade of select electrical elements, and correction of electrical deficiencies. Asbestos and lead abatement coincident to the work of this contract.

NOW, THEREFORE, if the principal shall, within ten (10) days following acceptance by Duval County of such proposal and award by said County to said principal of said contract, execute and return such further contract documents as may be required by the terms of the proposal accepted, and within five (5) days after execution of such contract documents, deliver its safety plan for the Project, and the bonds and insurance documents, as required by the terms of the proposal accepted, then this obligation shall be null and void, otherwise it shall remain in full force and the amount hereof shall be paid to and retained by Duval County as liquidated damages for principal's failure to do so.

Principal: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

Surety: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

## SECTION 00040

### PREVAILING WAGE RATES

"General Decision Number: TX20250134 03/14/2025

Superseded General Decision Number: TX20240134

State: Texas

Construction Type: Building

County: Duval County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

|  |  |
|--|--|
| If the contract is entered<br>  into on or after January 30,<br>  2022, or the contract is<br>  renewed or extended (e.g., an<br>  option is exercised) on or<br>  after January 30, 2022:<br> <br> <br> <br> <br> <br> <br> | . Executive Order 14026<br>  generally applies to the<br>  contract.<br>  . The contractor must pay<br>  all covered workers at<br>  least \$17.75 per hour (or<br>  the applicable wage rate<br>  listed on this wage<br>  determination, if it is<br>  higher) for all hours<br>  spent performing on the<br>  contract in 2025.<br> |
| If the contract was awarded on<br>  or between January 1, 2015 and<br>  January 29, 2022, and the<br>  contract is not renewed or<br>  extended on or after January<br>  30, 2022:<br> <br> <br> <br> <br> <br> <br>         | . Executive Order 13658<br>  generally applies to the<br>  contract.<br>  . The contractor must pay all<br>  covered workers at least<br>  \$13.30 per hour (or the<br>  applicable wage rate listed<br>  on this wage determination,<br>  if it is higher) for all<br>  hours spent performing on<br>  that contract in 2025.<br>     |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

|                     |                  |
|---------------------|------------------|
| Modification Number | Publication Date |
| 0                   | 01/03/2025       |
| 1                   | 03/14/2025       |

ASBE0087-002 06/03/2024

|  | Rates    | Fringes |
|--|----------|---------|
| ASBESTOS WORKER/HEAT & FROST<br>INSULATOR..... | \$ 29.50 | 8.79    |

\* BOIL0074-003 01/01/2025

|                  | Rates    | Fringes |
|------------------|----------|---------|
| BOILERMAKER..... | \$ 33.17 | 24.92   |

IRON0066-005 06/01/2024

|  | Rates    | Fringes |
|--|----------|---------|
| IRONWORKER, REINFORCING AND<br>STRUCTURAL..... | \$ 26.75 | 7.53    |

LABO0154-001 05/01/2024

|  | Rates    | Fringes |
|--|----------|---------|
| Laborers: (Mason Tender -<br>Cement/Concrete)..... | \$ 25.27 | 9.57    |

\* SUTX2009-021 04/20/2009

|                                   | Rates       | Fringes |
|-----------------------------------|-------------|---------|
| BRICKLAYER.....                   | \$ 17.76    | 0.00    |
| CARPENTER.....                    | \$ 18.00    | 0.00    |
| CEMENT MASON/CONCRETE FINISHER... | \$ 13.27 ** | 0.00    |
| ELECTRICIAN.....                  | \$ 15.85 ** | 0.00    |
| LABORER: Common or General.....   | \$ 8.50 **  | 0.00    |



|   |             |      |
|---|-------------|------|
| LABORER: Landscape & Irrigation.....          | \$ 8.50 **  | 0.22 |
| LABORER: Mason Tender - Brick...              | \$ 12.02 ** | 0.00 |
| LABORER: Mortar Mixer.....                    | \$ 9.50 **  | 0.00 |
| OPERATOR: Backhoe/Excavator/Trackhoe.....     | \$ 13.75 ** | 0.00 |
| OPERATOR: Bulldozer.....                      | \$ 12.80 ** | 0.43 |
| OPERATOR: Crane.....                          | \$ 21.33    | 0.00 |
| OPERATOR: Forklift.....                       | \$ 14.58 ** | 0.00 |
| OPERATOR: Loader (Front End)....              | \$ 10.54 ** | 0.00 |
| PAINTER: Brush, Roller and Spray.....         | \$ 15.80 ** | 0.00 |
| PLUMBER, Includes HVAC Pipe Installation..... | \$ 12.50 ** | 0.00 |
| ROOFER.....                                   | \$ 15.10 ** | 1.29 |
| SHEET METAL WORKER.....                       | \$ 17.00 ** | 0.00 |
| TILE SETTER.....                              | \$ 15.00 ** | 0.00 |
| TRUCK DRIVER.....                             | \$ 11.24 ** | 0.35 |
| -----   |             |      |

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is

like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

-----

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

#### Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

#### Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

#### Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

#### State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

-----

#### WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests

for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210.

=====

**END OF SECTION**

**DOCUMENT 00611**

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor or Company)

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

a \_\_\_\_\_ hereinafter called Principal, and  
(Corporation/Partnership)

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_  
(Name of Recipient)

400 E. Gravis Avenue, San Diego, Texas 78384  
(Recipient's Address)

hereinafter called COUNTY, in the penal sum of \$ \_\_\_\_\_

\_\_\_\_\_ Dollars \$ \_\_\_\_\_  
Dollars

in lawful money of the United States, for the payment of which sum well and truly to be made we bind ourselves, successors, an assignees, jointly and severally, firmly in these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the COUNTY dated the \_\_\_\_\_ day of \_\_\_\_\_, 2025, a copy of which is hereto attached and made a part hereof for the construction of:

Duval County Courthouse, Roof Remediation, Exterior Windows & Electrical

Includes:

Work includes limited site work including removal of abandoned utility poles and lines, installation of subgrade utility lines, sidewalks, and sodding. Exterior rehabilitation and restoration work generally includes replacement of stone copings, limited membrane roofing work, limited masonry restoration work including masonry cleaning, stone and brick repairs, restoration of wood window and door assemblies, and painting. Electrical work includes removal of abandoned electrical elements, upgrade of select electrical elements, and correction of electrical deficiencies. Asbestos and lead abatement coincident to the work of this contract.

NOW THEREFORE, if the Principal shall well, truly and faithfully perform its duties in all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the COUNTY, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the COUNTY from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the COUNTY all outlay and expense which the COUNTY may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the COUNTY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts,  
(Number of Original Copies)

each one of which shall be deemed in original, this the \_\_\_\_ day of \_\_\_\_\_, 2025.

ATTEST:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Principal Secretary)

By: \_\_\_\_\_

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

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

\_\_\_\_\_  
City

\_\_\_\_\_  
State

\_\_\_\_\_  
Zip Code

ATTEST:

\_\_\_\_\_  
(Surety)

\_\_\_\_\_  
(Witness as to Surety)

By: \_\_\_\_\_

(Attorney in Fact)

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

\_\_\_\_\_  
City

\_\_\_\_\_  
State

\_\_\_\_\_  
Zip Code

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

**DOCUMENT 00612**

**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor or Company)

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

a \_\_\_\_\_ hereinafter called Principal, and  
(Corporation/Partnership)

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

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

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_  
Duval County  
(Name of Recipient)

\_\_\_\_\_  
400 E. Gravis Avenue, San Diego, Texas 78384  
(Recipient's Address)

hereinafter called COUNTY, in the penal sum of \$ \_\_\_\_\_ Dollars  
in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves,  
successors, and assignee, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the  
COUNTY dated the \_\_\_\_ day of \_\_\_\_\_, 2025, a copy of which is hereto attached and made a part hereof  
for the completion of:

Duval County Courthouse, Roof Remediation, Exterior Windows & Electrical

Includes:

Base work includes limited site work including removal of abandoned utility poles and lines, installation of subgrade utility lines, sidewalks, and sodding. Exterior rehabilitation and restoration work generally includes replacement of stone copings, limited membrane roofing work, limited masonry restoration work including masonry cleaning, stone and brick repairs, restoration of wood window and door assemblies, and painting. Electrical work includes removal of abandoned electrical elements, upgrade of select electrical elements, and correction of electrical deficiencies. Asbestos and lead abatement coincident to the work of this contract.

NOW THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said WORK, and for all labor, performed of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the COUNTY and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

ATTEST:

\_\_\_\_\_  
(Principal)

\_\_\_\_\_  
(Principal Secretary)

(SEAL)

By: \_\_\_\_\_

\_\_\_\_\_  
(Witness as to Principal)

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

\_\_\_\_\_  
City State Zip Code

ATTEST:

\_\_\_\_\_  
(Surety)

\_\_\_\_\_  
(Witness as to Surety)

By: \_\_\_\_\_  
(Attorney in Fact)

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

\_\_\_\_\_  
City State Zip Code

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.



**DOCUMENT 00700**

**GENERAL CONDITIONS**

**1.1 DOCUMENTS**

- A. American Institute of Architects Document A201-2017, General Conditions of the Contract for Construction, forms a part of this Contract and by reference is incorporated herein as fully as if repeated at length.
- B. AIA Document A101-2017 Standard Form of Agreement Between Owner and Contractor (A copy is included in the Appendix).

**1.2 RELATED REQUIREMENTS**

- A. Document 00800 - Supplementary Conditions.
- B. Division 1 - General Requirements.
- C. Chapter 2258 of the Texas Government Code: Prevailing Wage Rates.

**END OF DOCUMENT**

**SUPPLEMENTARY CONDITIONS**

**1.1 RELATED REQUIREMENTS**

- A. Document 00700 - General Conditions.

**1.2 GENERAL**

- A. The following supplements modify, delete from, or add to the General Conditions referenced above.
- B. Where any provision of the General Conditions is modified, unaltered provisions remain in effect.

**1.3 SUPPLEMENTS**

- A. Article 1 - General Provisions:
1. Add Subparagraph 1.1.9: "The term 'product' includes materials, systems, and equipment."
  2. Add Subparagraph 1.1.10: "The term 'furnish' means to supply and deliver to Project site, ready for unloading, unpacking, assembly, erection, placement or similar requirements."
  3. Add Subparagraph 1.1.11: "The term 'install' means to unload, unpack, assemble, erect, place, finish, protect, adjust, and clean, or similar requirements."
  4. Add Subparagraph 1.1.12: "The term 'provide' means to furnish and install."
- B. Article 3 - Contractor:
1. Add Subparagraph 3.4.4: "The Contractor shall comply with the prevailing wage law in accordance with Article 5159 of Vernon's Revised Texas Civil Statutes including any amendments or supplements thereto, and shall pay not less than the minimum wage rates established in the Contract Documents. Contractor may pay higher rates than the minimum prevailing wage rates given, however, the Owner will not be liable for claims for additional compensation because of payment by Contractor of any wage rates in excess of the minimum prevailing wage rates."
  2. Delete paragraph 3.6; substitute the following: "The Owner qualifies for exemption from the State of Texas and local sales and use taxes pursuant to the provisions of the Texas Limited Sales, Excise and Use Tax Act. The Contractor shall not pay any such taxes that would otherwise be payable in connection with the performance of this Contract, but shall instead obtain an exemption by complying with the State Comptroller's requirements. Exemption certificates will be furnished to the Contractor by the Owner."
- C. Article 4 – Architect:
- 4.3 Architect's Additional Services:
- 4.3.1 The Architect and his consultants will receive additional compensation for work performed under the following circumstances:
- .1 Review of Contractor's or subcontractors submittals out of sequence from the submittal schedule agreed to by the Architect.
  - .2 Responses to the Contractor's or subcontractors requests for information where such information is available to the Contractor or subcontractors from a careful study and comparison of the Contract Documents, field conditions, Owner-provided information, Contractor – or subcontractor -prepared coordination drawings, or prior Project correspondence or documentation.
  - .3 Change Order and Construction Change Directives requiring evaluation of proposals, including revisions to the Contract Documents.
  - .4 Providing consultation concerning replacement or repair of Work, resulting from fire, water damage, or other cause during construction, if the or other cause is the

result of actions by the General Contractor or its subcontractors in connection with the Work.

- .5 Subcontractors are to bid the project according to requirements in the Construction Documents. If a cost savings is realized by the Owner from a subcontractor-suggested substitution, then the Owner will pay for the architect and consultants' fees and expenses related to review of the substitution. If the substitution is not accepted, or there is no cost savings proposed, then the subcontractor must pay for the architect and his consultants' fees and expenses related to review of the substitution.
- .6 Submittal review in excess of the original submittal and one re-submittal.
- .7 Review of mock-ups in excess of the original submittal and on re-submittal, unless additional mock-ups are required by the Architect, Owner, or the Texas Historical Commission. Should additional mock-ups be required, Contractor will be compensated for such work.
- .8 Review and documentation of defective or nonconforming work due to the Contractor's or any subcontractor's failure to comply with Contract Document requirements.
- .9 Services provided after the original Substantial Completion date if delay of Substantial Completion was caused by actions of the Contractor or any Subcontractor.
- .10 Substantial or Final Completion inspections in excess of two inspections.
- .11 Additional bidding services required to:
  - a. Re-bid Work that has already been bid.
  - b. Qualify additional subcontractors after the initial bidding period.
  - c. Re-bid any bid packages due to the subcontractor bids exceeding the Contractor's estimate that was established prior to bidding.
- .12 Required revisions to the Construction Documents after the initial bidding period due to the bids exceeding the Owner's budget unless outside the Contractor's control due to market condition changes that can be substantiated between the date of the contractor's final cost estimate and the bid due date.
- .13 Change Order and Construction Change Directive requiring evaluation of proposals, including revisions of the Contract Documents where changes are due to defective or non-conforming Work by the General Contractor or its subcontractors in connection with the Work.
- .14 Changes to the Construction Documents made necessary by acceptance of a substitution.
  - a. Substitutions will only be reviewed and considered for acceptance if they provide cost reductions to be realized by the Owner. These reductions must include any fees and expenses related to additional services required by the Architect or their consultants to modify the Construction Documents.
- .15 Evaluation of an extensive number of claims by the Contractor or any subcontractor in connection with the Work.

4.3.2 The Owner will compensate the Architect and his consultants for additional time and expenses related to any of the above services, and will deduct the amount of such services from the Contractor's Contract Sum by Change Order. Additional services will be preformed after notification to the Contractor that services of the Architect are required due to circumstances identified above. The Architect's Additional Services will be calculated at the following rates:

|    |                                    |           |
|----|------------------------------------|-----------|
| .1 | Senior Principal                   | \$ 300.00 |
| .2 | Principal                          | \$ 250.00 |
| .3 | Senior Associate                   | \$ 200.00 |
| .4 | Architect/Designer/Project Manager | \$ 150.00 |
| .5 | Architectural Intern/Design Staff  | \$ 100.00 |
| .6 | Historic Preservation Specialist   | \$ 150.00 |
| .7 | Administrative                     | \$ 100.00 |

D. Article 9 - Payments and Completion:

1. Add Subparagraph 9.6.9: "Until Substantial Completion the Owner will retain 5 percent of the amount due the Contractor on account of progress payments. Upon Substantial Completion retainage will be reduced to 5 percent."

E. Article 10 - Protection of Persons and Property:

1. Add Paragraph 10.5: "The Contractor shall not knowingly use any materials containing asbestos or other known hazardous materials in the Work."

F. Article 11 - Insurance and Bonds:

1. In Subparagraph 11.1.1, following the word "located", add "and against whom the Owner has no reasonable objection."
2. Add the following to the end of Subparagraph 11.1.1: "The form of the Certificate of Insurance shall be ACORD form 25S or other form acceptable to the Owner."
3. Add Subparagraph 11.1.5: "Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:
  - .1 Premises-Operations including X, C and U coverages as applicable.
  - .2 Independent Contractors' Protective.
  - .3 Products and Completed Operations.
  - .4 Personal Injury Liability with Employment Exclusion deleted.
  - .5 Contractual, including specified provision for Contractor's obligation under Paragraph 3.18.
  - .6 Owned, non owned and hired motor vehicles.
  - .7 Broad Form Property Damage including Completed Operations."
4. Add Subparagraph 11.1.6: "The insurance required by Subparagraph 11.1.1 shall be written for not less than the following limits or those required by law, whichever is greater and shall include the following coverages as a minimum:
  - .1 Worker's Compensation:
    - (a) State: Statutory.
    - (b) Applicable Federal: Statutory.
    - (c) Employer's Liability: \$500,000 per accident; \$500,000 per disease, Policy Limit; \$500,000 per disease, each employee.
  - .2 General Liability including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage:
    - (a) Bodily Injury and Property Damage: \$1,000,000 combined single limit.
    - (b) Products and Completed Operations shall be maintained for 2 years after final payment. Provide evidence of coverage on annual basis.
    - (c) Property Damage Liability: Include X, C and U coverage.
    - (d) Contractual Liability: \$1,000,000 combined single limit.
    - (e) Personal Injury, with Employment Exclusion deleted: \$1,000,000 aggregate.
    - (f) If the General Liability policy includes a General Aggregate, such General Aggregate shall be not less than \$2,000,000. Policy shall be endorsed to have General Aggregate apply to this Project only.
  - .3 Automobile Liability including owned, non owned and hired vehicles:
    - (a) Bodily Injury and Property Damage: \$1,000,000 combined single limit.
  - .4 Umbrella Excess Liability: \$4,000,000 over primary insurance."
5. Delete Subparagraph 11.1.2; substitute the following: "Furnish to Owner performance bond and labor and material payment bond, each equal to the amount of the Contract Sum, with approved surety, covering faithful performance of Contract and payment of obligations incurred in performance of Contract and also for use and benefit of parties who may become entitled to liens under the Contract according to provisions of laws of the State in which the project is located. The form of the bonds shall be acceptable to Owner."
6. Add Clause 11.1.2.1: "The Contractor shall deliver the required bonds to the Owner not later than three days following the date of execution of the Owner - Contractor Agreement, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall,

prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished."

7. Add Clause 11.1.2.2: "The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney."

G. Article 15 – Claims and Disputes

1. In Subparagraph 15.1.7, delete "The Contractor and Owner"; substitute "The Contractor, Owner, and Architect."
2. Delete Paragraph 15.4.

**END OF DOCUMENT**

## SECTION 01110

### SUMMARY OF WORK

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Project description.
  - 2. Work by Others.
  - 3. Contractor use of site and premises.

##### 1.2 PROJECT DESCRIPTION

- A. Work of this Project is described as Duval County Courthouse, Roof Remediation, Exterior Windows, and Electrical.
- B. Base work includes limited site work including removal of abandoned utility poles and lines, installation of subgrade utility lines, sidewalks, and sodding. Exterior rehabilitation and restoration work generally includes replacement of stone copings, limited membrane roofing work, limited masonry restoration work including masonry cleaning, stone and brick repairs, restoration of wood window and door assemblies, and painting. Electrical work includes removal of abandoned electrical elements, upgrade of select electrical elements, and correction of electrical deficiencies. Asbestos and lead abatement coincident to the work of this contract.
- C. Alternate work includes painting exterior doors, rehabilitation of Men's restroom at the basement level, and removal of paint coatings from exterior stone elements.
- D. The Project will be constructed under a single prime contract with the Owner.

##### 1.3 WORK BY OTHERS

- A. Separate Contracts:
  - 1. The Owner may execute contracts for additional work at the site that is excluded from the work of this Contract.
  - 2. Work under separate contract may be executed concurrent with Work of this Contract.
  - 3. Cooperate with the Owner and separate contractors to accommodate this requirement.

##### 1.4 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow for:
  - 1. Work by separate contractors.
  - 2. Work by Owner.
- B. The building will be in full-time normal use during the period of construction. All work shall be performed in such a manner as not to interfere with the functions and business of the Owner insofar as possible.
- C. Contractor shall at all times conduct operations in a manner that ensures the safety of the building and its occupants. Contractor shall not obstruct passage to or from any part of the existing building in operation except by permission of the Owner. Contractor shall pay particular attention to maintaining clear access to all required exits.
- D. Coordinate use of site and premises with the Owner.

- E. Move any stored products under Contractor's control that interfere with the operations of the Owner or separate contractors.
- F. Assume full responsibility for protection and safekeeping of products under this Contract stored on site.
- G. Obtain and pay for use of any additional storage or work areas needed for operations.

#### 1.5 WORK RESTRICTIONS

- A. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify the Owner and Architect not less than two days in advance of proposed utility interruptions.
  - 2. Obtain the Owner's written permission before proceeding with utility interruptions.
- B. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruptions to Owner occupancy with Owner.
  - 1. Notify the Owner and Architect not less than two days in advance of proposed disruptive interruptions.
  - 2. Obtain the Owner's written permission before proceeding with disruptive operations.

#### **PART 2 - PRODUCTS**

Not used.

#### **PART 3 - EXECUTION**

Not used.

**END OF SECTION**

## SECTION 01210

### ALLOWANCES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Quantity and cash allowances.

B. Related Sections

1. Section 01290 - Payment Procedures.
2. Section 01330 - Submittal Procedures.
3. Individual specification sections.

C. Include in Contract Sum cash allowances stated in individual Specification Sections and scheduled at end of section.

D. Designate in Progress Schedule delivery dates for products under each allowance.

E. Designate in Schedule of Values quantities of materials specified under unit cost allowances.

##### 1.2 QUANTITY AND CASH ALLOWANCES

A. General:

1. Purchase products under each allowance as directed by Architect.
2. Allow sums for various products as described in individual specification sections.
3. Amount of allowance includes:
  - a. Net cost of product, less any applicable trade discounts.
  - b. Delivery to site.
  - c. Labor required under allowance, only when labor is specified to be included in allowance.
4. In addition to amounts of allowances, include in Contract Sum, Contractor's costs for:
  - a. Handling at site, including unloading, uncrating, and storing.
  - b. Protection from elements and from damage.
  - c. Labor for installation and finishing, except where labor is specified to be part of allowance.
  - d. Other expenses required to complete installation.
  - e. Overhead and profit.

B. Selection of Products:

1. Architect's Duties:
  - a. Consult with Contractor's in consideration of products and suppliers.
  - b. Make selection; designate products to be used.
  - c. Prepare Change Orders.
2. Contractor's Duties:
  - a. Assist Architect in determining:
    - 1) Supplier or installer, as applicable.
    - 2) Cost, delivered and unloaded at site.
  - b. Obtain proposals from suppliers when requested by Architect.
  - c. Notify Architect of any effect anticipated by selection of product or supplier under consideration on construction schedule or contract sum.



- d. On notification of selection, enter into purchase agreement with designated supplier.
- C. Delivery:
  - 1. Contractor's Duties:
    - a. Arrange for delivery and unloading.
    - b. Promptly inspect products for damage or defects.
    - c. Submit any claims for transportation damage.
- D. Installation: Comply with requirements of referenced specification section.
- E. Adjustment of Costs:
  - 1. Should actual purchase cost be more or less than specified amount of allowance, Contract Sum will be adjusted by Change Order equal to amount of difference.
  - 2. Amount of Change Order will recognize any changes in handling costs at site, labor, installation costs, overhead, profit, and other expenses caused by selection under allowance.
  - 3. For products specified under unit cost allowance, unit cost shall apply to quantity listed in Schedule of Values.
  - 4. Submit invoices or other data to substantiate quantity actually used.
  - 5. Submit any claims for additional costs at site or other expenses caused by selection under allowances, prior to execution of work. Failure to do so will constitute waiver of claims for additional costs.

## **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

### **3.1 ALLOWANCE SCHEDULE**

- A. Allowance No. 1 – Window Restoration: Include a cash allowance of \$7,500 for additional repairs beyond that indicated in the base contract.
  - 1. Related Specification Sections:
    - a. Section 01226 – Unit Prices.
    - b. Section 07920 – Joint Sealers and Lead Weathercaps.
    - c. Section 08520 – Wood Window Restoration.
    - d. Section 08800 – Glazing.
    - e. Section 09910 – Painting and Finishing.
- B. Allowance No. 2 – Masonry Restoration: Include a cash allowance of \$15,000 for additional repairs or replacement of brick and stone masonry beyond that indicated in the base contract.
  - 1. Related Specification Sections:
    - a. Section 01226 – Unit Prices.
    - b. Section 04069 – Restoration Mortar.
    - c. Section 04905 – Masonry Restoration.
    - d. Section 04931 – Chemical Cleaning of Masonry.
    - e. Section 07920 – Joint Sealers and Lead Weathercaps.

- C. Allowance No. 3 – Concrete Slab Repairs: Include a cash allowance of \$5,000 for removal and replacement of additional concrete slab at the basement level for modifications to under slab plumbing piping for new fixtures.
1. Related Specification Sections:
    - a. Section 01230 – Alternates for rehabilitation of Men’s Restroom at basement level.
    - b. Section 03300 – Cast-in-Place Concrete.
    - c. Section 09390 – Tile.
- D. Allowance No. 4 – Modification to MEP Piping: Include a cash allowance of \$7,500 for replacement of additional damaged/deteriorated MEP piping beyond that indicated in base contract.
1. Related Specification Sections:
    - a. Division 25 – Mechanical.
    - b. Division 26 – Electrical.
- E. Allowance No. 5 – Gypsum Board Furr Out & Furr Downs: Include a cash allowance of \$5,000 to provide additional metal framed gypsum board furr out or furr down to conceal MEP devices/distribution line beyond that indicated in the base contract.
1. Related Specification Sections:
    - a. Section 09250 – Gypsum Board Assemblies.
    - b. Section 09910 – Painting and Finishing.

**END OF SECTION**

## **SECTION 01226**

### **UNIT PRICES**

#### **PART 1 - GENERAL**

##### **1.1 GENERAL REQUIREMENTS**

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

##### **1.2 SUMMARY**

- A. This section specifies administrative and procedural requirements for unit prices.
  - 1. A unit price is an amount proposed by Bidders and stated on the Bid Form as a price per unit of measurement for materials or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased.
- B. Unit prices include all necessary equipment, materials, overhead, and profit and applicable taxes.
- C. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

#### **PART 2 - PRODUCTS**

- 2.1 Not used.

#### **PART 3 - EXECUTION**

##### **3.1 UNIT PRICE SCHEDULE**

- A. Unit Price No. 1 – Window Repairs
  - 1. Brick Mold Replacement
    - a. Unit of Measurement: Per window unit.
  - 2. Wood Sill Replacement
    - a. Unit of Measurement: Per window unit.
  - 3. Wood Dutchman Repair at Frame or Blind Stop
    - a. Unit of Measurement: Per location.
  - 4. Frame or Blind Stop Replacement in Lieu of Wood Dutchman Repair
    - a. Unit of Measurement: Per Location.
  - 5. Sash Replacement Upper or Lower Sash.
    - a. Unit of Measurement: Per sash.
  - 6. Related Specification Section(s):
    - a. Section 01210 – Allowances.
    - b. Section 01732 – Selective Demolition.
    - c. Section 08520 – Wood Window Restoration.
    - d. Section 08800 – Glazing.
    - e. Section 09910 – Painting and Finishing.

B. Unit Price No. 2 – Masonry Repairs

1. Brick Repointing
  - a. Unit of Measurement: Per square foot.
2. Brick Patching Repair
  - a. Unit of Measurement: Per location.
3. Stone Repointing
  - a. Unit of Measurement: Per lineal foot.
4. Stone Patching Repair
  - a. Unit of Measurement: Per location (not to exceed 6-inch x 6-inch by 1-inch deep).
5. Stone Crack Repair
  - a. Unit of Measurement: Per location (not to exceed 18-inches long).
6. Stone Replacement
  - a. Unit of Measurement: Per unit approx. 4'-0" long, Refer to Sht. A-4.01.
    - (1) Stone Type A
    - (2) Stone Type B
    - (3) Stone Type C
    - (4) Stone Type D
7. Related Specification Section(s):
  - a. Section 01210 – Allowances.
  - b. Section 01732 – Selective Demolition.
  - c. Section 04069 – Restoration Mortar.
  - d. Section 04905 – Masonry Restoration.
  - e. Section 07620 – Sheet Metal Flashing and Trim.

C. Unit Price No. 3 – Concrete Repairs

1. Concrete slab repair/replacement
  - a. Unit of Measurement: Per square foot.
2. Related Specification Section(s):
  - a. Section 01210 – Allowances.
  - b. Section 03300 – Cast-in-Place Concrete

**END OF SECTION**

**SECTION 01230**  
**ALTERNATES**

**PART 1 – GENERAL**

**1.1 SUMMARY**

- A. Section Includes: Documentation of changes to Contract Sum and Contract Time.
- B. Contract Documents contain pertinent requirements for materials and methods to accomplish work described herein.
- C. Provide alternate costs for inclusion in Contract Sum if accepted by Owner.

**1.2 RELATED REQUIREMENTS**

- A. Owner-Contractor Agreement: Alternates accepted by Owner for incorporation into the Work.
- B. Individual specification sections identified.

**1.3 PROCEDURES**

- A. Alternates will be exercised at the option of Owner.
- B. Coordinate related work and modify surrounding work as required to complete the work, including changes under each Alternate, when acceptance is designated in Owner-Contractor Agreement.

**1.4 DESCRIPTION OF ALTERNATES**

- A. Alternate No. 1: Prep and Paint Exterior Wood Doors
  - 1. Base Bid: Touch-up stained finish at exterior doors B02, B04, 101, and 103.
  - 2. Alternate Bid 1: In lieu of touching up stained finish at exterior doors B02, B04, 101, and 103, strip clear coat (exposed exterior surfaces only) to bare wood and apply opaque paint system to exterior surfaces, color to be selected by Architect. Apply one coat primer and two finish coats.
  - 3. Related Specification Section(s):
    - a. Section 09910 – Painting and Finishing
- B. Alternate No. 2: Rehabilitate Men's Restroom at Basement Level
  - 1. Base Bid: No work to Exist. Women's B02, Exist. Men's Restroom, and Exist. Storage B04 at the basement level to rehabilitate the Men's Restroom.
  - 2. Alternate Bid 2: Interior rehabilitation work to Exist. Women's B02, Exist. Men's Restroom, and Exist. Storage B04 at the basement level to rehabilitate Men's Restroom as indicated on Drawing Sheets A-5.01, A-5.10, A-6.01, A-6.10, A-6.11, M201, P101, P201, and E106, and E801. Work includes but is not limited to the following: Selective demolition including limited hazardous materials abatement, and demo of concrete floor slab as required for connections to new plumbing fixtures; New wall partitions, furr-outs, and suspended ceiling, new toilet and urinal partitions; Restore existing wood door assembly and provide new hollow metal door assembly; Restoring plaster finish and new finishes including tile flooring and wainscot, painting walls and ceilings, toilet accessories; New MEP including plumbing fixtures including water lines, light fixtures, and ventilation; ADA signage.
  - 3. Related Specification Section(s):

- a. Section 01210 – Allowances.
- b. Section 01730 – Selective Demolition.
- c. Section 03300 – Cast-in-Place Concrete.
- d. Section 07840 – Fire Stopping.
- e. Section 07920 – Joint Sealers and Lead Weathercaps.
- f. Section 08110 – Steel Doors and Frames.
- g. Section 08295 – Wood Door Restoration.
- h. Section 08310 – Access Doors and Frames.
- i. Section 08710 – Door Hardware.
- j. Section 09215 – Veneer Plaster.
- k. Section 09250 – Gypsum Board Assemblies.
- l. Section 09281 – Gypsum Plaster Restoration.
- m. Section 09390 – Tile.
- n. Section 09910 – Painting and Finishing.
- o. Section 10160 – Metal Toilet Compartments.
- p. Section 10425 – Signage.
- q. Section 10810 – Toilet Accessories.
- r. Division 25 – Mechanical and Plumbing, refer to Drawing Sheets MP001 & MP001 for mechanical and plumbing specifications
- s. Division 26 – Electrical.
- t. Lead Paint Removal Work Plan and Asbestos Abatement Project Design contained in the Appendix of the Project Manual.

C. Alternate No. 3: Strip Paint Coatings from Exterior Stone Elements

- 1. Base Bid: No work to exterior stone elements.
- 2. Alternate Bid 3: Remove paint coatings from exterior stone elements to expose natural stone finish. Purchase paint removal test kit by Dumond, [www.dumondglobal.com](http://www.dumondglobal.com). Apply all 3 products to stone substrate in 5"x5" test areas. Follow manufacturers instructions for application, neutralizing, and wash down/removal. Based on test results, provide product that successfully removed paint coatings.
- 3. Related Specification Section(s):
  - a. Section 01210 – Allowances for masonry restoration.
  - b. Section 01226 – Unit Prices for masonry repairs.
  - c. Section 09910 – Painting and Finishing.
  - d. Lead Paint Removal Work Plan contained in the Appendix of the Project Manual.

D. Alternate No. 4: Gypsum Board in Lieu of Veneer Plaster

- 1. Alternate Bid 2: In Unisex ADA Restroom B03 provide painted veneer plaster finish closely matching finish of existing plaster at new walls and suspended ceiling.
- 2. Alternate Bid 4: In Unisex ADA Restroom B03 provide painted gypsum board finish in lieu of veneer plaster at new walls and suspended ceiling.
- 3. Related Specification Section(s):
  - a. Section 09215 – Veneer Plaster
  - b. Section 09250 – Gypsum Board Assemblies
  - c. Section 09910 – Painting and Finishing

## **PART 2 – PRODUCTS**

2.1 Not used.

## **PARTS 3 – EXECUTION**

3.1 Not used.

**END OF SECTION**

## SECTION 01250

### CONTRACT MODIFICATION PROCEDURES

#### PART 1- GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Architect's Supplemental Instructions.
  - 2. Proposal Requests.
  - 3. Contractor's proposed changes.
  - 4. Construction Change Directives.
  - 5. Change Orders.
- B. Related Sections:
  - 1. Section 01600 - Product Requirements.

##### 1.2 CHANGE PROCEDURES

- A. Architect's Supplemental Instructions:
  - 1. Architect will advise of minor changes in Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract.
  - 2. Format: AIA Document G710 - Architect's Supplemental Instructions.
- B. Proposal Requests:
  - 1. Architect may issue a Proposal Request that includes a detailed description of a proposed change with supplemental or revised Drawings and specifications.
  - 2. Format: AIA Document G709 - Proposal Request.
  - 3. Prepare and submit an estimate of any change to Contract Sum or Contract Time within 7 days.
- C. Contractor's Proposed Changes:
  - 1. Contractor may propose a change by submitting request for change to Architect.
  - 2. Describe proposed change, reason for change, its full effect on Work, and any change to Contract Sum or Contract Time.
  - 3. Document any required substitutions in accordance with Section 01600.
- D. Construction Change Directive:
  - 1. Architect may issue a directive, signed by Owner, instructing Contractor to proceed with a change for subsequent inclusion in a Change Order. Document will describe changes in Work and designate method of determining any change to Contract Sum or Contract Time. Promptly execute change.
  - 2. Format: AIA Document G713 - Construction Change Directive.
- E. Change Orders:
  - 1. Format: AIA Document G701 - Change Order.
  - 2. Execution: Architect will issue Change Orders for signature of parties as provided in Conditions of the Contract.



### 1.3 DISTRIBUTION

- A. Distribute copies of change procedure documents to Owner, Architect, THC Representative, and subcontractors and suppliers as applicable.

## **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

- 3.1 Not used.

**END OF SECTION**

## SECTION 01290

### PAYMENT PROCEDURES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Schedule of Values.
2. Applications for Payment.

##### 1.2 SCHEDULE OF VALUES

A. General:

1. Submit a Schedule of Values to Owner and Architect, with a copy to THC Representative, at least 20 days prior to submitting first Application for Payment.
2. Upon request of Owner or Architect, furnish additional data to support values given that will substantiate their correctness.
3. Approved Schedule of Values will be used as basis for reviewing Contractor's Applications for Payment.

B. Form and Content:

1. Format: AIA Document G703 - Continuation Sheet of Application and Certification for Payment. Contractor's standard electronic media printout will be considered.
2. Use Table of Contents of Project Manual as basis of format for listing costs of Work.
3. List installed value of component parts of Work in sufficient detail to serve as basis for computing values for progress payments.
4. Include separate line items for:
  - a. Site mobilization.
  - b. Bonds and insurance.
  - c. Contractor's overhead and profit.
5. For items on which payment will be requested for stored materials, break down value into:
  - a. Cost of materials, delivered and unloaded.
  - b. Total installed value.
6. For each line item that has a value of more than \$25,000.00, break down costs to list major products or operations under each item.
7. Total of costs listed in Schedule shall equal Contract Sum.

C. Review and Resubmittal:

1. After initial review by Owner and Architect, revise and resubmit if required.
2. Revise and resubmit along with next Application for Payment when a Change Order is issued. List each Change Order as a new line item.

##### 1.3 APPLICATIONS FOR PAYMENT

A. Preparation:

1. Format: AIA Document G702 - Application and Certification for Payment, supported by AIA Document G703 - Continuation Sheet. Contractor's standard electronic media printout will be considered.

2. Prepare required information in typewritten format or on electronic media printout.
  3. Use data from reviewed Schedule of Values. Provide dollar value in each column for each line item representing portion of work performed.
  4. List each authorized Change Order as a separate line item, listing Change Order number and dollar value.
  5. Prepare Application for Final Payment as specified in Section 01770.
- B. Waivers of Lien:
1. Along with the each Application for Payment, submit waivers of lien from each Subcontractor or Sub-subcontractor included on the current month's Application for Payment.
  2. Submit partial waivers on each item for amount requested, prior to deduction of retainage.
  3. For completed items, submit full or final waiver.
- C. Substantiating Data:
1. When Owner or Architect requires substantiating information, submit data justifying dollar amounts in question.
  2. Provide one copy of data with cover letter showing Application number and date, and line item number and description.
- D. Submittal:
1. Submit three copies of each Application for Payment.
  2. Payment period: Submit at intervals stipulated in Agreement.

## **PART 2 - PRODUCTS**

2.1 Not used.

## **PART 3 - EXECUTION**

3.1 Not used.

**END OF SECTION**

## **SECTION 01310**

### **PROJECT MANAGEMENT AND COORDINATION**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Project coordination.
  - 2. Project meetings.

##### **1.2 PROJECT COORDINATION**

- A. Coordinate scheduling, submittals, and work of various Sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.
- C. Coordinate completion and clean up of work of separate Sections in preparation for Substantial Completion.
- D. Coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents to minimize disruption of Owner's activities.

##### **1.3 PROJECT MEETINGS**

- A. Schedule and administer preconstruction conference and progress meetings.
- B. Make physical arrangements for meetings; notify involved parties at least four days in advance.
- C. Record significant proceedings and decisions at each meeting; reproduce and distribute copies to:
  - 1. Parties in attendance.
  - 2. THC Representative, if not present at meeting.
  - 3. Others affected by proceedings and decisions made.

##### **1.4 PRECONSTRUCTION CONFERENCE**

- A. Schedule within 15 days after date of Notice to Proceed at project field office or other central site, convenient to all parties.
- B. Attendance:
  - 1. Architect.
  - 2. Contractor.
  - 3. THC Representative.
  - 4. Major subcontractors and suppliers as Contractor deems appropriate.
  - 5. Representative of Testing Laboratory.
- C. Review and Discuss:
  - 1. Relation and coordination of various parties, and responsible personnel for each party.

2. Use of premises, including office and storage areas, temporary controls, and security procedures.
3. Construction schedule and critical work sequencing.
4. Processing of:
  - a. Contract modifications.
  - b. Shop Drawings, Product Data, and Samples.
  - c. Applications for Payment.
  - d. Substitutions.
  - e. Other required submittals.
5. Adequacy of distribution of Contract Documents.
6. Procedures for maintaining contract closeout submittals.
7. Installation and removal of temporary facilities.
8. Notification procedures and extent of testing and inspection services.

## 1.5 PROGRESS MEETINGS

- A. Schedule periodic progress meetings as required by the progress of the Work.
- B. Location: Contractor's project field office.
- C. Attendance:
  1. Architect and consultants as appropriate to agenda.
  2. Contractor.
  3. THC Representative, when applicable.
  4. Subcontractors and suppliers as appropriate to agenda.
  5. Others as appropriate to agenda.
- D. Review and Discuss:
  1. Work progress since previous meeting, including:
    - a. Field observations, deficiencies, conflicts, and problems.
    - b. Progress and completion date.
    - c. Corrective measures needed to maintain quality standards, progress, and completion date.
  2. Status of:
    - a. Requests for Information (RFIs).
    - b. Contract Modifications.
  3. Coordination between various elements of Work.
  4. Maintenance of Project Record Documents.

## PART 2- PRODUCTS

- 2.1 Not used.

## PART 3 EXECUTION

- 3.1 Not used.

**END OF SECTION**

## SECTION 01320

### CONSTRUCTION PROGRESS DOCUMENTATION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Progress schedule.
2. Construction photographs.

###### B. Related Sections:

1. Section 01290 - Payment Procedures.
2. Section 01330 - Submittal Procedures: Shop Drawings, Product Data, and Samples.
3. Section 01770 - Closeout Procedures.

##### 1.2 PROGRESS SCHEDULE

###### A. Format:

1. Prepare Schedules as a horizontal bar chart with separate bar for each major portion of Work or operation, identifying first work day of each week.
2. Sequence of listings: The chronological order of the start of each item of Work.
3. Scale and spacing: To provide space for notations and revisions.
4. Sheet size: Multiples of 8-1/2 x 11 inches.

###### B. Content:

1. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
2. Identify each item by specification Section number.
3. Provide sub-schedules to define critical portions of the entire Schedule.
4. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
5. Provide separate schedule of submittal dates for Shop Drawings, Product Data, and Samples, including:
  - a. Dates reviewed submittals will be required from Architect.
  - b. Decision data for selection of finishes.
  - c. Delivery dates for Owner furnished products.
  - d. Progress payment dates.
6. Coordinate content with Schedule of Values specified in Section 01290.
7. Revisions:
  - a. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
  - b. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
8. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

C. Submittal:

1. Submit initial Schedules to Owner, Architect, and THC Representative within 15 days after date of Notice to Proceed. After review, resubmit required revised data within 10 days.
2. Submit revised Progress Schedules with each Application for Payment.
3. Submit the number of opaque reproductions that Construction Manager requires, plus one copy each for Owner, Architect, and THC Representative.

D. Distribution:

1. Distribute copies of approved Schedules to project site file, Subcontractors, suppliers, and other concerned parties.
2. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Schedules.

### 1.3 CONSTRUCTION PHOTOGRAPHS

A. Photography:

1. Employ photographer to take construction progress photos and record photographs during construction.
2. Provide progress photographs taken each month just prior to date for each scheduled Application for Payment.
3. Illustrate:
  - a. Conditions prior to commencement of work.
  - b. Major construction events.
  - c. Conditions upon Substantial Completion.
4. Photograph project from minimum of fourteen different views at each specified time; views as directed by Architect.
5. At successive periods of photography, take photographs from same overall view as previously taken.
6. Provide factual presentation.
7. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion, preferably with perspective corrective lens.

B. Progress Photographs:

1. Provide index to progress photos and reduced plan(s) keyed and numbered to each photo, label and date.
2. Photographic format: digital at 1600 x 1200 resolution or 35 mm, color.
3. Print format: standard color print size, print on archival paper if digital image.
4. Labels: Subject and date.
5. Negatives: provide copies of negatives or copy of disk in jpeg format.

C. Record Photographs:

1. Provide index to progress photos and reduced plan(s) keyed and numbered to each photo, label and date.
2. Photographic format: Professional quality, perspective corrected lens preferred.
3. Print format: 8 x 10 color digitally printed on archival paper or photographically printed on well-washed resin coated paper.
4. Content: Each exterior elevation, window details at basement level minimum 3 windows, upper and lower roofs two views of each, and not less than three interior views of rehabilitated restroom if alternate is accepted. Views should be correlated to match the angle and distance of previous view.

5. Intervals: All views captured at three times: before work begins, during investigative or construction work and upon completion.
6. Labels: Subject, view, date and photographer.
7. Negatives: Photographic negatives in archival sleeves or a digital copy on compact disk in jpeg format.

D. Submittal:

1. Progress photos:
  - a. Submit three print copies in transparent sleeves and one digital image data on compact disk with each Application for Payment.
2. Record photographs:
  - a. Submit three copies in transparent sleeves and one digital copy on an archival compact disk with Project Record Documents.

**PART 2 - PRODUCTS**

2.1 Not used.

**PART 3 - EXECUTION**

3.1 Not used.

**END OF SECTION**



**SECTION 01330**  
**SUBMITTAL PROCEDURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Submittal procedures.
  - 2. Submittal schedule.
  - 3. Proposed Products list.
  - 4. Shop Drawings.
  - 5. Product Data.
  - 6. Samples.
  - 7. Quality control submittals.
- B. Related Sections:
  - 1. Section 01400 - Quality Requirements.

**1.2 SUBMITTAL PROCEDURES**

- A. Transmit each submittal along with form approved by Architect.
- B. Number each submittal with Project Manual section number and a sequential number within each section. Number resubmittals with original number and an alphabetic suffix.
- C. Identify Project Contractor, Subcontractor or supplier, pertinent Drawing sheet and detail numbers, and specification Section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that:
  - 1. Submittal was reviewed.
  - 2. Products, field dimensions, and adjacent construction have been verified.
  - 3. Information has been coordinated with requirements of Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to Architect and to THC Representative when applicable. Coordinate submittal of related items.
- F. For each submittal, allow 14 days for Architect's review, excluding delivery time to and from Contractor.
- G. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of completed Work.
- H. Provide space for Contractor and Architect review stamps.
- I. Revise and resubmit submittals when required; identify all changes made since previous submittal.
- J. Distribute copies of reviewed submittals to concerned parties and to Project Record Documents file. Instruct parties to promptly report any inability to comply with provisions.

### 1.3 SUBMITTAL SCHEDULE

- A. Within 15 days after date of Notice to Proceed, submit a complete list of submittals required for Project to Architect and THC Representative.
- B. For each submittal, indicate on schedule:
  - 1. Applicable specification section number.
  - 2. Type of submittal, e.g. Shop Drawing, Product Data, Sample, Certificate, etc.
  - 3. Indication of whether submittal is for review or for information purposes only.
  - 4. Anticipated date of submittal to Architect.
  - 5. Date reviewed copies must be returned to Contractor.
- C. Architect will review Submittal Schedule for conformance to requirements of Contract Documents and will return one copy to Contractor with comments as applicable.
- D. THC Representative will return one copy of Submittal Schedule to Contractor indicating those submittals requiring review by THC.

### 1.4 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit to Architect and THC Representative a complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

### 1.5 SHOP DRAWINGS

- A. Shop Drawings are drawings, diagrams, schedules, and other data specifically prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.
- B. Present information in clear and thorough manner.
- C. Identify details by reference to sheet and detail numbers or room number shown on Drawings.
- D. Maximum Sheet Size: 30 x 42 inches.
- E. Submit one digital copy of each sheet.
- F. Architect will return one digital copy to Contractor for printing and distribution.

### 1.6 PRODUCT DATA

- A. Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- B. Mark each copy to identify applicable products, models, options, and other data.
- C. Supplement manufacturers' standard data to provide information unique to this Project.
- D. Submit one digital copy.
- E. Architect will return digital copy to Contractor for printing and distribution.

## 1.7 SAMPLES

- A. Samples are physical examples, which illustrate materials, equipment, or workmanship and establish standards for which the Work will be judged.
- B. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- C. Where so indicated, submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect's selection.
- D. Include identification on each sample, with full Project information.
- E. Unless otherwise specified in individual specifications, submit two of each sample.
- F. Architect will notify Contractor of approval or rejection of samples, or of selection of color, texture, or pattern if full range is submitted.

## 1.8 QUALITY CONTROL SUBMITTALS

- A. Quality control submittals specified in Section 01400 are for information and do not require Architect's responsive action except to require resubmission of incomplete or incorrect information.

## **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

- 3.1 Not used.

**END OF SECTION**

## SECTION 01356

### RESTORATION PROJECT PROCEDURES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Definitions.
  - 2. Historic significance.
  - 3. Restoration procedures.
  - 4. Historic artifacts.
  - 5. Alterations.
  - 6. Hazardous material procedures.

##### 1.2 DEFINITIONS

- A. Match Existing: Provide new materials to match the existing, in place material in all aspects as closely as possible. Existing materials are those, which are visible in whole or in part in the building.
- B. Match Original: Provide new materials to match the original material in all aspects as closely as possible. Original materials are those which were originally installed in the building at the time of its completion, prior to previous alterations, and which may predate existing materials.
- C. Preservation: The act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property.
- D. Reconstruction: The act or process of reproducing, by means of new construction, the form, features, and detailing of a non-surviving building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.
- E. Restoration: The act or process of accurately depicting the form, features, and character as it appeared at a particular time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.

##### 1.3 QUALITY ASSURANCE

- A. Historic Significance:
  - 1. The existing building is a Registered Texas Historic Landmark and a State Archeological Landmark.
  - 2. Due to its unique historical significance, special procedures and precautions must be used in selective demolition and restoration.
  - 3. The building is to be restored to its original 1916 appearance.
- B. Texas Historical Commission (THC):
  - 1. THC is providing partial funding for this project and will review and have authority over restoration work as applicable.
  - 2. THC's contact for this project is: Tania Salgado
  - 3. Texas Historical Commission, Division of Architecture
    - 108 W. 16<sup>th</sup> Street
    - Austin, Texas 78711
    - 512-463-6094

- C. Restoration Procedures:
  - 1. Preserve existing materials, finishes, and profiles.
  - 2. Blend new and existing work to provide smooth transitions and uniform appearance.
  - 3. Cease work, notify Contractor, and await instructions if materials or conditions encountered at the site are not as indicated by the Contract Documents or if structure is in danger of movement or collapse.
- D. Earthwork: At least two weeks prior to beginning earthwork operations at site, contact THC's designated Archeological Steward:
  - 1. Review proposed procedures, equipment, and extent of earthwork.
  - 2. Determine procedures to be followed if suspected archeological artifacts are encountered during excavation.
  - 3. Comply with Archeological Steward's requirements for earthwork, notification, protection, and removal of artifacts.
- E. Historic Artifacts: If artifacts of a historic nature are encountered during the Work:
  - 1. Cease work in the affected area immediately.
  - 2. Protect artifacts from damage.
  - 3. Notify Contractor and THC and await instructions.
  - 4. Salvage or dispose of artifacts as directed by THC.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. New Materials:
  - 1. Provide new materials to match existing adjacent materials or original materials for closing of openings, repairs, and reconstructions where suitable salvaged materials do not exist, are insufficient in quantity, or where reuse is not permitted.
  - 2. Retain samples of existing and original materials on site for comparison purposes.
  - 3. Match existing materials in material, type, size, quality, color, finish, and other attributes.
- B. Reused Materials:
  - 1. Clean and prepare salvaged materials for reuse.
  - 2. Do not use materials with objectionable chips, cracks, splits, dents, scratches, or other defects.
  - 3. Repair operable items to function properly.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Test materials to be used in repairs for compatibility with existing materials; do not use incompatible materials.
- B. Cut, move, or remove items to provide access for alterations and restoration work. Replace and restore upon completion.
- C. Protect existing materials and surfaces from damage by construction operations.

### **3.2 ALTERATIONS**

- A. Coordinate alterations and renovations to expedite completion.

- B. Minimize damage to existing materials and surfaces; provide means for restoring products and finishes to their original or specified new condition.
- C. Remove unsuitable materials not marked for salvage.
- D. Remove debris and abandoned items from areas of work and from concealed spaces.
- E. Refinish visible surfaces to specified condition, with neat transition to adjacent surfaces.
- F. Install products and finish surfaces as specified in individual sections, or where no specification section exists, to match existing original.
- G. Finish patches to provide uniform color and texture over entire surface, with repairs not discernible from normal viewing distance. If finish cannot be matched, refinish entire surface to nearest intersections.
- H. Rework finished surfaces to smooth plane, without breaks, steps, or bulkheads:
  - 1. Where new work abuts or aligns with existing, provide smooth and even transition.
  - 2. Where a change in plane of 1/4 inch or more occurs, submit recommendation to Architect for transition.
- I. Where alterations expose mechanical and electrical components, which were previously concealed, rework to be concealed in completed work.

**END OF SECTION**

**SECTION 01400**  
**QUALITY REQUIREMENTS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. References.
  - 2. Quality assurance and control of installation.
  - 3. Manufacturer's field services and reports.
  - 4. Test reports and certifications.
  - 5. Manufacturer's installation instructions.

**1.2 REFERENCES**

- A. For products or workmanship specified by reference to association, trade, or industry standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Conform to edition of reference standard in effect as of date of Project Manual.
- D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

**1.3 QUALITY ASSURANCE AND CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

**1.4 MANUFACTURERS' FIELD SERVICES AND REPORTS**

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, or startup of equipment, as applicable, and to initiate instructions when necessary.
- B. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

- C. Submit report to Architect for review in duplicate within 10 days of observation.

#### 1.5 TEST REPORTS AND CERTIFICATIONS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide test reports and manufacturers' certifications.
- B. Indicate that material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Submittals may be recent or previous test results on material or Product, but must be acceptable to Architect.
- D. Submit two copies of each report.

#### 1.6 MANUFACTURER'S INSTALLATION INSTRUCTIONS

- A. When Contract Documents require that Products be installed in accordance with manufacturer's instructions:
  - 1. Submit manufacturer's most recent printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, as applicable.
    - a. Submit in quantities specified for Product Data.
    - b. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
    - c. Identify conflicts between manufacturers' instructions and requirements of Contract Documents.
  - 2. Perform installation of Products to comply with requirements of manufacturer's instructions.
  - 3. If installation cannot be performed in accordance with manufacturer's instructions, notify Architect and await instructions.

### **PART 2 - PRODUCTS**

- 2.1 Not used.

### **PART 3 - EXECUTION**

- 3.1 Not used.

**END OF SECTION**



## **SECTION 01450**

### **TESTING LABORATORY SERVICES**

#### **PART 1 - GENERAL**

##### **1.1 RELATED DOCUMENTS**

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

##### **1.2 WORK INCLUDED**

- A. The testing laboratory shall make all inspections and perform all tests in accordance with the building code, local authorities, ASTM specifications and the Contract Documents.
- B. Materials and workmanship not meeting the required standards are to be removed and replaced. Replacement and subsequent testing shall be at the expense of the Contractor.
- C. Testing, inspection, and certifications specified in other sections of these Specifications shall be paid by the Contractor, unless otherwise indicated.
- D. Inspection by the laboratory shall not relieve the Contractor or Fabricator of his responsibility to furnish materials and workmanship in accordance with the Contract Documents.

##### **1.3 SELECTION AND PAYMENT**

- A. Owner will employ and pay for services of an independent testing laboratory to perform inspection and testing services specified in this section.

##### **1.4 REFERENCED STANDARDS**

- A. The latest adopted edition of all standards referenced in this Section shall apply, unless noted otherwise. In case of conflict between these Contract Documents and a referenced standard, the Contract Documents shall govern. In case of conflict between these Contract Documents and the Building Code, the more stringent shall govern.

##### **1.5 QUALITY ASSURANCE**

- A. Testing Laboratory shall meet the requirements of ASTM E329 and ASTM E543.
- B. Testing Laboratory shall be insured against errors and omissions by a professional liability insurance policy having a limit of liability not less than \$500,000.
- C. Testing Laboratory shall be under the direction of a Registered Engineer licensed in the State of Texas, having at least five years experience in inspection and testing of construction materials.
- D. Laboratory staff monitoring concrete work shall be ACI certified inspectors.
- E. Laboratory staff performing structural steel inspection shall be currently certified AWS Certified Welding Inspectors (CWI), in accordance with the provisions of AWS QCI, "Standard and Guide for Qualification and Certification of Welding Inspectors". The inspector may be supported by assistant inspectors who may perform specific inspection functions under the supervision of the inspector. Assistant inspectors shall be currently certified AWS Certified Associate Welding Inspectors (CAWI). The work of the assistant inspectors shall be regularly monitored by the inspector, generally on a daily basis.

- F. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

#### 1.6 LABORATORY RESPONSIBILITIES

- A. Attend preconstruction meetings and progress meetings as required to coordinate work with the Contractor and address quality control issues.
- B. Test samples of design mixes submitted by Contractor.
- C. Provide qualified personnel at site. Cooperate with Architect/Engineer and Contractor in performance of services.
- D. Perform specified inspecting, sampling, and testing of Products in accordance with specified standards.
- E. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- F. Promptly notify Architect/Engineer and Contractor of observed irregularities or non-conformance of Work or Materials.
- G. Perform all inspections and tests in accordance with building code requirements for "Special Inspection" whether or not such inspections are specified in the Contract Documents.

#### 1.7 LABORATORY REPORTS

- A. After each inspection and test, promptly submit copies of laboratory reports to Architect, Engineer, Owner and to Contractor.
- B. Include:
  - 1. Date issued
  - 2. Project title and number
  - 3. Name of inspector
  - 4. Date and time of sampling or inspection
  - 5. Identification of product and specifications section
  - 6. Location in the Project
  - 7. Type of inspection or test
  - 8. Date of test
  - 9. Results of tests
  - 10. Conformance with Contract Documents

#### 1.8 LIMITS ON TESTING LABORATORY AUTHORITY

- A. Laboratory may not release, revoke, alter, or enlarge the requirements of the Contract Documents.
- B. Laboratory may not approve or accept any portion of the Work, except where such approval is specifically called for in these specifications.
- C. Laboratory may not assume any duties of Contractor.
- D. Laboratory has no authority to stop the Work.

#### 1.9 CONTRACTOR RESPONSIBILITIES

- A. See technical sections of these specifications for specific requirements.

- B. Deliver to the laboratory, without cost to the Owner, adequate samples of materials proposed for use, which are required to be tested.
- C. Advise laboratory sufficiently in advance of construction operations to allow laboratory to complete any required checks or tests and to assign personnel for field inspection and testing as specified.
- D. Provide facilities for safe storage and proper curing of concrete test samples on project site for the first 24 hours and also for subsequent field curing as required by ASTM specifications C31.
- E. Provide incidental labor and equipment as required to assist laboratory personnel in obtaining and handling samples at the site and in accessing work for inspection.
- F. Furnish concrete mix designs, in accordance with ACI 301, section 3.9, made by an independent testing laboratory or qualified concrete supplier. Where mix designs are required, the laboratory shall be selected and paid by the Contractor.
- G. Provide current welder certifications for each welder to be employed.
- H. Furnish fabrication and erection inspection of all welds in accordance with AWS D1.1, Chapter 6.
- I. Prequalification of all welding procedures to be used in executing the work.

## **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

### **3.1 FILLING AND BACKFILLING**

- A. The Contractor shall make available to the laboratory, adequate samples of each fill and backfill material from the proposed sources of supply not less than 10 days prior to the start of the work.
- B. Laboratory shall analyze samples as required to provide a soil description and to determine compliance with quality requirements. Perform the following tests:
  - 1. Test for liquid limit in accordance with ASTM D423.
  - 2. Test for plastic limit of soils and plasticity index of soils in accordance with ASTM D424.
  - 3. Tests for moisture density relations of soil in accordance with ASTM D698 or D1557, as applicable.
- C. Furnish a report for each individual test and state whether sample conforms to specified requirements or reasons for nonconformance.
- D. Inspect underslab drainage material and placement for compliance with specified gradation, quality and compaction.
- E. Make in-place compaction test for moisture content, moisture-density relationship, and density of fill material after compaction to determine that backfill materials have been compacted to the specified density. Number of tests shall be as follows:
  - 1. One test for each 5000 square feet of area of each lift placed under floor slab. Stagger test locations in each lift from those in the previous lift. Perform a minimum of three tests for each lift.

2. One test for each 100 linear feet, or portion thereof, of each lift placed against foundation walls, with locations staggered from those in the previous lift.
3. One test of each lift placed below any isolated footing, and every 100 linear feet under continuous footings, with locations taken on a different side from that in the lift below.

### 3.2 CONCRETE REINFORCING STEEL AND EMBEDDED METAL ASSEMBLIES

- A. Inspect all concrete reinforcing steel prior to placing of concrete for compliance with the Contract Documents and approved shop drawings. All instances of noncompliance shall be immediately brought to the attention of the Contractor for correction. If uncorrected by the Contractor, they shall be listed in the report.
- B. Observe and report on the following:
  1. Number and size of bars.
  2. Bending and lengths of bars.
  3. Splicing.
  4. Clearance to forms including chair heights.
  5. Clearance between bars or spacing.
  6. Rust, form oil, and other contamination.
  7. Grade of Steel.
  8. Securing, tying and chairing of bars.
  9. Excessive congestion of reinforcing steel.
  10. Installation of anchor bolts and placement of concrete around anchor bolts.
  11. Fabrication and installation of embedded metal assemblies, including visual inspection of all welds.
  12. Visually inspect studs and deformed bar anchors on embedded assemblies for compliance with Contract Documents.
- C. Provide a qualified, experienced inspector to inspect reinforcing steel. Inspector shall have a minimum of three years experience inspecting reinforcing steel in projects of similar size.

### 3.3 CONCRETE INSPECTION AND TESTING

- A. Secure composite samples of concrete at the jobsite in accordance with ASTM C172.
- B. Mold and cure three specimens from each sample in accordance with ASTM C31. The test cylinders shall be stored in the field 24 hours and then carefully transported to the laboratory and cured in accordance with ASTM C31.
- C. Test specimens in accordance with ASTM C39. Two specimens shall be tested at 28 days for acceptance and one shall be tested at seven days for information.
- D. Make one strength test (three cylinders) for each 100 cubic yards or fraction thereof, of each mix design placed in one day.
- E. Make one slump test for each set of cylinders following the procedural requirements of ASTM C143 and ASTM C172. Make additional slump tests whenever the consistency of the concrete appears to vary. Do not permit placement of concrete having measured slump outside the limits given on the drawings, except when approved by the Architect. Slump tests corresponding to samples from which strength tests are made shall be reported with the strength test results. Other slump tests need not be reported.
- F. Determine total air content of air entrained normal-weight concrete sample for each strength test in accordance with ASTM C231.

- G. Determine temperature of concrete sample for each strength test.
- H. Monitor the addition of water at the jobsite and the length of time the concrete is allowed to remain in the truck before placement. Report any significant deviation from the approved mix design to the Architect, the Contractor, and the concrete supplier.
- I. Observe the placing of all concrete, except non structural slabs-on-grade and sitework. Observe and report on placing method, consolidation, cold joints, length of drop and displacement of reinforcing. Report deficiencies to the Contractor immediately for corrective action. Inspections may be reduced to a periodic basis when all procedures have been deemed satisfactory by the laboratory.
- J. The testing laboratory shall certify each delivery ticket indicating class of concrete delivered (or placed), amount of water added and the time at which the cement and aggregate was dispensed into the truck, and the time at which concrete was discharged from the truck.

#### 3.4 Evaluation and Acceptance:

- A. If the measured slump or air content of air entrained concrete falls outside the specified limits, a check test shall be made immediately on another portion of the same sample. In the event of a second failure, the concrete shall be considered to have failed to meet the requirements of the specifications, and shall be rejected.
- B. The strength level of the concrete will be considered satisfactory if the averages of all sets of three consecutive strength test results are equal to or exceed the specified strength and no individual test result (average of two cylinders) is below the specified strength by more than 500 psi.
- C. Completed concrete work will be accepted when the requirements of "Specifications for Structural Concrete for Buildings," ACI 301, Chapter 18 have been met.
- D. Comply with ACI 311, "Guide For Concrete Inspection" and "ACI Manual of Concrete Inspection" (SP-2).
- E. Inspect the application of curing compound and monitor all curing conditions to assure compliance with Specification requirements. Report curing deficiencies to the Contractor immediately and submit a report to the Architect.

#### **END OF SECTION**

## **SECTION 01500**

### **TEMPORARY FACILITIES AND CONTROLS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Temporary utilities.
  - 2. Field offices and sheds.
  - 3. Temporary controls.
  - 4. Protection of installed Work.
  - 5. Progress cleaning.
  - 6. Dust control.
  - 7. Removal.

##### **1.2 TEMPORARY ELECTRICITY**

- A. Connect to existing electrical system for electricity required during construction.
- B. Owner to pay cost of electricity used from existing electric service.
- C. Provide and pay for required service of capacity or characteristics other than that currently available.
- D. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.
- E. Maintain distribution system and provide routine repairs.

##### **1.3 TEMPORARY WATER**

- A. Connect to existing water source for water required for construction.
- B. Owner to pay costs of water used from existing water service.
- C. Extend branch piping and provide temporary hoses so that water is available at locations needed for work.
- D. Protect from freezing.
- E. Maintain distribution system and provide routine repairs.

##### **1.4 TEMPORARY SANITARY FACILITIES**

- A. Provide chemical toilets for use during construction.
- B. Permanent toilets may not be used during construction.
- C. Maintain facilities in clean and sanitary condition.

##### **1.5 FIELD OFFICES AND SHEDS**

- A. Provide temporary field offices and storage sheds required for construction.

- B. Do not unreasonably encumber site or premises with excess materials or equipment.
- C. Temporary Structures:
  - 1. Portable or mobile buildings, structurally sound, weathertight, with floors raised above ground.
  - 2. Temperature transmission resistance: Compatible with occupancy and storage requirements.
  - 3. Provide connections for utility services when required.
  - 4. Provide steps and landings at entrances.
- D. Field Office:
  - 1. Size required for Contractor's use and to provide space for project meetings.
  - 2. Adequate electrical power, lighting, heating, and cooling to maintain human comfort.
  - 3. Provide facilities for storage of Project Record Documents.
  - 4. Provide computer with printer and e-mail connection.
  - 5. Maintain digital camera at site with capability to transmit photographs via e-mail.

## 1.6 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from construction operations.
- B. Fencing:
  - 1. Provide temporary fencing for construction operations.
  - 2. Construction: Commercial grade chain link.
  - 3. Height: 6 feet.
  - 4. Locate to protect stored materials and equipment.
  - 5. Provide vehicular gates.
- C. Tree and Plant Protection:
  - 1. Protect existing trees and plants at site that are designated to remain.
  - 2. Remove roots and branches that interfere with construction. Employ qualified tree surgeon to remove and to treat cuts.
  - 3. Provide temporary barriers to height of 6 feet around individual or groups of trees and plants.
  - 4. Do not permit vehicular traffic, parking, storing of materials, dumping of harmful chemicals or liquids, or standing or continuously running water within root zones.
  - 5. Supervise earthwork operations to prevent damage to root zones.
  - 6. Replace trees and plants that are damaged or destroyed due to construction operations.
- D. Provide access doors with locking hardware.

## 1.7 EXTERIOR CLOSURES

- A. Provide temporary weathertight closures for exterior openings to provide acceptable interior working conditions, to allow for temporary heating and maintenance of ambient temperatures required in individual specification sections, to protect the Work, and to prevent entry of unauthorized persons.
- B. Provide access doors with locking hardware.

## 1.8 PROTECTION OF INSTALLED WORK

- A. Protect installed work from construction operations; provide special protection when required in individual specification sections.

- B. Minimize traffic, storage, and construction activities on roof surfaces. If traffic, storage, or activity is necessary, obtain recommendations for protection from roofing manufacturer.
- C. Prohibit traffic from landscaped areas.

#### 1.9 PROGRESS CLEANING

- A. Maintain areas free from waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Provide containers for collection of waste materials, debris, and rubbish; remove and dispose of off site as required by construction activities.
- C. Periodically clean interior areas to provide suitable conditions for finish work.

#### 1.10 TEMPORARY CONTROLS

- A. Dust Control:
  - 1. Provide dust control materials and methods to minimize dust from construction operations.
  - 2. Prevent dust from dispersing into occupied spaces.

#### 1.11 REMOVAL

- A. Remove temporary utilities, equipment, facilities, and services when construction needs can be met by use of permanent construction or upon completion of Project.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing and permanent facilities used during construction to original or to specified condition.

### PART 2 - PRODUCTS

- 2.1 Not used.

### PART 3 - EXECUTION

- 3.1 Not used.

**END OF SECTION**



## **SECTION 01580**

### **PROJECT IDENTIFICATION AND SIGNS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Project identification sign.
  - 2. Informational signs.
  - 3. Maintenance and removal.

##### **1.2 QUALITY ASSURANCE**

- A. Project Sign:
  - 1. Design sign and structure to withstand 50 MPH wind velocity.
  - 2. Sign Painter: Experienced as a professional sign painter for minimum 3 years.
  - 3. Finishes: Adequate to withstand weathering, fading, and chipping for duration of construction.
- B. Do not erect other signs at site without Owner's approval, except those required by governing authorities.

##### **1.3 SUBMITTALS**

- A. Shop Drawings: Show content, layout, lettering, colors, structure, sizes, and grades of members.

#### **PART 2 - PRODUCTS**

##### **2.1 MATERIALS**

- A. Structure and Framing: New lumber, structurally adequate.
- B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inch thick, standard large sizes to minimize joints.
- C. Rough Hardware: Galvanized steel or aluminum.
- D. Paints: Sherwin Williams Company or approved substitute.

##### **2.2 FABRICATION**

- A. Provide one painted sign of following design:
  - 1. Area: 32 square feet.
  - 2. Bottom edge of sign: 6 feet above ground.
  - 3. Content and colors: Refer to Construction Sign Drawing at end of Section.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Install project identification sign within 30 days after date of Notice to Proceed.
- B. Erect at designated location.
- C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
- D. Install sign surface plumb and level, with butt joints. Anchor securely.
- E. Paint exposed surfaces of sign, supports, and framing.

### **3.2 MAINTENANCE**

- A. Maintain signs and supports clean. Repair deterioration and damage.

### **3.3 REMOVAL**

- A. Remove signs, framing, supports, and foundations at completion of Project and restore the area.

**END OF SECTION**

## Specifications for County Courthouse Signage

### TEXAS HISTORICAL COMMISSION

#### Texas Historic Courthouse Preservation Program

A Partnership for the Restoration  
of the  
*Sample County Courthouse*



County Judge: John R. Doe

County Commissioners:

John S. Doe • John Doe

Jane Ann Doe • John F. Doe

CHC Chair: John M. Doe

---

Architect: Name of Firm Goes Here

Structural Engineer: Name of Firm Goes Here

MEP Engineer: Name Goes Here

---

General Contractor: Name Goes Here



**TEXAS HISTORICAL COMMISSION**  
*real places telling real stories*

#### FINISHED SIZE:

4' x 8'

#### BACKGROUND:

White

#### COLORS:

■ PMS 193

■ PMS Warm Gray 11

■ Black

(or equivalent vinyl color)

#### PHOTO OR ILLUSTRATION:

Grayscale

#### SANS SERIF FONTS:

**Gotham Bold**

**Helvetica Bold**

#### SERIF FONTS:

Adobe Garamond Pro Semibold

*Adobe Garamond Pro Bold Italic*

#### FOR MORE INFORMATION:

Please contact the Marketing  
Communications Division  
of the Texas Historical Commission  
at 512.463.6255.

SCALE: 1" = 1'

## **SECTION 01600**

### **PRODUCT REQUIREMENTS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Products.
  - 2. Transportation and handling.
  - 3. Storage and protection.
  - 4. Reuse of existing materials.
  - 5. Product options.
  - 6. Substitutions.

##### **1.2 PRODUCTS**

- A. Provide interchangeable components by the same manufacturer for identical items.
- B. Do not reuse materials and equipment removed from existing construction in completed Work, except as specifically permitted by the Contract Documents.

##### **1.3 TRANSPORTATION AND HANDLING**

- A. Coordinate delivery of Products to prevent conflict with Work and adverse conditions at site.
- B. Transport and handle Products in accordance with manufacturer's instructions.
- C. Promptly inspect shipments to ensure that Products comply with requirements of Contract Documents, are undamaged, and quantities are correct.
- D. Provide equipment and personnel to handle products by methods to prevent damage.

##### **1.4 STORAGE AND PROTECTION**

- A. Store and protect Products in accordance with manufacturer's instructions with manufacturer's seals and labels intact and legible.
- B. Store Products on site unless prior written approval to store off site has been obtained from Owner.
- C. Store Products subject to damage by elements in weathertight enclosures. Maintain temperature and humidity within ranges required by manufacturer's instructions.
- D. Exterior Storage:
  - 1. Store fabricated Products above ground; prevent soiling and staining.
  - 2. Cover products subject to deterioration with impervious sheet coverings; provide ventilation to prevent condensation.
  - 3. Store loose granular materials in well drained area on solid surfaces; prevent mixing with foreign matter.
- E. Arrange storage areas to permit access for inspection. Periodically inspect stored products to verify that products are undamaged and in acceptable condition.

## 1.5 REUSE OF EXISTING MATERIALS

- A. Carefully remove, handle, protect, and store Products.
- B. Clean and refinish Products to original or specified condition.
- C. Restore operable components to working condition.
- D. Arrange and pay for transportation, storage, and handling of Products requiring off site storage, restoration, or renovation.

## 1.6 PRODUCT OPTIONS

- A. Products specified by reference standard only:
  - 1. Select any Product meeting the specified standard.
  - 2. Submit Product Data to substantiate compliance of proposed Product with specified requirements.
- B. Products specified by naming two or more acceptable Products: Select any named Product.
- C. Products specified by stating that the Contract Documents are based on a Product by a single manufacturer followed by the statement "Equivalent products by the following manufacturers are acceptable":
  - 1. Select the specified Product or a Product by a named manufacturer having equivalent or superior characteristics to the specified Product and meeting the requirements of the Contract Documents.
  - 2. If the specified Product is not selected, submit Product Data to substantiate compliance of proposed Product with specified requirements.
  - 3. The specified Product establishes the required standard of quality.
- D. Products specified by naming one or more Products followed by "or approved substitute" or similar statement:
  - 1. Submit a Substitution Request Form for Products not listed.
  - 2. The specified Product establishes the required standard of quality.
- E. Products specified by naming one or more Products or manufacturers followed by the statement "Substitutions: Under provisions of Division 1":
  - 1. Submit a Substitution Request Form for Products not listed.
  - 2. The specified Product establishes the required standard of quality.
- F. Products specified by naming one Product followed by the statement "Substitutions: Not permitted": Substitutions will not be allowed.
- G. Products specified by required performance or attributes, without naming a manufacturer or Product:
  - 1. Select any Product meeting specified requirements.
  - 2. Submit Product Data to substantiate compliance of proposed Product with specified

## 1.7 SUBSTITUTIONS

- A. Do not substitute Products unless a Substitution Request Form has been approved by the Architect.
- B. Substitutions during Bidding: Refer to Instructions to Bidders.

- C. Architect will consider Substitution Requests within 30 days after award of Contract. After initial 30 day period, Substitutions Requests will be considered only due to non-availability of a specified Product.
- D. In case of non-availability of a specified Product notify Architect in writing as soon as non-availability becomes apparent.
- E. Submit Substitution Requests using Substitution Request Form provided by Architect. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents, including:
  - 1. Product identification, including name and address of manufacturer.
  - 2. Product description, performance and test data, and reference standards.
  - 3. Sample, if requested.
  - 4. Description of any anticipated effect that acceptance of proposed Substitution will have on Progress Schedule, construction methods, or other items of Work.
  - 5. Description of any differences between specified product and proposed Substitution.
- F. Submit two copies. Architect will return one copy to Contractor for printing and distribution.
- G. A request constitutes a representation that the Contractor:
  - 1. Has investigated the proposed Product and determined that it meets or exceeds the quality level of the specified Product.
  - 2. Will provide the same warranty for the Substitution as for the specified Product.
  - 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
  - 5. Will reimburse Owner for design services associated with re-approval by authorities or revisions to Contract Documents to accommodate the Substitution.
- H. Substitutions will not be considered if:
  - 1. They are indicated or implied on Shop Drawings or other submittals without submittal of a Substitution Request Form.
  - 2. Approval will require substantial revision of Contract Documents without additional compensation to Architect.
- I. Approved substitutions will be incorporated into Contract Documents by Change Order.

## **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

- 3.1 Not used.

**END OF SECTION**

**DOCUMENT 01631**

**SUBSTITUTION REQUEST FORM**

DATE: \_\_\_\_\_

TO: \_\_\_\_\_

ATTENTION: \_\_\_\_\_

PROJECT: \_\_\_\_\_

We submit for your consideration the following product as a Substitution for the specified product:

| Section No. | Paragraph | Specified Product |
|-------------|-----------|-------------------|
|-------------|-----------|-------------------|

|       |       |       |
|-------|-------|-------|
| _____ | _____ | _____ |
|-------|-------|-------|

Proposed Substitution: \_\_\_\_\_

Reason for Substitution: \_\_\_\_\_

\_\_\_\_\_

Product Data:

Attach complete technical data for the proposed Substitution. Include information on changes to Contract Documents that the proposed Substitution will require for its proper installation.

Samples:

☐ Attached      ☐ Will be furnished upon request

Does the Substitution affect dimensions shown on Drawings?

☐ No      ☐ Yes (explain) \_\_\_\_\_

\_\_\_\_\_

Effects of proposed Substitution on other Work:

\_\_\_\_\_

\_\_\_\_\_

Differences between proposed Substitution and specified Product:

\_\_\_\_\_

\_\_\_\_\_

Manufacturer's warranties of the proposed Substitution and specified Products are:

☐ Same    ☐ Different (explain) \_\_\_\_\_  
\_\_\_\_\_

Maintenance service and spare parts are available for proposed Substitution from:

\_\_\_\_\_  
\_\_\_\_\_

Previous installations where proposed Substitution may be seen:

Project: \_\_\_\_\_ Project: \_\_\_\_\_

Owner: \_\_\_\_\_ Owner: \_\_\_\_\_

Architect: \_\_\_\_\_ Architect: \_\_\_\_\_

Date Installed: \_\_\_\_\_ Date Installed: \_\_\_\_\_

Cost savings to be realized by Owner, if proposed Substitution is approved:

\_\_\_\_\_

Change to Contract Time, if proposed Substitution is approved:

☐ No Change      ☐ Add \_\_\_\_\_ days      ☐ Deduct \_\_\_\_\_ days

Submittal constitutes a representation that Construction Manager has read and agrees to the provisions of Section 01600.

Submitted By Construction Manager:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Firm

For Use by Architect:

Based on the information supplied by the Construction Manager, the Architect has reviewed the proposed Substitution on the basis of design concept of the Work and conformance with information given in Contract Documents.

☐ Approved      ☐ Approved as Noted      ☐ Rejected

☐ Submit Additional Information: \_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_



## **SECTION 01730**

### **SELECTIVE DEMOLITION**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Removal of designated building construction.
  - 2. Identification of utilities.
  - 3. Abatement: The contractor shall abate asbestos containing materials and abate/remediate lead containing materials in areas of work under this contract. Refer to Drawings and Specifications prepared by the environmental consultant contained in the Appendix of the Project Manual for scope of work.

##### **1.2 SUBMITTALS**

- A. Shop Drawings: Indicate areas for demolition, removal sequence and location of salvageable items, and location and construction of temporary work.

##### **1.3 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for demolition work, safety of structure, and dust control.
- B. Obtain required permits from authorities.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Conform to applicable codes when hazardous or contaminated materials are discovered.
- E. Do not close or obstruct exits.

##### **1.4 PROJECT CONDITIONS**

- A. Minimize interference with streets, walks, other public right-of-ways, and adjacent facilities.
- B. If hazardous materials are discovered, beyond that indicated in the Lead Paint Removal Workplan and the Asbestos Abatement Project Design contained in the Appendix of the Project Manual, notify Owner and Architect and await instructions.
- C. If any of the following conditions are encountered, cease work immediately, notify Architect, and await instructions:
  - 1. Structure is in danger of movement or collapse.
  - 2. Materials or conditions encountered differ from those designated in the Contract Documents.

#### **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Erect temporary partitions, barricades, warning devices, and controls.
- B. Provide protective coverings, shoring, bracing, and supports for construction designated to remain.
- C. Temporarily or permanently disconnect utilities as required.

### **3.2 DEMOLITION**

- A. Remove existing construction to extent indicated and as necessary to join new work to existing. Do not remove more than is necessary to allow for new construction.
- B. Do not damage work designated to remain.
- C. Minimize noise and spread of dirt and dust.
- D. Assign work to trades skilled in procedures involved.
- E. Plug ends of disconnected utilities with threaded or welded caps.
- F. Protect and support active utilities designated to remain. Post warning signs showing location and type of utility and type of hazard.
- G. Remove and dispose of waste materials off site.
- H. Store items designated to remain property of Owner where directed by Owner.

**END OF SECTION**

## **SECTION 01732**

### **CUTTING AND PATCHING**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Requirements and limitations for cutting and patching of new work.
- B. Execute cutting to include excavating, fitting, and patching of Work required to:
  - 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 and replace work not conforming to requirements of Contract Documents.
  - 5. Provide routine penetrations of nonstructural surfaces for installation of piping and electrical conduit.
  - 6. Interface new and existing work.

##### **1.2 SUBMITTALS**

- A. Submit written request in advance of executing cutting or alteration that affects:
  - 1. Work of Owner or separate contractor.
  - 2. Structural integrity of project.
  - 3. Integrity or effectiveness of weather exposed or moisture resistant elements or systems.
  - 4. Efficiency, operational life, maintenance, or safety of operational elements.
  - 5. Visual qualities of sight exposed elements.
- B. Include in Request:
  - 1. Identification of project.
  - 2. Description of work affected.
  - 3. Necessity for cutting or patching.
  - 4. Effect of cutting or patching on work of Owner or separate contractor, or on structural, weatherproof, or visual integrity of project.
  - 5. Description of proposed work:
    - a. Scope of cutting and patching.
    - b. Contractor and trades to execute work.
    - c. Products proposed to be used.
    - d. Extent of refinishing.
  - 6. Alternate to cutting and patching.
  - 7. Cost proposal, if applicable.
  - 8. Written permission of any separate contractor whose work will be affected.
- C. If conditions of work or schedule necessitate a change of material from that originally installed, submit written request in accordance with Section 01600.
- D. Submit written notice to Architect designating time work will be uncovered, to allow for observation.

### 1.3 PREPARATION

- A. Examine existing conditions of work, including elements subject to movement or damage during cutting and patching.
- B. After uncovering work, examine conditions affecting installation of new products or performance of work.
- C. Provide protection for other portions of project.
- D. Provide protection from elements.

### 1.4 CUTTING AND PATCHING

- A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances, and finishes.
- B. Execute cutting and demolition by methods that will prevent damage to other work, and will provide proper surfaces to receive installation of repairs and new work.
- C. Execute excavating and backfilling by methods that will prevent damage to other Work, and will prevent settlement.
- D. Employ original installer or fabricator to perform cutting and patching for:
  - 1. Weather exposed or moisture resistant elements.
  - 2. Sight exposed finished surfaces.
- E. Restore work that has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
- F. Refinish entire surfaces as necessary to provide an even finish:
  - 1. Continuous surfaces: To nearest intersections.
  - 2. Assembly: Refinish entirely.

## **PART 2 - PRODUCTS**

- 2.1 Not used.

## **PART 3 - EXECUTION**

- 3.1 Not used.

**END OF SECTION**

## **SECTION 01770**

### **CLOSEOUT PROCEDURES**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

**A. Section Includes:**

1. Closeout procedures.
2. Final cleaning.
3. Adjusting.
4. Project record documents.
5. Operation and maintenance data.
6. Warranties.
7. Spare parts and maintenance materials.
8. Demonstration and instructions.

**B. Related Sections:**

1. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning.

##### **1.2 CLOSEOUT PROCEDURES**

**A. Final Inspection:**

1. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with the Contract Documents and ready for inspection by Architect and THC Representative.
2. If Architect performs reinspection due to failure of Work to comply with claims of status of completion made by Contractor, Owner will compensate Architect for such additional services and will deduct the amount of such compensation from final payment to the Contractor.

**B. Submit final Application for Payment showing original Contract Sum, adjustments, previous payments, retainage withheld from previous payments, and sum remaining due.**

**C. Closeout Submittals:**

1. Evidence of compliance with requirements of governing authorities.
2. Construction photographs.
3. List of subcontractors and suppliers, indicating firm name, area of responsibility or specialty, address, and telephone number.
4. Project Record Documents.
5. Operation and Maintenance Data.
6. Warranties.
7. Keys and keying schedule.
8. Spare parts and maintenance materials.
9. Evidence of payment to Subcontractors and suppliers.
10. Final lien waiver.
11. Certificate of insurance for products and completed operations.
12. Consent of Surety to final payment.

### 1.3 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean surfaces exposed to view:
  - 1. Clean glass.
  - 2. Remove temporary labels, stains and foreign substances.
  - 3. Polish transparent and glossy surfaces.
  - 4. Vacuum carpeted surfaces; damp mop hard surface flooring.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean or replace filters of operating equipment.
- E. Clean debris from roofs and drainage systems
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

### 1.4 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

### 1.5 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other Modifications to the Contract.
  - 5. Reviewed Shop Drawings, Product Data, and Samples.
  - 6. Material Safety Data Sheets.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured depths of foundations in relation to finish floor datum.
  - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 4. Field changes of dimension and detail.

5. Details not on original Contract Drawings.
- F. Material Safety Data Sheets:
  1. Maintain copies of manufacturer's Material Safety Data Sheets for each Product incorporated into the Work.
  2. Indicate manufacturer name, product name, chemical composition, hazards, and safety and health procedures.
  3. Assemble in three ring binder with durable plastic cover.
    - a. Prepare binder covers with printed title "MATERIAL SAFETY DATA SHEETS" and title of project.
    - b. Organize contents according to Project Manual table of Contents.
    - c. Provide typed table of contents.
- G. Prior to Substantial Completion transfer marks made during construction to one set of reproducible transparency prints.
- H. Submit one copy of Project Record Documents to Architect for review, along with final Application for Payment.
- I. After Architect has approved Project Record Documents, submit following copies:
  1. THC:
    - a. Drawings: Digital copy on thumb drive.
    - b. Specifications: Digital copy on thumb drive.
  2. Architect:
    - a. Drawings: Digital copy on thumb drive.
    - b. Specifications: Digital copy on thumb drive.
  3. Owner:
    - a. Drawings: One full size set of blackline prints and digital copy on thumb drive.
    - b. Specifications: One 8-1/2 x 11 inch set and digital copy on thumb drive.

#### 1.6 OPERATION AND MAINTENANCE DATA

- A. Provide two copies, 8-1/2 x 11 inches text pages, bound in three ring binders with durable plastic covers.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Contents:
  1. Directory: List names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
  2. Operation and maintenance instructions: Arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
    - a. Significant design criteria.
    - b. List of equipment.
    - c. Parts list for each component.
    - d. Operating instructions.
    - e. Maintenance instructions for equipment and systems.

- f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
  - 3. Project documents and certificates including:
    - a. Shop drawings and product data.
    - b. Air and water balance reports.
    - c. Certificates.
    - d. Photocopies of warranties and bonds.
- E. Submittal:
  - 1. Submit one copy of completed volumes in final form 15 days prior to final inspection.
  - 2. Architect will notify Contractor of any required revisions after final inspection.
  - 3. Revise content of documents as required prior to final submittal.
  - 4. Submit revised volumes within 10 days after final inspection.

#### 1.7 WARRANTIES

- A. Provide two copies of each warranty.
- B. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

#### 1.8 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project site in location as directed; obtain receipt prior to final payment.

#### 1.9 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Utilize Operation and Maintenance Manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed upon times, at equipment location.
- E. Prepare and insert additional data in Operation and Maintenance Manuals when need for additional data becomes apparent during instruction.



## **PART 2 – PRODUCTS**

2.1 Not used.

## **PART 3 - EXECUTION**

3.1 Not used.

**END OF SECTION**

## **SECTION 02300**

### **EARTHWORK**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Excavating and backfilling for sidewalks, where indicated on the Drawings.
  - 2. Excavating and backfilling for underground electrical utilities.
  - 3. Site grading.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 02754 – Portland Cement Concrete Pavement for sidewalk.
  - 3. Section 02924 – Sodding for site restoration.

##### **1.2 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
- B. C 136 - Sieve Analysis of Fine and Coarse Aggregates.
- C. D 698 - Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>) (600 kN-m/m<sup>3</sup>).
- D. D 2922 - Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
- E. D 4254 - Minimum Index Density of Soils and Calculation of Relative Density.

##### **1.3 DEFINITIONS**

- A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.
- B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from excavations.
- D. Select Fill: The layer of compacted fill materials placed between the subgrade and surface slab in a soil-supported foundation.
- E. Structures: Buildings, footings, foundations, retaining walls, slabs, curbs, mechanical and electrical appurtenances, or other manmade stationary features constructed above or below ground surface.
- F. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within building lines.
- G. Backfill Materials: Satisfactory soil materials free of clay, rock, or gravel larger than 2 inches in any dimensions, debris, waste, frozen materials, vegetation and other deleterious matter.

## 1.4 SUBMITTALS

- A. Test Reports: In addition to test reports required under Quality Requirements, submit the following:
  - 1. Laboratory analysis of each soil material proposed for fill and backfill from on-site and borrow sources.

## 1.5 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction.
  - 1. Comply with Trench Safety requirements established by OSHA.
- B. Pre-installation Conference: Before commencing earthwork, meet with representatives of the governing authorities, Owner, Architect, consultants, independent testing agency, and other concerned entities. Review earthwork procedures and responsibilities including testing and inspection procedures and requirements. Notify participants at least 3 working days prior to convening conference. Record discussions and agreements and furnish a copy to each participant.

## 1.6 PROJECT CONDITIONS

- A. Existing Services:
  - 1. General: Indicated locations are approximate; determine exact locations before commencing Work. Determine location of above grade and underground utilities and perform work in a manner, which will avoid damage. Hand excavate, as required.
  - 2. Maintain all existing underground utilities. Locate existing underground utilities in areas of excavation work. Provide adequate means of support and protection during earthwork operations. Coordinate with utility companies to temporarily shutoff services during excavation if lines are active.
  - 3. Traffic: Conduct site-clearing operations to ensure minimum interference with driveways, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from Owner.

## 1.7 SITE PROTECTION

- A. Protection of Persons and Property: Barricade open excavations occurring as part of this work.
- B. Protection of Existing Elements: Provide protections necessary to prevent damage to existing elements indicated to remain in place.
  - 1. Restore damaged elements to their original condition, as acceptable to Owner at no additional cost to Owner.

# PART 2 - PRODUCTS

## 2.1 SOIL MATERIALS

- A. General: Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
- B. Backfill: Reused site soils free from trash, debris, roots over 1 inch in diameter, matted roots, rocks over 3 inches in diameter, topsoil, and other deleterious matter.
- C. Drainage Fill: Crushed stone or gravel, graded as follows per ASTM C 136:

| SIEVE SIZE   | PERCENT PASSING |
|--------------|-----------------|
|              |                 |
| 1-1/2 inches | 100             |
| 1 inch       | 95 - 100        |
| 3/4 inch     | 55 - 85         |
| 1/2 inch     | 25 - 50         |
| No. 4        | 0 - 5           |

- D. Import Topsoil: Contractor to supply high quality imported topsoil of loamy character, high in humus and organic content from local agricultural source. Topsoil to be reasonably free from clay lumps, coarse sands, stones, roots, and other foreign matter. There shall be no toxic amounts of acid or alkaline elements.

## 2.2 ACCESSORIES

- A. Detectable Warning Tape: Acid and alkali resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick minimum, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 2'-6" deep.
1. Tape Colors: Provide tape color to utilities as follows:
    - a. Red: Electric
    - b. Yellow: Gas, oil, steam, and dangerous materials
    - c. Orange: Telephone and other communications.
    - d. Blue: Water systems.
    - e. Green: Sewer systems.

## PART 3 - EXECUTION

### 3.0 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damaged caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Provide erosion control measures to prevent erosion of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Cut roots of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction. Cuts shall be made with a rock saw or manually cut to create a clean edge. No backhoes are allowed for trenching due to the high potential for damage to root structure of existing trees.
  1. Leave existing topsoil in place within drip lines of existing trees to prevent damage to root system.

### 3.2 DEWATERING

- A. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding areas.
- B. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.

### 3.3 EXCAVATION

#### A. General

1. Explosives: Do not use explosives.
2. Unclassified Excavation: Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstructions encountered.
  - a. Unclassified excavation includes excavation of walks, pavements and other obstructions visible on surface; underground structures, utilities, and other items indicated to be demolished and removed; together with soil and other materials encountered that are not classified as rock or unauthorized excavations.

#### B. Stability of Excavations

1. Comply with OSHA requirements, local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations. Stability of excavations shall be the responsibility of the Contractor.
2. Shoring and Bracing: Provide and install shoring and bracing as legally required. Shoring design shall be provided by the Contractor and prepared by a Professional Engineer registered in the State of Texas.

#### C. Excavation Adjacent to Existing Structures: Exercise caution in excavation adjacent to existing structures. Do not excavate beneath existing foundations unless indicated to do so. Comply with requirements indicated to prevent undermining of existing foundations.

#### D. Excavation for Walks and Pavements: Excavate surfaces under walks and pavements to indicated cross sections, elevations and grades.

#### E. Excavation for Utility Trenches:

1. Excavate trenches to indicated slopes, lines, depths, and invert elevations.
2. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicate.
  - a. Clearance: As indicated.
3. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove stones and sharp objects below invert elevation and install bedding course.
  - a. For pipes or conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
  - b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.

### 3.4 UNAUTHORIZED EXCAVATIONS

#### A. Fill unauthorized excavation under foundations or wall footings by extending indicated bottom elevation of concrete foundation or footing to excavation bottom, without altering required top elevation.

1. In locations other than those above, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Architect/Engineer.

### 3.5 STORAGE OF SOIL MATERIALS

- A. Stockpile excavated materials acceptable for backfill and fill soil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

### 3.6 DRAINAGE FILL

- A. Place drainage fill to profiles and elevations indicated.
- B. Place fill in maximum 6 inch deep, even, horizontal lifts.
- C. Compact each lift to minimum 90 percent of ASTM D 4254 relative density.

### 3.7 BACKFILL

- A. Backfill excavations promptly, but not prior to completing the following:
  - 1. Acceptance of construction below finish grade.
  - 2. Surveying locations of underground utilities for record documents.
  - 3. Testing, inspection, and approval of underground utilities.
  - 4. Concrete formwork removal.
  - 5. Removal of trash and debris from excavation.
  - 6. Removal of temporary shoring and bracing, and sheeting.
- B. Utility Trench Backfill
  - 1. Place and compact bedding course on rock and other unyielding bearing surfaces and to fill unauthorized excavations. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
  - 2. Place and compact initial backfill of satisfactory soil material or subbase material, free of particles larger than 1 inch, to a height of 12 inches over the utility pipe or conduit.
    - a. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility systems.
  - 3. Coordinate backfilling with utilities testing.
  - 4. Fill voids with approved backfill materials as shoring and bracing, and sheeting is removed.
  - 5. Place and compact final backfill of satisfactory soil material to final subgrade.
  - 6. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.
- C. Subbase and Base Courses:
  - 1. Under pavements and walks, place subbase course material on prepared subgrades. Place base course material over subbases to pavements.
    - a. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections and thickness to not less than 95 percent of ASTM D 4254 relative density.
    - b. Shape subbase and base to required crown elevations and cross-slope grades.
    - c. When thickness of compacted subbase or base course is 6 inches or less, place materials in a single layer.
    - d. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

D. Fill

1. Preparation: Remove vegetation, topsoil, debris, wet and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
  - a. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface.
  - b. When subgrade or existing ground surface to receive fill has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and re-compact to required density.
2. Place fill materials in layers to required elevations for each location listed below.
  - a. Under grass, use new import topsoil.
  - b. Under landscape beds, use new import topsoil.
  - c. Under walks and pavements, use subbase or base material, or satisfactory excavated or borrow soil material.
  - d. Under footings and foundations, use engineered fill.

3.8 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice
  2. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density.
    - a. Stockpile or spread and dry removed wet satisfactory soil material.

3.9 COMPACTION

- A. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structure to required elevations. Place backfill and fill uniformly along the full length of the structure.
- C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM D698:
1. Under structures, building slabs, steps, and pavements, compact the top 12 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
  2. Under walkways, compact the top 6 inches below subgrade and each layer of backfill or fill material at 95 percent maximum dry density.
  3. Under lawn or unpaved areas, compact the top 6 inches below subgrade and each layer of backfill or fill material at 90 percent maximum dry density.
  4. Select Fill shall be placed in lifts not to exceed eight inches loose thickness and compacted to between ninety-five percent and one hundred percent of the maximum dry density as determined by ASTM D698.

3.10 SITE GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
1. Provide smooth transition between existing adjacent grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.

- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  - 1. Lawn or Unpaved Areas: Plus or minimum 0.10 foot.
  - 2. Walks: Plus or minus 0.10 foot.
  - 3. Pavements: Plus or minus ½ inch.

### 3.11 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
  - 1. Scarify or remove and replace material to depth directed by the Architect; reshape and recompact at optimum moisture content to the required density.
- C. Settling: Where settling occurs during the Project correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

### 3.12 FIELD QUALITY CONTROL

- A. Testing Laboratory Services: Perform field in place density tests, ASTM D 2922, at following rates; minimum of three tests for each lift or area:
  - 1. Under paving: One test for each 5000 square feet or fraction thereof, per lift.
  - 2. Trenches and below grade walls: One test for each 100 linear feet, per lift.

### 3.13 CLEANING

- A. Remove surplus materials and those not suitable for reuse from site.

### 3.14 PROTECTION

- A. Protect graded areas from traffic and erosion; keep free of trash and debris.

**END OF SECTION**



## **SECTION 02754**

### **PORTLAND CEMENT CONCRETE PAVING**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Concrete sidewalks.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 07920 - Joint Sealers.

##### **1.2 REFERENCES**

- A. American Concrete Institute (ACI) 301 - Specifications for Structural Concrete for Buildings.
- B. American Society for Testing and Materials (ASTM):
  - 1. A 185 - Welded Steel Wire Fabric for Concrete Reinforcement.
  - 2. A 615 - Deformed Billet Steel Bars for Concrete.
  - 3. C 33 - Concrete Aggregates.
  - 4. C 94 - Ready Mixed Concrete.
  - 5. C 150 - Portland Cement.
  - 6. C 171 - Sheet Materials for Curing Concrete.
  - 7. C 260 - Air-Entraining Admixtures for Concrete.
  - 8. C 309 - Liquid Membrane-Forming Compounds for Curing Concrete.
  - 9. C 494 - Chemical Admixtures for Concrete.
  - 10. D 1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- C. Concrete Reinforcing Steel Institute (CRSI) - Manual of Practice.

##### **1.3 SUBMITTALS**

- A. Mix Designs: Include:
  - 1. Materials and proportions.
  - 2. Aggregate gradations.
  - 3. Water/cement ratio, design strength, slump, and air content.
  - 4. Admixtures.
  - 5. Special requirements.

##### **1.4 QUALITY ASSURANCE**

- A. Concrete Mix Design: ACI 301, Method 2.

##### **1.5 DELIVERY, STORAGE AND HANDLING**

- A. Mix and deliver concrete to project in accordance with ASTM C 94.
- B. Schedule delivery so that continuity of any pour will not be interrupted for over 15 minutes.

- C. Place concrete on site within 90 minutes after proportioning materials at batch plant.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Formwork:
  - 1. Forms: Wood, metal, or other material that will not adversely affect surface of concrete and will provide specified surface finish.
  - 2. Form release agent: Nonstaining, wax barrier type.
- B. Reinforcement:
  - 1. Reinforcing bars: ASTM A 615, deformed, Grade 40 or 60.
  - 2. Dowels: ASTM A 615, smooth.
  - 3. Welded wire fabric: ASTM A 185.
  - 4. Accessories: Include devices necessary for placing, spacing, supporting, and fastening reinforcement.
  - 5. Tie wire: Black annealed steel, 16 gage minimum.
- C. Concrete Materials:
  - 1. Portland cement: ASTM C 150, Type I or III as applicable.
  - 2. Aggregates: ASTM C 33, clean, hard, durable, and uncoated.
    - a. Fine: Natural sand free from silt, loam, and clay.
    - b. Coarse: Crushed, stone, maximum size No. 467.
  - 3. Admixtures:
    - a. Water reducing or water reducing/set retarding: ASTM C 494.
    - b. Air entraining: ASTM C 260.
- D. Expansion Joint Filler: Non asphaltic type, ASTM D 1752, Type 1.
- E. Joint Sealers: One component, self-leveling elastomeric polyurethane sealant designed for horizontal applications, ASTM C 920, Type S, Grade P, Class 25.
  - 1. Product: Sikaflex SL 1 or approved equal.
- F. Curing Materials:
  - 1. Curing compound: ASTM C 309, Type 1.
  - 2. Curing paper: ASTM C 171, waterproof paper or polyethylene film.
- G. Water: Clean and potable.
- H. Sandblasting Aggregate (As necessary to match existing adjacent finishes): Natural or manufactured.

### **2.2 MIXES**

- A. Proportions: Proportions of cement, aggregate, and water to attain required plasticity and compressive strength shall be in accordance with ACI 301.
- B. Design concrete to yield following characteristics:
  - 1. Minimum 28 day compressive strength: 3000 PSI.
  - 2. Slump: 3 to 5 inches.

3. Air entrainment: 4 to 6 percent.

## 2.3 FABRICATION

- A. Reinforcing: In accordance with CRSI Manual.

## PART 3 - EXECUTION

### 3.1 CONSTRUCTION OF FORMWORK

- A. Set accurately to required grades and alignment.
- B. Brace to withstand loads applied during concrete placement.
- C. Clean contact and screed surfaces of hardened concrete and foreign materials.
- D. Apply form release agent to contact surfaces.
- E. Leave in place minimum 12 hours after completion of finishing operation.
- F. Provide expansion joints where paving abuts existing and other construction, and at maximum 30 feet on center unless otherwise indicated.
  1. Shape joint filler to concrete cross section and fasten in place. Provide holes for dowel bars maximum 1/8 inch larger than bar diameter.
  2. Use removable strips to provide recess for sealant.

### 3.2 INSTALLATION OF REINFORCEMENT

- A. In accordance with ACI 301 and CRSI Manual.
- B. Before placing, clean reinforcing of loose rust, mill scale, dirt, oil, and other materials that could reduce bonding.
- C. Install wire fabric in longest practical lengths. Offset end laps in adjacent widths to prevent continuous lap.
- D. Install reinforcing in middle third of flatwork.
- E. Stop alternate bars of reinforcing steel at control joint locations.
- F. Provide dowels at maximum 12 inches on center at expansion joints; stop reinforcement on both sides of joint.

### 3.3 CONCRETE PLACEMENT

- A. Place concrete in accordance with requirements of ACI 301.
- B. Avoid segregation due to rehandling or flowing.
- C. Do not place partially hardened, contaminated, or retempered concrete.
- D. Consolidate with mechanical vibrating equipment.
- E. Before depositing new concrete on concrete that has set, roughen and clean surface of set concrete. Wet surfaces just prior to placing new concrete.

- F. Locate temporary interruptions of concrete placement at either an expansion or control joint.
- G. Shape curbs and gutters to required cross section by use of template.
- H. Strike off flatwork with transverse screed, shaped to provide slope where required, guided by screeds or side forms. Follow screeding operation with longitudinal float.
- I. Tool expansion joint edges and other exposed edges to smooth, dense surface with 1/8 inch radius.
- J. Control Joints:
  - 1. Walks: Provide control joints at maximum 5 feet on center unless otherwise indicated. Form joints straight and of uniform depth, using 3/8 inch deep round edge tool.
- K. Protect concrete from frost damage and rapid drying; use curing paper or curing compound method.
- L. Installation Tolerances: Surfaces true to plane, in longitudinal direction to required grade, within plus or minus 1/4 inch in 10 feet, noncumulative.
- M. Seal expansion joints as specified in Section 07920.

#### 3.4 CONCRETE FINISHING

- A. Sandblasted Finish (For exterior walks): Sandblast exposed surfaces to uniform medium texture as required to match existing adjacent finish.

**END OF SECTION**

## **SECTION 02924**

### **SODDING**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Sod installation for restoration of site, where affected by the work of this Project.
  - 2. Fertilizing.
  - 3. Maintenance.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 02300 – Earthwork for site grading and trenching for below grade utility lines.

##### **1.2 REFERENCES**

- A. American Sod Producers Association (ASPA) - Guideline Specifications to Sodding.
- B. Federal Specification (FS) O-F-241 - Fertilizers, Mixed, Commercial.

##### **1.3 SUBMITTALS**

- A. Submit certification for grass species and sod source.

##### **1.4 QUALITY ASSURANCE**

- A. Sod: Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding upper two corners.
- B. Sod Producer: Company specializing in sod production and harvesting with minimum 3 years experience, and certified by the State of Texas.

##### **1.5 DELIVERY, STORAGE AND HANDLING**

- A. Deliver sod on pallets. Protect exposed roots from dehydration.
- B. Do not deliver more sod than can be installed within 24 hours.
- C. Deliver fertilized in waterproof bags showing weight, chemical analysis, and name of manufacturer.

#### **PART 2 - PRODUCTS**

##### **2.1 MATERIALS**

- A. Sod:
  - 1. ASPA approved, field grown grade; cultivated grass sod, strong fibrous root system, free of stones, burned or bare spots; containing no more than 10 weeds per 1000 square feet.
  - 2. Species: Match existing.

## 2.2 ACCESSORIES

- A. Fertilizer: FS O-F-241, recommended for grass.
- B. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

## 2.3 HARVESTING SOD

- A. Machine cut sod and load on pallets in accordance with ASPA Guidelines.
- B. Cut sod in area not exceeding 1 square yard, with minimum 1/2 inch and maximum 1 inch topsoil base.

# PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Prepare subsoil; eliminate uneven areas and low spots.
- B. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.
- C. Remove contaminated topsoil.

## 3.2 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod within 24 hours after harvesting to prevent deterioration.
- C. Lay sod tight without open joints and without overlapping; stagger end joints 12 inches minimum. Do not stretch sod pieces.
- D. Lay smooth.
- E. Place top elevation of sod 1/2 inch below adjoining paving.
- F. Immediately after installation, roll sod to ensure bond between sod and soil and to remove air pockets, voids, and minor depressions and irregularities.
- G. Fill voids between sod pieces with topsoil. Rake excess topsoil into sod but do not smother grass with topsoil.

## 3.3 WATERING

- A. Water sodded areas within 2 hours after installation, to saturation.
- B. Continue watering daily using less water; ensure moisture to 4 inch depth but avoid standing water.
- C. When root growth is observed by lifting corners of sod, reduce watering to alternating days.
- D. After 12 to 14 days, if root growth prevents sod corners from being lifted, allow sod to dry to permit mowing.

### 3.4 MAINTENANCE

- A. Maintain lawn areas by watering, mowing, and weeding from date of installation until Substantial Completion.
- B. Water to minimum depth of 2 inches; provide temporary hoses and sprinklers for non-irrigated areas.
- C. Mow weekly after grass reaches 2 inch height. Neatly trim edges.
- D. Remove clippings immediately after mowing and trimming.
- E. Remove weeds and foreign grass weekly. Use herbicides only if approved by Architect.

### 3.5 FERTILIZING

- A. After first mowing, apply fertilizer in accordance with manufacturer's instructions.
- B. Lightly water to aid in dissipation of fertilizer.

**END OF SECTION**

## **SECTION 03300**

### **CAST-IN-PLACE CONCRETE**

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION OF WORK**

- A. Concrete formwork, reinforcement, accessories, finishing, and curing
- B. Floors and slabs on grade

##### **1.02 RELATED SECTIONS**

- A. Section 06100 – Rough Carpentry

##### **1.03 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301.
- B. Acquire cement from same source and aggregate from same source for entire project.
- C. Follow recommendations of ACI 305R when concreting during hot weather.
- D. Follow recommendations of ACI 306R when concreting during cold weather.
- E. Submit photos of reinforcement placement to the Engineer 24 hours prior to concrete placement.

##### **1.04 SUBMITTALS**

- A. The mix design, performed within the last six months by an independent testing laboratory or concrete supplier, which meets the requirements of this Specification.
- B. The mix design shall include:
  - 1. Proportioning of all materials.
  - 2. Slump.
  - 3. Air entrainment.
  - 4. 7 and 28-day compressive strength historical data.
  - 5. Sieve analysis and source of fine and coarse aggregates.
- C. Furnish engineer with copies of batch tickets for each batch of concrete delivered to job-site.



## **PART 2 - PRODUCTS**

### **2.01 FORM MATERIALS**

- A. Unless otherwise shown or specified, construct formwork for exposed concrete surfaces with plywood, to provide continuous, straight, smooth, exposed surfaces.
- B. Below-grade footings may be earth-formed, provided that the sides and bottom of the footing trench are cut clean and debris and loose soil are removed before placement.

### **2.02 REINFORCING MATERIALS**

- A. Reinforcing bars and dowels: ASTM A 615 Grade 60.
- B. Bar Supports: Furnish and install in accordance with Concrete Reinforcing Steel Institute "Manual of Standard Practice," unless detailed otherwise on the drawings.

### **2.03 CONCRETE MATERIALS**

- A. Cement: Conform to ASTM C 150, Type I.
- B. Fine and Coarse Aggregates: ASTM C 33
- C. Water: Clean and not detrimental to concrete.
- D. Admixtures:
  - 1. Air-entraining admixture. ASTM C 260.
  - 2. Chemical Admixtures: ASTM C 494.
  - 3. Admixtures shall be from one manufacturer and must be compatible when mixed together.

### **2.04 RELATED MATERIALS**

- A. Tie Wire: No. 18 gauge soft annealed wire.
- B. Curing Compound: shall not be used.
- C. Expansion Joints: Asphalt impregnated fiberboard or redwood.
- D. Joint sealant shall conform to the requirements of ASTM D5893-96 "Standard Specification for Cold Applied, Single Component, Chemically Curing Silicone Joint Sealant for Portland Cement Concrete Pavements"

### **2.05 CONCRETE MIX DESIGN**

- A. Mix and transport concrete in accordance with ASTM C 94/ C 94M.
- B. Provide concrete for placement of the following characteristics unless noted otherwise:
  - 1. Compressive Strength: 3500 psi
  - 2. Maximum Water/Cement Ratio 0.45
  - 3. Air Content: 4 percent, per ASTM C 173

- 4. Maximum Slump: 3 inches
- C. Use acceleration or set-retarding admixtures only when approved by Engineer.

### **PART 3 - EXECUTION**

#### **3.01 FORMS**

- A. Provide forms in good condition. Brace and tie together to maintain position and shape during placement and vibration of concrete. Forms shall be sufficiently tight to prevent the leakage of mortar.

#### **3.02 PREPARATION**

- A. Remove water from the forms and excavations before any concrete is deposited. Divert any flow of water to prevent washing of freshly deposited concrete. Remove all debris from the space to be occupied by the concrete.
- B. Immediately in advance of placing concrete, excavations, forms, reinforcement, inserts, etc. will be inspected by the Engineer. If any part of the work is determined to be unsatisfactory, do not proceed with the concrete work until all defects have been remedied and the approval of the Engineer has been obtained.

#### **3.03 INSTALLING REINFORCEMENT**

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve no less than minimum concrete coverage required for protection.
- B. Place reinforcement accurately in position and securely fasten and support to prevent displacement during the placing of the concrete.
- C. Provide concrete minimum cover protection for reinforcement of 3 inches for below-grade concrete and 2 inches otherwise. Provided standard spacers as needed.

#### **3.04 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 301/ 304R. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
- B. Thoroughly wet the forms or subgrade with clean water immediately before placement.
- C. Do not chute concrete more than fifteen feet. Restrict free fall of concrete to three feet, maximum.
- D. Use vibrator to consolidate concrete.
- E. Strike off and screed concrete to produce a section that is thoroughly compacted and finished to the specified line, grade and cross-section.
- F. Install transverse construction joints at the end of each day's placing operations and at any other time when concrete placement is interrupted for sixty minutes or longer.
- G. All concrete not placed within ninety minutes after mixing will be rejected and is to be disposed of off site by the Contractor at his own expense.

- H. Concrete that has developed initial set before placement will be rejected and disposed of by the Contractor at his own expense.
- I. Concrete with a temperature of more than 90 degrees Fahrenheit prior to placement will be disposed of off site by the Contractor at his own expense.
- J. Any time that the air temperature reaches 35 degree Fahrenheit and is falling, placement of concrete shall cease. All concrete placed within the previous 72 hours shall be immediately protected.
- K. Contractor is to bear the cost of all concrete rejected by the Engineer and all cost associated with transportation and disposal.

### **3.05 JOINTS**

- A. Where shaped sealant/control joints are required in topping, form joints by tooling. Alternatively, control joints shall be saw cut after finishing. Joints shall be completed within four hours after the concrete has been placed.

### **3.06 CONCRETE FINISHES**

- A. Trowel Finish: consolidate concrete surface by final machine and/or hand-troweling operation. The final surface shall be free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/8-inch in 10 feet when tested with 10 foot straightedge.
- B. Broomed Finish: apply non-slip broomed finish to surfaces that will be exposed to vehicular traffic. While the concrete is still workable, produce a brush surface finish. Work surface with an approved brush to produce a uniformly textured surface.

### **3.07 CURING**

- A. Cure concrete by moist curing for a period of not less than 72 hours from the end of finishing operations. During moist curing, the surface of the concrete shall not be allowed to dry.

**END OF SECTION**

## SECTION 04069

### RESTORATION MORTAR

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Analysis of existing mortar.
2. Mortar materials.
3. Mortar mixes.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 04905 - Masonry Restoration.
3. Refer to the appendix for brick and stone repointing mortar submittal approved for prior project.

##### 1.2 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. C 144 - Aggregate for Masonry Mortar.
2. C 150 - Portland Cement.
3. C 207 - Hydrated Lime for Masonry Purposes.
4. C 270 - Mortar for Unit Masonry.
5. C 1324 - Examination and Analysis of Hardened Masonry Mortar.

##### 1.3 SUBMITTALS

A. Samples:

1. Submit two cured mortar samples for each mortar color required, 6 x 1/2 x 1/2 inches in size.
2. Samples will be compared to original unweathered samples to determine acceptability of match.

B. Test Reports: Original mortar analysis.

##### 1.4 QUALITY ASSURANCE

A. Preconstruction Testing Laboratory Services:

1. Remove minimum of four unweathered, undisturbed, full depth mortar samples from each original masonry system.
  - a. Select samples from different locations representative of various existing conditions.
  - b. Size: 6 inches wide, full depth.
  - c. Include all types of mortar present in each location.
2. Retain one sample from each original mortar system for later comparison with proposed mortar mixes.
3. Test mortar in accordance with ASTM C 1324; report the following:
  - a. Volumetric proportions of aggregate, cement, lime, and other ingredients.
  - b. Type, composition, color, and gradation of aggregate.
  - c. Presence of pigments or additives.

4. Based on test results, provide recommended mortar mix for each masonry system in accordance with ASTM C 270, compatible with physical and mechanical properties of original masonry materials.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect materials from moisture absorption and damage; reject damaged containers.
- B. Store sand to prevent inclusion of foreign matter.

## PART 2 – PRODUCTS

### 2.1 MATERIALS

- A. Portland Cement:
  1. Type: ASTM C 150, Type II, containing maximum 0.60 percent alkali (sodium oxide) and maximum 0.15 percent water soluble alkali by weight.
  2. Color: To match original mortar.
- B. Lime: ASTM C 207, Type S, hydrated masonry type.
- C. Sand: ASTM C 144; color, size, and type to match original mortar.
- D. Water: Potable, clean, and free of oils, acids, alkalis, salts and organic matter.
- E. Other Components: As determined by original mortar analysis to produce visual and performance characteristics to match original mortar.
- F. Air Entraining, Antifreeze, Bonding, and Other Additives: Not permitted.

### 2.2 MIXES

- A. Proportions: As determined by original mortar analysis.
- B. Ultimate Compressive Strength: Not to exceed that of original mortar or masonry.

### 2.3 MIXING MORTAR

- A. Thoroughly mix ingredients in quantities needed for immediate use.
- B. Mix dry ingredients mechanically until uniformly distributed; add water to achieve workable consistency.
- C. Discard lumpy, caked, frozen, and hardened mixes, and mixes not used within 2 hours after initial mixing.
- D. Use mortar within 2-1/2 hours after initial mixing at ambient temperatures below 80 degrees F and within 1-1/2 hours after initial mixing at ambient temperatures over 80 degrees F.
- E. Do not add antifreeze compounds to lower freezing temperature of mortar.
- F. Provide consistent color for exposed mortar.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

A. Install mortar per Section 04905.

**END OF SECTION**

## SECTION 04905

### MASONRY RESTORATION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Remove and replace stone coping stones where damaged by fastener installation at main and lower roofs.
2. Remove and re-set existing stones where required to replace damaged coping stones.
3. Repair existing coping stones scheduled to remain, where condition has the potential to pose a water infiltration issue as determined by the Architect, includes injection grouting cracks and patching.
4. Coring and waterproofing holes through exterior wall assembly for new IT conduit.
5. Cutting hole in exterior wall for new exhaust louver including steel lintels and flashing.
6. Patching brick units at removed MEP devices and distribution lines.
7. Limited repairs to cementitious parge coat at MEP penetrations.
8. Providing OSHA – compliant access for work of this Section.
9. Providing temporary shoring and bracing required to complete work of this Section.
10. Stone anchors and attachment devices.
11. Lead Paint Removal Work Plan and Asbestos Project Design contained in the Appendix of the Project Manual for Hazardous Materials scope of work.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 04069 - Restoration Mortar for setting and pointing mortar.
3. Section 04931 – Chemical Cleaning of Masonry for stone cleaning and removal of asphaltic coating at coping stones.
4. Section 07541 – Polyvinyl-Chloride (PVC) Roofing for modification of parapet flashing membrane at parapet walls.
5. Section 07620 – Sheet Metal Flashing for coping flashing and counterflashing.
6. Section 07920 – Joint Sealers and Lead Weathercaps for sealing joints between masonry and non-masonry materials.
7. Section 09910 – Painting and Finishing for field painting of parge coating.

##### 1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. C 97 - Absorption and Bulk Specific Gravity of Dimension Stone.
2. C 170 - Compressive Strength of Natural Building Stone.
3. C 295 - Petrographic Examination of Aggregates for Concrete.
4. ASTM C91-01: Standard ASTM C144-03: Standard Specification for Aggregate for Masonry.
5. ASTM C150-02ae1: Standard Specification for Portland Cement.
6. ASTM C207-97: Standard Specification for Hydrated Lime for Masonry Purposes.
7. ASTM C270-03: Standard Specification for Mortar for Unit Masonry.

B. IMIAC (International Masonry Industry All-Weather Council) - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

- C. Preservation Brief 2: Repointing Mortar Joints in Historic Brick Buildings, Robert C. Mack, FAIA, National Park Service, revised October, 1998.

### 1.3 DEFINITIONS AND GOALS

- A. Defective/Deteriorated Joint: Joints in which mortar is missing, loose, eroded, cracked, powdered, unsound, or weathered more than 1/8 inch from original plane.
- B. Dutchman: The removal of areas of unsound stone from a single unit and the installation of a piece of the same stone, cut, carved and tooled to match.
- C. Patching: The goal of patching is to remove areas of deteriorated stone from individual units and recreate missing lines, forms and shapes with a compatible material that has the color and texture of the original stone.
- D. Re-pointing: The process of raking out (removing) mortar and replacing it with new mortar.
- E. Masonry Replacement: The process of removing masonry unit(s) and replacement with new unit(s) to match original in color, texture, finish, strength, etc.

### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each product indicated including recommendations for their application and use. Include test reports and certifications substantiating that products comply with specified requirements. Submit Material Safety Data Sheets for each product proposed for use.
- B. Samples: Submit, for verification purposes, prior to mock-up erection, three samples each of the following:
  - 1. For patching material, submit 6"x6"x1" samples of the mixed and cured material, showing the full range of expected color variations, and finish quality for each type of stone and brick patching required. Document each sample with manufacturer and stock number or other information necessary to order additional material.
  - 2. Limestone samples in sufficient quantity to show full color and texture range, minimum 3-inch x 6-inch samples.
  - 3. Full size face brick samples showing the full range of exposed colors, textures, and dimensions to be expected in the completed work.
  - 4. Each type of anchor.
  - 5. Each type of adhesive.
- C. Shop Drawings:
  - 1. The stone fabricator shall prepare and submit for approval complete cutting and setting drawings for all of the cut stonework. Drawings shall show in detail the sizes, sections, and dimensions of stone, the arrangement of joints, anchoring, setting marks, location of existing anchors and kerfs to remain, and other necessary details. The dimensions on the shop drawings shall represent field conditions and field measurements. Submit structural calculations for proposed stone anchors, signed and sealed by a structural engineer licensed in the State of Texas.
- D. Qualification Statement: Restorer qualifications, including previous projects.

### 1.5 QUALITY ASSURANCE

- A. Restoration Specialist:
  - 1. Work of this Section must be performed by an experienced masonry restoration firm that has completed work similar in material, design, and extent to that indicated for this Project and with



- a record of successful in-service performance, having not less than 5 years comparable experience.
- 2. Field Supervision: Restoration specialist firm shall maintain an experienced full-time supervisor on the Project site during times that masonry restoration work is in progress.
- B. Source of Materials: Obtain each type of material for masonry restoration (Stone, brick, cement, sand, etc...) from one source with resources to provide material of consistent quality in appearance and physical properties.
- C. Field-Constructed Mock-ups: Contractor shall prepare the following sample panels on the building where directed by the Architect. Obtain Architect's acceptance of visual qualities before proceeding with the work. Retain accepted panels in undisturbed condition as a standard for judging completed work.
  - 1. Brick patching, 3 small holes, minimum 1" diameter.
  - 2. Brick replacement, 2 units, staining if required.
  - 3. Stone patching demonstrating removal of damaged limestone and/or incompatible prior patches and installation and curing of specified patching mortar.
  - 4. Injection grouting demonstrating preparation of typical crack and installation of grouting.
  - 5. Replacement coping stone: Install/reinstall two coping stones, one new and one salvaged. Demonstrate stone cleaning, setting/pinning, installation of coping flashing and counterflashing, installation of lead weathercaps (Sky facing and cove joints), and re-pointing.
  - 6. Re-pointing (Brick and stone): Prepare two separate samples in-situ of approximately 2 feet high by 3 feet wide for each type of re-pointing required. One for demonstrating methods and quality of workmanship expected in removal of mortar from joints and the other for demonstrating visual qualities of pointing mortar and workmanship expected in pointing mortar joints.

## 1.6 PROJECT CONDITIONS

- A. Environmental Requirements:
  - 1. Hot weather requirements: If ambient temperature is over 95 degrees F or relative humidity is less than 50 percent, protect from direct sun and wind exposure for minimum 48 hours after installation.
- B. Cold weather requirements:
  - 1. In accordance with IMIAC requirements.
  - 2. Do not use frozen materials or build upon frozen work.

## 1.7 SEQUENCING/SCHEDULING

- A. Perform masonry restoration work in a logical sequence. Submit a plan sequencing for the following items of work:
  - 1. Masonry cleaning at coping stones, specified under Section 04931 – Chemical Cleaning of Masonry. Note in-place stone replacement/repair mock-ups must be viewed against cleaned masonry.
  - 2. Removal of masonry for replacement/repair.
  - 3. Re-pointing defective and or deteriorated stone and brick masonry joints, specified under Section 04069 – Restoration Mortar.
  - 4. Resealing open and or deteriorated sealant joints, specified under Section 07920 – Joint Sealers and Lead Weathercaps.

## 1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver masonry restoration materials to site in manufacturer's original and unopened containers and packaging, bearing labels as to type and names of products and manufacturer's.

- B. Protect masonry restoration materials during storage and construction from wetting by rain, snow or ground water, and from staining or intermixture with earth or other types of materials.
- C. Comply with manufacturer's recommendations for minimum and maximum temperature requirements for storage.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable Manufacturers - Patching Compound:
  - 1. Cathedral Stone Products.
  - 2. Edison Coatings.
- B. Acceptable Manufacturers - Injection Grout:
  - 1. Cathedral Stone Products.
  - 2. Edison Coatings.
- C. Substitutions: Under provisions of Division 1.

### **2.2 REPLACEMENT STONE AND STONE FOR DUTCHMAN REPAIR**

- A. General: Limestone Building Stone Standard: ASTM C568, Classification: III (High-Density).
- B. Description: Provide natural Texas limestone from a single quarry with low clay content and with minimum average compressive strength parallel when load is applied to bedding plane: 2500 psi when tested in accordance with ASTM C110.
  - 1. Type: Grey Lueders Limestone as distributed by Cobra Stone, Inc., Williamson County, TX.
    - a. Smooth face
- C. Grout for Dutchman Seams: Jahn M-40 Crack and Void Injection Grout, as manufactured by Cathedral Stone Products, Inc., Hanover MD, (800) 684-0901.
- D. Anchor Setting Mortar: Single component, cementitious, non-shrink mortar for securing anchors in new or existing masonry structures.
  - 1. Product: Jahn M-80 Anchor Setting Mortar, as manufactured by Cathedral Stone Products Inc., Hanover, MD, (800) 684-0901.

### **2.3 STONE PATCHING MATERIALS**

- A. Cementitious Patching Materials: Premixed cementitious patching material formulated to match the color and texture of the existing masonry. One-component, non-sag, mineral-based mortar, containing no synthetic polymers or additives for repair and reconstruction of natural stone surfaces. The mortar must be vapor permeable, frost and salt resistant, shrink resistant, and be physically compatible with the substrate, including, but not limited to porosity, tensile and compressive strength.
  - 1. Product: Jahn M70 Stone Patching Mortar, as manufactured by Cathedral Stone Products, Inc., Jessup, Maryland, or approved substitute.
    - a. Provide custom color as required to match the existing sandstone.
- B. Stain for patching mortar (if necessary):
  - 1. General: Inorganic, breathable, color fast, mineral stain compatible with cementitious patching material specified.
    - a. Epochrome S water-borne chemical toners for tinting unmatched mortar repairs, as manufactured by Cathedral Stone Products, Inc., Hanover, MD, (800) 684-0901.

## 2.4 INJECTION GROUT FOR STONE REPAIRS INSITU

- A. Description: Single-component cementitious injection grout to be used in the stabilization and/or rehabilitation of cracked masonry.
  - 1. Products:
    - a. Jahn M31 Micro Injection Adhesive for hairline cracks up to 3/16" in width, using gravity feed or pressure injection for use on both non-structural void applications and structural load bearing situations.
    - b. Jahn M40 Crack Injection Grout for cracks ranging from approximately 3/16" to 9/16" in width using low pressure mechanical or gravity feed equipment for use in repairing voids in non structural situations.
    - c. Do not add any bonding agents, accelerators, or retarders to the grout.

## 2.5 BRICK

- A. Face Brick: ASTM C216, Grade SW, to match existing, each type, in size, color and texture.
  - 1. Product: Iron spot brick as manufactured by Cloud Ceramics, Concordia, Kansas (785) 243-1286.
    - a. Color: Bronze Is and Kansas Gold Is, may require mix to match existing.
    - b. Finish: Velour
    - c. Size: Norman 2 1/4" x 11 5/8" x 3 5/8" cut to match original face dimensions 2 1/4" x 8 1/4" x 3 5/8".
- B. Salvaged Face Brick: Using approved method, salvage undamaged brick from building, where scheduled to be removed. Clean mortar from brick in good condition and ready for re-use.
- C. Back-up Brick: Where brick is fully concealed provide common brick conforming to ASTM C62, Grade SW.
- D. Brick Stain (Use as necessary, as determine by Architect, should replacement brick not match existing brick in repair areas):
  - 1. Stain: Sol-silicate pigmented mineral stain and glaze, Restauro Stain as manufactured by Keim Mineral Coatings of America, Inc.
  - 2. Thinner and Primer: Design-Dilution (Fixativ) as manufactured by Keim Mineral Coatings of America, Inc.

## 2.6 BRICK PATCHING MATERIAL

- A. Description: Single-component, cementitious, mineral based mortar containing no synthetic polymers or additives designed for the restoration of brick. The mortar must be vapor permeable, frost and salt resistant, shrink resistant, and be physically compatible with the substrate, including, but not limited to porosity, tensile and compressive strength.
- B. Product: Jahn M100 Brick Repair Mortar, as manufactured by Cathedral Stone Products Inc., Hanover, Maryland.

## 2.7 CEMENT PARGING MATERIALS

- A. Portland cement: ASTM C 150, Type I or II white or gray cement, containing not more than 0.60 percent total alkali when tested according to ASTM C 114.
- B. Sand: Clean, sharp sand, ASTM C 144, free of excessive organic or deleterious matter.
- C. Water: Clean, free of oils, acids, alkalis, salts and organic matter.
- D. Mix shall be two-parts Portland Cement to three-parts sand.

1. Optional Product: Jahn M60 Exterior Stucco, as manufactured by Cathedral Stone Products Inc., Hanover, Maryland.

## 2.8 MASONRY ACCESSORIES

### A. Anchors:

1. Stainless steel threaded rods, ASTM A 580, Type 304, minimum 1/2 inch diameter; provide 3/4" diameter at coping stones at stair sidewalls and entries. #177 Continuous Threaded Rod as manufactured by Heckmann Building Products or approved equal.
2. Wall Ties: Corrugated stainless steel, 16 gauge by 1" wide, as manufactured by Hohmann & Barnard or approved equal.
3. Termination Bar with lip, stainless steel, ASTM A 167, A 666, A 240/A240M, Type 304, 26 gauge, # 1050S826 termination bar as manufactured by Heckmann Building Products or approved equal.
4. Weep tube, 3/8" diameter plastic tube, # 330 as manufactured by Heckmann Building Products or approved equal.
5. Bonding Agent: Two component modified epoxy resin.
  - a. Product: Flexi-weld 520, 520T Moisture-Insensitive 100% solids Ni-mod Epoxy Adhesive as manufactured by Edison Coatings, Inc.
6. Anchor Setting Mortar: Single component, cementitious, non-shrink mortar for securing anchors in new or existing masonry structures.
  - a. Product: Jahn M80 Anchor Setting Mortar, as manufactured by Cathedral Stone Products, Inc., Jessup, Maryland.
7. Compressible filler: Closed cell neoprene sponge, NS as manufactured by Hohmann & Barnard, Inc., in thickness and width indicated, or approved equal.
8. Chemical anchor bolts and studs: Hilti, HIT-RE 500 V3 Epoxy Anchoring System with stainless steel screw anchors and bolts.

## PART 3 - EXECUTION

### 3.1 SURFACE CONDITIONS

#### A. Inspection

1. Prior to work of this Section, carefully inspect the work of all other trades and verify that all such work is completed to the point where this installation may properly commence.
2. Verify that masonry may be completed in accordance with all pertinent codes and regulations, the referenced standards, and the original design.
3. Do not start work until mock-ups are accepted by the Architect.

- B. In the event of discrepancy, immediately notify the Architect. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

### 3.2 STONE REMOVAL AND REPLACEMENT

- A. At locations indicated, remove stone that has deteriorated or is damaged beyond repair. Carefully demolish or remove entire unit from joint to joint, without damaging surrounding stone, in a manner that permits replacement with full-size unit.
- B. Support and protect remaining stonework that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

- C. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose masonry units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- D. Remove in an undamaged condition as many whole stone units as possible.
  - 1. Remove mortar, loose particles, and soil from stone by cleaning with hand chisels, brushes, and water.
  - 2. Remove sealants by cutting close to stone with utility knife and cleaning with solvents.
  - 3. Store stone for reuse, as indicated.
- E. Clean stone surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.
- F. Replace removed stone with new stone matching existing stone, including size. Butter vertical joints for full width before setting and set units in full bed of mortar, unless otherwise indicated. Replace existing anchors with new anchors of size and type indicated.
  - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing stonework.
  - 2. Rake out mortar used for laying stone before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing stone, and at same time as repointing of surrounding area where deteriorated.
- G. Contractor is responsible for repair or replacement of stone that is damaged during removal where the stone is indicated to be salvaged for re-use.

### 3.3 STONE DUTCHMAN REPAIR

- A. Large Spalled Areas (3 inches or more in depth and 6 inches or more in diameter) and Severely Deteriorated Surfaces
- B. Inspection: Prior to cutting out for the installation of new stone dutchman, the Contractor shall verify all locations and dimensions of stone to be removed by inspecting and sounding those areas indicated on the Contract Documents as requiring dutchman. The Contractor shall submit shop drawings indicating the location, sizes, and anchoring detail of each dutchman unit. Obtain Architect's approval for locations, sizes and anchor details prior to cutting out stone. The Contractor shall notify the Architect in writing if conditions in the field differ from those indicated on the Contract Documents or stone shop drawings.
- C. Carefully cut out by hand, for installation of dutchman stone scheduled for removal. Cutting out of stone shall be in the locations indicated on the approved shop drawings. Cut out without damaging surrounding masonry to remain. Obtain approval for cutting masonry anchors encountered at cut outs for dutchman. Cut sides and backs of stone reveals flat with 90 degree corners.
- D. Remove mortar, loose particles, old patches and debris from existing surrounding masonry in preparation for replacement. Clean with stiff brushes or by flushing with water.
- E. Stone Installation:
  - 1. General: Dutchmen shall be installed level, plumb, square and true within the allowable tolerances. The units are to be positioned in such a manner that no dimensional error is allowed to occur. Horizontal and vertical seams shall be correctly aligned and of uniform width. Complete surface tooling, honing or dimensioning after stone dutchman units have been installed. Blend all finishes on dutchman units with finishes on adjacent stone.
  - 2. Set dutchman with specified adhesive in the position to which it is assigned in accordance with the approved setting drawings.
  - 3. Drill new holes into the new stone and into the existing masonry back-up. The drilled holes shall be cleaned with stiff nylon or natural bristle brushes or by flushing with water.
  - 4. Tape around hole to prevent spillage of adhesive onto exposed face of masonry. Using tape or clay hold adhesive back from face of the stone at least one inch.

5. Install the Hilti HIT HY20 Fastener System per the Manufacturer's instructions.
6. The stainless steel threaded rod shall be cleaned and degreased as necessary to remove all contaminants, which may hinder the adhesive bond.
7. All surfaces that are in contact with adhesive must be free of dirt, dust, paint, glaze, grease, oil, rust, or other contaminant. Surface may be dry or damp (no free water). The adhesive shall come in contact with clean sound surfaces.
8. Grout face of dutchman seams with specified grout tinted to match the adjacent stone.

### 3.4 STONE PATCHING

#### A. Surface Preparation for Installation of Repair Mortar:

1. Using methods approved via submittals, remove loose mortar, patches, and damaged unsound masonry to sound and solid substrate. Remove sealant residue.
2. Anchors that are free of rust, solidly embedded, and do not project beyond the surface of the masonry unit may remain. All others should be removed.
3. Cut the edges of the repair area to provide a minimum depth of ¼". The edges of the repair should be square cut. Do not allow any feathered edged in the repair area.

#### B. Mixing, Application, and Curing of Repair Mortar:

1. Mixing:
  - a. General: Mix patching mortar in accordance with manufacturer's printed instructions.
  - b. Do not mix more material than can be used within 30 minutes. Discard any material that has been mixed for 30 minutes or more.
  - c. Mixing ratios:
    - 1). Granite: Jahn M160; Approximately 5 parts dry material to 1 part water.
  - a. Add water to dry ingredients and mix well. Adjust amount of water according to the weather and the porosity of the substrate.
2. Application:
  - a. Apply the mortar mix using a trowel in a series of 1-inch lifts allowing mortar to dry approximately 10-20 minutes between lifts. If applied in layers, scrape off any cement skin that has formed and continue application. Dampen the surface before applying the next layer. Work mortar firmly into the surface of the masonry, including the corners, and under and around all mechanical anchors.
  - b. Build up patching material so that it is slightly above adjacent masonry surface. Allow 15 to 30 minutes to set slightly (Wait time will vary with temperature and humidity-longer in cool weather), then scrape off excess material using a brush until the desired profile is reached. Do not press down or "float" the repair. Where patches occur at panel edges or corners, form mortar to match the profile of the surrounding masonry. In all cases, finish so that it is as indistinguishable as possible from the adjacent masonry.
3. Curing:
  - a. Lightly mist patch with water to wet the entire surface of the finished patch approximately 30 minutes to 1 hour after completion on hot sunny days and approximately 2 hours or longer, on cool or cloudy days. Time will vary with temperature and humidity. Mist several times a day on the three days following the repair installation.

#### B. Finishing:

1. Upon initial cure, and in accordance with the manufacturer's printed instructions, patch shall be finished to match the existing adjacent masonry.
2. Clean any mortar residue form area surrounding the patch by sponging as many times as necessary with clean water. This should be done before patching material sets.
3. After the repair has been cured and allowed to dry for at least one week, if the appearance of a repair does not meet the specifications of the job, the surface color of the repair is to be enhanced by applying a vapor permeable, mineral based pigmented stain.
  - a. Remove dust and loose particulate matter from surfaces to receive coatings immediately

prior to coating application.

- b. Protect all non-masonry surfaces such as glass, wood, metal, etc....
- c. Cracks and spalls must be repaired and cured prior to coating application.
- d. Apply specified coating to vertical surfaces only.
- e. Substrate must be completely dry before coating. Do not work when precipitation is expected within 48 hours of installation. The coating needs adequate time to bond to the substrate; Moisture disrupts the curing process.

C. Mixing Coating System:

- 1. It is recommended that proper eye protection be worn during mixing in case of accidental splashing. Mix component A (colored paint) with component B (Silin AZ Fixative) in the desired proportions (see chart below) before installation.
- 2. Mixing ratios will depend on the desired coating effect and the substrate surface.
  - a. Transparent finish:
    - (1) Parts of colored coating: 1
    - (2) Parts of Silin AZ Fixative: 3-100+
  - b. Refer to manufacturers data sheets for more detail on transparent finishes.

D. Adjustment and Cleaning:

- 1. Remove and replace all unsatisfactory patches, at no additional cost to the Owner. Conditions deemed unacceptable include, but are not limited to:
  - a. Separation or shrinkage at the edge of a patch,
  - b. Separation of the patch from the substrate,
  - c. Surface crazing or cracking,
  - d. "Burned" surfaces (from overly quick drying),
  - e. Discoloration, or mis-matched color (compared to existing adjacent stone), and
  - f. Mis-matched surface quality and finish (compared to existing adjacent stone).
- 2. Repair adjacent surfaces or other elements that have been marred or otherwise damaged during the work of this Section.
- 3. Remove uncured mortar from the perimeter of the repair before it dries using clean water and a rubber sponge. Repeat several times with clean water to prevent a halo effect. Cured mortar may only be removed chemically or mechanically.
  - a. Should removal of cured mortar be necessary, Contractor shall submit proposed method of removal and obtain Architect's approval prior to removal.
- 4. Once masonry patching work is complete, remove all unused materials, containers and equipment from the site, and dispose of all related debris.

### 3.5 INJECTION GROUTING OF CRACKS

A. General: Strictly adhere to manufacturer's written instructions and recommendations regarding preparation, installation, finishing, and curing.

B. Surface Preparation:

- 1. Remove any existing patching material or unsound stone from crack to be injection grouted.
- 2. Transverse Cracks (perpendicular to the face of the wall): Drill a series of injection ports 1/8" in diameter and spaced 2 inches apart, into the heart of the transverse crack and throughout its length. Holes shall be angled slightly down. Seal crack between drill holes with non-staining clay, to prevent leaking of the injection mortar.
- 3. Lateral Cracks / Delamination (parallel to the face of the wall): Drill a series of injection ports 1/8" in diameter and spaced 2 inches apart, in a square configuration (90°) on the face of the substrate to create a "drill frame". Ports should be drilled in a downward direction.

4. Wash the surface and interior of the crack using clean water to remove all dust, loose or deleterious material, which could prevent proper flow/or adhesion, thereby compromising the integrity of the cured injection grout.

C. Mixing:

1. It is recommended that safety goggles, gloves, and a dust mask be worn for protection. Do not mix more material than can be used within approximately 30 minutes. Discard any mixed material that has been unused for 30 minutes or more.
2. Mixing Ratio:
  - a. Jahn M30: The mixing ratio is approximately 2 to 5 parts powder to 1 part water by volume.
  - b. Jahn M40: The mixing ratio is approximately 2 to 2-1/2 parts powder to 1 part water by volume.
3. Mixing:
  - a. For Jahn M30: Mix mechanically using, a high-speed drill (3,000 RPM or higher) equipped with a Jiffler type-mixing paddle. After mixing, the mortar should be poured into another clean container using a sieve. Continued agitation is necessary if the mortar is allowed to sit prior to use.
  - b. For Jahn M40: Mix manually or mechanically using a slow speed drill (400-600 RPM) equipped with a Jiffler type-mixing paddle. The material should be mixed for a minimum of three minutes with continued agitation should the product be allowed to sit prior to use.
4. The percentage of water content varies depending on the width of the crack, the amount of moisture present within the crack, and the structural characteristics to be attained. Contractor shall determine the appropriate water content, as submitted for approval, and ensure consistency of the mix.

D. Application and Curing:

1. Substrate Preparation: Moisten the interior of the crack immediately before injection by flushing with clean water. If the surface is allowed to dry out before grout is injected, this step must be repeated.
2. Treatment of Transverse Cracks: Inject grout into lowest port and continue until it flows freely from this port and other ports at the same level. Seal ports using non-staining clay and proceed in identical fashion until the crack is filled. Clean up overflow immediately.
3. Treatment of Lateral (delamination) Cracks: Inject grout into lower left port and proceed until it flows freely from this port and other ports at the same level. Where necessary, insert threaded stainless steel dowels after some grout has been injected, agitate or tap several times to remove any voids or air pockets and inject remainder of the grout until port is full and grout flows freely from other ports at the same level. Seal ports using non-staining clay. Inject grout into lower right port and proceed in identical fashion. The order of injection is lower left, lower right, upper left, then upper right. Clean up overflow immediately.
4. Once the mortar has sufficiently set, the clay may be removed from the crack and the drill holes.

- E. Finishing: Remove plugs after 24 to 48 hours and repair the ports and the crack surface with patching mortar.

F. Adjustment and Curing:

1. Remove and replace all installations that exhibit:
  - a. Discoloration, or mis-matched color (compared to existing adjacent stone); or
  - b. Mis-matched surface quality and finish (compared to existing adjacent stone).
2. Repair adjacent surfaces or other elements that have been marred or otherwise damaged during the work of this Section.
3. Remove uncured mortar from substrate before it dries using clean water and a rubber sponge. Cured mortar may only be removed chemically or mechanically.



4. Should removal of cured mortar be necessary, Contractor shall submit proposed method of removal and obtain Architect's approval prior to removal.
5. Once injection grouting work is complete, remove all unused materials, containers and equipment from the site, and dispose of all related debris.

### 3.6 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
  1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.
- C. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose masonry units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- D. Remove in an undamaged condition as many whole bricks as possible.
  1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
  2. Store brick for reuse, as indicated.
    - a. Document quantity of salvaged brick and submit to the Architect for determination of locations where salvaged brick will be reused.
    - b. The goal is to use clean and undamaged salvaged units at localized repairs areas that are highly visible. Confirm locations with Architect prior to installation of salvaged brick.
- E. Clean bricks surrounding removal area by removing mortar, dust, and loose particles in preparation for replacement.
- F. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
- G. Lay replacement brick with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid. Maintain joint width for replacement units to match existing joints.
  1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
  2. Rake out mortar used for laying brick before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing masonry, and at same time as repointing of surrounding area.

### 3.7 BRICK PATCHING (For holes less than 1 ½" in diameter)

- A. Remove loose material from brick surface. Remove additional material so patch will not have feathered edges and will be at least ¼-inch thick, but not less than recommended by patching compound manufacturer.
- B. Mask or remove surrounding mortar joints if patch will extend to edge of brick.
- C. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compounded, as needed, to produce exact match.
- D. Rinse surface to be patched and leave damp, but without standing water.

- E. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
- F. Place patching compound in layers as recommended by patching compound manufacturer, but no less than 1/4-inch or more than 2-inches thick. Roughen surface of each layer to provide a key for next layer.
- G. Trowel, scrape, or carve surface of patch to match texture and surface plane of surrounding brick. Shape and finish surface before or after curing, as determined by testing, to best match existing brick.
- H. Keep each layer damp for 72 hours or until patching compound has set.

### 3.7 ROUTING AND REPOINTING MORTAR JOINTS

- A. Rake out and repoint mortar joints to the following extent:
  - 1. All joints in areas indicated.
  - 2. Joints where mortar is missing or where they contain holes.
  - 3. Cracked joints, where mortar has separated from unit masonry.
  - 4. Brick joints where they are worn back 1/4-inch or more from surface of unit masonry.
  - 5. Joints where they sound hollow when tapped by metal object.
  - 6. Stone joints where beaded profile is damaged.
  - 7. Joints where they are deteriorated to point that mortar can be easily removed by hand.
  - 8. Joints, other than those indicated as sealant-filled joints, where they have been filled with substances other than mortar
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows:
  - 1. Remove mortar from joints to depth equal to 2-1/2 times joint width, but not less than 1/2 inch or depth at which sound mortar is reached.
  - 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to exposed masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
  - 3. Do not spall edges of masonry units or widen joints. Replace or patch damaged masonry units as directed by Architect.
    - a. Cut out mortar by hand with chisel and mallet. Do not use power-operated grinders without Architect's written approval based on submission by Contractor of a satisfactory quality-control program and demonstrated ability of operators to use tools without damaging masonry units. Quality-control program shall include provisions for supervising performance and preventing damage due to worker fatigue.
    - b. Cut out center of mortar joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar by hand with chisel and mallet. Strictly adhere to written quality-control program. Quality-control program shall include provisions for demonstrating ability of operators to use tools without damaging masonry, supervising performance, and preventing damage due to worker fatigue.
- D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- E. One mortar color will be used at stone and brick masonry.
- F. Point joints as follows:
  - 1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen masonry-joint surfaces before pointing.

2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Fully compact layer thoroughly and allow it to become thumbprint hard before applying next layer.
  3. After low areas have been filled to same depth as remaining joints, point all joints by placing mortar in layers not greater than 3/8 inch. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry has worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
  4. When mortar is thumbprint hard, tool joints to match original appearance of joints. Remove excess mortar from edge of joint by brushing.
    - a. Historic brick and stone mortar joints: Concave profile.
    - b. Below grade masonry or masonry not exposed to view: Flush joint.
- G. Cure mortar by maintaining in thoroughly damp condition for at least 72 hours, including weekends and holidays.
1. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
  2. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.
  3. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

### 3.8 CEMENT PARGING

- A. Dampen masonry prior to parging.
- B. Parge masonry in two coats to total 3/4 inch thickness (Match existing thickness). Roughen first coat when partially set, allow to cure for 24 hours, dampen and apply second coat.
- C. Float or trowel second coat to smooth surface matching texture of adjacent finish.

### 3.9 ADJUST AND CLEAN

- A. After mortar has hardened but before it has fully cured, thoroughly clean masonry surfaces of excess mortar using stiff nylon or natural bristle brushes and clean water; do not use metal brushes or scrapers.
- B. Any masonry work that does not result in a consistent appearance with adjacent brickwork and stonework shall be considered defective and shall be corrected by the Contractor at no additional cost to the Owner.

### 3.9 FIELD QUALITY CONTROL

- A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Architect's Project representatives two weeks in advance of times when lift devices and scaffolding are scheduled to be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location and only when the completed work is accepted in writing by the Architect.

### END OF SECTION

## SECTION 04931

### CHEMICAL CLEANING OF MASONRY

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Chemically clean existing coping stones scheduled to remain 100% including removal of asphaltic coating. Areas must be fully cleaned as determined by the Architect to evaluate match to replacement and repaired stone.
2. Verify chemicals and chemical effluent resulting from cleaning operations will not damage existing membrane roofing system scheduled to remain. Fully protect roofing from damage. If roofing is damaged resulting from work of this contract, contractor is responsible for repairs as recommended by the roofing manufacturer at no additional cost to the owner.
3. Asbestos Abatement Project Design contained in the Appendix of the Project Manual for scope of Hazardous Abatement work.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 04069 – Restoration Mortar for repointing mortar.
3. Section 04905 - Masonry Restoration for stone replacement and repair.
4. Section 07920 – Joint Sealers and Lead Weathercaps.
5. Limited Asbestos Survey prepared by Champion Environmental Consulting dated March 4, 2021 in the Appendix of the Project Manual.
6. Asbestos Abatement Project Design contained in the Appendix of the Project Manual for scope of Hazardous Abatement work.

##### 1.2 DESCRIPTION OF WORK

- A. Masonry cleaning, in scheduled areas, shall be completed prior to the removal or repair of deteriorated masonry. After the masonry has been cleaned, it shall be protected from dirt and staining for the remainder of the project.
- B. The goal of the work of this Section is to remove all stains, atmospheric dirt, and other residue from all exposed masonry surfaces of the building scheduled for cleaning and to give the facade a clean, uniform appearance without blotches, streaks, runs or other kinds of spotty appearance. Any work that does not achieve this goal will be considered unsuccessful and will have to be re-cleaned until this goal is achieved, at no additional cost to the Owner.

##### 1.3 DEFINITIONS

A. Pressure Spray:

1. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.
2. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.
3. High-Pressure Spray: 800 to 1200 psi; 4 to 6 gpm.

##### 1.4 SUBMITTALS

- A. Product Data: Include product description, application procedures, precautions, and limitations in use of products.
- B. Contractor is responsible for proper disposal of all waste and cleaning materials.

- C. Submit, for Owner review, a letter of acceptance from local regulatory entities (such as Storm or Sanitary Sewer Departments) indicating that procedure for disposal of cleaning effluent is compliant with relevant rules and regulations.

## 1.5 QUALITY ASSURANCE

- A. Applicator:
  - 1. Minimum 3 years documented experience in work of this Section.
  - 2. Successful completion of at least 3 projects of similar scope and complexity within past 5 years.
- B. Mockups:
  - 1. Control Test Sample: Upon approval of product data and methods, prepare cleaning sample(s) approximately 10 square feet for each type of masonry and surface condition and for each type of cleaning product proposed for use in locations approved by the Architect.
    - a. Allow cleaning solutions to remain on surface for varying time periods in several locations to determine optimum time required.
    - b. Perform multiple applications of varying concentrations of cleaning solutions to determine optimum concentration.
    - c. Ensure that materials and procedures will not discolor or damage existing surfaces.
  - 2. Allow a waiting period of not less than 7 days after completion of sample cleaning to permit a study of sample panels for negative reactions.
- C. Miscellaneous
  - 1. Methods of Application: Submit a written description of the full range of methods and procedures proposed for cleaning and stain removal including but not limited to: method of application, dilution of application, temperature of application, length of time of surface contact, method of rinsing surface (temperature, pressure, and duration), repetition of procedure, etc.
  - 2. Methods of Protection: Submit a written description of proposed materials and methods of protection for preventing damage to any non-masonry surfaces in proximity to this work, including glass and metals. These methods and materials may include, but are not limited to, spray-on, peel-off type liquid materials and masking tape. Outline methods proposed to keep water from reaching the interior of the building.
  - 3. If materials and methods other than those indicated are proposed for cleaning work, provide a written description, including evidence of successful use on other comparable projects, and a testing program to demonstrate their effectiveness for this Project.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original sealed and labeled containers.
- B. Store all materials in accordance with manufacturer's recommendations and free from extremes of temperature.

## 1.7 PROJECT CONDITIONS

- A. Clean masonry surfaces only when air temperature is 50 deg F (10 deg C) and above and will remain so for at least 7 days after completion of cleaning.
- B. Do not perform work when wind could carry materials to adjacent or underlying materials, or to adjacent property.
- C. Perform all work of this Section in accordance with all Federal, State and local regulations regarding the transportation, storing, handling, application, removal and disposal of the products involved.

- D. Protect workers and public from injury during this work. Provide all required temporary partitions, closures, guards, notices, and the like.
- E. Protect the site and adjoining property, including vehicles, from damage that may result from this work. Trees and plants around the building shall be protected from contamination.
- F. Take all measures required to ensure that the building remains completely watertight throughout the course of this work.
- G. Repair damage to the building caused by penetration of water, or other factors resulting from failure to properly protect the building during work of this Section. Repairs shall be completed at no additional cost to the Owner, in a manner that fully restores all affected elements to their condition prior to damage.

## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- A. Masonry cleaning materials used in this work shall be part of a system of products produced by one manufacturer, where possible, to ensure compatibility.
- B. All materials shall be manufactured for the purpose in which they are proposed for use.
- C. All chemical materials, compounds, liquids, etc. shall be safe and shall not violate state or federal environmental or safety regulations.
- D. Injurious substances or any ingredients that independently or in combination with other compounds, fluids or solutions will damage masonry shall not be used. Methods or products causing abrasion or similar damage to the surface finish of the masonry shall not be used.
- E. No sand, silica flour, or any other grit shall be used either singly or in combination with pressurized air, water or any other liquid.

### **2.2 CHEMICAL CLEANING SYSTEM FOR LIMESTONE**

- A. Description: Manufacturer's standard mildly acidic cleaner containing no hydrochloric, hydrofluoric, or sulfuric acid or chlorine bleaches.
  - 1. Product (Mildest to Strongest):
    - a. Option 1: Enviro Klean 2010 All Surface Cleaner, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797.
    - b. Option 2: Sure Klean Light Duty Restoration Cleaner, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797.

### **2.3 CHEMICAL REMOVAL OF ASPHALTIC COATING**

- A. Description: Heavy duty solvent cleaner containing no methylene chloride or methanol, designed to remove asphalt and tar from limestone.
  - 1. Product: Sure Klean Asphalt & Tar Remover, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797.

## 2.4 CHEMICAL CLEANING SOLUTIONS

- A. Dilute chemical cleaners with water to produce solutions not exceeding concentrations recommended by chemical cleaner manufacturer.
- B. Acidic Cleaner Solution for Unpolished Stone: Dilute with water to produce hydrofluoric acid content of 3 percent or less, but not greater than that recommended by chemical cleaner manufacturer.
  - 1. Use only on unpolished granite, unpolished dolomite marbles, and siliceous sandstones.
- C. Acidic Cleaner Solution for Brick: Dilute with water to produce hydrofluoric acid content of 3 percent or less, but not greater than that recommended by chemical cleaner manufacturer.

## 2.5 CLEAN MATERIALS AND EQUIPMENT

- A. Water for Cleaning: Potable.
- B. Warm Water: Heat water to a temperature of 140 to 160 deg. F (60 to 71 deg. C).
- C. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masing material for protecting glass, metal, and polished stone surfaces from damaging effects of acidic and alkaline masonry cleaners.
  - 1. Products: Sure Klean Strippable Masking, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797.
- D. Spray Equipment:
  - 1. Provide equipment for controlled spray application of water and chemical cleaners, at rates indicated for pressure, measured at spray tip, and for volume. Adjust pressure and volume, as required, to ensure that damage to masonry does not result from cleaning methods.
    - a. Pressure not to exceed 400 psi for limestone.
    - b. For water spray application, provide a fan-shaped spray tip that disperses water at an angle of not less than 15 degrees.
    - c. For heated water spray application, provide equipment capable of maintaining a temperature at flow rates indicated between 140 and 160 deg F (60 and 71 deg. C)
    - d. For chemical cleaner spray application, provide low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with a con-shaped spray tip.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. General: Comply with chemical cleaner manufacturer's written instructions for protecting building surfaces against damage from exposure to their products.
- B. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from injury from masonry cleaning work.
  - 1. Do not clean masonry during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
  - 2. Neutralize and collect alkaline and acid wastes. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

### 3.2 CLEANING MASONRY, GENERAL

- A. Proceed with cleaning in an orderly manner, work from bottom to top of each scaffold width and from one end of each elevation to the other.
- B. Use only those cleaning methods indicated for each masonry material and location.
  - 1. Use natural-fiber brushes only.
  - 2. Use spray equipment that provides controlled application at volume and pressure indicated, measured at spray tip. Adjust pressure and volume to ensure that cleaning methods do not damage masonry.
    - a. Equip units with pressure gages.
- C. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.
- D. Chemical Cleaner Application Methods: Apply chemical cleaners to masonry surfaces to comply with chemical cleaner manufacturer's written instructions.
  - 1. Reapplying Chemical Cleaners: Do not apply chemical cleaners to same stone surfaces more than twice.
- E. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting.

### 3.3 CHEMICAL CLEANING MASONRY

- A. Remove dirt, hydrocarbons, grease, oil, environmental pollutants, applied coatings, rust stains, and residues.
- B. Sandblasting and the use of non-proprietary acids are prohibited.
- C. Follow manufacturer's instructions and procedures established during preparation of mockups.
- D. Working from bottom to top, prewet the surface with clean water.
- E. Apply cleaning solution using synthetic roller, soft-bristled brush or spray applicator. Work into surface voids and irregularities.
- F. Allow solution to stand on surfaces as recommended by Chemical Cleaning Manufacturer and as established by approved mock-ups. Do not allow to dry; reapply as necessary.
- G. Gently scrub heavily soiled surfaces with medium hard bristle brush.
- H. Working from bottom to top, rinse surfaces with medium pressure water. Hold nozzle perpendicular to surface; work at uniform rate and uniform distance from surface.
- I. Repeat process if required until masonry is clean.
- J. Do not damage existing surfaces. Leave surfaces uniform in appearance.

### 3.4 MASONRY CLEANING – WATER SOAK METHOD (OPTIONAL)

- A. Fabricate, using non-ferrous materials, an armature and piping system that will allow a continuous and low pressure spray of surfaces to be cleaned. Install spray tips at intervals that are calculated to provide an even flow of water throughout the system.



- B. Ensure that the building is completely watertight in all areas scheduled for this treatment. Fill all cracks and open joints, and correct other conditions that may allow for water penetration to interior surfaces of the facade or interior spaces of the building.
- C. Apply a light water mist, for a maximum duration of two (2) hours, followed by a minimum drying time of one (1) hour. At the Contractor's option, an integral timer may be incorporated into the system, to accomplish this interval automatically.
- D. Upon completion of a 24-hour cycle of mist-dry intervals, wash treated surfaces, using the pressure washer with 20° tip, at pressures not exceeding 600 psi.
- E. Repeat the process as required until all surfaces are satisfactorily cleaned.

### 3.5 FINAL CLEANING

- A. Contractor shall repeat the processes of the work of this Section until the goal of a clean, uniform surface is achieved.
- B. Do not use acidic or alkaline cleaners for final cleaning.

**END OF SECTION**

**SECTION 06100**  
**ROUGH CARPENTRY**

**PART 1- GENERAL**

**1.1 SECTION INCLUDES**

- A. All materials and labor for work requiring new lumber for:
  - 1. Wood blocking, nailers, and shims.
  - 2. Electrical panel backboards.
  - 3. Connecting hardware, fasteners, and accessories

**1.2 RELATED SECTIONS**

- A. General: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Section 08110 – Steel Doors and Frames.
- C. Section 08215 – Stile and Rail Wood Doors.
- D. Section 08295 – Wood Door Restoration.
- E. Section 08310 – Access Doors and Frames.
- F. Section 08520 – Wood Window Restoration.
- G. Division 26 – Electrical.

**1.3 SUBMITTALS**

- A. Submit shop drawings and product data, describe materials, fasteners, fastening methods, accessories, and locations.
- B. Submit documentation of wood treatment facility's qualifications and compliance with American Wood Preserver's Association (AWPA) standards.

**1.4 QUALITY ASSURANCE**

- A. All dimension lumber and engineered wood products shall bear a legible grade stamp of a certified lumber grading agency.
- B. Each piece or bundle of treated wood products shall bear a legible third-party quality mark or tag indicating the name of the treater, date of treatment or lot number, and the American Wood Preservers' Association (AWPA) Specification symbol to which the treatment conforms.
- C. Provide Underwriters' Laboratories (UL) approved identification for fire resistant treated materials.
- D. Unless noted otherwise, all rough carpentry work shall conform to the conventional framing rules of the applicable building code.

**1.5 STORAGE AND HANDLING**

- A. All wood products shall be placed on blocking so that the material does not sag and is completely out of ground-contact.
- B. All wood products shall be protected from rain and direct sunlight.
- C. Materials shall be stored on site no more than 30 days prior to use. Once un-bundled, materials must be installed immediately unless stickered and protected in a manner approved by the Engineer.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Blocking and bridging shall be No. 2 Grade Southern Pine, nominal thickness, unless otherwise noted.
- B. Shims shall be taper-sawn western red cedar or approved substitute.

### **2.2 PLYWOOD PANELS**

- A. Construction Panel Standards: Comply with PS 1 "U.S. Product Standard for Construction and Industrial Plywood" for plywood construction panels and for products not manufactured under PS 1 provisions with APA PRP-108.

### **2.3 PRESERVATIVE TREATMENT**

- A. Preservative Treatment: Comply with applicable requirements of AWWA C2 (Lumber) and AWWA C9 (plywood). Provide treatment after members are shaped with Alkaline Copper Quaternary (ACQ) or Copper Azole (CA) preservative by vacuum pressure full-cell process in accordance with AWWA Standard Specification P-5 and as follows:
- B. Kiln dry members after treatment to 15% MC. Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review. Re-grade and re-stamp lumber after kiln drying in accordance with lumber producer's grading rules.
- C. Apply preservative field treatment to cut and bored surfaces in accordance with AWWA M4.

### **2.3 FIRE RETARDANT TREATMENT**

- A. Comply with AWWA Standards C20 (Lumber) and C27 (Plywood). Provide materials with a flame spread not exceeding 25 (ASTM E 84). Identify "fire retardant treated wood" with appropriate UL classification marking or other testing and inspection agency marking acceptable to authorities having jurisdiction. Provide materials as follows:
  - 1. Exterior Exposure Treatment Process: Hickson Corporation "NCX" or Hoover Treated Wood Products "Exterior Fire-X"
  - 2. Interior Exposure Treatment Process: Hickson Corporation "Dricon", Osmose "Flameproof LHC-HTT"
  - 3. Kiln dry after treatment to maximum moisture content of 15% for plywood, 19% for lumber
  - 4. Do not use twisted, warped, bowed, or otherwise defective wood

### **2.4 STORAGE AND HANDLING**

- A. All wood products shall be placed on blocking so that the material does not sag and is completely out of ground-contact.
- B. All wood products shall be protected from rain and direct sunlight.
- C. Materials shall be stored on site no more than 30 days prior to use. Once un-bundled, materials must be installed immediately unless stickered and protected in a manner approved by the Engineer.

## 2.5 FASTENERS, ADHESIVES, & ACCESSORY MATERIALS

- A. All fasteners in exterior or treated wood shall be hot dip galvanized, stainless steel, or shall have an approved corrosion resistant coating.
- B. Nails: common wire nails of the size shown on the plans.
- C. Screws: For deck installation, unless otherwise noted, screws shall be self drilling, truss-head screws by Olympic Fasteners or approved substitute, in the length shown on the plans. For structural connections, screws shall be SIMPSON SDS-type screws or approved substitute, in the diameter and length shown on the plans. Where length is not given, the length shall be sufficient to develop the full shear capacity of the screw in the main member.
- D. Bolts, nuts, and washers: ASTM A 307, Grade A, unless otherwise noted.
- E. Concrete or masonry substrate: galvanized anchor with expansion shank, or threaded concrete screw anchor, length as shown on the plans or as recommended by manufacturer for minimum 1,000 pound pull-out resistance. Approved manufacturers:
  - 1. Tapcon
  - 2. Hilti
  - 3. Rawl
- F. Connector hardware: approved manufacturers:
  - 1. Cleveland Steel Specialty Co. (Cleveland, Teco)
  - 2. United Steel Products Co. (Kant-Sag - Silver)
  - 3. Simpson Strong-Tie
- G. Construction Adhesive: Polyurethane-based, single-component, gun-grade adhesives by OSI Sealants, Inc.
  - 1. Moisture content 19% or lower, use PL Premium
  - 2. Pressure treated wood, use PL-400.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify all dimensions and existing conditions in the field.
- B. Verify that surfaces are ready to receive work.
- C. Verify mechanical, electrical, and building items affecting work of this Section are ready to receive this work. Notify the engineer of any such items requiring adjustment.
- D. Beginning of installation means acceptance of existing conditions.

### 3.2 INSTALLATION

- A. Remove existing materials to be replaced.

- B. Accurately measure or scribe members before cutting. Make all cuts clean and true to mating surfaces. All lumber and timber shall be accurately cut and framed to a close fit so that the joints will have even bearing over the entire contact surface. Mortises shall be true to size for their full depth and tenons shall make a snug, but not a driven, fit there-in.
- C. Treat all field-cuts of existing and new treated material with an approved water repellent preservative.
- D. Firestop concealed spaces of wood framed walls, furring, and partitions at each floor level and at the ceiling line of the top story. Use closely-fitted wood blocks of nominal 2-inch thick lumber of the same width as framing members.
- E. Set and secure materials and components in place, plumb, and level.
- F. Discard units of material with defects, which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- G. Set carpentry work accurately to required levels and lines, with members plumb and true and accurately cut and fitted.
- H. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes.
- I. Bridging and blocking shall be framed neatly and accurately, and securely toenailed with at least two nails in each end. Bridging or blocking shall be provided as follows:
  - 1. In new work, in rows at midspan and 8-feet on-center, and over supports; and
  - 2. Where shown on the plans or as required to prevent warping or twisting of installed materials.
- J. Connecting hardware shall be installed in accordance with the manufacturer's recommendations.

#### **END OF SECTION**

## **SECTION 07211**

### **BATT INSULATION**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Acoustical insulation for interior partitions as indicated on partition types.
  - 2. Thermal insulation throughout attic between ceiling framing.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 09215 – Veneer Plaster.
  - 3. Section 09250 – Gypsum Board Assemblies.

##### **1.2 REFERENCES**

- A. American Society for Testing and Materials (ASTM).
  - 1. C 665 Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction.
  - 2. E84 Test Method for Surface Burning Characteristics of Building Materials.
  - 3. E96 Test Method for Water Vapor Transmission of Materials.
  - 4. E136 Test Method for Behavior of Materials in a Vertical Tube Furnace at 750° C.
  - 5. C518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter.
  - 6. C423 Test Method for Sound Absorption Coefficient by the Reverberation Room Method.

##### **1.3 SUBMITTALS:**

- A. Product Data for each type of insulation product specified including product literature and installation instructions.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.

##### **1.4 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to the site ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type and brand. Delivered materials shall be identical to approved samples.
- B. Store materials under cover in a dry and clean location, off the ground. Remove materials, which are damaged or otherwise not suitable for installation and replace with acceptable materials.
- C. Take every precaution to prevent the insulation from becoming wet, cover with tarps or other weather/watertight sheet goods.

#### **PART 2- PRODUCTS**

##### **2.1 MANUFACTURERS**

- A. Manufacturers: Subject to compliance with requirements, provide insulation products of one of the following:

1. CertainTeed Corp.
2. Manville Building Insulation
3. Owens/Corning Fiberglas Corp.

## 2.2 INSULATING MATERIALS

- A. General: Provide insulating materials that comply with requirements and with referenced standards.
- B. Attic Insulation
  1. Type: Kraft-faced glass fiber acoustical insulation (ASTM C 665).
  2. Size: 6" thickness, 16" width (Field verify) for installation between wood framing.
  3. Surface Burning Characteristics:
    - a. Maximum flame spread: 25.
    - b. Maximum smoke developed: 50 (ASTM E84).
  4. Combustion Characteristics: passes ASTM E136
  5. Vapor Retarder Perm Rating: 0.02 Max (ASTM C1136).
  6. Dimensional Stability: Linear Shrinkage less than 0.1%.
  7. R-value: R-19 (ASTM C518).
- C. Sound Attenuation Batts:
  1. Type: Unfaced glass fiber acoustical insulation complying with ASTM C 665, Type I.
  2. Size 3 ½" thickness, 16" width for installation in wood or metal framing.
  3. Surface Burning Characteristics:
    - a. Maximum flame spread: 10.
    - b. Maximum smoke developed: 10 (ASTM E84)
  4. Combustion Characteristics: passes ASTM E 136.
  5. Sound Transmission Class: STC:
  6. Dimensional Stability: Linear Shrinkage less than 0.1%.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Examine the areas and conditions where building insulation is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

### 3.2 INSTALLATION

- A. Comply with manufacturer's instructions for the particular conditions of installation in each case. If printed instructions are not available or do not apply to the project conditions, consult the manufacturer's technical representative for specific recommendations before proceeding with the work.
- B. Extend insulation full thickness as shown over entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections, which interfere with placement.
- C. Apply a single layer of insulation to the required thickness, unless a double layer is required, to make up the total thickness shown.
- D. Place insulation away from recessed light fixtures that are not designed for direct insulation contact.

### 3.3 PROTECTION

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

**END OF SECTION**



## SECTION 07541

### POLYVINYL-CHLORIDE (PVC) ROOFING REPAIRS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Modify parapet flashing at main and lower roofs as indicated on the drawings.
2. Fully protect the existing roofing system at the main and lower roofs for the duration of the project and as required to maintain the existing warranty.
3. If roofing is damaged resulting from the work of this contract, contractor is responsible for repairs as recommended by the roofing manufacturer at no additional cost to the owner.

*Note information contained in this section describes the existing roofing system and is generally for contractor information. If areas of roofing require replacement, contractor shall field verify and confirm system compatibility with roofing manufacturer indicated.*

###### B. Related Sections:

1. Section 04905 – Masonry Restoration for replacement coping stones.
2. Section 04931 – Chemical Cleaning of Masonry for stone cleaning and removal of asphaltic coating at coping stones, protect roofing from potential chemical from cleaning products.
3. Section 07620 – Sheet Metal Flashing and Trim for coping cap flashing, coping flashing, and counterflashing.
4. Section 07920 – Joint Sealers and Lead Weathercaps.
5. Description of scope of roofing work prepared by Parsons Commercial Roofing, Inc. of the existing roofing system is contained in the Appendix of the Project Manual.
6. Asbestos Abatement Project Design contained in the Appendix of the Project Manual.

##### 1.2 PREINSTALLATION MEETINGS

- ###### A. Preinstallation Conference: Conduct conference at Project Site.

##### 1.3 ACTION SUBMITTALS

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

1. For roofing system submit copy of FM Approvals indicating compliance with wind lift pressures indicated in the structural notes.

###### B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Counterflashing detail and membrane flashing termination detail at parapet.

###### C. Samples: For the following products:

1. Termination bar and each type of fastener.

#### 1.4 INFORMATIONAL SUBMITTALS

##### A. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
  - a. Submit evidence of compliance with performance requirements.
2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

##### B. Product Test Reports: For roof membrane and insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.

##### C. Research reports.

##### D. Field Test Reports:

1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

##### E. Field quality-control reports.

##### F. Sample warranties.

#### 1.5 CLOSEOUT SUBMITTALS

##### A. Maintenance data.

#### 1.6 QUALITY ASSURANCE

- ##### A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

#### 1.7 WARRANTY

- ##### A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Warranty Period: **20** years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- ##### A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.

- B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- C. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- D. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures when tested according to FM Approvals 4474, UL 580, or UL 1897:
  - 1. Refer to Design Criteria indicated in structural drawings.
- E. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
  - 1. Fire/Windstorm Classification: Contractor to meet requirements for windstorm certification in region
  - 2. Hail-Resistance Rating: FM Global Property Loss Prevention Data Sheet 1-34 **SH**.
  - 3. Wind Uplift Load Capacity: Contractor to meet requirements for windstorm certification in region
- F. Exterior Fire-Test Exposure: ASTM E108 or UL 790, **Class A**; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

## 2.2 POLYVINYL CHLORIDE (PVC) ROOFING

- A. PVC Sheet: ASTM D4434/D4434M, Type III, fabric reinforced with enhanced heat and chemical resistance.
  - 1. Product: Per proposal prepared by Parsons Commercial Roofing, Inc., the existing flashing membrane is a weft inserted low-shrink, anti-wicking polyester fabric with a thermoplastic coating laminated to both sides as manufactured by Duro-Last Roofing Inc.
  - 2. Thickness: 50 mils.
  - 3. Exposed Face Color: White.

## 2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.
- C. Low-Rise, Urethane, Fabric-Backed Membrane Adhesive: Roof system manufacturer's standard spray-applied, low-rise, two-component urethane adhesive formulated for compatibility and use with fabric-backed membrane roofing.
  - 1. Product: Sure-Flex PVC Low-VOC Bonding Adhesive as manufactured by Carlisle Syntec Systems.
- D. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

- E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

## 2.4 ROOF INSULATION

- A. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
  - 1. Product: Existing expanded polystyrene (EPS) insulation, mechanically fastened.
  - 2. Thickness: ½"

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
  - 1. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
  - 2. Verify that concrete substrate is visibly dry and free of moisture, and that minimum concrete internal relative humidity is not more than [75] <Insert number> percent, or as recommended by roofing system manufacturer, when tested according to ASTM F2170.
    - a. Test Frequency: One test probe per each 1000 sq. ft., or portion thereof, of roof deck, with no fewer than three test probes.
    - b. Submit test reports within 24 hours of performing tests.
  - 3. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.
  - 4. Verify that joints in precast concrete roof decks have been grouted flush with top of concrete.

### 3.2 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav SPRI's Directory of Roof Assemblies listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

### 3.3 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Installation Over Concrete Decks:

1. Install base layer of insulation with [joints staggered not less than 24 inches in adjacent rows] [end joints staggered not less than 12 inches in adjacent rows].
  - a. Make joints between adjacent insulation boards not more than 1/4 inch in width.
  - b. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
    - 1) Trim insulation so that water flow is unrestricted.
  - c. Fill gaps exceeding 1/4 inch with insulation.
  - d. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
  - e. Adhere base layer of insulation to concrete roof deck according to [FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification] [SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity] and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - 1) Set insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
  - a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
  - b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
  - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
    - 1) Trim insulation so that water flow is unrestricted.
  - e. Fill gaps exceeding 1/4 inch with insulation.
  - f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
  - g. Adhere each layer of insulation to substrate using adhesive according to [FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance Classification] [SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity] and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.4 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
  1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  2. At internal roof drains, conform to slope of drain sump.
    - a. Trim cover board so that water flow is unrestricted.
  3. Cut and fit cover board tight to nailers, projections, and penetrations.
  4. Adhere cover board to substrate using adhesive according to **[FM Approvals' RoofNav listed roof assembly requirements for specified Windstorm Resistance**

**Classification]** [SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity] and FM Global Property Loss Prevention Data Sheet 1-29, as follows:

- a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.5 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- E. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.
  - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
  - 2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
  - 3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.6 INSTALLATION OF BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.7 INSTALLATION OF WALKWAYS

- A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
  - 1. Install flexible walkways at the following locations:
    - a. Perimeter of each rooftop unit.
    - b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
    - c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
    - d. As required by roof membrane manufacturer's warranty requirements.
  - 2. Provide 6-inch clearance between adjoining pads.
  - 3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.8 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

### **END OF SECTION**

## SECTION 07620

### SHEET METAL FLASHING AND TRIM

#### PART 1- GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Sheet metal coping flashing at coping stones scheduled to be removed and replaced, where indicated on the Drawings.
2. Sheet metal counterflashing at coping stones at main and lower roofs, where indicated on the Drawings.
3. Formed sheet metal cap flashing at main roof, east and west parapets, where indicated on the Drawings.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 04069 – Restoration Mortar.
3. Section 04905 – Masonry Restoration.
4. Section 06100 – Rough Carpentry for wood framing, plywood, sheathing, blocking, furring, etc....not exposed to view.
5. Section 07920 - Joint Sealers and Lead Weathercaps.
6. Section 09910 – Painting and Finishing for field painting sheet metal elements, where exposed to view.
7. Asbestos Project Design contained in the Appendix of the Project Manual for Hazardous Materials scope of work.

##### 1.2 REFERENCES

A. ASTM International (ASTM):

1. B 32 - Solder Metal.

B. Copper Development Association (CDA) - Contemporary Copper, A Handbook of Sheet Copper Fundamentals, Design, Details and Specifications.

C. Sheet Metal and Air Conditioning Contractors National Association (SMACNA) - Architectural Sheet Metal Manual.

##### 1.3 SUBMITTALS

A. Submit manufacturer's technical information and installation instructions for:

1. Each specified sheet metal material and fabricated product, indicating that materials meet standards specified herein.
2. Solder and flux.

B. Shop Drawings for each item under 1.1.A showing layout, profiles, method of joining, and anchorage details. Indicate type and thicknesses of metal and dimensions. Provide layouts at 1/4-inch scale and details at 3-inch scale.

C. Samples: Each material and profile proposed for use; minimum 12 inches long.



- D. Mock-ups:
  - 1. Full size mock-up of sheet metal coping flashing and coping counterflashing, installed.
  - 2. Full size mock-up of formed sheet metal coping cap, installed.
  - 3. Locate mock-ups, where directed by Architect.
  - 4. Accepted mock-ups, if undamaged through Substantial Completion may be incorporated into the work.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Minimum 3 years experience in work of this Section.
  - 2. Successful completion of at least 3 projects of similar complexity in the past 5 years.

#### 1.5 PROJECT CONDITIONS

- A. Coordinate work of this Section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.
- B. Do not form sheet metal at ambient temperatures less than 50 degrees F.
- C. Do not apply moisture barrier at ambient or surface temperatures less than 40 degrees F.

#### 1.6 WARRANTY

- A. Installer Warranty: Sheet metal installer warranty in which sheet metal installer agrees to repair or replace components of sheet metal downspout drainage system that fail in materials or workmanship within specified warranty period.
  - 1. Failures include, but are not limited to, the following:
    - a. Structural failures
    - b. Loose parts
    - c. Wrinkling or buckling
    - d. Failure to remain weathertight, including uncontrolled water leakage
    - e. Deterioration of metals, metal finishes, and other materials beyond normal weathering, including non-uniformity of color or finish
  - 2. Warranty Period: Two years from date of Substantial Completion.

### PART 2- PRODUCTS

#### 2.1 SHEET METAL MATERIALS

- A. Copper Sheet: Copper sheet, ASTM B 370; temper H00 (cold-rolled) except where temper 060 is required for forming; thickness as indicated.
  - 1. 2-Piece Counterflashing, Coping Flashing and Formed Coping Cap: Weight: 16 oz. unless otherwise indicated.

#### 2.2 ACCESSORIES

- A. Solder: Solder: 60-40 tin / lead solder, ASTM B 32.
- B. Flux: Muriatic acid neutralized with zinc.

- C. Nails: Copper or hardware bronze, 0.109 inch minimum not less than 7/8" long barbed with large head.
- D. Rivets: 1/8"-3/16" diameter, with solid copper mandrels and washers.
- E. Masonry Screws: 1/4 inch diameter, galvanized, with polymer finish; slotted hex washer head with minimum 5/8 inch EPDM washer; Tapcon by Builex or approved substitute.
- F. Fastener lengths as required to penetrate:
  - 1. Minimum 1 inch, maximum 1 1/2 inch into masonry joint (Do not penetrate masonry unit).
  - 2. Minimum 1 1/4 inch, or through wood receiving members
  - 3. Minimum 1/2 inch through sheet metal and steel receiving members.
- G. Miscellaneous Materials: Provide sheet metal clips, straps, anchoring devices and similar accessory units for installation of the work that match, or are compatible with, the material being installed. Provide miscellaneous metal accessories in sizes and gauges as required for proper performance.
- H. Joint Sealers: Specified in Section 07920.

## 2.3 FABRICATION

- A. Fabricate components in accordance with SMACNA Manual and CDA Handbook.
- B. Pre tin edges of copper sheet.
- C. Solder shop formed joints. After soldering, remove flux and wash clean.
- D. Fabricate corners in single units with minimum 18 inch long legs.
- E. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- F. Form sections accurate to size and shape, square and free from distortion and defects.
- G. Provide for thermal expansion and contraction in sheet metal:
  - 1. Provide expansion joints in sheet metal exceeding 15 feet in running length.
  - 2. Place expansion joints at 10 feet on center maximum 2 feet from corners and intersections.
  - 3. Joint width: Consistent with types and sizes of materials, minimum width 1/4".
- H. Unless otherwise indicated, provide minimum 3/4 inch wide flat lock seams; lap in direction of water flow.
- I. Fabricate cleats and starter strips of same material as sheet metal.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Examine the substrate and the conditions under which work is to be performed, and do not proceed until unsatisfactory conditions have been corrected. Surfaces are to be clean, even, smooth, dry and free from defects and projections which may adversely affect the installation.

### 3.2 INSTALLATION

- A. Install flashings and sheet metal as indicated and in accordance with SMACNA Manual and CDA Handbook.
- B. Install cleats and starter/edge strips before starting installation of sheet metal.
- C. Secure flashings with concealed fasteners where possible.
- D. Apply plastic cement between metal and felt flashings.
- E. Fit flashings tight, with square corners and surfaces true and straight.
- F. Seam and seal field joints.
- G. Separate dissimilar metals with bituminous coating or non-absorptive gaskets.
- H. Reglets:
  - 1. Install reglets true to line and level. Seal top of surface mounted reglet with joint sealer.
  - 2. Install flashings into reglets to form tight fit. Secure with lead or plastic wedges at 9 inches on center maximum. Seal remaining space with backer rod and joint sealer.
- I. Apply joint sealers as specified in Section 07920.

### 3.3 CLEANING

- A. Clean sheet metal; remove slag, flux, stains, spots, and minor abrasions without etching surfaces.

**END OF SECTION**

## **SECTION 07840**

### **FIRESTOPPING**

#### **PART 1- GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Firestopping perimeter of and penetrations through fire rated assemblies.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 04905 – Masonry Restoration for repairing holes through wall and floor assemblies.
  - 3. Section 09250 – Gypsum Board Assemblies.

##### **1.2 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - 1. E 814 - Fire Tests of Through-Penetration Firestops.
  - 2. E 1966 - Fire-Resistive Joint Systems.
- B. Underwriters Laboratories, Inc. (UL):
  - 1. 1479 - Fire Tests of Through-Penetration Firestops.
  - 2. 2079 - Fire Resistance of Building Joint Systems.

##### **1.3 SYSTEM DESCRIPTION**

- A. Provide continuous protection against passage of heat, fire, smoke, and gases at perimeter of and penetrations through fire rated assemblies.

##### **1.4 QUALITY ASSURANCE**

- A. Firestopping: Fire resistance rating equivalent to adjacent construction; tested by a recognized independent testing laboratory to ASTM E 814, E 1966, UL 1479, or UL 2079.

##### **1.5 SUBMITTALS**

- A. Product Data:
  - 1. Include product description, limitations in use, and fire hazard classifications and ratings.
  - 2. Provide UL or equivalent details for each firestop system.
  - 3. Test Reports: Indicate conformance with ASTM E 814, ASTM E 1966, UL 1479, or UL 2079.
  - 4. Certificates of Compliance: Indicating conformance of installed systems to specified requirements.

##### **1.6 ENVIRONMENTAL REQUIREMENTS**

- A. Do not apply sealants, mortars, or putties when temperature of substrate material and surrounding air is below 40 degrees F or is anticipated to drop below that temperature within 24 hours after installation.
- B. Maintain sealant at a minimum 70 degrees F.

## **PART 2- PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable Manufacturers:
  - 1. Hilti, Inc.
  - 2. Isolatek International.
  - 3. 3M Fire Protective Products.
  - 4. Nelson Firestop Products.
  - 5. Specified Technologies, Inc.
  - 6. Tremco, Inc.
- B. Substitutions: Under provisions of Division 1.

### **2.2 MATERIALS**

- A. Firestopping: One or more of the following:
  - 1. Silicone elastomer compound: Single or multiple component, low modulus, moisture curing silicone sealant.
  - 2. Ceramic sealant: Single component, moisture curing ceramic sealant.
  - 3. Intumescent sealant: Single component, water based intumescent sealant.
  - 4. Acrylic sealant: Single component acrylic sealant, suitable for painting.
  - 5. Putty: Single component ceramic fiber base putty or intumescent elastomer putty that expands on exposure to surface heat gain.
  - 6. Mortar: Hydraulic cementitious mortar.
  - 7. Pillows or blocks: Formed intumescent or mineral fiber pillows or blocks.
  - 8. Intumescent strips: Solvent free intumescent wrap strips.
  - 9. Mechanical devices: Incombustible fillers or silicone elastomer covered with sheet stainless steel jacket, joined with collars, penetration sealed with flanged stops.
  - 10. Cast-in-place devices: Containing intumescent material and smoke/water seals.

### **2.3 ACCESSORIES**

- A. Forming and Damming Materials: As recommended by firestopping manufacturer for intended use.
- B. Permanent: Mineral fiber board, mineral fiber matting, or mineral fiber putty.
- C. Temporary: Plywood, particle board, or other.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Prepare openings to receive firestopping as directed by manufacturer:
- B. Remove incidental and loose materials from penetration opening.
- C. Remove free liquids and oil from involved surfaces and penetration components.
- D. Install damming materials to accommodate and ensure proper thickness and fire rating requirements and provide containment during installation.

- E. Remove combustible materials and materials not intended for final penetration seal system.

### 3.2 INSTALLATION

- A. Install firestopping at perimeter of and penetrations through fire rated assemblies.
- B. Apply materials in accordance with manufacturer's instructions.
- C. Apply firestopping material in sufficient thickness to achieve required ratings.
- D. Compress fibered material to achieve a density of 40 percent of its uncompressed density.
- E. Place foamed material in layers to ensure homogenous density, filling cavities and spaces. Place sealant to completely seal junctions with adjacent dissimilar materials.
- F. Place intumescent coating in sufficient coats to achieve rating required.
- G. Remove dam material after firestopping material has cured.
- H. Finish exposed surfaces to smooth, flush appearance.

**END OF SECTION**

## SECTION 07920

### JOINT SEALERS AND LEAD WEATHERCAPS

#### GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Joint backup materials.
2. Sealers.
3. Lead weathercap at sloping and connection joints at stone copings, including sealant and joint back-up.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 04905 – Masonry Restoration for sealing joints between masonry and different materials.
3. Section 07620 – Sheet Metal Flashing and Trim for sealing reglets, sealing penetrations through copings.
4. Section 07840 - Firestopping for fire-resistant building joint-sealant systems.
5. Section 08110 – Steel Doors and Frames for sealing perimeter joints.
6. Section 08520 – Wood Window Restoration for perimeter sealant at windows.
7. Section 08800 – Glazing for glazing sealants.
8. Section 09215 – Veneer Plaster for sealing concealed perimeter joints of veneer plaster partitions to reduce sound transmission.
9. Section 09250 – Gypsum Board Assemblies for sealing concealed perimeter joints of gypsum board partitions to reduce sound transmission.
10. Section 09300 – Tile for sealing tile joints.
11. Division 25 – Mechanical and Plumbing, refer to Drawing Sheets MP001 & MP001 for mechanical and plumbing specifications.

##### 1.2 REFERENCES

A. ASTM International (ASTM):

1. C 790 - Use of Latex Sealing Compounds.
2. C 804 - Use of Solvent-Release Type Sealants.
3. C 834 - Latex Sealing Compounds.
4. C 920 - Elastomeric Joint Sealants.
5. C 1330 - Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

##### 1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's technical information, including Material Safety Data Sheets (MSDS), and handling/installation/curing instructions, where applicable, for each sealant system and component proposed for use, including sealers, primers, backup materials, bond breakers, and lead weathercaps.

- B. Samples:
  - 1. Sealer: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
  - 2. Sealant bond breaker and joint backing, one of each type, min. 6-inch length.
  - 3. Lead weathercap, one of each profile and size proposed for use, min. 6-inch length.
- C. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.
- D. Compatibility and Adhesion Test Reports: From sealant manufacturer indicating the following:
  - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
  - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Mock-ups: Prior to the start of the sealant work but following the cleaning work, perform mock-up(s) using the proposed sealant for each combination of substrates to be sealed. In each, demonstrate all aspects of old sealant removal, joint preparation, installation of back-up materials, and installation of sealant and lead weathercap, where applicable.
  - 1. Retain approved mock-ups in place to establish standards and guidelines for acceptable installation of sealant work.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multi-component materials.
- B. Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high, or low temperatures, contaminants, or other causes.

#### 1.7 PROJECT CONDITIONS

- A. Do not apply material if it is raining or snowing or if such conditions appear to be imminent.
- B. Do not apply sealers at temperatures below 40 degrees F and rising unless approved by sealer manufacturer.
- C. Do not apply work of this Section on surfaces which are wet, damp, or have frost.

#### 1.8 WARRANTY

- A. Provide written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.



1. Warranty Period: Two years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

#### **A. Acceptable Manufacturers:**

1. Degussa Building Systems. ([www.degussabuildingsystems.com](http://www.degussabuildingsystems.com))
2. Dow Corning Corp. ([www.dowcorning.com](http://www.dowcorning.com))
3. GE Silicones. ([www.gesilicones.com](http://www.gesilicones.com))
4. Pecora Corp. ([www.pecora.com](http://www.pecora.com))
5. Sika Corp. ([www.sikausa.com](http://www.sikausa.com))
6. Tremco, Inc. ([www.tremcosealants.com](http://www.tremcosealants.com))

#### **B. Substitutions: Under provisions of Division 1.**

### **2.2 MATERIALS**

#### **A. Joint Sealer Type 1:**

1. ASTM C 920, Type M, Grade P, multi component polyurethane, self leveling.
2. Movement capability: Plus or minus 25 percent.
3. Color: To be selected from manufacturer's full color range.

#### **B. Joint Sealer Type 2:**

1. ASTM C 920, Type M, Grade NS, multi component polyurethane.
2. Shore A hardness: Between 45 and 50.
3. Movement capability: Plus or minus 25 percent.
4. Color: To be selected from manufacturer's full color range.

#### **C. Joint Sealer Type 3:**

1. ASTM C 920, Type M, Grade NS, multi component polyurethane, non sag.
2. Movement capability: Plus or minus 50 percent.
3. Colors: To be selected from manufacturer's full color range.

#### **D. Joint Sealer Type 4:**

1. ASTM C 834, single component acrylic latex, non sag.
2. Movement capability: Plus or minus 7-1/2 percent.
3. Color: To be selected from manufacturer's full color range.

#### **E. Joint Sealer Type 5:**

1. ASTM C 920, Type S, Grade NS, single component silicone, non sag, mildew resistant.
2. Movement capability: Plus or minus 25 percent.
3. Colors: To be selected from manufacturer's full color range.

#### **F. Joint Sealer Type 6:**

1. ASTM C834, single component acrylic latex, non sag, non-hardening, recommended by manufacturer for acoustical applications.
2. Movement capability: Plus or minus 7-1/2 percent.
3. Color: White.

## 2.3 LEAD WEATHERCAPS

- A. Weathercap Joint Protective System, as manufactured by Weathercap, Inc., Slidell, LA. Use Type A and Type B in sizes as appropriate for installation.

## 2.4 ACCESSORIES

- A. General: Provide sealant backings of material and type that are non-staining; 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:
  - 1. ASTM C 1330, closed cell polyethylene foam, preformed round joint filler, non absorbing, non staining, resilient, compatible with sealer and primer, recommended by sealer manufacturer for each sealer type.
  - 2. Size: Minimum 1.25 times joint width.
- 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 where such adhesion would result in sealant failure. 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 joint-sealant-substrate tests and field tests.
- E. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent non-porous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- F. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## 2.5 MIXES

- A. Mix multiple component sealers in accordance with manufacturer's instructions.
  - 1. Mix with mechanical mixer; prevent air entrainment and overheating.
  - 2. Continue mixing until color is uniform.

# PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Remove loose and foreign matter that could impair adhesion. If surface has been subject to chemical contamination, contact sealer manufacturer for recommendation.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Protect adjacent surfaces with masking tape or protective coverings.
- D. Sealer Dimensions:
  - 1. Minimum joint size: 1/4 x 1/4 inch.
  - 2. Joints 1/4 to 1/2 inch wide: Depth equal to width.

3. Joints over 1/2 inch wide: Depth equal to one half of width.

### 3.2 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Perform installation in accordance with ASTM C 804 for solvent release and ASTM C 790 for latex base sealers.
- C. Install joint backing to maintain required sealer dimensions. Compress backing approximately 25 percent without puncturing skin. Do not twist or stretch.
- D. Use bond breaker tape where joint backing is not installed.
- E. Employ only proven installation techniques that ensure sealants are deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces equally on opposite sides.
- F. Tool immediately after application to ensure firm, full contact with the inner surfaces of joint. Finish bead shall be smooth, continuous, and slightly concave, and shall not protrude from joints.
- G. Apply sealer within recommended temperature range. Consult manufacturer when sealer cannot be applied within these temperature ranges.

### 3.3 WEATHERCAP INSTALLATION

- A. Joint preparation: Rake back and cut out joints, using approved method, to a depth that accommodates the anchor shaft length plus backer rod (compressed) plus 1/4". Raked joint and adjacent terra cotta shall be clean, dry, and free of mortar, dust, and sealant.
- B. Weathercap installation:
  1. Mark off width of selected weathercap on stone, and apply masking tape laterally along the markings. Size of weathercap shall be joint width plus 1/4".
  2. Notch, pre-fit, and contour weathercap in terra cotta. Neatly miter, cop, and butt intersection joints to produce close fit. Remove to fill joint with sealant.
  3. Seat specified backer rod to proper depth, 1/4" below anticipated base of weathercap anchor shaft. Fill joint solidly with sealant to an excess of 1/8" above the terra cotta surface. Seat pre-contoured weathercap and press down to a firm bed so that the bonding grooves on the underside of the weathercap are solidly filled and no voids exist between weathercaps and masonry.
  4. Strip off excess sealant; when set, remove masking tape.

### 3.4 CLEANING

- A. Remove masking tape and protective coverings after sealer has cured.
- B. Spillage: Except as specified for weathercap installation, do not allow sealant to overflow confines of joint, or onto adjoining work, or to migrate into voids of exposed finishes. Clean adjoining surfaces completely and safely of all excess sealant, without damaging the surface.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from the original work.

### 3.6 SEALER SCHEDULE

| JOINT LOCATION OR TYPE  | SEALER TYPE |
|---|-------------|
| Exterior Joints:  |             |
| Horizontal joints subject to pedestrian or vehicular traffic: |             |
| Slopes less than ¼ inch per foot                              | 1           |
| Slopes of ¼ inch per foot or more                             | 2           |
| Vertical joints and horizontal non-traffic bearing joints     | 3           |
|   |             |
| Interior Joints:  |             |
| Horizontal joints subject to pedestrian traffic               | 6           |
| Joints in toilet rooms and around countertops                 | 5           |
| Joints subject to thermal movement                            | 3           |
| Joints in acoustical assemblies                               | 6           |
| Other joints  | 4           |

**END OF SECTION**

## SECTION 08110

### STEEL DOORS AND FRAMES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Interior non-rated steel door assembly to Janitor's Closet [Alternate No. 2].
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 06100 – Rough Carpentry.
  - 3. Section 08710 - Door Hardware.
  - 4. Section 09215 – Veneer Plaster.
  - 5. Section 09250 – Gypsum Board Assemblies.
  - 6. Section 09910 – Painting and Finishing for field painting.

##### 1.2 REFERENCES

- A. ASTM International (ASTM) A 366 - Steel Sheet, Carbon, Cold-Rolled, Commercial Quality.
- B. Door Hardware Institute (DHI) - Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
- C. National Fire Protection Association (NFPA) 80 - Standard for Fire Doors and Windows.
- D. Steel Door Institute (SDI) 100 - Recommended Specifications - Standard Steel Doors and Frames.
- E. Underwriters Laboratories (UL) 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.

##### 1.3 SUBMITTALS

- A. Product Data: Show elevations, dimensions, gages of metal, louver, hardware reinforcing gages and locations, and anchor types.
- B. Shop Drawings: Indicate locations, elevations, dimensions, model designations, fire ratings, and anchoring details.
- C. Door Schedule: Use same reference designations indicated on drawings in preparing schedule for doors and frames.

##### 1.4 QUALITY ASSURANCE

- A. Doors: SDI 100, Grade II - Heavy Duty, Model 1 - Full Flush.
- B. Frames: SDI 100, Grade II - Heavy Duty.
- C. Fire Door and Frame Construction: Conform to UL 10C.

##### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Ship door frames with removable angle spreader; do not remove until frame is installed.

- B. Store doors upright in protected, dry area, off ground or floor, with at least 1/4 inch space between individual units.
- C. Do not cover with non vented coverings that create excessive humidity.
- D. Remove wet coverings immediately.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable Manufacturers:
  - 1. Ceco Door Products. ([www.cecodoor.com](http://www.cecodoor.com))
  - 2. Curries Company. ([www.curries.com](http://www.curries.com))
- B. Substitutions: Under provisions of Division 1.

### **2.3 INTERIOR HOLLOW-METAL DOORS AND FRAMES**

- A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2, at locations indicated in the Door Schedule.
- A. Physical Performance: Level B according to SDI A250.4.
- B. Doors:
  - 1. Type: As indicated in the Door Schedule.
  - 2. Thickness: 1-3/4 inches
  - 3. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch.
  - 4. Edge Construction: Model 2, Seamless.
  - 5. Core: Polyurethane.
- C. Frames:
  - 1. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch.
  - 2. Construction: Full profile welded.
- D. Exposed Finish: Prime for field painting.

### **2.5 FRAME MATERIALS**

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.
- D. Frame Anchors: ASTM A879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
  - 1. For anchors build into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A1011/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 A153/A153M.
- F. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.

- G. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- H. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat.

## 2.6 DOOR MATERIALS

- A. Steel Sheet: ASTM A 366, cold rolled.
- B. Door Core: Foamed-in-place polyurethane.
- C. Primer: Zinc rich type.

## 2.7 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factor assembled before shipment.
- B. Hollow-Metal Doors:
  - 1. Exterior Doors: Provide weep-hole openings in bottoms or exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
  - 1. Provide countersunk, flat-or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
  - 2. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
  - 3. Floor Anchors: Weld anchors to bottoms of jamb with at least four spot welds per anchor.
  - 4. Jamb Anchors: Provide number and spacing of anchors as follows:
    - a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches O.C., to match coursing, and as follows:
      - (1) Two anchors per jamb up to 60 inches high.
      - (2) Three anchors per jamb from 60 to 90 inches high.
      - (3) Four anchors per jamb from 90 to 120 inches high.
      - (4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
    - b. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches O.C.
- D. Hardware Preparation: Factory prepare hollow-metal work to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
  - 1. Reinforce doors and frames to receive nontemplated, mortise, and surface-mounted door hardware.
  - 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.

## 2.8 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
  - 1. Shop Primer: SDI A250.10.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set.
    - a. At fire-rated openings, install frames according to NFPA 80.
    - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    - c. Install frames with removable stops located on secure side of opening.
    - d. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    - e. Check plumb, square, and twist of frames. Shim as necessary to comply with installation tolerances.
    - f. Field apply bituminous coatings to backs of frames that will be filled with grout containing anti-freezing agents.
  2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
    - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
  3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
  4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
  5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
  6. In-Place Concrete or Masonry Constructions: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
  7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
  8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
    - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
    - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
    - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
    - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Steel Doors:
    - a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
    - b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
    - c. At Bottom of Door: 5/8 inch plus or minus 1/32 inch.
    - d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
  2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.



### 3.2 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow-metal work immediately after installation.
- C. Prime-Coat Touch-up: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touch-up compatible air-drying, rust-inhibitive primer.
- D. Metallic-Coated Surface Touch-up: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- E. Touch-up Painting: Cleaning and touch-up painting of abraded areas of paint are specified in painting Section.

**END OF SECTION**

## **SECTION 08215**

### **STILE AND RAIL WOOD DOORS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

**A. Section Includes:**

1. Exterior non-rated stile and rail wood doors.

**B. Related Sections:**

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 06100 – Rough Carpentry for furring, blocking, and other carpentry work not exposed to view.
3. Section 07920 – Joint Sealers and Lead Weathercaps for perimeter sealants.
4. Section 08295 – Wood Door Restoration for restored door assemblies.
5. Section 08710 - Door Hardware.
6. Section 08800 - Glazing.
7. Section 09910 - Painting and Finishing.

##### **1.2 REFERENCES**

- A.** AWI – Architectural Woodwork Institute.
- B.** WDMA – Window and Door Manufacturers Association: I.S. 6A-01 Industry Standard for Architectural Stile and Rail Doors.
- C.** NFPA-80 Standards for Fire Doors.
- D.** Hardwood Plywood and Veneer Association.

##### **1.3 SUBMITTALS**

- A.** Product Data: For each type of door. Include details of construction and glazing.
- B.** Shop Drawings for each door indicating location, size, door and frame elevations, construction details (Indicate dimensions, material and profiles), location of hardware cutouts, requirements for veneer matching and factory finishing.
1. Field Measurements: Obtain field measurements for existing masonry openings, where applicable, and indicate on shop drawings.
- C.** Samples:
1. 12 x 12 inch corner section of each type of door showing edges, faces, joinery, and material qualities of typical stile, rail, molding and panel with scheduled finish.

##### **1.4 QUALITY ASSURANCE**

**A.** Quality Standard: Comply with the following standard:

1. AWI Quality Standard: "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute for grade of door, construction, finish, and other requirements.

- B. Single-Source Responsibility: Obtain doors from one source and by a single manufacturer.
- C. Manufacturer Qualifications: Successful completion of minimum of 3 previous projects of similar scope and complexity within past 5 years.
- D. Fire-Rated Wood Doors: Provide wood doors which are identical in materials and construction to units tested in door assemblies in accordance with NFPA 252 and which are labeled and listed for ratings indicated by ITS – Warnock Hersey or UL.
- E. Temperature Rise Rating: At stairwell enclosures, provide doors which have Temperature Rise Rating of 250 degrees F maximum in 30 minutes of fire exposure.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Package doors in heavy plastic with identifying marks; slit plastic wrap on site to permit ventilation, but do not remove from plastic until ready to install.
- B. Store door upright with at least 1/4 inch between doors, in protected, dry area.

#### 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until building is enclosed, wet-work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURED UNITS

- A. Acceptable Manufacturers for Rated Doors:
  - 1. Buell Door Company.
  - 2. Eggers Industries.
  - 3. The Maiman Company.
  - 4. Restorhaus Inc., Lubbock, TX.
- B. Stile and Rail Wood Doors:
  - 1. Graded in accordance with AWI Section 1400 requirements for quality grade specified, kiln-dried to average moisture content of 8 percent.
  - 2. Exposed Members Transparent Finish
    - a. Quality: Premium Grade.
    - b. Species: Quarter Sawn White Oak stile, rail, flat and raised panels, and panel molding.
    - c. Finishing: Refer to Section 09910.
  - 3. Adhesives:
    - a. Interior doors: Type II - Water Resistant.
    - b. Exterior doors: Type I - Waterproof.
    - c. Face to core adhesives shall be Type I as classified by WDMA TM-6 "Adhesive Bond Test Method."

## 2.2 WOOD TREATMENT

- A. Exterior Doors: Factory treat exterior doors after fabrication with water repellent to comply with NWWDA I.S.4.

## 2.3 FABRICATION

- A. Comply with AWI Section 1400.
  - 1. Prefitting: Prefit doors to frames at factory with following clearances:
  - 2. Jambs and head: 1/8 inch maximum between door and frame.
  - 3. Sills: 1/8 inch maximum between door and top of finish floor.
  - 4. Meeting stiles: 1/8 inch maximum between doors.
  - 5. Lock edge: Bevel 1/8 inch in 2 inches.
  - 6. Premachining: Premachine doors at factory in accordance with AWI Section 1300, to receive hardware specified in Section 08710.

## 2.4 SHOP PRIMING

- A. Doors for Opaque Finish: Shop prime all surfaces of doors (including top and bottom) for paint finish with one coat of wood primer specified in Division 9 Section "Painting and Finishing".

## 2.5 HARDWARE

- A. Refer to Section 08710 – Door Hardware.

# PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Condition doors to average humidity that will be encountered after installation.

## 3.2 EXAMINATION

- A. Examine installed door frames prior to hanging doors
  - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
  - 2. Reject doors with defect.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

## 3.3 INSTALLATION

- A. Install doors plumb and level.
- B. If field cutting for height is necessary, cut bottom edge only, 3/4 inch maximum.
- C. Apply sealer to field cut surfaces.
- D. Install door hardware in accordance with Section 08710.
- E. Install glass as specified in Section 08800.

- F. Warp: Maximum 1/4 inch in any 3'-0" x 7'-0" portion of door, measured with taut string or straight edge on concave face of door.
- G. Field-Finished Doors: Refer to Section 09910 – Painting and Finishing.

#### 3.4 ADJUSTING AND PROTECTION

- A. Operation: Re-hang or replace doors that do not swing or operate freely.
- B. Finished Doors: Re-finish or replace doors damaged during installation.
- C. Protect doors as recommended by door manufacturer to ensure that wood doors will be without damage or deterioration at the time of Substantial Completion.

**END OF SECTION**

## **SECTION 08295**

### **WOOD DOOR RESTORATION**

#### **PART 1- GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Restore exterior and interior door assemblies including frame and transom, where indicated on the Door Schedule.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 01230 – Alternates for painting exterior wood doors.
  - 3. Section 06100 – Rough Carpentry for furring, blocking, and other carpentry work not exposed to view.
  - 4. Section 08710 - Finish Hardware.
  - 5. Section 08800 - Glazing.
  - 6. Section 09910 – Painting and Finishing.

##### **1.2 SUBMITTALS**

- A. Qualification Statement: Restorer qualifications, including previous projects.
- B. Product Data:
  - 1. Manufacturer's technical information, including Material Safety Data Sheets (MSDS) and installation instructions for each material proposed for use.
- C. Wood Identification: Prior to any patching, repair, or wood replacement, Contractor shall confirm species of wood used in original construction of doors.

##### **1.3 QUALITY ASSURANCE**

- A. Restorer Qualifications:
  - 1. Minimum 3 years documented experience in work of this Section.
  - 2. Successful completion of at least 3 projects of similar scope and complexity within past 5 years.
- B. Mockups:
  - 1. Size: One typical door scheduled for opaque finish and one scheduled for transparent finish, including frame and transom.
  - 2. Illustrate complete restoration process including patching, wood dutchman, hardware, re-glazing, and refinishing.
  - 3. Locate where directed.

#### **PART 2 – PRODUCTS**

##### **2.1 WOOD FOR REPAIR**

- A. Woodwork: Provide wood having a moisture content from time of manufacture until time of installation not greater than values required by the applicable grading rules of the respective grading and inspecting agency for the species and products indicated.

1. Lumber Species: Wood used for repairs and replacement shall match species and cut of wood being replaced unless otherwise indicated or approved by Architect.
  - a. Species: Quarter Sawn White Oak.

## 2.2 PATCHING COMPOUND FOR TRANSPARENT FINISH

- A. Description: Solvent-based, stainable wood filler for filling nail holes, dents, chips, and cracks in wood without shrinkage, cracking, or crumbling.
- B. Product: Famowood Wood Filler, solvent-base, as manufactured by Eclectic Products Inc., Pineville, LA or approved equal.

## 2.3 WOOD CONSOLIDANT / FILLER FOR OPAQUE FINISH

- A. Description: Adhesive putty and wood replacement system; high-strength non-shrink adhesive paste to fill, repair and replace wood.
- B. Product: The West System as manufactured by Gougeon Brothers, Bay City, MI (517) 684-7286.

## 2.4 MISCELLANEOUS

- A. Hardware: Specified in Section 08710.
- B. Glass and Glazing Accessories: Specified in Section 08800.

# PART 3 - EXECUTION

## 3.1 PREPARATION

- A. Tag and label each door component removed from site and identify with door number indicated on the Drawings.
- B. Carefully remove and transport historic door assemblies scheduled for repair and restoration. Protect against damage.

## 3.2 GENERAL REPAIR

- A. Remove hardware for salvage and re-use, refer to Hardware Schedule.
- B. Door Assemblies Scheduled for Transparent Finish: Remove paint coating(s) to bare wood.
- C. Door Assemblies Scheduled for Opaque Finish: Specified in Section 09910
- D. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually. Use patching compound for repair of minor holes, gouges, cracks, checks, and dings.
- E. Replace damaged wood where not possible to repair with putty. Match existing profile, and joinery of piece being replaced to appear seamless when re-finished.
- F. Adjust joinery for uniform appearance. Re-glue loose or misaligned wood joints.

## 3.3 PATCHING WOOD – TRANSPARENT FINISH

- A. Mix and apply patching compound in accordance with manufacturer's instructions.
- B. After filler has cured, sand to smooth surface, flush with adjacent surfaces.

### 3.4 PATCHING WOOD – OPAQUE FINISH

- A. Follow manufacturer's recommendations for methods and procedures.
  - 1. For shallow or cosmetic repairs less than 1/2"-inch in depth, repair with epoxy filler. Use a chisel to remove damaged or incompatible wood and leave a clean cavity with solid wood exposed on all sides. Wet out the repair area with epoxy, then add filler to the remaining mixture and trowel thickened epoxy into the cavity.
  - 2. For cavities deeper than 1/2"-inch, repair with wood dutchman.

### 3.5 DUTCHMAN REPAIRS

- A. Where wood is deteriorated, split, cracked, missing or non-matching, remove defective portions and enough sound wood so that all exposed surfaces are rectangular.
- B. Cut dutchman to fit so that original profile will be restored when it is inserted. Grain of dutchman shall run in same direction as grain of piece being restored.
- C. Glue dutchman with epoxy and clamp until set.
- D. Sandpaper repair with grain of wood to match original profile.

### 3.6 REPLACEMENT OF GLASS

- A. Replace damaged and missing glass under provisions of Section 08800.
- B. Replace glazing putty and finish to match original.

### 3.7 REFINISHING WOOD

- A. Sanding: No sanding marks shall appear on finish door assemblies. No allowance will be made for damage to original contours, profiles and edges resulting from the use of mechanical belt sanders. The use of any form of mechanical rotary sanding devices is prohibited.
- B. Refinish wood as specified in Section 09910.
- C. Remove doors from frames to permit access to edges. Finish edges same as faces.

### 3.8 ADJUSTMENT AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean woodwork on exposed and semi-exposed surfaces. Touch up field-applied finishes to restore damaged or soiled areas.

**END OF SECTION**



## **SECTION 08310**

### **ACCESS DOORS AND FRAMES**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Fire rated and non-fire rated wall and ceiling access panels as required by other Sections for access to concealed equipment.
  - 2. Related hardware and attachments.
- B. Related Sections:
  - 1. Section 06100 – Rough Carpentry for furring, blocking, and other carpentry work not exposed to view.
  - 2. Section 09215 – Veneer Plaster for finishing veneer plaster.
  - 3. Section 09250 – Gypsum Board Assemblies for wall and ceiling construction.
  - 4. Section 09281 – Gypsum Plaster Restoration for wall and ceiling construction.
  - 5. Section 09910 – Painting and Finishing for final finishing.
  - 6. Section 09300 – Tile.
  - 7. Division 26 – Mechanical and Plumbing, refer to Drawing Sheets MP001 & MP001 for mechanical and plumbing specifications
  - 8. Division 26 – Electrical.

##### **1.2 SUBMITTALS**

- A. Product Data: For each type of door and frame indicated. Include construction details relative to materials, individual components and profiles, finishes, and fire ratings (if required) for access doors and frames.
- B. Shop Drawings: Show fabrication and installation details of customized doors and frames. Include plans, elevations, sections, details, and attachment to other Work.
- C. Schedule: Provide complete door and frame schedule, including types, general locations, sizes, construction details, latching or locating provisions, and other data pertinent to installation.
- D. Coordination Drawings: Reflected ceiling plans drawn to scale and coordinating penetrations and ceiling-mounted items with concealed framing, suspension systems, piping, ductwork, and other construction. Show the following:
  - 1. Method of attaching door frames to surrounding construction.
  - 2. Ceiling-mounted items including access doors and frames, lighting fixtures, diffusers, grilles, speakers, sprinkler, and special trim.

##### **1.3 QUALITY ASSURANCE**

- A. Source Limitations: Obtain doors and frames through one source from a single manufacturer.
- B. Fire-Rated Access Doors and Frames: Units complying with NFPA 80 that are identical to access door and frame assemblies tested for fire-test-response characteristics per the following test method and that are labeled and listed by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction:
  - 1. NFPA 252 or UL 10B for vertical access doors.

2. ASTM E 119 or UL 263 for horizontal access doors and frames.

C. Size Variations: Obtain Architect's acceptance of manufacturer's standard-size units, which may vary slightly from sizes indicated.

#### 1.4 COORDINATION

A. Verification: Determine specific locations and sizes for required access doors and frames from trades, including mechanical and electrical, requiring access to concealed equipment and indicate on submittal schedule.

#### 1.5 DELIVERY, STORAGE AND HANDLING

A. Comply with Section 01600.

B. Deliver materials to Project site ready to use.

C. Exercise proper care in handling of Work so as not to damage finish surfaces. Protect Work from damage following installation.

D. Store materials under cover in a dry and clean location off the ground. Remove materials that are damaged or otherwise not suitable for installation from job site and replace with acceptable materials at no additional cost to Owner.

#### 1.6 WARRANTY

A. Warrant access doors and frames to be free from manufacturing defects in materials and workmanship for the following warranty periods indicated:

1. Wall and ceiling access panel: One (1) year from the date of Substantial Completion.

### **PART 2 - PRODUCTS**

#### 2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products from one of the following manufacturers:

1. Cendrex, Inc.
2. Karp Associates, Inc.
3. Milcor Limited Partnership.
4. Nystrom Building Products, Inc.

#### 2.2 MATERIALS

A. Cold-Rolled Steel Sheets: ASTM A 366/A 366M, Commercial Steel (CS), or ASTM A 620/A 620M, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness; with minimum thickness indicated representing specified nominal thickness according to ASTM A 568/A 568M.

B. Rolled-steel floor plate: ASTM A 786/A, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.

C. Drywall Beads: Edge trim formed from 0.0299-inch (0.76-mm) zinc-coated steel sheet formed to receive joint compound and in size to suit thickness of gypsum board and gypsum base for veneer plaster.

- D. Plaster Bead: Casing bead formed from 0.0299-inch (0.76-mm) zinc-coated steel sheet with flange formed out of expanded metal lath and in size to suit thickness of plaster.

## 2.3 ACCESS DOORS AND FRAMES

- A. Flush, insulated, fire-rated access doors and trimless frames:
  - 1. Locations: Veneer-plaster or wall surfaces.
  - 2. Fire-resistance rating: One and one-half hours.
  - 3. Temperature rise rating: 250 deg F (139 deg C) at the end of 30 minutes.
  - 4. Door: Flush panel with a core of mineral-fiber insulation enclosed in sheet metal with a minimum thickness of 0.036-inch (0.9 mm).
  - 5. Frame: Minimum 0.060-inch (1.5-mm) thick sheet metal with drywall or plaster bead, as required by wall type.
  - 6. Hinges: Concealed pin type.
  - 7. Automatic closer: Spring type.
  - 8. Latch: Key operated latch bolt.
  - 9. Finish: Paintable powder coat.
  - 10. Product: S – Series as manufactured by Nystrom Building Products, Inc.
- B. Flush access doors and trimless frames:
  - 1. Locations: Veneer-plaster or plaster wall or ceiling surfaces.
  - 2. Door: Minimum 0.060-inch (1.5-mm) thick sheet metal, set flush with surrounding finish surfaces.
  - 3. Frame: Minimum 0.060-inch (1.5-mm) thick sheet metal with drywall or plaster bead, as required by wall type.
  - 4. Hinges: Hinges: Spring-loaded concealed pin type.
  - 5. Latch: Key operated cam latch.
  - 6. Finish: Paintable powder coat.
  - 7. Product: N – Series as manufactured by Nystrom Building Products, Inc.

## 2.4 FABRICATION

- A. General: Provide access door assemblies manufactured as integral units ready for installation.
- B. Metal surfaces: For metal surfaces exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- C. For trimless frames with drywall bead for installation in gypsum veneer plaster, provide edge trim for gypsum base securely attached to perimeter of frames.
- D. For trimless frames with plaster bead for full-bed plaster applications, provide zinc-coated expanded metal lath and exposed casing bead welded to perimeter of frames.
- E. Provide mounting holes in frames to attach frames to metal or wood framing in plaster and drywall construction and to attach masonry anchors in masonry construction.
- F. Latching mechanism: Furnish number required to hold doors in flush, smooth plane when closed.
- G. Extruded aluminum: After fabrication, apply manufacturer's standard protective coating on aluminum that will come in contact with concrete.

## 2.5 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

## **PART 3 - EXECUTION**

### 3.1 PREPARATION

- A. Advise installers of other work about specific requirements relating to access door and floor door installation, including sizes of openings to receive access door and frame, as well as locations of supports, inserts, and anchoring devices.

### 3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for installing access doors and frames and floor doors and frames.
- B. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finish surfaces.
- C. Install access doors with trimless frames and floor doors flush with adjacent finish surfaces to receive finish material.

### 3.3 ADJUSTING AND CLEANING

- A. Adjust doors and hardware after installation for proper operation.
- B. Remove and replace doors and frames that are warped, bowed, or otherwise damaged.

**END OF SECTION**

## **SECTION 08520**

### **WOOD WINDOW RESTORATION**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

**A. Section Includes:**

1. Restore wood window assemblies at the basement level, where indicated on the Window Schedule, work generally includes:
  - a. Replacement of sashes, glass, parting strip, and exterior mullion trim to match existing.
  - b. Restoration of frame, blind stop, sill, brick mold, and interior stops.
  - c. Reinforcing bottom rail of upper sashes for thicker glass.
2. Replacement of perimeter sealants.
3. Replacement of sash chains 100%, replacement of missing or damaged hardware beyond repair (Reuse existing where in restorable condition), replacement of weatherstripping, and increasing weights as required for thicker glass/heavier sashes.
4. Fixing sashes in place, including metal angles to support upper sash as indicated on the Drawings.

**B. Related Sections:**

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 06100 – Rough Carpentry.
3. Section 07920 – Joint Sealants.
4. Section 08800 – Glazing.
5. Section 09910 – Painting and Finishing for field painting.

**C. Related Documents:**

1. Lead Paint Removal Work Plan contained in the Appendix of the Project Manual.

##### **1.2 REFERENCES**

**A. AWI – Architectural Woodwork Institute.**

**B. WDMA – Window and Door Manufacturers Association: I.S. 6A-01 Industry Standard for Architectural Stile and Rail Doors.**

##### **1.3 SUBMITTALS**

**A. Shop drawings:**

1. Provide plans and elevations indicate materials, surface grain direction, profiles, assembly methods, joint details, fastening methods, accessories, hardware, and finishes.
  - a. Field Measurements: Obtain field measurements of each type of original window frame unit and sash to be replicated and indicate on shop drawings.
  - b. Where windows or sashes are scheduled to be replicated from existing similar assemblies, match exactly the dimensions, profiles, construction details, materials, and finish of original windows unless noted otherwise.

## 1.4 QUALITY REQUIREMENTS

- A. Quality Standard: Comply with the following standard:
  - 1. AWI Quality Standard: "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute, Section 1000 for Premium Grade.
- B. Fabricator/Installer Qualifications:
  - 1. Minimum 5 years documented experience in work of this Section.
  - 2. Successful completion of at least 3 projects of similar scope and complexity within past 5 years.
- B. Mockups:
  - 1. Provide mockup of one completely restored window with new sashes.
  - 2. Show frame, sash, trim, joint sealants, paint, and hardware.
  - 3. Locate where directed.
  - 4. Approved mockup may remain as part of the Work.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Lumber for opaque finish:
  - 1. Species: Douglas Fir
  - 2. Cut: Vertical Grain.
  - 3. Maximum moisture content: 12 percent on 90 percent of pieces; 15 percent on remaining pieces.
- B. Lumber for transparent finish, interior trim elements:
  - 1. Species: White Oak.
  - 2. Cut: Rift/quarter sawn.
  - 3. Maximum moisture content: 12 percent on 90 percent of pieces; 15 percent on remaining pieces.
- C. Hardware:
  - 1. Existing original sash locks in good condition are to remain and be refinished to match original condition. Hardware that is not original is to be bagged and labeled by window number and given to the Owner. Where sash locks are missing, provide new locks to match existing.
    - a. Install restored and replica sash locks. Install original hardware in their existing
  - 2. Sash Lock: Model LKF-14, solid brass, oil-rubbed bronze finish, as manufactured by Phelps Company, Brattleboro, VT, (802) 257-4314.
  - 3. Sash Lift:
    - a. Model LF30 (1 per sash, narrow sashes), solid brass, oil-rubbed bronze finish, as manufactured by Phelps Company, Brattleboro, VT, (802) 257-4314.
    - b. Model LFD31 (2 per sash, wide sashes), solid brass, oil-rubbed bronze finish, as manufactured by Phelps Company, Brattleboro, VT, (802) 257-4314.
  - 4. Pulley (2 per window): Model SP250BBRE solid brass, oil-rubbed bronze finish, as manufactured by Phelps Company, (802) 257-4314.

5. Window Weights: Models CW01, CW03, CW05, 1-5 lbs, stackable cast iron weights, as needed to properly counterweight sash, as manufactured by Phelps Company, Brattleboro, VT, (802) 257-4314.
  6. Sash Chain: #45C-OB Centurion high strength alloy sash chain as manufactured by Phelps Company, Brattleboro, VT, (802) 257-4314.
  7. Removable Stop Fasteners: Model SBA62 Stop Bead Adjuster, as manufactured by Phelps Company, Brattleboro, VT, (802) 257-4314.
- A. Weatherstripping:
    1. Head: Series 6, item 1B, 12 gauge bronze, as manufactured by Zero International.
    2. Jamb: Series 6, item 4B, 9 gauge bronze, as manufactured by Zero International.
    3. Meeting Rail: Series 6, items 2B & 3B, (item 2, provide 10 gauge bronze; item 3 provide 9 gauge bronze), as manufactured by Zero International.
    4. Sill: #8054S-Bk, kerf neoprene seal, as manufactured by Zero International.
  - B. Perimeter Sealants: Specified in Section 07920.
  - C. Preservative Treatment: Bora-Care termite pretreatment, as manufactured by Nisus Corporation, or approved equal.
  - D. Glass and Glazing Accessories: Specified in Section 08800.
  - E. Paints and Coatings: Specified in Section 09910.
  - F. Consolidant: Low viscosity penetrating consolidant, 8 hour minimum cure time; LiquidWood by Abatron, Inc. Or approved substitute.
  - G. Epoxy Fill Patching Compound:
    1. Exterior surfaces: Epoxy based, multiple component; WoodEpoxy by Abatron, Inc. Or approved substitute.
    2. Interior surfaces: Minwax Wood Putty by Minwax Company or approved substitute, color matched to wood.

## 2.2 FABRICATION OF NEW COMPONENTS

- A. Comply with AWI Section 1000.
- B. Fabricate new windows and sashes with profiles to match existing.
- C. Fabricate mullions and sash members with mortised and tenoned joints. Fit to hairline joint, glue and nail. Stapling not permitted.
- D. Finger joints not permitted.
- E. Form glass stops of solid wood, sloped for water wash.
- F. Install hardware centered or symmetrically located.
- G. Weatherstrip operable sash, seal fixed sash.
- H. Form sills in one piece. Slope sills for water wash.
- I. Size units to allow for tolerances of rough openings and shim space around perimeter.

## **PART 3 – EXECUTION**

### **3.1 REPLACEMENT OF DETERIORATED AND MISSING WOOD**

- A. Replace deteriorated wood sash and trim members with new wood.
- B. Match new wood to profile and grain of existing wood.
- C. Fabricate frame and sash members with mortised and tenoned joints. Fit to hairline joint, glue and nail. Stapling not permitted.
- D. If sashes are removed, provide temporary plywood infill that provides weather tight protection over opening. Coordinate installation procedures with Construction Manager. Install with a method of attachment that does not damage existing materials to remain.

### **3.2 EPOXY PATCHING OF EXISTING WOOD**

- A. Mix and apply epoxy in accordance with manufacturer's instructions
- B. Apply epoxy putty to fill voids after consolidant has cured.
- C. Embed wood in center of large patches to reduce amount of filler.
- D. After filler has cured, sand, chisel or plane off to smooth surface, flush with adjacent surfaces.

### **3.3 CONSOLIDATION OF EXISTING WOOD**

- A. Remove damaged and deteriorated wood to sound material and apply consolidant.
- B. Apply consolidant in accordance with manufacturer's instruction
- C. Completely saturate damaged wood with consolidant; allow to cure 8 hours minimum.
- D. Apply to end grain where exposed. Where end grain is not exposed, drill 1/8 inch holes staggered and at angles to side grain to expose as much end grain as possible.
- E. Prevent leakage with wax or clay plugs. Clean leakage before it cures.
- F. Apply second coat if first coat does not completely saturate and harden wood.

### **3.4 FIXING OPERABLE SASH IN PLACE**

- A. Fix all sashes in place
- B. Fix upper sash of double hung window in place by securing sash with countersunk or concealed fasteners. Coordinate placement of fasteners with Construction Manager.
- C. Apply joint sealer to sash-to-frame joints at fixed window sashes.

### **3.5 REFINISHING WOOD**

- A. Refinish wood under provisions of Section 09910.
- B. Paint exposed exterior surfaces; stain exposed interior surfaces.



- C. Avoid damage to existing interior surfaces. Properly protect interior surfaces from damage.
- D. Replacement members and existing adjacent interior members affected by construction are to be refinished to match existing surfaces.

### 3.6 PREPARATION

- A. Prior to installation, condition windows to average humidity that will prevail after installation.

### 3.7 INSTALLATION OF NEW WINDOWS

- A. Install windows plumb and level.
- B. Maintain alignment with adjacent construction.
- C. Set units plumb, level, and square; shim as required.
- D. Secure windows to adjacent construction without distortion or stress.

**END OF SECTION**

## **SECTION 08710**

### **DOOR HARDWARE**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

**A. Section Includes:**

1. Commercial door hardware for exterior wood door.
2. Commercial door hardware for interior metal and wood doors [Alternate no. 2].
3. Hardware for other sections referencing this section.

**B. Related Sections:**

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 01230 – Alternates for rehabilitation of Men's Restroom at Basement Level.
3. Section 08110 – Steel Doors and Frames.
4. Section 08215 – Stile and Rail Wood Doors.
5. Section 08295 – Wood Door Restoration.

##### **1.2 REFERENCES**

**A. Builders Hardware Manufacturers Association (BHMA):**

1. A156.3 - Exit Devices.
2. A156.4 - Door Controls - Closers.

**B. National Fire Protection Association (NFPA):**

1. 80 - Standard for Fire Doors and Windows.
2. 105 - Installation of Smoke Control Door Assemblies.

**A. Underwriters Laboratories (UL) 305 - Safety Panic Hardware.**

##### **1.3 SUBMITTALS**

**A. Product Data:** Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.

**B. Samples for Initial Selection:** Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of door hardware indicated.

**C. Samples:**

1. Submit sample of each type of hardware item in finish specified to verify compatibility of operation and finish with hardware by different manufacturers and restored historic hardware.
2. Submit sample of each type of period hardware item in finish specified along with the historic item to be closely matched for comparison.
3. Submit sample of each type of restored hardware item. Samples shall demonstrate contractor's ability to clean, repair, and re-finish existing historic hardware.
4. Submitted samples that are accepted and remain undamaged through substantial completion may be incorporated into the work.

- D. Schedule:
1. Include complete hardware for each door opening.
  2. Indicate door location, size, hand, bevel, thickness, swing, and other attributes.
  3. Provide product data for each item.
  4. Prepare a schedule listing doors according to door and room numbers indicated on the Drawings.
  5. Keying Schedule: Prepared by or under supervision of supplier, detailing Owner's final keying instructions for locks.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
1. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- C. Qualification data for firms and persons providing reproduction hardware and reconditioning of historic hardware: Provide a minimum of 3 projects of similar scope and scale completed within the last 5 years.
- D. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
- E. Single Source Responsibility: Obtain each type of hardware (Lockset, latchset, hinges, closers, etc.) from a single manufacturer, unless otherwise indicated.
- F. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
1. Provide smoke gasketing at fire rated doors in accordance with NFPA 105.
- G. Conform to applicable accessibility code for locating hardware and for door opening force requirements.
- H. Keying Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings." Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
1. Function of building, flow of traffic, purpose of each area, and degree of security required.
  2. Preliminary key system schematic diagram.
  3. Requirements for key control system.

#### 1.5 PROJECT CONDITIONS

- A. The hardware schedule at the end of this Section is based on an inventory of hardware on the existing and salvaged doors and transoms. Contractor shall perform a comprehensive inventory of existing hardware for verification. Un-restorable original hardware shall be replaced with acceptable stock "period" hardware, unless otherwise noted.

- B. Reuse existing historic hardware to the maximum extent feasible by restoring or repairing unless otherwise noted. Replace hardware that cannot be restored to proper operation.

## 1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

## 1.7 DELIVERY, STORAGE AND HANDLING

- A. Pack each item of hardware separately, complete with fasteners, installation instructions, and templates.
- B. Mark each container with item number corresponding to number on hardware schedule.

## 1.8 WARRANTY

- A. Provide manufacturer's two year warranty for locksets and latchsets.
- B. Provide manufacturer's five year warranty for door closers.

## 1.9 MAINTENANCE

- A. Deliver to Owner upon Substantial Completion:
  - 1. Copy of approved hardware schedule.
  - 2. Keying schedule.
  - 3. Keys; tag and identify with mark corresponding to keying schedule.
  - 4. Maintenance tools and instructions: Furnish a complete set of specialized tools and maintenance instructions as necessary for Owner's continued adjustment and maintenance of door hardware.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURED UNITS

- A. Hinges:
  - 1. Period Butt Hinges:
    - a. Description: Full mortise, 5 knuckle solid brass ball tip hinges.
    - b. Size and profile: 5-inch by 5-inch and 4 ½ inches by 4 ½ inches with 8 flat head screws to match original size and configuration.
    - c. For exterior doors provide stainless steel pin body, pins to be non-removable.
    - d. Product:
      - (1) For interior doors 1 ¾" thick: CB191 4 ½" x 4 ½" Full Mortise Hinges as manufactured by Stanley Commercial Hardware or approved equal.
      - (2) For exterior doors 2 ¼" thick: FBB 199 5"x5" full mortise heavy weight ball bearing hinges as manufactured by Stanley Commercial Hardware or approved equal.
  - 2. Standards: Comply with the following:
    - a. Butts and Hinges: ANSI/BHMA A156.1.
- B. Locksets, Latchsets, Deadbolts, and Cylinders:
  - 1. Interior Period Lockset for Non-historic Doors in Non-original Openings:

- a. Schlage L Series mechanical mortise lock with rose and lever.
    - b. Functions as scheduled.
  - 2. Exterior Period Lockset for Reconstructed or Restored Doors in Original Openings:
    - a. Schlage L Series mechanical mortise lock, coordinate mortise body with existing historic trim scheduled to remain.
  - 3. Deadbolts:
    - a. Deadlock and strike: B-600 Series as manufactured by Schlage.
    - b. Function: Key outside x thumb turn inside unless otherwise indicated.
  - 4. Standards: Comply with the following:
    - a. Bored Locks and Latches: ANSI/BHMA A156.2, Grade 1, Series 4000.
    - b. Mortise Locks and Latches: ANSI/BHMA A156.13, Grade 1, Series 1000, stamped steel case with steel or brass parts.
    - c. Auxiliary Locks: ANSI/BHMA A156.5 Grade 1.
  - 5. Lock Trim: Comply with the following:
    - a. Lever: Solid cast brass.
    - b. Knob: Solid cast brass.
    - c. Escutcheon: Forged brass.
    - d. Dummy Trim: Match lock trim and escutcheons.
    - e. Lockset Designs: Provide the lockset design indicated or, if sets are provided by another manufacturer, provide designs that match those designated.
    - f. Bored Locks: Provide design indicated or, if provided by another manufacturer, provide designs that match those designated.
- C. Door Bolts
- 1. Flush Bolts (Head and foot bolts): Manual flush bolt for wood doors, 261: ¾" wide x 4" long x 1-1/8" deep by Ives.
  - 2. Standards:
    - a. Manual Flush Bolts: ANSI/BHMA, Grade 1, designed for mortising into door edge, minimum ¾-inch throw.
- D. Cylinders and Keying
- 1. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:
    - a. Number of pins:
      - (1) Exterior doors:
      - (2) Interior doors:
  - 2. Permanent Cores: Manufacturer's standard; finish to match lockset; complying with the following:
    - a. Interchangeable Cores: Core insert, removable by use of a special key, and usable with other manufacturer's cylinders.
  - 3. Standards:
    - a. Cylinders: ANSI/BHMA A156.5, Grade 1.
  - 4. Keying System: Unless otherwise indicated, provide a factory-registered keying system complying with the following requirements:
    - a. Grand Master Key System. Cylinders shall be master keyed.
  - 5. Keys: Provide nickel-silver keys complying with the following:
    - a. Stamping: Permanently inscribe each key with a visual key control number and include the following notation: "Do Not Duplicate"
    - b. Quantity: In addition to one extra blank key for each lock, provide the following:

- (1) Cylinder Change Keys: Two
- (2) Master Keys: Three
- (3) Grand Master Keys: Three

- E. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated.
1. Standards: Comply with the Followings:
    - a. Strikes for Bored Locks and Latches: ANSI/BHMA A156.2.
    - b. Strikes for Mortise Locks and Latches: BHMA A156.13.
    - c. Strikes for Auxiliary Deadlocks: ANSI/BHMA A156.5.
- F. Surface Mounted Closers
1. Description: 78B/F series closer, parallel arm, by Norton Door Controls.
  2. Construction: Cast aluminum body, rack and pinion operation with compression spring, fully hydraulic.
  3. Closing and latching speeds and back check controlled by independently adjustable concealed valves.
  4. Mounting: Surface mounted, non-handed with universal regular or parallel arm. Suitable for mounting on 1-3/4 inch minimum door top rail or transom bar without drop plate.
  5. Adjustable opening force and delayed closing in accordance with applicable accessibility code.
  6. Standards: ANSI/BHMA, Grade 1.
- G. Exit Devices
1. Description:
    - a. Single Door: XX-M Series Mortise Device with #812L trim with Dane Lever as manufactured by Falcon. Provide fire-rated where indicated.
  2. Standard: ANSI/BHMA A156.3, Grade 1.
  3. Certified Products: Provide exit devices listed in BHMA's "Directory of Certified Exit Devices."
  4. Panic Exit Devices: Listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for panic protection, based on testing according to UL 305.
  5. Outside Trim: Pull with cylinder; material and finish to match locksets, unless otherwise indicated.
- H. Door Stops and Holders:
1. Floor Stops: # FS444 & FS448 as manufactured by Ives.
  2. Door Holders: # FS4542-4 as manufactured by Ives.
  3. Silencers for Metal Door Frames: Neoprene or rubber, minimum diameter 1/2"; fabricated for drilled-in application to frame.
  4. Standards:
    - a. Stops and Bumpers: ANSI/BHMA A156.16, Grade 1.
    - b. Door Silencers: ANSI/BHMA A156.16, Grade 1.
- I. Silencers: Trimco No. 1229B or approved substitute.
- J. Door Gasketing
1. General: Provide continuous weather-strip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated or scheduled. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.
  2. Standard: Comply with ANSI/BHMA A156.22. For gasketing materials comply with ASTM D 2000 and AAMA 701/702.

- K. Metal threshold:
  - 1. Exterior Doors: #426BR Architectural Bronze ½" Saddle Threshold as manufactured by National Guard Products.
  - 2. Standard: Comply with ANSI/BHMA A156.21.
- L. Finishes: Refer to hardware schedule.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Remove existing hardware and salvage historic hardware for reuse unless otherwise noted; individually bag hardware from each door and identify with door number.
  - 1. Where historic hardware is not scheduled for reuse, remove and salvage for Owner. Package and store salvaged hardware as directed by Owner.

### **3.2. RESTORATION OF EXISTING HARDWARE**

- A. Restore existing operable components to working condition. Replace missing, worn, damaged, or deteriorated parts and lubricate moving components.
- B. Clean interior and exterior surfaces and working parts; remove rust, dirt, dust, and loose and foreign matter.
- C. Remove paints, coatings, and non-original lacquers from exposed surfaces. Coatings shall be removed by soaking items in paint stripper and carefully brushing with a soft bristle brush. Coatings shall not be removed by mechanical means.
- D. Restore original decorative tiger stripped finish.
- E. Items with original finish in good condition need not be refinished.

### **3.3 INSTALLATION**

- A. Install hardware in accordance with approved schedule and manufacturer's instructions.
- B. Install mortise items flush with adjacent surfaces.
- C. Install locksets, closers, and trim after finish painting.
- D. Mount closers so that closers and closer arms are not visible on corridor or public side of doors.
- E. Locate items in accordance with BHMA recommendations, unless otherwise indicated.

### **3.4 PROTECTION**

- A. Remove or protect hardware until painting is completed.

### **3.5 ADJUSTING**

- A. Test and adjust hardware for quiet, smooth operation, free of sticking, binding, or rattling.
- B. Adjust door closers to operate doors with following maximum opening forces:
- C. Non-fire rated doors: 5.0 pounds.

D. Fire-rated doors: 15.0 pounds.

### 3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

### 3.7. SCHEDULE

A. General:

1. Return unused original hardware to Owner. Pack and store as directed by the Owner.
2. At doors with glass panels, provide drop plate if required, where closers are indicated in the hardware schedule.

**Hardware Set A (Alternate no. 2):** Single interior metal door, non-historic opening,  
Janitor's Closet, Closet/Storeroom Lock Function, keyed outside  
B04

| ITEM                  | QTY | DESCRIPTION   | FINISH            | PHOTO |
|-----------------------|-----|---|-------------------|-------|
| Hinges                | 3   | 5 knuckle standard weight full mortise hinges, CB 191 4 ½" x 4 ½" with ball tips by Stanley   | Dark bronze       |       |
| Mortise lock & strike | 1   | Schlage L Series mechanical mortise lock with "A" rose & "01" lever. Provide conventional mortise cylinder & core with sectional trim compatible with exist. Keying system, coordinate with Owner | Oil rubbed bronze |       |

**Hardware Set B (Alternate no. 2):** Single interior door historic opening, Unisex ADA  
Restroom, push/pull function with option to lock, keyed outside, ADA thumb turn inside  
B03

| ITEM                   | QTY   | DESCRIPTION  | FINISH                              | PHOTO |
|------------------------|-------|--|-------------------------------------|-------|
| Closer                 | 1     | 78-B/F series door closer, parallel arm, by Norton Door Controls                               | Dull Bronze                         |       |
| Hinges                 | 3     | 5 knuckle standard weight full mortise hinges, CB 191 4 ½" x 4 ½" with ball tips by Stanley    | Dark bronze                         |       |
| Push/Pull Plates       | 1 set | 73B push plate, 73B push plate with RM5532 pull by Rockwood                                    | Oil rubbed bronze / Polished chrome |       |
| Auxiliary Mortise Lock | 1     | Schlage L400 Series auxiliary mortise lock, keyed outside, thumb turn inside, L583-363 EZ Turn | Oil rubbed bronze/ Polished chrome  |       |
| Sound seal             |       |  |                                     |       |
| Jamb/Head              | 1     | # 475D by Zero International   | Dark bronze anodized                |       |



**Hardware Set E1:** Paired exterior egress doors in historic opening, reconstruct doors, restore frame, one inoperable leaf, push/pull function with disengaged latch during working hours; lock from exterior with deadbolt after hours

102

| ITEM                  | QTY | DESCRIPTION                       | FINISH                     | PHOTO |
|-----------------------|-----|-----------------------------------|----------------------------|-------|
| Closer                | 2   | Salvage & install on new doors    |                            |       |
| Hinges                | 6   | Salvage & install on new doors    |                            |       |
| Deadlock & strike     | 1   | Salvage & install on new doors    |                            |       |
| Mortise Lock*         | 1   | Salvage & install on new doors    |                            |       |
| Head bolt & foot bolt | 2   | Salvage & install on new doors    |                            |       |
| Threshold             | 1   | Exist. bronze threshold           |                            |       |
| Kick Plate            | 2   | Salvage & install on new doors    |                            |       |
| Weather Seal          |     |                                   |                            |       |
| Sill                  | 1   | #53A by Zero International        | Aluminum                   |       |
| Jamb/Head             | 1   | #19WD by Zero International       | Bronze                     |       |
| Meeting Rail          | 1   | #56D & 156D by Zero International | Dark<br>Bronze<br>Anodized |       |

**END OF SECTION**

## SECTION 08800

### GLAZING

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Glass for other sections referencing this Section.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 08295 – Stile and Rail Wood Doors.
  - 3. Section 08592 – Wood Window Restoration.

##### 1.2 REFERENCES

- A. ASTM International (ASTM):
  - 1. C 864 - Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
  - 2. C 920 - Elastomeric Joint Sealants.
  - 3. C 1036 - Flat Glass.
  - 4. C 1048 - Heat-Treated Flat Glass-Kind HS, Kind FT, Coated and Uncoated Glass.
  - 5. E 774 - Sealed Insulating Glass Units.
- B. Glass Association of North America (GANA):
  - 1. Sealant Manual.
  - 2. Glazing Manual.

##### 1.3 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass or fabricated glass as defined in referenced glazing publications.
- B. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or a specified gas.
- C. Deterioration of Coated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in metallic coatings.
- D. Deterioration of Laminated Glass: Defects developed from normal use that are attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstruction vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.
- E. Deterioration of Insulating Glass: Failure of the hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulation glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

#### 1.4 SYSTEM DESCRIPTION

- A. Size glass to withstand positive and negative wind pressure acting normal to plane in accordance with Building Code as measured in accordance with ASTM E 330.
- B. Limit glass deflection to 1/200 or flexure limit of glass with full recovery of glazing materials, whichever is less.

#### 1.5 SUBMITTALS

- A. Product data: For each glass product and glazing material indicated.
  - 1. Manufacturer's product literature and applicable technical bulletins.
  - 2. Insulating glass certification report.
- B. Samples:
  - 1. 12 inch square sample of each type of glass.
  - 2. Sealant and glazing compound samples showing available colors.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Single firm with minimum 5 years successful experience in the fabrication of glass.
  - 1. Glass of type required for this project must be a certified product listed with the Insulating Glass Certification Council by firm, where applicable.
- B. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance.
- C. Glass standards:
  - 1. ASTM specification C1036 for glass.
- D. Regulatory Requirements: Provide tempered safety glass where required by regulatory agencies or Code.
- E. Perform Work in accordance with GANA Glazing Manual and GANA Sealant Manual for glazing installation methods.

#### 1.7 PROJECT CONDITIONS

- A. Perform glazing when ambient temperature is above 40 degrees F.
- B. Perform glazing on dry surfaces.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Clear Beveled Plate Glass:
  - 1. Provide clear beveled tempered plate glass, 1/4" thick, at exterior door 102. Provide clear tempered safety glass at doors. Match dimensions of original beveled glass at Door No. 101.
    - a. Tempered Glass: ASTM C 1048, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select, Kind FT fully tempered.
- B. Fully Tempered Float Glass:
  - 1. Provide fully tempered float glass, 1/4" thick, at exterior windows at basement level.
  - 2. ASTM C1048, Kind FT (fully tempered), Condition A (Uncoated), Type I, Class 1 (clear), Quality-Q3.
- C. Fully Tempered Acid Etched Glass:
  - 1. Provide fully tempered float glass, 1/4" thick, at exterior window B15, west bay only.
  - 2. Acid etched, Class 1 clear glass, Quality Q5 glazing B.

### 2.2 ACCESSORIES

- A. Setting Blocks: ASTM C 864, neoprene or EPDM, or ASTM C 1115, silicone; 80 to 90 Shore A durometer hardness, length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: ASTM C 864, neoprene or EPDM, or ASTM C 1115, silicone; 50 to 60 Shore A durometer hardness, minimum 3 inches long x one half the height of the glazing stop x thickness to suit application.
- C. Glazing Sealant: ASTM C 920, Type S, Grade NS, Class 25, Uses MT, N, G, and A; single component silicone, low modulus type, non sag, color to be selected from manufacturer's full color range.
- D. Backer Rod and Primer: As recommended by glazing sealant manufacturer.
- E. Glazing Clips: Manufacturer's standard.
- F. Glazing Compound: Modified oil type, non hardening, knife grade consistency, color to be selected from manufacturer's full color range. Do not use glazing compound with laminated or insulated glass.
  - 1. Product: Sarco Multi-Glaze Type "M" Putty quick skimming for inside shop glazing or Sarco Dual-Glaze Glazing Compound for field application.

### 2.3 FABRICATION

- A. Tempered Glass:
  - 1. Comply with ASTM C 1048 for type listed.
  - 2. Process in horizontal position so that inherent roller distortion will run parallel to building floor lines after installation.
- B. Fabrication Tolerances: ASTM C 1036 and C 1048.
- C. Glass Identification:
  - 1. Apply manufacturer's label indicating type and thickness to each light of glass. Show position of exterior face when installed, where applicable.

2. Etch manufacturer's label on each light of tempered glass.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Clean glazing rabbets; remove loose and foreign matter.
- B. Remove protective coatings on metal surfaces.
- C. Clean glass just prior to installation.
- D. Seal porous rabbet surfaces with primer or sealer.

### **3.2 INSTALLATION - GENERAL**

- A. Install glass in accordance with glass manufacturer's instructions.
- B. Maintain manufacturer's recommended edge and face clearances between glass and frame members.

### **3.3 INSTALLATION - SEALANT GLAZING METHOD**

- A. Apply sealant to full depth of permanent stops.
- B. Press glass into sealant with slight lateral movement to ensure adhesion.
- C. Apply sealant to full depth of removable stops. Secure stops in position, forcing contact with sealant bead and completely filling joint.

### **3.4 INSTALLATION - COMPOUND GLAZING METHOD**

- A. Locate and secure glass using glazing clips.
- B. Fill voids between glass and stops with glazing compound; tool to straight line. Slope to exterior for watershed.

### **3.5 PROTECTION**

- A. After installation, mark glass with an 'X' using removable plastic tape.

**END OF SECTION**

## SECTION 09215

### VENEER PLASTER

#### PART 1 - GENERAL

##### 1.1 SUMMARY

###### A. Section Includes:

1. Gypsum veneer plaster on gypsum base for walls and ceilings, where indicated on the drawings [Alternate no. 2].
2. Trim and accessories.

###### B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 01230 – Alternates for alternate wall and ceiling finish in Unisex ADA Restroom B03.
3. Section 09260 – Gypsum Board Assemblies for metal framing.
4. Section 09910 – Painting and Finishing.

##### 1.2 REFERENCES

###### A. American Society for Testing and Materials (ASTM):

1. C 587 - Gypsum Veneer Plaster.
2. C 588 - Gypsum Base for Veneer Plasters.
3. C 843 - Application of Gypsum Veneer Plaster.
4. C 844 - Application of Gypsum Base to Receive Gypsum Veneer Plaster.
5. C 1002 - Steel Drill Screws for the Application of Gypsum Board.
6. C 1047, Specification for Accessories for Gypsum Wallboard and Gypsum veneer Base.

##### 1.3 SUBMITTALS

- ###### A. Product Data:
- Manufacturer's technical information, specifications, and installation instructions for each product specified.

##### 1.4 QUALITY ASSURANCE

###### A. Mock-Ups:

1. Provide 10x10 foot mock-up of gypsum base and veneer plaster installation showing finish texture, and each type of joint and/or corner condition.
2. Location to be selected by Architect.
3. Accepted mock-up, if undamaged at the time of Substantial Completion may remain as part of the Work.

- ###### B. Single-Source Responsibility:
- Obtain veneer plaster base, gypsum plaster, and joint tape from a single manufacturer.

##### 1.5 DELIVERY, STORAGE, AND HANDLING

- ###### A. Packaging and Shipping:
- Have materials shipped in manufacturer's original packages showing manufacturer's name and product brand name.

- B. Storage and Protection: Store materials inside and protected from damage by the elements. Protect ends, edges, and faces of gypsum veneer base from damage.

## 1.6 PROJECT CONDITIONS

- A. Environmental Requirements:
  - 1. Do not apply plaster when ambient or substrate temperature is less than 50 degrees F nor more than 85 degrees F.
  - 2. Maintain minimum ambient temperature of 50 degrees F during and after application of plaster.

## PART 2 - PRODUCTS

### 2.1 VENEER PLASTER BASE

- A. Fire Rated, Impact/Penetration-Resistant: A gypsum core lathing panel with additives to enhance the fire resistance of the core and surfaced with absorptive paper on front and long edges. Complies with ASTM C 588.
  - 1. Product: Gold Bond Hi-Abuse Kal-Kore Fire Shield Type X, 5/8 inch thick, maximum practical length, tapered edges, as manufactured by Gold Bond Building Products, National Gypsum Co.

### 2.2 GYPSUM PLASTER

- A. Base Plaster: High strength gypsum plaster complying with ASTM C 587.
  - 1. Product: Gold Bond Kal-Kote Base Coat Plaster, as manufactured by Gold Bond Building Products, National Gypsum Co.
- B. Finish Plaster: Gypsum plaster for smooth finish complying with ASTM C 587.
  - 1. Product: Gold Bond Kal-Kote Smooth Finish, as manufactured by Gold Bond Building Products, National Gypsum Co.
- C. Water: Potable.

### 2.3 ACCESSORIES

- A. Metal Accessories: GA 216, galvanized steel as manufactured by Gold Bond Building Products, National Gypsum Co.
  - 1. Corner reinforcement: Kal-Korner Bead.
  - 2. Casing: Type: J & L Trim Casing Bead
  - 3. Control joint: .093 Zinc Control Joint.
- B. Joint Reinforcing Tape: Gold Bond Kal-Mesh, 2-1/2 inch wide coated fiberglass reinforcing tape, as manufactured by Gold Bond Building Products, National Gypsum Co.
- C. Fasteners: ASTM C 1002, Type S screws, minimum 5/8 inch penetration into framing.

### 2.4 MIXES

- A. Proportions and Procedures: In accordance with ASTM C 842 and the manufacturer's instructions.

## **PART 3 – EXECUTION**

### **3.1 INSTALLATION OF GYPSUM BASE**

- A. Follow ASTM C 844 and GA 216.
- B. Do not locate joints to align with edges of openings unless a control joint is installed.
- C. Exercise care during cutting and installation to avoid tearing face paper or breaking gypsum core.
- D. Apply panels in most economical direction with ends and edges occurring over supports.
- E. Cut panels around openings and projections.
- F. Mechanically fasten panels to framing. Place fasteners minimum 3/8 inch from edges of panels; drive heads slightly below surface.
- G. Tape, fill, and sand joints between panels, fastener depressions, corners, and edges:
  - 1. Apply taping compound approximately 3 inches wide.
  - 2. Apply tape to internal angles and joints, centered and seated into compound, leaving sufficient compound under tape to provide proper bond. Apply skim coat of taping compound over tape. Feather out on each side of tape.
  - 3. Apply taping compound to fastener depressions; feather out onto adjacent surfaces.

### **3.2 INSTALLATION OF ACCESSORIES**

- A. Install in accordance with manufacturer's instructions.
- B. Install corner reinforcement at outside corners. Use single lengths where length of corner does not exceed standard length.
- C. Install casings where indicated and where plaster abuts dissimilar materials or stops with edge exposed.
- D. Install control joints at ceilings:
  - 1. At maximum 50 feet on center.
  - 2. Where ceiling framing changes direction.
- E. Install control joints at walls and partitions:
  - 1. At changes in backup material.
  - 2. At maximum 30 feet on center.
  - 3. Above one jamb of openings in partitions.
- F. Install expansion joint (Square edge casing bead type) at intersection of 3 coat plaster finished walls and ceilings and gypsum board or veneer plaster walls and ceilings
- G. Install joint reinforcing tape at joints and inside corners.

### **3.3 APPLICATION OF PLASTER**

- A. Apply plaster in accordance with manufacturer's instructions and ASTM C 843.
- B. Apply two coats of plaster:
  - 1. Apply base coat to a thickness of 1/16 inch.



2. Apply final coat over slightly green, almost dry base coat, to a thickness of 1/16 inch.
3. Total thickness: Minimum 1/8 inch.

C. Finish surface to smooth finish, with neat, sharp corners and intersections.

D. Complete application of each panel formed by intersections, corners, trim and accessories in one operation to ensure uniformity of texture and finish.

E. Installation Tolerances:

1. Flatness: Plus or minus 1/8 inch in 10 feet.
2. Thickness for two coats: 1/8 inch plus or minus 1/64 inch.

#### 3.4 ADJUSTING

A. Repair or replace damaged, discolored and defective plaster.

### END OF SECTION

## SECTION 09250

### GYPSUM BOARD ASSEMBLIES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes [Alternate no. 2]:
  - 1. Gypsum Board.
  - 2. Cementitious backer units.
  - 3. Suspended metal channel ceiling framing.
  - 4. Metal framing and furring.
  - 5. Concealed metal reinforcing for attachment of grab bars, toilet partitions, and other items supported on drywall partitions and walls.
  - 6. Taping and bedding of new gypsum board.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 06100 – Rough Carpentry for furring, blocking, and other carpentry work not exposed to view.
  - 3. Section 07211 – Batt Insulation for acoustical insulation.
  - 4. Section 07840 – Firestopping for fire rated partitions.
  - 5. Section 07920 - Joint Sealers and Lead Weathercaps.
  - 6. Section 09215 – Veneer Plaster.
  - 7. Section 09281 – Gypsum Plaster Restoration.
  - 8. Section 09390 – Tile.
  - 9. Section 09910 – Painting and Finishing for priming and painting gypsum drywall.

##### 1.2 REFERENCES

- A. American National Standards Institute (ANSI):
  - 1. A108.11 – Interior Installation of Cementitious Backer Units.
  - 2. A118.9 – Test Methods and Specifications for Cementitious Backer Units.
- B. American Society for Testing and Materials (ASTM):
  - 1. A 591 – Steel Sheet, Cold Rolled, Electrolytic Zinc-Coated.
  - 2. A 653A/A 653 M – Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - 3. C 36 - Standard Specification for Gypsum Wallboard.
  - 4. C 422 – Gypsum Backing Board and Coreboard.
  - 5. C 475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - 6. C 630 – Water Resistant Gypsum Backing Board.
  - 7. C 754 – Installation of Steel Framing Members to Receive Screw-Attached Gypsum Wall Board, Backing Board, or Water-Resistant Backing Board.
  - 8. C 1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Board.
  - 9. C 1002 – Steel Drill Screws for the Application of Gypsum Board.
- C. Gypsum Association (GA):`

1. GA-214 - Levels of Gypsum Board Finish.
2. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.
3. GA-600 – Fire Resistance Design Manual.

D. Underwriters Laboratories, Inc. (UL) – Fire Resistance Directory.

### 1.3 QUALITY ASSURANCE

A. Fire Resistance Ratings:

1. Construct assemblies to achieve fire resistance ratings indicated on Drawings, in accordance with applicable GA or UL design number.

B. Deflection Limits:

1. Limit deflection of partitions to following limits, based on 5PSF uniform design load.
  - a. Partitions to receive tile or plaster: L/240.
  - b. Other partitions: L/120.
2. If partition height exceeds stud manufacturer's limiting height for applicable loading and deflection, install bracing above ceiling, decrease stud spacing, or increase stud gage.

### 1.4 SUBMITTALS

A. Product data for each type of product specified certifying that products comply with specified requirements.

### 1.5 PROJECT CONDITIONS

A. Maintain temperature in spaces in which work is being performed above 50 degrees F during and after installation.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to the following:

1. Georgia-Pacific Corp.
2. Gold Bond Building Products Div., National Gypsum Co.'
3. United States Gypsum Co.

### 2.2 PANEL PRODUCTS

A. Regular Gypsum Board: ASTM C36; 48 inches wide x thickness indicated, or if not indicated, in 5/8 inch thickness, maximum practical length, tapered edge.

B. Fire Resistant Gypsum Board:

1. Type X: ASTM C36, 48 inches wide x thickness indicated, or if not indicated, in 5/8 inch thickness, maximum practical length, tapered edge; apply to fire rated assemblies.

C. Cementitious Backer Units: ANSI A 118.9, high density, cementitious with glass fiber reinforcing, nominally 5/8 inch thick x 48 inches wide, maximum practical length, ends and edges square cut; apply to wall to receive ceramic tile.

## 2.3 METAL FRAMING MATERIALS

### A. General:

1. Provide components in accordance with ASTM C645.
2. Finish: ASTM A 653/A 653M, Structural Quality, Class G60 hot dip galvanized or ASTM A 591, Class B electrogalvanized.

### B. Metal Floor and Ceiling Runners

1. Channel Type: Formed from 20 gauge (unless otherwise noted) galvanized steel, width to suit channel type metal studs. Use 20 gauge top runners with 1-1/4" minimum flanges.
2. Ceiling runners at fire rated partitions shall be "Fire Trak" made by the Fire Trak Corp. fabricated of 20 gauge galvanized steel.

### C. Metal Studs, Framing and Furring

1. Channel Type Studs: Channel type with holes for passage of conduit formed from minimum 20 gauge (unless heavier gauge required to meet deflection limits) galvanized steel, width as shown on drawings.
2. Furring Channels: Hat shaped, 7/8 inch deep, 25 gage core steel.
3. Continuous 16 gauge x 8" wide steel wall plate screwed to studs as required for support of railings, toilet partitions and other items supported on drywall partitions and walls.
4. 3/4" 16 gauge Steel cold rolled channel studs with black asphaltum paint or galvanized finish.

### D. Suspended Ceiling Framing:

1. Runner channels: 1-1/2-inches deep, cold rolled, channel shaped, 16 gage core steel.
2. Furring channels: Hat shaped, 7/8-inch deep, 25 gage core steel.

## 2.4 ACCESSORIES

### A. Fasteners:

1. For attaching framing to concrete and wood framing: Type best suited to application.
2. For fastening framing members together: 3/8 inch long pan head screws.
3. For attaching gypsum panels to framing: ASTM C 1002, Type S screws, minimum 5/8 inch penetration into framing.

### B. Wire: Galvanized steel.

1. Hanger wire: 8 gage.
2. Tie wire: 18 gage, soft annealed

### C. Metal Accessories: Galvanized steel unless otherwise indicated.

1. Metal corner reinforcement: GA-216, Type CB-100x100.
2. Metal casings: GA-216, Type LC.
3. Metal control joint: GA-216.
4. Metal furring channel clips.

### D. Acoustical Sealer: Non-hardening, non-skinning, acoustical sealer designed for used with gypsum board.

### E. Joint Treatment Materials: Reinforcing tape and joint compound; ASTM C475.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF CEILING FRAMING

- A. Install in accordance with ASTM C 754 and manufacturer's instructions.
- B. Space hanger wires 48 inches on center along runner channels and within 6 inches of ends of channels; secure to structure above.
- C. Space runner channels 48 inches on center maximum and within 6 inches of abutting construction.
- D. Position channels for ceiling height; level and saddle tie along channels.
- E. Provide 1 inch clearance between channels and abutting construction.
- F. Overlap channel ends 12 inches at splices; secure each end with double loop tie wire.
- G. Space furring channels 16 inches on center maximum, perpendicular to runners and within 6 inches of abutting construction.
- H. Provide 1 inch clearance between channels and abutting construction.
- I. Secure to runners with clips on alternate sides of runners; saddle tie if clips cannot be alternated.
- J. Overlap channel ends 8 inches at splices; secure each end with double loop tie wire.
- K. Where openings interrupt furring or runner channels, install reinforcing to restore stability.

### 3.2 INSTALLATION OF GYPSUM PANELS

- A. Install panels and accessories in accordance with ASTM C 754, GA-216, and manufacturer's instructions.
- B. Accurately cut panels to fit around openings and projections. Do not tear face paper or break gypsum core.
- C. Place fasteners minimum 3/8 inch from edges of panels; drive heads slightly below surface. Stagger fasteners at abutting edges.
- D. Wall Panels:
  - 1. Apply panels at non fire-rated assemblies in most economical manner, with ends and edges occurring over supports.
  - 2. Apply panels at fire-rated assemblies as required by design assembly.
  - 3. Stagger joints on opposite sides of partitions.
  - 4. Do not locate joints to align with edges of openings unless a control joint is installed.
  - 5. Mechanically fasten single layer panels to framing.
  - 6. Apply face layer of double layer applications with joints offset from those in base layer; secure with mechanical fasteners to framing or with adhesive to base layer.
  - 7. At slip head connections, cut panels 1/2 inch short of structure at head; do not secure panels to top runner channel.
  - 8. Where recessed items occur in fire rated partitions, box item on all sides with gypsum board as required to maintain continuity of fire rating.
- E. Ceiling Panels:
  - 1. Apply panels perpendicular to framing, with end joints staggered.
  - 2. Support panels around openings in ceiling.
  - 3. Mechanically fasten to framing.

### 3.3 INSTALLATION OF ACOUSTICAL PARTITIONS

- A. Extend acoustical partitions past intersecting non-acoustical partitions.
- B. Install acoustical insulation:
  - 1. Butt to framing members and adjacent construction.
  - 2. Carry around pipes, wiring, outlets, and other construction without voids.
  - 3. Press against one gypsum board surface to form slight air space on opposite side.
- C. Seal acoustical partitions at perimeter and around penetrations:
  - 1. Apply continuous bead of sealer between gypsum panel edges and adjacent construction. In double layer applications, apply to base layer.
  - 2. Seal space between gypsum panels at control joints, prior to installing metal control joint.
  - 3. Apply sealer to penetrations through partitions.
  - 4. In fire rated partitions, use firestopping sealer specified in Section 07840. In non-fire rated partitions, use acoustical sealer.

### 3.4 INSTALLATION OF CEMENTITIOUS BACKER UNITS

- A. Install in accordance with ANSI A108.11 and manufacturer's instructions.
- B. Apply panels horizontally, with ends occurring supports. Stagger end joints in adjacent rows.
- C. Cut panels to fit around openings and projections.
- D. Mechanically fasten panels to framing.

### 3.5 INSTALLATION OF ACCESSORIES

- A. Install in accordance with manufacturer's instructions.
- B. Install corner reinforcement at outside corners. Use single lengths where length of corner does not exceed standard length.
- C. Install casings where indicated and where gypsum board abuts dissimilar materials or stops with edge exposed.
- D. Install control joints at ceilings:
  - 1. At maximum 50 feet on center.
  - 2. Where ceiling framing changes direction.
- E. Install control joints at walls and partitions:
  - 1. At changes in backup material.
  - 2. At maximum 30 feet on center.
  - 3. Above one jamb of openings in partitions.

### 3.6 JOINT TREATMENT

- A. Treat joints and fasteners in gypsum board in accordance with GA-214.
- B. Levels of Finish:
  - 1. Surfaces in plenums and janitor closets: Level 1 finish.
  - 2. Surfaces to receive paints and wall coverings: Level 4 finish.

### 3.7 CLEANING AND PROTECTION

- A. Promptly remove any residual joint compound from adjacent surfaces.
- B. Provide final protection and maintain conditions, in a manner suitable to Installer, that ensures gypsum board assemblies remain without damage or deterioration at time of Substantial Completion.

**END OF SECTION**

## SECTION 09281

### GYPSUM PLASTER RESTORATION

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes:

1. Gypsum plastering over interior masonry surfaces or metal framing. Restore plaster finish, all locations where exposed to view in Unisex Restroom B03 and Janitor's Closet B04, as indicated in the Room Finish Schedule [Alternate no. 2].
2. Where plaster walls are scheduled to receive tile wainscot, prep walls to ensure they are plumb and level to allowable substrate tolerance for tile installation [Alternate no. 2].
3. Repair damaged plaster finish, where affected by MEP work.
4. Metal lath, trim, and accessories.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 01730 – Selective Demolition.
3. Section 04905 – Masonry Restoration for re-pointing and repairs of cracks in masonry walls.
4. Section 09390 – Tile for allowable wall tolerance.
5. Section 09910 – Painting and Finishing.

##### 1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. C 28 - Gypsum Plaster.
2. C 631 - Bonding Compounds for Interior Plastering.
3. C 847 - Metal Lath.

B. Metal Lath/Steel Framing Association (ML/SFA) 920 - Guide Specifications for Metal Lathing and Furring.

C. Gypsum Construction Handbook, by the United States Gypsum Company, Latest edition.

D. Preservation Brief 21: Repairing Historic Flat Plaster – Walls and Ceilings, Mary Lee MacDonald, National Park Service, October, 1989.

##### 1.3 QUALITY REQUIREMENTS

A. Applicator Qualifications:

1. Minimum 3 years documented experience in work of this Section.
2. Successful completion of at least 3 projects of similar scope and complexity within past 3 years.

B. Analysis of Existing Plaster:

1. Remove four samples of existing plaster from different locations.
2. Retain one sample for later comparison.
3. Break up remaining samples individually with mallet until constituent parts remain. Examine under microscope to determine:



- a. Approximate proportions of aggregate and gypsum.
  - b. Type, size, and color of aggregate.
  - c. Types of additives.
- 4. Based on analysis, provide recommended plaster mix compatible with physical and mechanical properties of original plaster materials.
- B. Mock-Ups: Prior to installing plaster work, construct mock-up for each type of plaster repair and condition required to demonstrate aesthetic affects, as well as qualities of materials and execution. Build mock-ups to comply with the following requirements, using materials indicated for final unit of Work.
  - 1. Plaster patch, 24-inch square, demonstrating preparation, patching, and finishing technique.
  - 2. Crack repair, 4 lineal feet, demonstrating preparation, patching, and finishing technique.
  - 3. Repair/replacement of delaminated skim coat, 24-inch square, demonstrating preparation, repair, and finishing technique.
  - 4. Locate where directed by Architect.
  - 5. Obtain Architect's approval of mockups before start of plaster work.
  - 6. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed work.

#### 1.4 SUBMITTALS

- A. Product data: Submit manufacturer's product specifications and installation instructions for each product, including data showing compliance with specified requirements.
- B. Samples:
  - 1. Lath, 12 inch by 12 inch sample for each type.
  - 2. Metal accessories, 6" length sample for each type.
  - 3. 12 x 12 inch plaster samples match existing surface texture.
- C. Hot Weather Procedures: Describe materials and procedures to be used.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
- B. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes.
- C. Protect metal accessories from being bent or damaged.

#### 1.6 PROJECT CONDITIONS

- A. Environmental Requirements, General: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after plaster application.
- B. Do not apply plaster when ambient or substrate temperature is less than 50 degrees F nor more than 85 degrees F.
- C. Maintain minimum ambient temperature of 50 degrees F during and after application of plaster.

- D. Ventilation: Ventilate building spaces as required to remove water in excess of that required for hydrating plaster. Begin ventilation immediately after plaster is applied and continue until it sets.
- E. Protect contiguous work from soiling, splattering, moisture deterioration, and other harmful effects caused by plastering.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. Acceptable Manufacturers – Plaster:
  - 1. National Gypsum Co.
  - 2. United States Gypsum Co.

### **2.2 MATERIALS**

- A. Plaster Materials:
  - 1. Gypsum Plaster: ASTM C 28.
  - 2. Aggregate: Natural sand, size, color, and texture to match existing original.
  - 3. Additives: As determined by existing plaster analysis, to match existing original plaster.
  - 4. Water: Clean and potable.
- B. Metal Lath: ASTM C 847, expanded self-furring diamond mesh, galvanized.

### **2.3 ACCESSORIES**

- A. General: Comply with material provisions of ASTM C 1063 and the requirements indicated below; coordinate depth of accessories with thicknesses and number of plaster coats required.
  - 1. Galvanized Steel Components: Fabricated from zinc-coated (galvanized) steel sheet complying with ASTM A 653, G40 minimum coating designation.
- B. Metal Corner Reinforcement: Expanded, large-mesh, diamond-metal lath fabricated from zinc alloy or welded-wire mesh fabricated from 0.0475 inch diameter, zinc-coated wire and specially formed to reinforce external corners of Portland cement plaster on exterior exposures while allowing full plaster encasement.
- C. Cornerbeads: Small nose cornerbeads fabricated from the following metal, with expanded flanges of large-mesh diamond-metal lath allowing full plaster encasement:
  - 1. Galvanized Steel: Minimum 0.172 inch thick.
- D. Casing Beads: Square-edged style, with expanded flanges of the following material:
  - 1. Galvanized Steel: Minimum 0.172 inch thick.
- E. Control Joints: Prefabricated, of material and type indicated below:
  - 1. Galvanized Steel: Minimum 0.0172 inch thick.
- F. Lath Attachment Devices: Material and type required by ASTM C 1063 for installations indicated.
- C. Fasteners: Galvanized steel, minimum 5/8 inch penetration into supports.
- D. Patching Compound: Premixed, containing gypsum and aggregate.

- E. Tape: Woven glass fiber type, 4 inches wide.
- F. Tie Wire: Galvanized annealed steel, minimum 18 gage.
- G. Bonding Agent: ASTM C631; type recommended for bonding plaster directly to masonry surfaces:
  - 1. Product: Plaster-Weld, as manufactured by Larsen Products Corp., (800) 633-6668, or approved equal.

## 2.4 MIXES

- A. Scratch, Brown, and Finish Coats: Mix gypsum, additives, and aggregate in proportions to match original plaster. Add water to achieve workable consistency.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Substrates: With installer present, examine substrates to which plaster assemblies attach or abut for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Before applying plaster, clean and prepare substrates according to the manufacturer's instructions for each particular substrate condition and as specified. Roughen or remove substrates that could impair the bond with plaster.

### 3.2 PREPARATION

- A. Prepare unit masonry substrates for plastering by re-pointing and repairing cracks where required and cleaning to remove dirt, grease, oil, and other foreign matter and deposits that could impair bond with plaster.
- B. Coordinate removal of plaster back to masonry and to solid adjacent plaster. Make edges straight, clean, sharp and beveled inward. Repair or replace work to eliminate blisters, buckles, excessive crazing and check cracking, dry-outs, efflorescence and where bond to the substrate has failed.
- C. Sequence plaster application with installation and protection of other work so that neither will be damaged by installation of other.
- D. Mechanically mix plaster materials at the site; do not hand mix except where small amounts are needed, using less than one bag of plaster material.

### 3.3 INSTALLATION OF ACCESSORIES

- A. Set level and true to line; screw or wire tie to framing at maximum 12 inches on center.
- B. Casing Beads: Install where plaster abuts dissimilar material or stops with edge exposed.
- C. Corner Beads: Install at external corners.
- D. Control Joints: Unless otherwise indicated, locate as required to limit each area of plaster to 144 square feet with no dimension exceeding 12 feet.

- E. Apply joint sealer to form waterstop behind joints at intersections.

### 3.4 INSTALLATION OF METAL LATH AND FURRING

#### A. General:

1. Interior Lathing and Furring: Install materials indicated of plaster to comply with ASTM C 841.
  2. Install Supplementary framing, blocking, and bracing at terminations in Work and for support of fixtures, equipment services, heavy trim, and similar work to comply with details indicated or, if no otherwise indicated, to comply with applicable written instructions of plaster manufacturer or, if not available, of USG's "Gypsum Construction Handbook."
  3. Isolation: Where lathing and metal support system abuts building structure horizontally and where partition or wall abuts overhead structure, sufficiently isolate from structural movement to prevent transfer of loading from building structure. Install slip- or cushion-type joints to absorb deflections but maintain lateral support.
    - a. Frame both sides of control joint independently and do not bridge joints with furring and lathing or accessories.
- B. Apply lathing with long dimension perpendicular to supports, with end joints staggered and occurring over supports.
  - C. Lap ends minimum 1 inch and sides minimum 1-1/2 inches.
  - D. Secure to framing with wire ties at maximum 6 inches on center.
  - E. Stop lath at each side of control joints and secure.
  - F. Reinforce corners of openings with 6 x 12 inch lath strip installed diagonally at each corner, wire tied to lath.
  - G. If lath is not continued minimum 3 inches on each side of internal corners, reinforce with 12 inch wide lath strip bent at 90 degrees and wire tied to lath.

### 3.5 APPLICATION OF PLASTER

#### A. General:

1. Prepare monolithic surfaces for bonded base coats and use bonding compound to comply with requirements of referenced plaster application standards for conditioning monolithic surfaces.
  2. Tolerances: Do not deviate more than plus or minus 1/8 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed at any location on surface.
  3. Sequence plaster application with installation and protection of other work so that neither will be damaged by installation of other.
  4. Plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground, unless otherwise indicated. Where plaster is not terminated at metal frame by casing beads, cut base coat free from metal frame before plaster sets and groove finish coat at junctions with metal.
  5. Apply thicknesses and number of coats of plaster as indicated or as required by referenced standards.
- B. Plaster Application Standard: Apply plaster materials, composition, mixes, and finishes indicated to comply with ASTM C 842.

- C. Number of Coats: Apply plaster of composition to match original as determined by analysis, to comply with the following requirements:
  - 1. Three Coats: Over the following plaster bases:
    - a. Wood lath.
    - b. Metal lath.
    - c. Brick masonry.
  - 2. Finish Coats: Apply finish coats to match texture and finish of original adjacent plaster.
- D. Installation Tolerances:
  - 1. Plaster Tolerance: Maximum 1/8 inch in 10 feet variation from true flatness.
  - 2. Trim Tolerance: Maximum 1/4 inch in 10 feet variation from plumb, level, or true plane, noncumulative.
- E. Provide finish matching surrounding texture at each patch location and blend so that patches are indiscernible from original work.

### 3.6 REPAIR OF SMALL CRACKS AND MINOR DAMAGE

- A. Remove existing damaged plaster back to a point at which sound material is reached.
- B. Remove loose and foreign matter that could impair adhesion.
- C. Fill voids with patching compound; apply with sufficient pressure to eliminate voids and ensure adhesion.
- D. Finish to match adjacent surfaces.

### 3.7 REPAIR OF LARGE CRACKS

- A. Remove existing damaged plaster back to a point at which sound material is reached.
- B. Remove loose and foreign matter that could impair adhesion.
- C. Fill voids with patching compound; apply with sufficient pressure to eliminate voids and ensure adhesion.
- D. Embed tape in wet compound. Apply additional compound to cover tape.
- E. Finish to match adjacent surfaces.

### 3.8 REPAIR OF DELAMINATED PLASTER LAYERS

- A. Remove existing damaged plaster layers down to a point at which sound material is reached.
- B. Remove loose and foreign matter that could impair adhesion.
- C. Apply bonding agent in accordance with manufacturer's instructions.
- D. Fill voids with patching compound; apply with sufficient pressure to eliminate voids and ensure adhesion.
- E. Finish to match adjacent surfaces.

### 3.9 REPAIR OF DAMAGED PLASTER OVER METAL LATH

- A. Remove existing damaged plaster down to lath.
- B. Reattach loose lath with nails or wire ties.
- C. Apply scratch, brown, and finish coats to thickness to match original plaster.
- D. Finish to match adjacent surfaces.

### 3.10 REPAIR OF DAMAGED PLASTER OVER MASONRY

- A. Remove existing damaged plaster down to masonry.
- B. Rout out mortar joint to 5/8 inch depth.
- C. Apply bonding agent in accordance with manufacturer's instructions.
- D. Apply scratch, brown, and finish coats to thickness to match original plaster.
- E. Finish to match adjacent surfaces.

### 3.11 SKIM COATING EXISTING PLASTER

- A. Remove existing damaged plaster down to a point at which sound material is reached.
- B. Remove loose and foreign matter that could impair adhesion.
- C. Apply bonding agent in accordance with manufacturer's instructions.
- D. Apply minimum 1/8 inch plaster skim coat over entire surface.
- E. Finish to match original plaster.

### 3.12 ADJUSTING

- A. Repair or replace damaged, discolored, and defective plaster.

### 3.13 CLEANING

- A. Promptly remove plaster from surfaces, which are not to be plastered. Repair floors, walls and other surfaces, which have been stained, marred or otherwise damaged during plaster work. When plastering work is completed, remove unused materials, containers and equipment and clean floors of plaster debris.
- B. Work shall be left in clean condition ready for painting.

**END OF SECTION**

## SECTION 09300

### TILE

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes [Alternate no. 2]:
  - 1. Ceramic wall and floor tiles.
  - 2. Trim and accessories.
  - 3. Marble threshold where new tile flooring is scheduled.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 07920 - Joint Sealers and Lead Weathercaps.
  - 3. Section 09215 – Veneer Plaster.
  - 4. Section 09250 – Gypsum Board Assemblies.
  - 5. Section 09281 – Gypsum Plaster Restoration.
  - 6. Section 10160 – Metal Toilet Compartments.
  - 7. Section 10810 – Toilet Accessories.
  - 8. Division 25 – Mechanical and Plumbing for coordinate of floor drain, refer to Drawing Sheets MP001 & MP001 for mechanical and plumbing specifications.

##### 1.2 REFERENCES

- A. American National Standards Institute (ANSI):
  - 1. A108.4 - Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile Setting Epoxy Adhesive.
  - 2. A108.10 - Installation of Grout in Tilework.
  - 3. A118.6 - Ceramic Tile Grouts.
  - 4. A136.1 - Organic Adhesives for Installation of Ceramic Tile.
  - 5. A137.1 - Ceramic Tile.
- B. American Society for Testing and Materials (ASTM):
  - 1. C144 – aggregate for Masonry Mortar.
  - 2. C150 – Portland Cement.
  - 3. C207 – Hydrated Lime for Masonry Purposes.
  - 4. C 1028 – Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
- C. Tile Council of America (TCA) - Handbook for Ceramic Tile Installation.

##### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's installation, cleaning, and maintenance instructions.
- B. Samples:
  - 1. Tile: Full size sample of each type of tile for approval of color and profile.
  - 2. Grout: Cured samples showing available colors.

## 1.4 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Minimum 5 years experience in work of this Section.
  - 2. Successful completion of at least 3 projects of similar scope and complexity within past 5 years.
- B. Mockups: Prior to the start of the Tile Work, erect mock-ups for floor and wall tile. Build mock-ups to comply with the following requirements, using materials proposed for the final work. Obtain Architect's acceptance of visual qualities before proceeding with the work:
  - 1. 3'x3' mock-up of approved floor tile, fully grouted.
  - 2. 3'x3' mock-up of tile wainscot, include approved base tile, field, and cap tile, fully grouted.
  - 3. Locate where directed by Architect.
  - 4. Retain accepted mockup in undisturbed condition as a standard for judging completed work.
- B. Tile and Trim Units: Meet ANSI A137.1, Standard Grade.
- C. Static Coefficient of Friction for Floor Tile: Minimum 0.60, tested to ASTM C 1028 in dry condition.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver all products to job site in manufacture's unopened containers with grade seals unbroken and labels intact.
- B. Keep tile cartons dry.
- C. Deliver adhesive and grout containers bearing hallmark certifying compliance with reference standards.
- D. Protect adhesive containers from freezing and overheating according to manufacturer's instructions.

## 1.6 PROJECT CONDITIONS

- A. Maintain minimum ambient temperature of 50 degrees F during and after installation.

## 1.7 EXTRA STOCK

- A. Extra Stock: provide 2 percent of each tile used in clean marked containers.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Acceptable Manufacturers - Ceramic Tile:
  - 1. American Olean Tile Co., Inc.
  - 2. American Universal Corp., (714) 554-5660.
  - 3. Dal-Tile Corp.
  - 4. Heritage Tile, (888) 387-3280
  - 5. American Restoration Tile, (501) 455-1000
  - 6. American Universal Corp., (714) 554-5660
- B. Substitutions: Under provisions of Division 1.



## 2.2 MATERIALS

### A. Ceramic Wall Tile:

1. Source: Wall, Semi-Gloss Glazed Ceramic.
2. Edge: Cushioned.
3. Field tile, restroom B03:
  - a. Size: 4-1/4 inches wide x 4-1/4 inches high x 5/16 inch thick.
  - b. Color: Biscuit – K175 (1).
4. Accent tile:
  - a. Surface bullnose: 6 inches wide x 2 inches high x 5/16 inch thick, # S-4269.
  - b. Cove base at walls with wainscot: 4-1/4 inches wide x 4-1/4 inches high x 5/16 inch thick, # A-3401.
  - c. Sanitary cove base at wall with no wainscot: 4-1/4 inches wide x 4-1/4 inches high x 5/16 inch thick, # S-3419T.
  - d. Color: Mustard 1012 (3).
5. Trim units:
  - a. Furnish inside and outside corners as required.
  - b. Color to match field or accent tile.

### B. Unglazed Ceramic Mosaic Floor Tile:

1. Source: 1" Hexagon, Viva Tile Mosaic as manufactured by Heritage Tile.
2. Edge: Square.
3. Size: 1"x1"x1/4" thk.
4. Color: Gold (GD).

### C. Marble Threshold:

1. Product: Chiaro Beige Marble, polished, size/profile as indicated on the Drawings, as manufactured by Daltile.

## 2.3 ACCESSORIES

### A. Organic Adhesive for Wall and Floor Tile: ANSI A136.1, Type 2, thin set bond type.

### B. Water: Clean, potable.

### C. Grout:

1. ANSI A118.6 or better, polymer modified dry set type, sanded.
2. Color: To be selected from manufacturer's standards.

### D. Joint Sealers: Specified in Section 07920.

### C. Tile Cleaner: Proprietary blend of inhibited, mild acids, compatible with tile and setting materials.

1. Product: Standoff Grout & Tile Cleaner, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797.

### E. Sealer: Water-based, penetrating sealer, with stain protection for tile and grout.

1. Product: STONETECH Stone, Tile & Grout Sealer, as manufactured by Laticrete International, Inc.

## **PART 3 - EXECUTION**

### **3.1 PREPARATION**

- A. Clean surfaces to remove loose and foreign matter that could impair adhesion.
- B. Remove ridges and projections. Fill voids and depressions with patching compound compatible with setting materials.
- C. Allowable Substrate Tolerances:
  - 1. Maximum variation in substrate surface: 1/8 inch in 8 feet.
  - 2. Maximum height of abrupt irregularities: 1/32 inch.

### **3.2 INSTALLATION**

- A. Wall Tile: install in accordance with ANSI A108.4, thin set with organic adhesive.
- B. Floor Tile: install in accordance with ANSI A108.4, thin set with organic adhesive on concrete slab on grade.
- C. Minimize pieces less than one half size. Locate cuts to be inconspicuous.
- D. Lay tile to pattern furnished or specified herein. Do not interrupt tile pattern through openings.
- E. Place tile joints uniform in width.
- F. Fit tile around projections and at perimeter. Smooth and clean cut edges. Ensure that trim will completely cover cut edges.
- G. Install Trim:
  - 1. Inside corners: Cove units.
  - 2. Outside corners: Bead units.
  - 3. Base: Base units.
  - 4. Exposed tile ends: Bullnose units.
- H. Sound tile after setting and before grouting. Replace hollow sounding units.
- I. Allow tile to set for a minimum of 48 hours before grouting.
- J. Grout tile joints in accordance with ANSI A108.10 without excess grout.
- K. Control Joints:
  - 1. Provide at following locations:
    - a. Changes in backup material.
    - b. Changes in plane.
    - c. Over joints in substrate.
    - d. Maximum 36 feet on center.
  - 2. Form joints per TCA Method EJ-171.
  - 3. Install joint backing and joint sealer as specified in Section 07920.

### **3.3 ADJUSTING**

- A. Remove and replace pieces that have been damaged during installation.

### 3.4 PROTECTION

- A. Seal tile and grout, wall and floors.
- B. Provide protection for completed work using non-staining sheet coverings.
- C. Prohibit traffic on tile floors for minimum 3 days after installation.

**END OF SECTION**

**SECTION 09910**  
**PAINTING AND FINISHING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Surface preparation and field application of paints and stains.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 01230 – Alternates for painting exterior door assemblies.
  - 3. Section 07620 – Sheet Metal Flashing for elements exposed to view.
  - 4. Section 08110 – Steel Doors and Frames.
  - 5. Section 08215 – Stile and Rail Wood Doors.
  - 6. Section 08295 – Wood Door Restoration.
  - 7. Section 08310 – Access Doors and Frames.
  - 8. Section 08520 – Wood Window Restoration.
  - 9. Section 09215 – Veneer Plaster.
  - 10. Section 09250 – Gypsum Board Assemblies.
  - 11. Section 09281 – Gypsum Plaster Restoration.
  - 12. Division 25 – Mechanical and Plumbing for painting new exposed MEP distribution systems and devices, refer to Drawing Sheets MP001 & MP001 for mechanical and plumbing specifications.
  - 13. Division 26 – Electrical for painting new exposed MEP distribution systems and devices.
  - 14. Lead Paint Removal Workplan contained in the Appendix of the Project Manual.

**1.2 REFERENCES**

- A. ASTM International (ASTM) D 4442 – Direct Moisture Content Measurement of Wood and Wood-Base Materials.
- B. Society for Protective Coatings (SSPC) – Painting Manual.

**1.3 SUBMITTALS**

- A. Product Data: Manufacturer's data on materials proposed for use. Include:
  - 1. Product designation and grade of each coating type.
  - 2. Surface preparation materials and procedures.
  - 3. Product analysis and performance characteristics for each coating type.
- B. Samples:
  - 1. 3 x 6 inch samples of each of the selected colors and glosses applied on representative substrates on which the coating will be applied in the Work. Apply each coat stepped back 1 inch so that all coats remain exposed. Indicate type of material used for each coat. Include samples for transparent and opaque coatings.
  - 2. For plaster wall finishes provide 12 x 12 inch texture samples on gypsum board backing.

- C. Paint Schedule: Detailed schedule indicating type and location of surface, coating materials, and number of coats to be applied.

#### 1.4 QUALITY ASSURANCE

- A. Applicator Qualification: Engage an experienced applicator who has completed paint system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.
- B. Provide finish coats which are compatible with prime paints used.
- C. Mockups:
  - 1. Construct mockup panels, 4 feet wide x full height, for each color and substrate to be painted in the project, illustrating each coating color, texture, and finish.
  - 2. Locate where directed.
  - 3. Approved mockups may remain as part of Work.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver paints, coatings, solvents and similar materials to the job site in their original unopened containers with seals unbroken, labels intact and legible at time of use and with the manufacturer's instructions printed thereon. Do not use expired materials. Remove and do not store expired materials on-site.
- B. Paint Materials: Store at minimum ambient temperature of 45 degrees F and maximum of 90 degrees F, in ventilated area, or as required by manufacturer's instructions.

#### 1.6 PROJECT CONDITIONS

- A. Do not apply materials when surface and ambient temperatures or relative humidity are outside ranges required by manufacturer.
- B. Provide lighting level of 80 footcandles measured mid-height at substrate surface.

#### 1.7 MAINTENANCE

- A. Extra Stock: Deliver to the Owner an extra stock of paint equaling one gallon of each color and gloss used in each finish coating material. Extra stock shall be tightly sealed in clearly labeled containers.

### **PART 2 – PRODUCTS**

#### 2.1 MANUFACTURERS

- A. Contract Documents are based on products by Sherwin Williams Co.
- B. Equivalent products by the following manufacturers are acceptable:
  - 1. Benjamin Moore and Co. ([www.benjaminmoore.com](http://www.benjaminmoore.com))
  - 2. Devoe Paint Co. ([www.devoepaint.com](http://www.devoepaint.com))
  - 3. Fuller O'Brien Paints. ([www.fullerpaint.com](http://www.fullerpaint.com))
  - 4. I.C.I. Paints. ([www.icipaintstores.com](http://www.icipaintstores.com))
  - 5. Kelly-Moore Paints. ([www.kellymoore.com](http://www.kellymoore.com))
  - 6. PPG Architectural Finishes, Inc. ([www.pittsburghpaints.com](http://www.pittsburghpaints.com))
  - 7. Pratt and Lambert Paints. ([www.prattandlambert.com](http://www.prattandlambert.com))

- C. Substitutions: Under provisions of Division 1.

## 2.2 PAINT MATERIALS

- A. Prime Coats: Provide undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only to manufacturer-recommended limits. Two prime coats may be required to provide a proper base for finish coats.
- B. Colors and Glosses: Colors and glosses shall be as selected by the Architect. Colors will require paint manufacturer to prepare special factory mixes to match colors selected by the Architect. Color schedule (with gloss) shall be furnished by the Architect. The Architect and the Owner reserve the right to change custom colors and glosses, without additional cost to the Owner.
- C. Coloring Pigment: Products of or furnished by the manufacturer of the paint or enamel approved for the work.
- D. Linseed Oil: Raw or boiled, as required, of approved manufacture, per ASTM D234 and D260, respectively.
- E. Turpentine: Pure distilled gum spirits of turpentine, per ASTM D13.
- F. Dryers, Putty, Spackling Compound, Patching Plaster, etc.: Best quality, of approved manufacture.
- G. Solvents: Submit solvents recommended by paint manufacturers for each substrate condition.

## 2.3 MIXING

- A. Colors: Architect will furnish color schedule prior to commencement of painting.
- B. Uniformly mix to thoroughly disperse pigments.
- C. Do not thin in excess of manufacturer's recommendations.

# PART 3 – EXECUTION

## 3.1 EXAMINATION

- A. Test shop applied primer for compatibility with subsequent coatings.
- B. Measure moisture content of surfaces using electronic moisture meter. Do not apply coatings unless moisture content of surfaces are below following maximums:
  - 1. Concrete: 5 percent.
  - 2. Plaster: 12 percent.
  - 3. Wood: 15 percent, measured to ASTM D 4442.

## 3.2 PREPARATION

- A. General:
  - 1. Protect adjacent and underlying surfaces.
  - 2. Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
  - 3. Correct defects and clean surfaces capable of affecting work of this section.
  - 4. Seal marks that may bleed through surface finishes with shellac.

- B. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow to dry.
- C. Concrete:
  - 1. Clean surfaces of loose and foreign matter that could affect penetration or performance of sealer; follow manufacturer's instruction.
  - 2. Thoroughly rinse surfaces with clean water.
  - 3. Allow surfaces to dry completely before beginning application.
- D. Plaster:
  - 1. Fill hairline cracks, small holes, and imperfections with latex patching plaster. Finish smooth and flush with adjacent surfaces.
  - 2. Wash and neutralize high alkali surfaces.
- E. Galvanized Steel: Remove surface contamination and oils and wash with solvent.
- F. Uncoated Ferrous Metals:
  - 1. Remove grease, mill scale, weld splatter, dirt, and rust.
  - 2. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; wash with solvent.
  - 3. Apply treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned.
  - 4. Spot prime paint after repairs.
- G. Shop Primed Ferrous Metals:
  - 1. Sand and scrape to remove loose primer and rust. Feather edges to make patches inconspicuous.
  - 2. Clean with solvent.
  - 3. Prime bare steel surfaces.
- H. Wood for Opaque Finish:
  - 1. Wipe off dust and grit prior to priming.
  - 2. Seal knots, pitch streaks, and sappy sections with sealer.
  - 3. Fill nail holes and cracks after primer has dried; sand between coats.
- I. Wood for Transparent Finish:
  - 1. Wipe off dust and grit prior to sealing.
  - 2. Seal knots, pitch streaks, and sappy sections with sealer.
  - 3. Fill nail holes and cracks after sealer has dried; sand lightly between coats.
- J. Wood Doors: Seal door top and bottom edge surfaces with clear sealer.
- K. Metal Doors: Prime door top and bottom edge surfaces.
- L. Existing Wood with Transparent Finish:
  - 1. Remove loose and flaking varnish.
  - 2. Clean surfaces with ammonia based cleaner and wipe dry.
  - 3. Lightly sand remaining varnish to dull surface gloss and remove brush marks and raised areas.
  - 4. Fill holes, cracks, depressions and other imperfections with color-matched patching compound; sand flush with surface.
  - 5. Lightly sand exposed bare wood.

6. Apply stain to bare wood; blend into adjacent stained surfaces.
  7. Apply clear topcoats per Paint Schedule.
- M. Other Existing Surfaces:
1. Remove loose, flaking, powdery, and peeling paints.
  2. Lightly sand glossy painted surfaces.
  3. Fill holes, cracks, depressions and other imperfections with patching compound; sand flush with surface.
  4. Remove oil, grease, and wax by scraping; solvent wash and thoroughly rinse.
  5. Remove rust by wire brushing to expose base metal.
  6. Sand raised areas flush with adjacent surfaces.
  7. Where changes in plane occur due to loss of paint layers, sand or feather edges to provide smooth, gradual transitions. Texture surfaces where required to match adjacent surfaces.

### 3.3 APPLICATION

- A. Apply primer or first coat immediately after surface preparation is complete to prevent recontamination.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply coatings to minimum dry film thickness recommended by manufacturer.
- D. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.
- E. Apply coatings to uniform appearance without laps, sags, curtains, holidays, and brush marks.
- F. Allow applied coats to dry before next coat is applied.
- G. Sand between coats on interior wood and metal surfaces.
- H. Match final coat to approved color samples.
- I. Where clear finishes are specified, tint fillers to match wood. Work fillers into grain before set. Wipe excess from surface.
- J. Prime concealed surfaces of interior wood in contact with masonry or cementitious materials with one coat primer paint.
- K. Mechanical and Electrical Components:
1. Paint factory primed equipment.
  2. Remove unfinished and primed louvers, grilles, covers, and access panels; paint separately.
  3. Paint exposed and insulated pipes, conduit, boxes, ducts, hangers, brackets, collars, and supports unless factory finished.
  4. Do not paint name tags or identifying markings.
  5. Paint exposed conduit, electrical equipment, mechanical ducts, and sprinkler piping in finished areas.
- L. Do not Paint:
1. Surfaces indicated on Drawings or specified to be unpainted or unfinished.
  2. Surfaces with factory applied finish coat or integral finish, except for touching-up of damaged surfaces.
  3. Masonry surfaces.



4. Finish hardware.
5. Architectural metals, including brass, bronze, stainless steel, and chrome plating.
6. Surfaces not to be painted shall be left completely free of droppings and accidentally applied materials resulting from the Work of this Section

### 3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Ensure that materials are being applied properly.

### 3.5 ADJUSTING

- A. Make detailed inspection of paint work; touch up abraded, stained, and otherwise disfigured surfaces or refinish as required.

### 3.6 CLEANING

- A. Remove paint from adjacent surfaces.

### 3.7 PAINT SCHEDULE

- A. Types of paint listed herein are set forth as standard of quality and type of coating required for each type of surface.
  1. Exposed surfaces of type listed in following schedule are to be painted.
  2. Other exposed surfaces not specifically listed shall receive not less than two coats of appropriate type of coating.
- B. Prime coat shall consist of touch up only on shop primed and existing surfaces.

| SUBSTRATE  | PRIMER   | TOP COATS   |
|--|--|---|
| Exterior Surfaces:   |  |   |
| Wood, Opaque finish<br>(Window & Door Assemblies)  | One coat PrepRite ProBlock Interior/Exterior Latex Primer/Sealer | Two coats duration exterior latex satin coating.                                    |
| Metal, Opaque Finish<br>Ferrous and galvanized metals<br>(Lintels, window grilles, & sheet metal flashing) | One coat Chembuild Series 135                                    | One intermediate coat EnduraShield Series 73, One finish coat Fluoronar Series 1072 |
| Cement Parging   | Loxon Concrete & Masonry Primer/Sealer Interior/Exterior Latex   | Conflex XL Elastomeric High Building Coating  |
|  |  |   |
| Interior Surfaces:   |  |   |
| Gypsum plaster & Gypsum Board  | One coat PrepRite ProBlock Interior/Exterior Latex Primer/Sealer | Two coats ProMar 200 Interior Latex   |
| Wood, opaque finish, Satin   | One coat PrepRite ProBlock Interior/Exterior Latex Primer/Sealer | Two coats Pro Industrial DTM Acrylic  |

| SUBSTRATE  | PRIMER  | TOP COATS   |
|--|---|---|
| Wood, transparent finish, satin<br>(Door and Window Assemblies)      | One coat Wood Classics<br>Interior Oil Stain        | Two coats Wood Classics<br>Polyurethane Varnish, Satin          |
| Ferrous and galvanized metals<br>(Door assemblies, access<br>panels) | One coat Pro Industrial<br>ProCryl Universal Primer | Two coats Pro Industrial<br>Waterbased Alkyd Urethane<br>Enamel |

**END OF SECTION**

## **SECTION 10160**

### **METAL TOILET COMPARTMENTS**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes [Alternate no. 2]:
  - 1. Stainless steel toilet partition and urinal screen.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.
  - 2. Section 09215 – Veneer Plaster.
  - 3. Section 09250 – Gypsum Board Assemblies.
  - 4. Section 09281 – Gypsum Plaster Restoration.
  - 5. Section 09390 – Tile.
  - 6. Section 10810 - Toilet Accessories.

##### **1.2 REFERENCES**

- A. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- B. ASTM A 240/A 240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

##### **1.2 SUBMITTALS**

- A. Product Data: Manufacturer's data sheets on each product to be used, including installation methods:
- B. Shop Drawings: Include layout, door swings, dimensions, materials, panel construction, finishes, hardware, accessories, and method of anchoring.
- C. Samples: 3 x 3 inch panel samples showing finish.

##### **1.3 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.

##### **1.4 WARRANTY**

- A. The toilet partition manufacturer shall guarantee all stainless steel toilet partitions by written certification, for a period of 5 years against defects in material and workmanship. Warranty does not include installation errors, improper usage or vandalism.

#### **PART 2 - PRODUCTS**

##### **2.1 MANUFACTURERS**

- A. Acceptable Manufacturers:
  - 1. Accurate Partitions Corp. ([www.accuratepartitions.com](http://www.accuratepartitions.com))

2. Hadrian Inc. ([www.hadrian-inc.com](http://www.hadrian-inc.com))

B. Substitutions: Under provisions of Division 1.

## 2.2 MATERIALS

- A. Stainless Steel Partitions with Floor-to-Ceiling Hung Mounting Style with the following components:
1. Doors, Panels, and Urinal Screens: 1" thick, fabricated from tension leveled 22 gauge type 304 stainless steel with diamond textured finish bonded to sound deadening double faced honeycomb core.
  2. Pilaster: 1 1/4" thick 70" high, fabricated from tension leveled 18 gauge type 304 stainless steel with diamond textured finish bonded to sound deadening double faced honeycomb core.
  3. All stainless steel components shall be assembled with a continuous roll-formed interlocking 22-gauge stainless steel crown molding welded and ground smooth at the corners.
  4. Finish: All components shall be 304 stainless steel with a #4 finish and include a PVC film for protection during shipment and installation.
  5. Door Hardware: Cam-action hinges that permit door to remain at desired position when not in use. Hinges, one-piece strike and keeper and coat hook shall be chromium plated Zamac to resist corrosion. Hinges, strike and keeper shall be attached with tamper resistant barrel nuts and shoulder screws. Concealed latch assembly shall allow for emergency access. Doors for handicapped compartments shall be supplied with ADA paddle handles.
  6. Mounting Hardware: Chrome plated Zamac stirrup brackets shall be used to mount panels and pilasters. Mounting hardware shall be secured with tamper resistant screws.
  7. Construction Design: Partitions shall be floor anchored with a channel bracket and include an integral leveling nut to provide proper height adjustment. Floor anchoring system shall be concealed by a type 304 stainless steel trim shoe with a #4 finish. Aluminum headrail with anti-grip profile shall provide overhead bracing and span all compartments and brace the end pilaster to the back wall.

## PART 3 - EXECUTION

### 2.1 INSTALLATION

- A. Install in accordance with manufacturers written instructions and approved Shop Drawings.
- B. Set partitions straight, plumb, level, and aligned.
- C. Provide 3/8 to 1/2 inch vertical clearances between walls and panels and between walls and end pilasters.
- D. Attach panel to walls and ceilings using appropriate anchor devices.
- E. Adjust for floor variations with screw jack integral in pilasters. Conceal floor fastenings with pilaster shoes.
- F. Equip doors with two hinges, door latch, door strike and keeper, and bumper/coat hook. Provide one additional bumper/hook on inside of outswinging doors.
- G. Attach urinal screens with two brackets each.

### 2.2 ADJUSTING

- A. Adjust hardware for proper operation.

- B. Adjust door hinges to hold door open 10 degrees when not latched.
- C. Sand out and polish minor scratches and abrasions to match factory finish.

### 2.3 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products.

**END OF SECTION**

## **SECTION 10425**

### **SIGNAGE**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Interior room sign [Alternate no. 2].
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements
  - 2. Section 09281 – Gypsum Plaster Restoration for attachment to interior plaster wall.

##### **1.2 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM B 209 for 5005-H15

##### **1.3 SUBMITTALS**

- A. Product data: For each type of sign specified, including details of construction relative to materials, dimensions of individual components, anchorage details, accessories, profiles, and finishes. Include not less than half-size details of wording and graphic layout.
- B. Samples for Interior Signs:
  - 1. Submit manufacturer's samples for initial selection of color, pattern, and texture for each exposed finish.
  - 2. Submit samples for each type of material proposed for use.
- C. Installation: Submit supplier's installation instructions.
- D. Warranty: Submit manufacturer's standard warranty document executed by authorized company official.

##### **1.4 QUALITY ASSURANCE**

- A. New Sign Fabricator Qualifications: Firm experienced in producing signs similar to those indicated for this Project, with a record of successful in-service performance, and sufficient production capacity to produce sign units required without causing delay in the Work.
- B. Single-Source Responsibility: For each sign type required, obtain signs from one source of a single manufacturer.
- C. Design Concept: The Specifications indicate sizes, profiles, and dimensional requirements of signs and are based on the specific types and models indicated. Sign units by other manufacturers may be considered provided deviations in dimensions and profiles do not change the design concept as judged by the Architect.
- D. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including dimensions, anchorage, all details, elevations, plans and sections required to indicate all conditions.
- E. Mock up: 1 full size mock-up of Interior signs.

- F. Regulatory Requirements: Products shall meet requirements of the Americans With Disabilities Act Accessibility Guidelines (ADAAG), Texas Accessibility Standards (TAS), and other local amendments and modifications.

## 1.5 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fitting. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay.

## 1.6 PRODUCT HANDLING AND PROTECTION

- A. Deliver materials to Project site in original packages, containers, or bundles, labeled with manufacturer's name, product brand name, and lot number.
- B. Store materials inside, under cover, and dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes.
- C. Protect metal accessories from being bent or damaged.

## PART 2- PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
  - 1. Interior Panel Signs:
    - a. 3D-G Environmental Graphics  
1217 N. Tyler  
Dallas, TX 75208  
214-942-0518

### 2.2 MATERIALS

#### A. INTERIOR PANEL SIGNS

- 1. General: Cast Colored Opaque Acrylic Sheet - Provide cast (not extruded or continuous cast) methyl methacrylate monomer plastic sheet, in sizes and thicknesses indicated, with a minimum flexural strength of 16,600 psi when tested according to ASTM D790, with a minimum allowable continuous service temperature of 176 deg F (80 degC). Provide in colors and finishes as selected from the manufacturer's standards.
  - a. Fasteners: Use concealed fasteners fabricated from metals that are not corrosive to the sign material and mounting surface.
  - b. Anchors and Inserts: Use non-ferrous metal or hot-dipped galvanized anchors and inserts for installation. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.
  - c. Colored Coatings for Acrylic Plastic Sheet: Use colored coatings, including inks and paints for copy and background colors, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and are non-fading for the application intended.
  - d. Graphic Content and Style: Provide sign copy that complies with the requirements indicated for size, style, spacing, content, position, material, finishes, and colors of letters, numbers, and other graphic devices.
- 2. Product: Custom frameless plaque as manufactured by 3D-G; Refer to 3.3, Interior Sign Schedule.
  - a. Material: Aluminum backed photopolymer on 1/4" thick acrylic.

- b. Fabrication: Cut acrylic true to shape with edges beveled as indicated. Route edges after applying photopolymer to acrylic to blend edges and eliminate gaps between sheets.
- c. Backplate: Provide a 1/8" thick backplate to space sign off wall. Edges of backplate to be black. Adhere backplate to back of 1/4" thick acrylic with permanent 4 mil thick double face film tape.
- d. Finish: Polyurethane coating system, surface preparation and application as recommended by coating system manufacturer. Paint face and edge color to be determined. Tip raised borders and copy with color to be determined. Braille does not tip.
- e. Graphics: Provide border, tactile copy and grade 2 Braille raised 1/32 inch minimum from plaque first surface by manufacturer's photopolymer bonded process. Adhesive-fixed characters are not acceptable. Produce precisely formed characters with square cut edges free from burrs and cut marks. Provide lettering and graphics precisely formed, uniformly opaque to comply with relevant ADA regulations and requirements indicated for size, style, spacing, content, position, and colors. Computerized translation of sign copy to be responsibility of the manufacturer.
- f. Letters and Characters: To be upper case text, font to be determined, and meet ADA requirements regarding character proportion.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

- A. General: Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions. Install signs level, plumb, and at the height indicated with sign surfaces free from distortion or other defects.
- B. Wall-Mounted Panel Signs: Attach panel signs to wall surfaces, according to the requirements of the American Disability Act, at 60" above the finished floor to the centerline of the sign on the latch side of the door, using the method indicated below. If there is less than 18" between door casing and intersecting wall, center sign horizontally in the space available. If there is more than 18" between door frame and intersecting wall, locate sign 3" from door casing. Where there is no wall space to the latch side of the door, including at double leaf doors, signs shall be placed on the nearest adjacent wall.
- C. Shim Plate Mounting: Provide 1/8-inch-thick concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other mounting methods are not practicable. Attach the plate with fasteners and anchors suitable for secure attachment to the substrate. Attach panel sign units to the plate using the method specified above.
- D. Install Signs: level, plumb, and at the height indicated, with sign surfaces free from distortion or other defects in appearances.
- E. Signage Placement: Prior to installation, contractor shall mark propose signage location on wall and coordinate review by Owner, Architect, and THC for review and acceptance.

#### **3.2 CLEANING AND PROTECTION:**

- A. After installation, clean soiled sign surfaces according the manufacturer's instructions. Protect units from damage until acceptance by the Owner.
- B. Repair scratches and other damage which might have occurred during installation. Replace components where repairs were made but are still visible to the unaided eye from a distance of five feet.

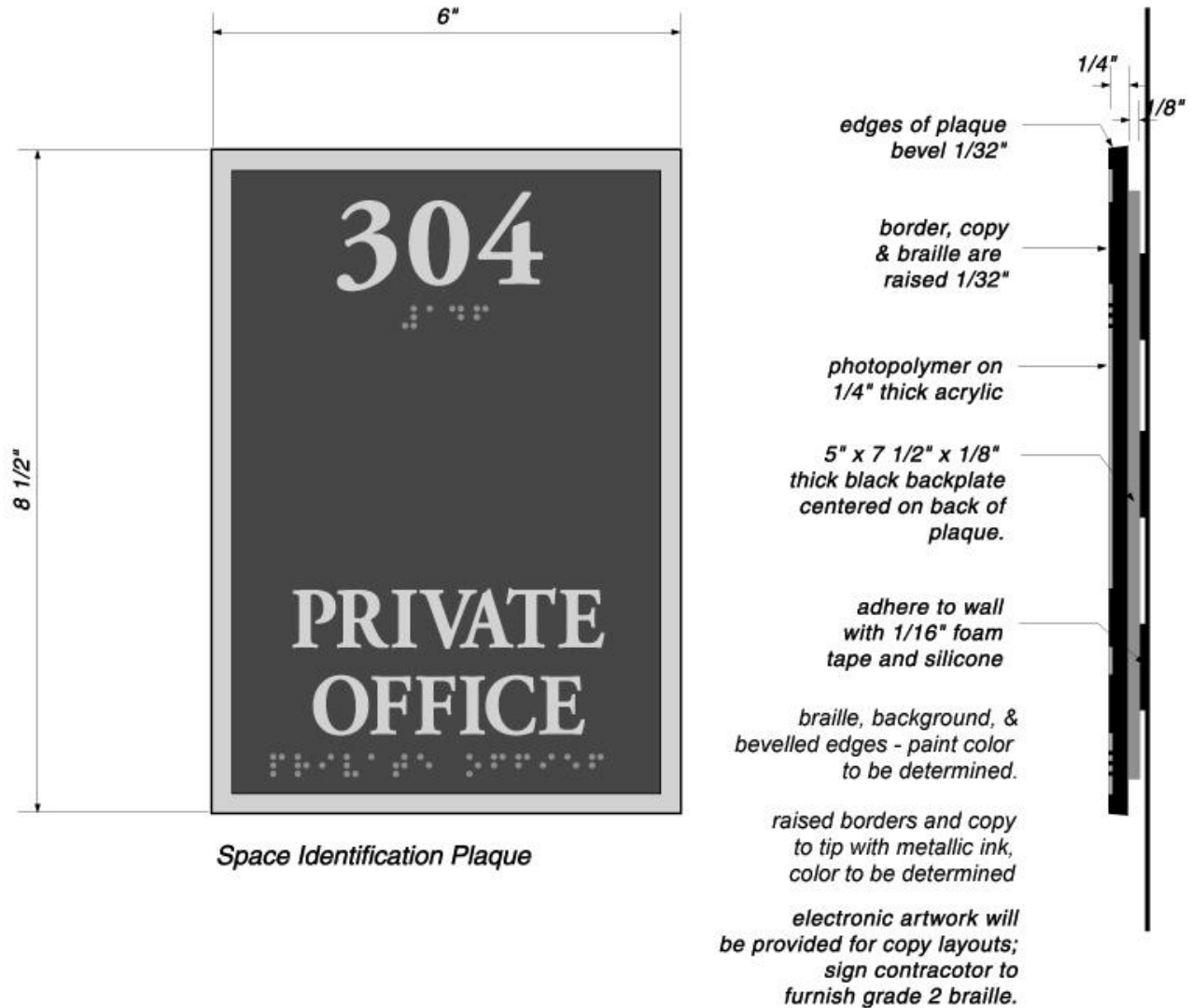


### 3.3 INTERIOR SIGNAGE SCHEDULE:

- A. All signage to be in compliance with the Americans with Disabilities Act of 1990 and the Texas Accessibility Standards. Mount new signage according the mounting height requirements of ADA. Refer to schedule and Drawings for sizes, locations, and layout of signage types, sign text copy, and graphics.

| Door No. | Quantity | Inscription   | Interior | Comments | Size/Material                                    |
|----------|----------|---|----------|----------|--|
| B03      | 1        | UNISEX ADA RESTROOM<br>(Note: Include the international symbol for accessibility) | Interior |          | 6" x 8 1/2",<br>photopolymer on acrylic, typical |

## Interior Room Sign



END OF SECTION

## SECTION 10810

### TOILET ACCESSORIES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

A. Section Includes [Alternate no. 2]:

1. Soap dispenser.
2. Paper towel dispenser
3. Toilet tissue dispenser.
4. Framed mirror.
5. Grab bars.
6. Hand dryer.
7. Sanitary waste receptacle.
8. Baby changing station.
9. Pipe covers.
10. Attachment hardware.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 09215 – Veneer Plaster.
3. Section 09250 – Gypsum Board Assemblies.
4. Section 09280 – Gypsum Plaster Restoration.
5. Section 09300 – Tile.
6. Section 10160 – Metal Toilet Compartments.

##### 1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. A 123/A 123M - Zinc (Hot-Galvanized) Coatings on Iron and Steel Products.
2. A 269 - Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
3. A 480/A 480M - Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
4. A 666 - Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
5. B 456 - Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
6. C 1036 - Flat Glass.

##### 1.3 SUBMITTALS

- A. Product Data: Manufacturer's brochures showing sizes, details of function, finishes, and attachment methods.
- B. Setting Drawings: Provide setting drawings, templates, instructions, and directions for installation of anchorage devices in other work.
- C. Submit schedule of accessories indicating quantity and location of each item.
- D. Samples: One of each accessory, if requested.

#### 1.4 QUALITY ASSURANCE

- A. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set or built into masonry; coordinate delivery with other work to avoid delay.
- B. Accessory Locations: Coordinate accessory locations with other work to avoid interference and to assure proper operation and servicing of accessory units. Height of accessories shall be installed in compliance with applicable accessibility code.
- C. Products: Unless otherwise noted, provide products of same manufacturer for each type of unit and for units exposed in same areas.

#### 1.5 PRODUCT HANDLING

- A. Deliver accessories to the site ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type of material, manufacturer's name and brand name.

#### 1.6 WARRANTY

- A. Mirrors:
  - 1. Warranty period: 10 years.
  - 2. Warrant against silver spoilage resulting from manufacturing defects.

#### 1.7 MAINTENANCE

- A. Label keys and forward directly to Owner.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
  - 1. A and J Washroom Accessories.
  - 2. American Specialties, Inc.
  - 3. Bobrick Washroom Equipment Co.
  - 4. Bradley Corp.
  - 5. General Accessory Manufacturing Co.
  - 6. IPS Corporation, [www.truebro.com](http://www.truebro.com)
- B. Substitutions: Under provisions of Division 1.

#### 2.2 MATERIALS

- A. Stainless Steel:
  - 1. Sheet: ASTM A 480/A 480M or ASTM A 666; Type 304, rollable temper.
  - 2. Tubing: ASTM A 269.
- B. Galvanized Steel: ASTM A 366.
- C. Mirror Glass: ASTM C 1036, Type I, Class 1, Quality q1.

## 2.3 ACCESSORIES

- A. Fasteners: Stainless steel where exposed, hot dip galvanized where concealed; type best suited to substrate conditions.

## 2.4 FABRICATION

- A. Use stainless steel for exposed surfaces; galvanized steel may be used in concealed locations.
- B. Form exposed surfaces from single sheet of stock, free from joints, and flat, without distortion.
- C. Weld joints of fabricated components and grind smooth.
- D. Fabricate grab bars of tubing, free of visible joints, return to wall with end attachment flanges. Peen grip surfaces.
- E. Fabricate soap dispensers to operate with less than 5 pound force.
- F. Provide hangers, adapters, anchor plates, and accessories required for installation.
- G. Key locks alike; furnish three keys.
- H. Mirrors:
  - 1. Frame: One piece, roll formed stainless steel channel, 1/2 x 1/2 inch, with corners mitered.
  - 2. Mirror: Apply one coat of silver, one coat of electroplated copper, and one coat of organic mirror backing compound to back surface of glass.
  - 3. Backing: Galvanized steel sheet.
  - 4. Isolate glass from frame and backing with resilient, waterproof padding.
  - 5. Shop assemble units and package complete with anchors and fittings.
  - 6. Finishes:
    - a. Stainless steel: No. 4 satin.
    - b. Galvanizing: ASTM A 123/A 123M to 1.25 ounces per square foot.
    - c. Chrome plating: ASTM B 456, Type SC 2, polished finish.
    - d. Polyethylene: White.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Examine the areas and conditions where toilet accessories are to be installed and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

### 3.2 PREPARATION

- A. Accessories which are to be partition mounted shall be closely coordinated with other trades, so that the necessary reinforcing is provided to receive the accessories.
- B. Furnish templates and setting drawings and anchor plates required for the proper installation of the accessories at gypsum drywall and masonry partitions. Coordinate the work to assure that base plates and anchoring frames are in the proper position to secure the accessories.
- C. Verify by measurements taken at the job site those dimensions affecting the work. Bring field dimensions, which are at variance with those on the approved shop drawings to the attention of the

Architect. Obtain decision regarding corrective measures before the start of fabrication of items affected.

- D. Cooperate in the coordination and scheduling of the work of this Section with the work of other Sections so as not to delay job progress.

### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Set plumb, level, square, and rigidly anchored.

### 3.4 CLEANING AND PROTECTION

- A. Upon completion of the installation, clean accessories of dirt, paint and foreign matter.
- B. Replace and/or repair installed work, which is damaged or defective at no additional cost.

### 3.5 SCHEDULE

| DESCRIPTION   | MANUFACTURER | CATALOG NO.                 |
|---|--------------|-----------------------------|
| Wall-mounted soap dispenser   | ASI          | 20363                       |
| Paper towel dispenser/waste receptacle, recessed                      | ASI          | 20469                       |
| Stainless steel angle frame mirror                                    | ASI          | 0600-B1836 18"Wx36"H        |
| Toilet tissue dispenser, surface mounted                              | ASI          | 20030                       |
| Stainless steel baby changing station, recessed                       | ASI          | 9018                        |
| Sanitary waste receptacle, surface mounted                            | ASI          | 20852                       |
| Stainless steel hand dryer  | ASI          | 0192-1-93                   |
| Grab bar straight, stainless steel w/snap flange                      | ASI          | 3801 x length indicated     |
| Grab bar wall to floor, custom length, stainless steel w/ snap flange | ASI          | 3801 x length indicated     |
| Under lavatory pipe cover   | TRUEBRO      | Lav Guard 2 Series #100 E-Z |
|   |              |                             |

**END OF SECTION**



## SECTION 26 05 00

### COMMON WORK RESULTS FOR ELECTRICAL

#### PART 1 GENERAL

##### 1.1 RELATED WORK

- A. Examine all Drawings, Specifications, and associated Contract documents and coordinate them with work described in this Division of the Specification.

##### 1.2 DESCRIPTION OF WORK

- A. The work covered by Division 26 of the Specifications includes the furnishing of all materials, labor, transportation, tools, permits and fees, and incidentals necessary for the complete installation of all electrical work required in the Contract Documents.
- B. It is the intent of the Contract Documents to provide an installation complete in every respect.
- C. All items noted, indicated, and called for herein and on the Drawings shall be furnished and installed by this Contractor unless noted to be furnished by others. These items may include wiring, conduit systems, electrical equipment, and other electrical systems required for a complete system.
- D. In the event that additional or special construction is required, the Contractor is responsible for providing all material and equipment which are usually furnished with such construction in order to complete the installation, whether indicated or not.
- E. The Contractor is advised to visit the premises and thoroughly familiarize himself with existing conditions including any conditions on which his work might depend. Advise the Architect of any discrepancy or conflict prior to bidding.

##### 1.3 DRAWINGS AND SPECIFICATIONS

- A. These Specifications are accompanied by Drawings and details of the installations indicating the locations of equipment, outlets, controls, circuits, and related items. The Drawings and these Specifications are complimentary to each other, comprising the Contract Documents, and what is required by one is as binding as if required by both. Where conflicts may occur between the Drawings and the Specifications, the most stringent interpretation of the design concept is binding unless the Engineer waives this provision.
- B. If the Contractor deems it necessary to change or depart from indications, requirements, or similar instructions of the Drawings or Specifications, submit to the Architect or Engineer for review details of and reasons for the proposed departures. Do not make changes or departures without prior approval.

##### 1.4 CODES, STANDARDS AND FEES

- A. General code compliance:
  - 1. In general, comply with the current editions of the standards issued by the following organizations or governing bodies:
    - a. General code requirements:
      - 1) National Electrical Code (NEC) (NFPA 70).
      - 2) International Building Code (IBC).
      - 3) International Fire Code (IFC).
      - 4) Underwriters Laboratories (UL).



- b. Manufacturer's standards:
    - 1) National Electrical Manufacturers Association (NEMA).
    - 2) American National Standards Institute (ANSI).
    - 3) Certified Ballast Manufacturers (CBM).
  - c. Governmental standards and codes:
    - 1) Occupational Safety and Health Acts (OSHA).
    - 2) Federal Americans with Disabilities Act (ADA).
    - 3) State of Texas Elimination of Architectural Barriers Act (Texas Civil Statutes).
    - 4) City of San Diego Electrical Codes and Ordinances.
  - d. The terms and conditions of services provided by the following utilities:
    - 1) AEP Texas
  - e. Any other authorities that may have lawful jurisdiction pertaining to the work specified.
- 2. Refer to the individual Specification Sections for detailed references to applicable standards. Where specific codes or standards are listed individually in other sections of these Specifications, the intent is to call attention to the requirements of these particular codes or standards and not to imply that the previously listed codes or standards do not apply.
- B. None of the terms or provisions of this Specification waive any of the rules, regulations, or requirements of authorities with standards governing the construction work. In any instance where these Specifications call for materials for construction of a better quality or larger size than required by the codes, the provisions of these Specifications take precedence.
- C. In case of direct conflict between applicable Codes and the Contract Documents, the Codes govern.
- D. The Contractor is responsible for all permits, fees, and licenses required due to or because of this project. Include costs of all such permits or fees in the bid. No additional compensation will be made for any required inspection, permit, license, or fee.

## 1.5 SUPERVISION AND OBSERVATION OF THE WORK

- A. Supervision of the work:
  - 1. Provide a competent foreman at the building site to receive instructions and to act for the Contractor.
  - 2. The Contractor is solely responsible for work methods, jobsite safety considerations, and contract compliance at the project site.
  - 3. The Engineer has no authority to exercise any control over work, health, or safety precautions. All such items are the Contractor's sole responsibility.
- B. Observation of the work:
  - 1. The Engineer or Engineer's representative reserves the right to observe the work at any time.
  - 2. Give assistance, as may be required, to the Engineer or Engineer's representative or observer during inspection of the work.
  - 3. The observation of the work and other professional activities of the Engineer shall not relieve the Contractor of his obligations, duties, and responsibilities including construction means, methods, sequences, techniques, or procedures necessary for performing, superintending, or coordinating all portions of the construction work.

4. The presence of the Engineer or Engineer's representative at the job site or his observance of the Contractor's work does not relieve the Contractor of any safety or work related responsibilities.
5. The Engineer's periodic inspections do not constitute a warranty by the Engineer, nor do they imply a fiduciary duty on the part of the Engineer to certify that the work is complete in all respects or performed completely in accordance with all Contract Documents. The responsibility for compliance with the Contract Documents rests with the Contractor.

#### 1.6 REVISIONS TO THE WORK

- A. All addendum and change order items are governed by the same terms and conditions as the Contractor's initial contract with the Owner.
- B. Expeditiously carry out, in a timely manner, authorized changes or recommendations made by appropriate persons.
- C. Change orders:
  1. Refer to the General and Special Conditions for the appropriate manner for submitting any change orders.
  2. All proposed change orders shall be presented in written form to the Architect for acceptance or denial by the Owner.
  3. Contractor initiated change orders shall be formally made only after discussion with the Engineer regarding reasons for the anticipated change.
  4. Provide complete break-downs of costs in all change orders with details of material quantities, quantity costs, man-hours required, cost per man-hour, overhead, and profit clearly set out in the change order. Provide a clear indication of any overall cost increase or decrease.
  5. Minor changes in the work, which require little or no increase in the cost of construction and which will not require a change in the construction contract, do not require formal change orders. However, these changes must be approved by all parties concerned.
  6. Unless specifically authorized otherwise, the Contractor must present each proposed change order as the matter comes up and not present omnibus change orders at the completion of the project.
- D. Replace or revise any materials or workmanship that are deemed unsatisfactory due to improper selection or placement of equipment or materials, or due to incomplete installation.

#### 1.7 WARRANTY

- A. General warranty: Guarantee all materials and workmanship for proper operation and service for a period of one year after the final acceptance of work.
- B. Warranty work included furnishing both materials and labor to replace the defective items.
- C. Extended warranty:
  1. Where noted in another Section or Division of the Specifications, such as for lighting fixture ballasts, extend warranty past twelve months to the time limit noted.
  2. Magnetic ballasts shall be warranted for a period of at least 2 years from time of acceptance.
  3. Electronic ballasts shall be warranted for a period of at least 5 years from time of acceptance.

4. Surge protective devices shall be warranted for a period of at least 2 years from time of acceptance
  5. Occupancy sensors shall be warranted for a period of at least 2 years from time of acceptance.
- D. Lamps:
1. Lamps shall be warranted for the manufacturer's standard published average lifetime, or the project one year warranty period, whichever is less.
  2. Lamp lifetime shall be measured from the time of the Owner's acceptance of the project and not from the time of first energization.
  3. If lamps do not meet this lifetime criteria, they shall be replaced at the Contractor's expense during the warranty period.
  4. Where questions arise as to the actual "burn time" of the lamps, the Owner shall furnish to the Contractor estimates of the actual lamp burn time.
  5. Replacement lamps shall be new and not drawn from the Owner's spare stock.

## 1.8 TEMPORARY ELECTRICAL SERVICES

- A. Division 26 is solely responsible for the installation and removal of temporary electrical service unless approved otherwise by the Architect or Engineer.
- B. The installation and removal of temporary electrical service shall not be excluded from the contract.
- C. Payment for costs of energy usage:
1. Metered utility electrical use (energy charges) for new buildings, whether received from temporary or permanent services, shall be paid for by the Contractor until the Owner accepts the building.
  2. Division 26 shall not be responsible for paying for the metered utility energy charges unless agreed to with the other trades.
- D. Scope of temporary electrical services required:
1. Provide reasonable and necessary power and lighting services for construction.
  2. It is not the intention of these Specifications to require that electrical service be mandated for specific types of equipment (such as hoist, elevators, or pumps) that can be or have been served by other means.
  3. Temporary lighting levels for construction:
    - a. At least 20 footcandles, as measured on the floor or work surface.
    - b. As uniform as practical given job conditions and layout of construction.
    - c. Provide in areas and at such times as adequate natural light is not available during construction hours.
  4. Receptacle layout, ground fault protection, grounding testing, and similar items must equal or exceed those prescribed by OSHA.
  5. Any permanently installed receptacles used for temporary construction services shall be ground fault protected per NEC.
  6. Refer to NEC Article 305 for additional requirements of temporary wiring systems.
- E. Utilization of permanent lighting for construction services:
1. Clean fixtures used for temporary service during construction and bring up to new equipment condition.

2. Replace lamps which are utilized for temporary service during construction and have significant burn times with new lamps within five (5) days of final inspection or when directed by Architect.
- F. Establishment of construction services:
1. Temporary construction services may include the installation of temporary utility transformers and services, use of portable generators, or other suitable means.
  2. If utility construction services are required, the contractor is responsible for contacting the utility and paying for any costs associated with the establishment and removal of the construction service.
  3. Utilize construction service until the permanent service is installed and available for use.
  4. Site temporary facilities so that they do not conflict with permanent construction or remove as soon as practical when permanent construction moves into their area.

#### 1.9 BUILDING CONSTRUCTION AND LAYOUT OF WORK

- A. Consult all Drawings and Specifications to thoroughly familiarize oneself with the type and quality of construction to be provided on this project.
- B. The electrical Drawings are diagrammatic in character. Installation details are subject to the requirements of structural and architectural conditions as well as code and ordinance provisions.
- C. Plan the installation so that work will be concealed in walls, ceilings, chases and related portions of the building unless specifically noted or indicated to be exposed.
- D. The location of electrical items is indicated approximately on the Electrical Drawings. These Drawings are not intended to give complete and exact details in regard to location of outlets, equipment, and other items. Exact locations are to be determined by actual measurements and equipment shop drawings. Symbols or notes for equipment starters, disconnects, and similar items are provided to alert the Contractor of the need for such equipment and are not to be construed to identify the exact placement of the required items.
- E. Consult the Architectural Details to determine wall finishes and locations of wall mounted signs, boards, mirrors, and similar items to insure that electrical outlets do not interfere with wall finishes or materials attached to walls.
- F. Any switch, receptacle, lighting fixture, outlet, junction box, panelboard, and similar type of equipment that interferes with existing or new finishes, conflicts with other equipment, or compromises the use of the facilities by the Owner, may be moved up to 10 feet without additional cost to the Owner, Architect, or Engineer.
- G. Any overhead or underground mechanical, electrical, communication service of any nature damaged by the construction shall be restored to working condition during and after construction to the satisfaction of the Owner. The Owner will make every effort to assist the Contractor, but the location of services shall be the responsibility of the General Contractor and Electrical Contractor.

#### 1.10 SUBMITTAL AND APPROVAL OF MATERIALS

- A. Within a minimum of 30 days after the contract has been awarded, submit for approval complete data covering equipment and materials, which the Contractor proposes to furnish and for which submittal information is required. Consult the

General, Supplementary General, and Special Conditions of the Contract Documents to determine if a faster response time than 30 days is required.

B. General submittal requirements:

1. Before submitting shop drawings or any related material to the Engineer, Contractor shall:
  - a. Thoroughly review safety practices, precautions, and programs for the construction process and determine if any proposed or indicated construction or sequences of construction will or may possibly cause undue hazards, fail to properly protect workers, or otherwise violate the letter or intent of applicable safety practices. Any such questions of compromise of safety shall be brought to the immediate attention of the Architect.
  - b. Review each submission for conformance with the means, methods, techniques, sequences, and operations of construction.
  - c. Coordinate all items to determine if the physical sizes of the submitted items are in accordance with the allowable sizes or dimensions as indicated on the Drawings and as called for on any dimensioned Architectural plans.
  - d. Approve each submittal prior to submission. Stamp or otherwise acknowledge that the submission has been reviewed and approved prior to submission.
  - e. Notify and document in the submittal index any deviation from specified materials.
  - f. Furnish complete, and as specified (both on the Drawings and in the Specifications), any minor or miscellaneous items not submitted for review. Otherwise, all items will be assumed to be furnished complete and as specified.
2. Submit data in three ring hard back binders sized for 8-1/2" X 11" enclosures. Larger format submittals, such as equipment layouts or special shop drawings, shall be edge bound and folded to fit 8-1/2" X 11" size and adequately attached with the submittal.
3. Submit all data at one time. Partial submittals may only be made for large projects and only with the prior approval of the Engineer.
4. The Engineer reserves the right to directly charge the Contractor for time and material costs, at standard hourly rates, if more than two (2) submittals of the same class or type of materials or equipment is required to obtain substitution approval.
5. The Engineer, Architect, and Owner will each retain one copy of each submittal. Provide sufficient additional copies for the Contractor's use and the use of his suppliers.

C. Submittal documents:

1. Provide a cover sheet with the following information:
  - a. Title of the submittal.
  - b. Name and location of the building or project.
  - c. Name of the entity making the submittal.
  - d. Supply house(s) supplying the equipment.
  - e. Date of the submittal.
  - f. Space on cover sheet or associated area that can accept a submittal review stamp from the Engineer.
2. Follow the Specification format with each major category of equipment having its own manila divider referenced to the particular section of the Specifications. Provide a separate detailed listing included at the front of each section of the submittal listing each item by item as follows:

PRODUCT SPECIFIED: MFG. NAME AND NUMBER

PRODUCT PROPOSED: MFG. NAME AND NUMBER

The detailed listing may be omitted for lighting fixtures if the subsequent catalogue cut sheets properly indicate all features of the lighting fixtures including type, complete catalogue number, ballasts, etc.

3. Equipment requiring submittal:
    - a. Lighting fixture assemblies including submittal data for:
      - 1) Enclosures and housings.
      - 2) Photometrics reports.
      - 3) Lenses.
      - 4) Lamps.
      - 5) Magnetic ballasts.
      - 6) Electronic ballasts.
    - b. Panelboards, switchboard, motor control center, and transformers.
    - c. Disconnect and safety switches including the individual loads that they supply
    - d. Separately mounted starters and the loads that they control.
    - e. Contactors and photocell.
    - f. Fuses.
    - g. Metering enclosures.
    - h. Wiring devices and plates.
    - i. Floor boxes and covers.
    - j. Fire alarm system components.
    - k. Dimmer system components.
    - l. Occupancy sensors and systems.
    - m. Other special system components and equipment.
  4. At the Engineer's request, the following equipment and items must also be submitted:
    - a. Conduit, raceways, and fittings.
    - b. Wires and cables.
    - c. Boxes.
- D. Submittal approval and review:
1. Submittals which are submitted in the manner outlined previously will be reviewed by the Engineer.
  2. The Engineer will make a good faith effort to check and review the submittals during the normal course of business.
  3. The Contractor shall notify the Engineer of any time constraints for equipment order placement, release, or similar issues that make or may make expeditious submittal approval required.
  4. The Engineer's approval and review process is provided under the following conditions:
    - a. Review of a manufacturer's engineered systems or manufactured components, whose design is under the sole control of the manufacturer, will not be made.
    - b. The Engineer may require additional documentation, tests, information, or other data in order to finalize the approval process.
    - c. If additional documentation or information is not provided, is provided in an unsatisfactory manner, or is not provided in a timely manner, the affected materials and equipment shall be furnished as specified, complete in all respects.
    - d. The approval review will be performed only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents.

- e. No attempt to check quantities of equipment will be made. The Contractor is solely responsible for providing the correct numbers of all items.
- f. Modifications or comments made on or attached to the shop drawings or submittals do not relieve the Contractor from compliance with the requirements of the Drawings and Specifications.
- g. Approval of a specific item does not necessarily convey approval of the assembly of which the item is a component.

## 1.11 SUBSTITUTIONS

### A. General requirements:

- 1. The listing of product manufacturers, catalog numbers, etc., on the Drawings and in the various sections of the Specifications is generally intended to establish a standard of quality for those products.
- 2. Selection of items or equipment specified or indicated to be furnished is based on engineering judgment regarding application, physical sizes or shapes, dimensions, performance levels, efficiencies, maintenance conditions, colors, materials available, comparison to similar products, and other attributes and conditions that may not be obvious or apparent to those wishing to obtain approval for substitution.

### B. Prior approvals:

- 1. All manufacturers listed on the Drawings or in a particular Section of the Specifications as "Approved Manufacturers" are pre-approved to furnish the specified products only provided that their offered products meet the Specifications.
- 2. Manufacturers not listed on the Drawings or in a particular Section of the Specification, as "Approved Manufacturers" require prior approval to furnish their products on the project.
- 3. Where the Specifications refer to "or equal," "Engineer approved equal," or similar language, the intent of the Specifications is to require approval of substituted items prior to bidding and not after bidding.
- 4. The Engineer may waive the prior approval requirement due to unusual project conditions, such as lack of qualified vendors, if requested.
- 5. Substitution requests must be received by the Engineer at least 10 working days before bid date.
- 6. Requests must include a detailed listing of all products with adequate data sheets for the Engineer to make detailed comparison with specified products.
- 7. Unless special or modified construction is required, all substituted products must be standard manufactured items normally produced by the manufacturers requesting substitution.
- 8. Unsuccessful attempts to provide adequate or acceptable samples will cause the proposed substitution to be rejected.
- 9. It is the responsibility of the Contractor to review all items he wishes to substitute with the Engineer to determine if such substitutions meet the requirements and intent of the Specifications and the Drawings.
- 10. It is the right of the Engineer to review any and all substitutions and to reject any items that the Engineer deems unacceptable.

### C. The Contractor may request substitution materials or methods (unless such substitution is prohibited on the Drawings or in the Specifications), which he feels are equal or superior to those specified. If the Contractor does submit alternate materials or methods, it is understood that the Contractor:

1. Has investigated the substitute product and determined that it has all the same accessories and is equal to or superior in all respects to the product specified.
  2. Has investigated the substitute product and determined that while it is not superior to the product specified, it offers other features or options that the Engineer may consider to be advantageous to the product or equipment specified.
  3. Has coordinated the installation of the equipment, which he proposes to substitute with all trades and includes the costs for any changes required for the substitution.
  4. Waives any and all claims for additional costs related to the substitution.
  5. Will secure authorization for substitution from the Engineer prior to ordering and installing the substitute.
- D. Uniformity of equipment selection and application:
1. Categories of equipment require that uniformity across the equipment line be maintained and providing related products from more than one manufacturer of similar equipment will not meet the intent of these Specifications.
  2. Unless noted otherwise, the following categories of items shall each be furnished by a single manufacturer:
    - a. Switchboard, panelboards, and disconnect switches.
    - b. Starters and contactors.
    - c. Lighting fixture lamps.
    - d. Fuses.
    - e. Electronic linear fluorescent ballasts.
    - f. Wiring devices and plates.
  3. The Contractor is advised that lighting fixtures may require uniformity in areas such as number of louvers per fixtures, louver finish, downlight cone appearance, aperture size, or similar constraints.
  4. The Engineer reserves the right to disqualify a manufacturer from supplying a portion of the items in a category if the manufacturer cannot furnish all items in a category or if the proposed items in the category do not meet uniformity or appearance conditions.

#### 1.12 RECORD DRAWINGS

- A. Keep a set of Drawings on the job, noting all changes made in these Drawings in connection with the final installation including dimensioned locations of all lines and utilities outside the building.
- B. Turn over to the Architect, for delivery to the Owner, at least one clean, neatly marked set of blue line drawings showing "as-installed" work.

#### 1.13 FIRE SEALING

- A. All electrical penetrations through fire rated walls, floors, and ceilings shall be fire sealed to prevent the propagation of smoke and fire, regardless of whether they are enclosed in raceways or are free-wired.
- B. Provide fire sealing in all locations required by applicable Codes.
- C. Utilize materials suitable for the intended service.
- D. See Section 26 05 33 (Raceways and Boxes) for fire sealing requirements and methods. Fire sealing shall be provided for both raceway and free-wired low voltage cabling through firewalls or fire barriers.



## **PART 2 PRODUCTS**

### **2.1 STANDARDS FOR MATERIALS**

- A. Standards for materials and equipment are minimum standards. Materials and equipment selected for use in the project may be required to exceed the minimum testing and labeling standards.
- B. Minimum standards shall include the following (where standards for the particular material or equipment are available):
  - 1. National Electrical Code (NEC) requirements.
  - 2. Underwriters Laboratories (UL).
- C. Labels and marks:
  - 1. Individual components must bear the UL Component Recognition marking (backwards UR symbol) for items such as wiring, power supplies, switches, etc.
  - 2. Assembled equipment must bear the UL mark (UL inside of a circle) based on published UL Standards for Safety.
- D. Material and equipment testing:
  - 1. Materials must be tested to applicable UL standards and shall have passed the respective test requirements.
  - 2. The listing and/or labeling will be accepted as evidence that the materials or equipment conform to the applicable standards of that testing organization.

### **2.2 STANDARDS PRODUCTS**

- A. Materials and equipment are generally selected from standard products of manufacturers regularly engaged in the manufacture of products conforming to these Specifications.
- B. Custom designed products or product modifications are project specific and require adherence to the design conditions.

### **2.3 CONDITION OF MATERIALS AND APPURTENANCES**

- A. All conduit, conductors, fixtures, panelboards, switchboard, and other material systems must be new unless otherwise specified.
- B. Replace any equipment injured or damaged in transit from the factory, during delivery to premises, while in storage on premises, while being erected and installed, or while being tested, until time of final completion, without extra cost to Owner.

## **PART 3 – EXECUTION**

### **3.1 SPACE AND EQUIPMENT ARRANGEMENT**

- A. Install equipment to allow ready access to parts requiring operation or service without disassembly of other equipment.
- B. Maintain working clearances as required by the NEC as follows:
  - 1. NEC working clearances shall be maintained as directed by Article 110.
  - 2. Working clearances required by the NEC are minimum standards. Provided additional clearance where needed or where indicated on the Drawings.
  - 3. Required working clearances shall be maintained for at least the following general categories of equipment:

- a. Disconnect switches, safety switches, starters, and contactors (front of equipment).
  - b. Panelboards (normally front of equipment).
  - c. Switchboard (normally front of equipment, but may include sides).
  - d. Enclosed transformer housing access plates (normally front of transformer).
  - e. HVAC and mechanical unit electrical access plates.
- 4. Contact Engineer for questions on interpretations of clearance requirements.
- C. Provide adequate clear width for equipment maintenance. Minimum width is 30" for equipment operating at 600V or less.
- D. Protect equipment against construction and weather damage.
- E. Any large piece of apparatus, which is too large to permit access through completed building openings shall be brought to the job and placed in the space before the enclosing structure is completed.
- 3.2 CUTTING AND PATCHING
  - A. Where it becomes necessary to cut through any wall, floor, or ceiling to permit installation or repair of any electrical work, such cutting must be approved by the Architect.
  - B. The Contractor is not permitted to cut or modify any structural members without the written permission of the Architect.
- 3.3 CLEANING
  - A. Keep the premises free from accumulations of waste material or rubbish.
  - B. At completion of the job, remove all tools, scaffolding, and surplus materials and leave the area "broom clean".
- 3.4 SLEEVES AND PENETRATIONS
  - A. Install conduit sleeves in a timely manner so as not to impede other trades. Moisture seal sleeves in a manner approved by the Architect.
  - B. Install pitch pans and flashing for roof penetrations that are compatible with the roofing systems. Roof penetrations are subject to the approval of the Architect.
- 3.5 SUPPORTS
  - A. Provide all supporting equipment necessary to erect the electrical system. This support may consist of, but is not limited to, items such as channels, structural members, ceiling support wires, brackets, anchors, inserts, and similar items.
  - B. Install supports in a safe and structurally sound manner paying attention to the mounting surface and structural characteristics. Any supporting methods in question must be called to the attention of the Architect or Engineer for resolution.
- 3.6 EQUIPMENT AND HOUSEKEEPING PADS
  - A. Each piece of floor-mounted equipment, such as switchboards, generators, motor control centers, and transformers, requires a neat cement-finished, structural grade concrete base.
  - B. Equipment located on upper floors not subject to water exposure may be installed directly on concrete floors provide rubber vibration pads between each of the transformer mounting feet and the floor surface.

- C. Minimum requirements for equipment or housekeeping pads:
1. Pour bases not less than 4" high. Provide additional height if required by the Drawings or to match extensions of existing pads.
  2. Tool finish pads and provide a  $\frac{3}{4}$ " chamfer along all exposed tops of sides.
  3. Reinforce pad with #10 10X10 welded wire mesh placed in the center of the pad. Reinforce pad with #4 reinforcing bars laid 12" on center both ways and placed in the center of the pad. Keep bars at least 3" from the sides of the pads for generator.
  4. Pin pads to floor with short lengths of re-bar extending at least 3" into the floor and at least 3" into the pad.
  5. Pin pads to any adjacent existing concrete structures.
  6. Minimum 28-day compressive strength of pad is 3,000 psi.

### 3.7 ELECTRIC CONTROL WIRING OF HVAC MOTORS AND MOTOR-OPERATED EQUIPMENT

- A. Control wiring of HVAC motors and motor-operated equipment:
1. General requirements
    - a. It is the intent of these specifications to provide a clear delineation of responsibilities for the providing of electrical control wiring.
    - b. Divisions 25 and 26 shall jointly coordinate with each other to insure that all control wiring is provided as described.
    - c. All required items shall be furnished under the contract, with responsibilities of specific items as described hereafter, or in Division 25 Specifications.
    - d. While these specifications indicate the contract responsibilities of the various Divisions, they do not prevent job-site mutually agreed upon revisions or modifications to these responsibilities provided that ultimate contract responsibilities are retained as described in the Specifications.
  2. Responsibilities of Division 25 (Mechanical).
    - a. Furnish and set in place, ready for electrical connection, all HVAC motors and motor-operated HVAC equipment unless specifically noted otherwise.
    - b. Provide and set in place all HVAC control devices, such as relays, thermostats, electrically operated valves, control panels, and related items.
    - c. Provide and install all HVAC and energy management system interconnecting control wiring as follows:
      - 1) Install wiring between the equipment and its associated control point.
      - 2) Install all control wiring in conduit unless noted otherwise. Minimum conduit size is  $\frac{1}{2}$ ", except where connections at indoor equipment terminals allow use of  $\frac{3}{8}$ " flex.
      - 3) Install all HVAC control wiring in accordance with Section 26 05 19 and 26 05 33.
      - 4) Coordinate with Division 25 to obtain wiring diagrams for the installation of the control wiring.
      - 5) Where conductor sizes and numbers to various control connections are indicated on the Drawings, these are for reference only and require coordination between Divisions 25 and 26 to insure that all wiring is correct according to the selected equipment manufacturer's recommendations. Provide additional wiring or conductor sizes as required to

satisfy specified functions or to connect to equipment furnished.

- B. Control wiring for other systems:
  - 1. Provide and install control, actuation, and associated interconnecting control wiring for fire alarm system auxiliary components, including connections to electrically operated smoke dampers, HVAC smoke control systems, air handling unit starters, and similar equipment.

### 3.8 DISPOSAL

- A. Items not retained by the Owner of Contractor for their use shall be disposed of in an official sanitary landfill or delivered to the local City refuse collection system, provided such items are suitable for ordinary disposal.
- B. Disposal shall conform to the EPA "Universal Waste Rule."

### 3.9 CONNECTION OF EQUIPMENT

- A. Carefully examine the Drawings and Specifications for details regarding the construction of the electrical systems.
- B. Verify voltage, phase, ampacity, and connection requirements of all electrically operated equipment furnished by other trades. If the actual equipment furnished varies materially from that intended for connection, notify the Architect or Engineer for resolution of connection details.
- C. Verify rotation of all motor operated equipment or other equipment that is rotation sensitive. Rotation shall be verified prior to voltage application to equipment unless approved otherwise.
- D. Carefully examine all documentation furnished with electrical equipment prior to installing connections and operating equipment.
- E. Any equipment requiring certification, testing, calibration, or similar work by others prior to normal operation shall have such work performed by certified individuals or manufacturers prior to operation of the equipment.

### 3.10 WARRANTY DOCUMENTATION

- A. Deliver all warranty documentation to the Owner after acceptance of the building by the Owner.
- B. Documentation shall include sufficient information including manufacturer, local representative, type and model numbers of equipment, date of Owner's acceptance, length of warranty period, and similar data.

### 3.11 IDENTIFICATION AND LABELING

- A. Properly mark disconnect switches, panelboards, switchboards, special purpose device plates, designated receptacles, junction boxes, outlet boxes, etc., to identify their service or designation. Refer to section 26 05 53.

### 3.12 CONDITIONS OF EQUIPMENT AT FINAL ACCEPTANCE

- A. Prior to the time of acceptance, inspect all installed systems to assure that all construction is complete and premises are clean.
- B. Insure that all lighting fixtures are operating and that lenses and reflectors are free of dust, debris, and fingerprints.
- C. Lighting fixture lamps must be new or do not have significantly reduced lifetimes.

- D. Switchboard and panelboards must have all conductors neatly formed, laced and made-up tight.
- E. Equipment enclosures and plates shall be cleaned of stray paint, dust, grease and visible fingerprints.
- F. All circuit directories and labels are in place.
- G. All scratched surfaces are touched-up with paint matching original paint type and color. Where paint cannot be matched, repaint the entire surface in a color and manner approved by the Architect.
- H. Equipment lock keys shall be delivered to the Owner and not left in enclosures.
- I. Spare lamps and spare ballasts have been delivered to Owner and a signed receipt obtained.

**END OF SECTION**

## **SECTION 26 05 19**

### **LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes building wire and cable rated 600 volts or less and wiring connectors and connections.

##### **1.2 REFERENCES**

- A. International Electrical Testing Association:
  - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

##### **1.3 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Requirements for submittals.
- B. Product Data: Submit for building wire and each cable assembly type.

##### **1.4 CLOSEOUT SUBMITTALS**

- A. Section 01 70 00 – Contract Closeout: Requirements for submittals.
- B. Project Record Documents: Record actual locations of components and circuits.

##### **1.5 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

##### **1.6 FIELD MEASUREMENTS**

- A. Verify field measurements are as indicated on Drawings.

#### **PART 2 PRODUCTS**

##### **2.1 BUILDING WIRE**

- A. Manufacturers:
  - 1. Southwire.
  - 2. Encore.
  - 3. Essex Group Inc.
  - 4. Triangle.
  - 5. Capital.
  - 6. Senator.
  - 7. American Insulated Wire (AIW).
  - 8. United Copper Industries (THHN/THWN only).
  - 9. Substitutions: Section 01 60 00 – Material and Equipment.
- B. Product Description: Single conductor insulated wire.
  - 1. Soft drawn annealed copper based upon 98% conductivity.
  - 2. Tinned or untinned in accordance with established standards for the type of insulation around the conductors.
  - 3. Uniform in circular cross-section and continuous without splice except at junction or outlet boxes.
- C. Insulation: 600 volt rating; thermoplastic material rated 75 degrees C.
  - 1. Permanent marking approximately every two feet indicating conductor size, voltage, and temperature rating.

2. Insulation type for general use conductors: THHN/THWN.
- D. Service entrance, feeder, and branch circuit conductor construction standards:
  1. Sized per the American Wire Gauge.
  2. Solid per ASTM B3 for #12 AWG and smaller power and lighting conductors.
  3. Solid or Class B stranded (per ASTM B8) for #10 AWG.
  4. Class B stranded per ASTM B8 for conductors larger than #10 AWG.
  5. Single conductor, 600V insulation, UL listed.
  6. Install only in approved raceways or conduit.
  7. Not smaller than #12 AWG.

## 2.2 EQUIPMENT CONNECTION CORDS:

- A. Provide where indicated on the Drawings for equipment cords, suspended drop cord, and similar locations as follows:
  1. Fine stranded copper conductor construction for enhanced flexibility.
  2. Each phase, neutral, and grounding conductors individually insulated with a black round insulating jacket.
  3. Minimum 90 degree C temperature rating in wet or dry locations.
  4. Minimum size #14 AWG for 15A applications and minimum #12 AWG for 20A applications unless noted otherwise.
  5. 600V cord voltage rating.
  6. NEC type SO (extra hard usage thermoset rubber insulated oil resistant jacket) or extra-flexible type SOOW (extra hard usage thermoset rubber insulated oil resistant jacket and insulation, weather resistant) where noted.
  7. Complete with cord, plug and matching receptacle.

## 2.3 WIRING CONNECTORS

- A. Conductor splice connectors smaller than #6 AWG ("wire nuts"):
  1. Dry and damp locations:
    - a. Scotch.
    - b. Burndy.
    - c. Buchanan.
    - d. 3M.
    - e. Wago Corp.
  2. Wet locations:
    - a. King Technology (silicon filled).
    - b. Buchanan (epoxy filled).
- B. Conductor splice connectors #6 AWG and larger (power distribution blocks):
  1. Square D.
  2. Bussmann.
  3. NSI Industries.
- C. Tape:
  1. 3M.
  2. Plymouth/Bishop.
- D. Wire connector requirements:
  1. UL Listed.
  2. 600VAC insulation rating.
  3. #8 AWG and smaller dry location joints made with insulated compression spring "wire nuts". Other connection methods, such as Wago push-wire connectors, may also be used.

4. #8 AWG and smaller wet location joints made with insulated silicon or epoxy filled waterproof compression spring “wire nuts”.

## 2.4 PULLING COMPOUNDS

- A. Pulling Compounds:
  1. Ideal.
  2. 3M.
  3. American Polywater.
- B. Wire connector requirements:
  1. UL Listed.
  2. Wax based.
  3. Compatible with cable jacket. Do not use lubricant that will damage the conductor’s insulation.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Section 01 50 00 – Construction Facilities and Temporary Controls: Coordination and project conditions.
- B. Verify interior of building has been protected from weather.
- C. Verify mechanical work likely to damage wire and cable has been completed.
- D. Verify raceway installation is complete and supported.

### 3.2 PREPARATION

- A. Completely and thoroughly swab raceway before installing wire.

### 3.3 INSTALLATION

- A. Route wire and cable to meet Project conditions.
- B. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- C. Identify and color code wire and cable under provisions of Section 26 05 53. Identify each conductor with its circuit number or other designation indicated.
- D. Pulling conductors into conduits and raceways:
  1. Pull conductors into raceway at same time.
  2. Do not exceed the wire or cable manufacturer’s recommended pulling tension when pulling wires or cables in raceways.
  3. Provide adequate lubricant when necessary.
- E. Joints and splices:
  1. Service entrance and feeder conductors:
    - a. Install service entrance and feeder conductors as a continuous run the entire length without splicing.
    - b. Do not splice in pull boxes, even if pull boxes are indicated on the Drawings or required by the NEC, unless specifically approved by the Engineer.
  2. Branch circuit splices:
    - a. Install only where accessible in junction boxes, pull boxes, equipment enclosures, or similar locations.
    - b. Materials used must meet UL standards.
    - c. 600VAC insulation ratings.
    - d. Wire nut type joints and splices:



- 1) Dry location with conductors #8 AWG and smaller with insulated compression spring "wire nuts".
  - 2) Wet location joints with conductors #8 AWG and smaller with insulated silicon filled waterproof compression spring "wire nuts".
  - 3) Wet location conductor epoxy filled "wire nuts" shall be made with enough slack to allow enough lead length for a minimum of one removal and re-termination.
- e. Tape any exposed conductors with multiple layers of insulating friction tape.
- F. Properly tag and identify all branch circuit conductors as follows:
1. Use vinyl cloth wrap around for dry locations.
  2. Use heat shrink type wrap for wet locations.
  3. Indicate circuit number for wiring terminated in panelboards.
  4. Indicate circuit number and panel designation for wiring terminated on application device.
- G. Leave at least 6 inch conductor tails at each outlet for the installation of devices or fixtures.
- H. Install equipment and drop cords on equipment furnished by others including appliances, circulating pumps, and similar equipment.

### 3.4 WIRE COLOR

- A. General
1. For wire sizes 10 AWG and smaller, install wire colors in accordance with the following:
    - a. Black and red for single phase circuits at 120/240 volts.
    - b. Black, red, and blue for circuits at 120/208 volts single or three phase.
    - c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
  2. For wire sizes 8 AWG and larger, identify wire with colored tape at terminals, splices and boxes. Colors are as follows:
    - a. Black and red for single phase circuits at 120/240 volts.
    - b. Black, red, and blue for circuits at 120/208 volts single or three phase.
    - c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
- B. Neutral Conductors: White. When two or more neutrals are located in one conduit, individually identify each with proper circuit number.
- C. Branch Circuit Conductors: Install three or four wire home runs with each phase uniquely color coded.
- D. Feeder Circuit Conductors: Uniquely color code each phase.
- E. Ground Conductors:
1. For 6 AWG and smaller: Green.
  2. For 4 AWG and larger: Identify with green tape at both ends and visible points including junction boxes.
  3. Isolated grounding conductors green with orange tracer.

### 3.5 BRANCH CIRCUIT SIZING

- A. Minimum conductor size is #12 AWG for all circuits at a nominal voltage of 120VAC or greater.
- B. Requirements for increased conductor sizing:
  - 1. Where conductor sizes to mechanical equipment, panelboards, or similar equipment are upsized from their NEC minimums due to voltage drop considerations, the particular size indicated on the Drawings shall be maintained throughout from the circuit source to its load side connection.
  - 2. Where branch circuit conductor sizes of general use receptacle circuits are upsized from #12 AWG due to voltage drop considerations, the larger size shall be maintained from the circuit source to the last junction box in the circuit run provided the final receptacle connection is 20 feet or less in length from the last junction box.
  - 3. Where branch circuit conductor sizes of lighting fixture circuits are upsized from #12 AWG due to voltage drop considerations, the larger size shall be maintained from the circuit source to the last junction box in the circuit run, provided that:
    - a. Where taps to interior lighting fixtures are made from interior above-ceiling junction boxes, the conductor size may be reduced to #12 AWG if the taps are 10 feet or less in length.
    - b. Where interior lighting fixtures are field tandem wired or the bodies of fixtures are used as branch circuit raceways, the upsized conductor shall be maintained throughout the circuit.
    - c. Where taps in exterior lighting fixtures are made in pole bases and run inside the pole to the luminaire, the taps may be reduced to #12 AWG provided this conductor size does not exceed 12 amps. For greater loads, upsize to #10 AWG or larger, as required.
- C. Lighting Circuits:
  - 1. All exit or emergency lighting circuits: Minimum #10 AWG.
  - 2. 120V interior lighting circuits over 120 feet in total length: Minimum #10 AWG.
  - 3. 277V interior lighting circuits over 200 feet in total length: Minimum #10 AWG.
  - 4. 208V, 277V and 480 V exterior building lighting circuits: Minimum #12 AWG or as sized on the Drawings.
  - 5. Total circuit length is defined as the total distance from the power source to the last lighting fixture on the circuit.
- D. Power and receptacle circuits:
  - 1. 120V receptacle circuits over 120 feet in total length: Minimum #10 AWG.
  - 2. 208V power circuits sized as noted.
  - 3. 277V and 480 V power circuits sized as noted.
  - 4. Total circuit length is defined as the total distance from the power source to the last power connection on the circuit.

#### END OF SECTION



**SECTION 26 05 26**  
**GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Rod electrodes.
  - 2. Wire.
  - 3. Mechanical connectors.
  - 4. Exothermic connections.
- B. Related Sections:
  - 1. Section 03 30 00 – Cast in Place Concrete: Bonding or welding bars when reinforcing steel is used for electrodes.

**1.2 REFERENCES**

- A. Institute of Electrical and Electronics Engineers:
  - 1. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
  - 2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.
- B. International Electrical Testing Association:
  - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. National Fire Protection Association:
  - 1. NFPA 70 - National Electrical Code.

**1.3 SYSTEM DESCRIPTION**

- A. Grounding systems use the following elements as grounding electrodes:
  - 1. Metal underground water pipe.
  - 2. Metal building frame.
  - 3. Concrete-encased electrode.
  - 4. Rod electrode.

**1.4 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Requirements for submittals.
- B. Product Data: Submit data on grounding electrodes and connections.

**1.5 CLOSEOUT SUBMITTALS**

- A. Section 01 70 00 – Contract Closeout: Requirements for submittals.
- B. Project Record Documents: Record actual locations of components and grounding electrodes.

**1.6 QUALITY ASSURANCE**

- A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Section 01 60 00 – Material and Equipment: Requirements for transporting, handling, storing, and protecting products.

- B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.
- C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.
- D. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

#### 1.8 COORDINATION

- A. Complete grounding and bonding of building reinforcing steel prior concrete placement.

### **PART 2 PRODUCTS**

#### 2.1 ROD ELECTRODES

- A. Manufacturers:
  - 1. Copperweld, Inc.
  - 2. Erico, Inc.
  - 3. Substitutions: Section 01 60 00 – Material and Equipment.
- B. Product Description:
  - 1. Material: Copper-clad steel
  - 2. Service Entrance Grounds: 3/4 inch diameter and 10 feet in length.
  - 3. Supplemental Ground Rods: 1/2 inch diameter and 6 feet in length.
  - 4. Pole Base Grounds: 1/2 inch diameter and 6 feet in length.
  - 5. Connector: Connector for exothermic welded connection.

#### 2.2 WIRE

- A. Material: Stranded copper.
- B. Foundation Electrodes: 4 AWG.
- C. Grounding Electrode Conductor: Copper conductor bare or insulated.
- D. Bonding Conductor: Copper conductor bare or insulated.

#### 2.3 MECHANICAL CONNECTORS

- A. Manufacturers:
  - 1. Erico, Inc.
  - 2. Substitutions: Section 01 60 00 – Material and Equipment.
- B. Description: Bronze connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

#### 2.4 EXOTHERMIC CONNECTIONS

- A. Manufacturers:
  - 1. Cadweld, Erico, Inc.
  - 2. Substitutions: Section 01 60 00 – Material and Equipment.
- B. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Section 01 50 00 – Construction Facilities and Temporary Controls: Verification of existing conditions before starting work.
- B. Verify final backfill and compaction has been completed before driving rod electrodes.

### **3.2 PREPARATION**

- A. Remove paint, rust, mill oils, and surface contaminants at connection points.

### **3.3 GENERAL INSTALLATION REQUIREMENTS**

- A. Install in accordance with IEEE 142 and NEC Article 250.
- B. Install rod electrodes at locations as indicated on Drawings.
- C. Install grounding and bonding conductors concealed from view.
- D. Permanently ground entire light and power system in accordance with NEC, including service equipment, distribution panels, lighting panelboards, switch and starter enclosures, motor frames, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.

### **3.4 RACEWAY GROUNDING CONDUCTORS**

- A. Install branch circuits feeding isolated ground receptacles with separate insulated grounding conductor, connected only at isolated ground receptacle, ground terminals, and at ground bus of serving panel.
- B. Accomplish grounding of electrical system by using insulated grounding conductor installed with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with NEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment. Ground conduits by means of grounding bushings on terminations at panel boards with installed number 12 conductor to grounding bus.

### **3.5 MAIN GROUNDING ELECTRODE CONDUCTOR AND BONDING JUMPER**

- A. Provide at the service entrance as follows:
  - 1. Ground and grounding conductors shall be copper only.
  - 2. Size ground and grounding conductors per NEC Article 250 or larger as so indicated on the Drawings.
  - 3. Grounding conductors located inside equipment enclosure may be either bare copper splice plates(s) or insulated copper conductor(s).
  - 4. Grounding conductor(s) run outside of the service equipment shall be insulated copper conductor(s) enclosed by conduit.
  - 5. Attachment to grounding electrodes shall be as required by NEC 250-70.
  - 6. Grounding electrode conductors shall be installed as required by NEC 250-24 between the main service equipment ground bar and the grounding electrode(s) external to the service equipment. Maximum size of the grounding electrode conductor shall be #4/0 unless noted otherwise.
  - 7. The main bonding jumper(s) between the service equipment solid neutral bar and its ground bar shall be sized as per NEC 250-28 and Table 250-66. The size of the bonding jumper(s) shall be at least 12.5% of the combined conductor sizes of any service entrance phase. Where provided by the equipment manufacturers, bonding plates (or screws for

small installations) are acceptable in lieu of Contractor installed bonding jumpers.

- B. Run the grounding electrode conductor from the service entrance equipment ground bar to the following locations. The listing of the grounding electrodes is in order of preference from best to least effective:
1. The building main cold water service metal pipe within 5 feet of where the cold water enters the building. Attachment may be through a flange bolt head lug, a suitable clamp or U-bolt connector fitted around the pipe circumference, a terminal lug exothermically welded to the metal pipe, or other method approved by the Engineer. Where dielectric unions exist in the cold water metal pipe outside the building, provide properly sized bonding shunt strap around the water meter and all dielectric unions in the water pipe. Bonding straps to water service meters may be omitted where prohibited by the local Authority Having Jurisdiction.
  2. A main structural steel member of the building where the building construction is either framed steel columns and joists or is supported by steel rigid frames.
  3. Concrete slab:
    - a. Bond to reinforcing steel where at least 20 feet of 1/2 inch of larger diameter re-bar is accessible prior to pour. Bond to the rebar installed near the bottom of a footing of slab.
    - b. Where no slab reinforcing steel is readily available for grounding connection, provide as follows:
      - 1) Connection to a steel cage for a poured pier whose bottom is at least 6 feet below grade.
      - 2) Where no reinforcing steel is readily available in the slab pour, a bare copper conductor, minimum #2 AWG and at least 20 feet in length, may be substituted for the reinforcing steel.
      - 3) The concrete encased reinforcing steel shall not comprise the sole grounding electrode conductor but instead shall be supplemental only.
      - 4) Where the building is supported by poured concrete columns and joists, bonds to additional rebar other than in slab is not required.
  4. Driven ground rod(s). Service entrance ground rods shall be at least 10 feet in length with the top of the rod driven at least 6 inches below grade. Where rods are not able to be driven vertically due to existing conditions (such as sub-surface rock), install at an angle provided the rod end(s) are below the frost line. Where multiple ground rods are used, space ground rods at least 20 feet apart horizontally.
  5. Do not bond to metallic gas piping.
  6. Do not bond to plastic piping.
- C. Where the grounding electrode conductor(s) extend(s) from the service entrance equipment, install as follows:
1. Conduit protection:
    - a. Protect with EMT, IMC or rigid steel conduit where exposed above grade.
    - b. Single grounding conductors installed in metallic conduit shall have grounding bushings and jumpers between the conduit and the conductor at the termination end where the conduit stops prior to the connection to the termination of the conductor.

2. Conduit protection is not required where installed below grade or below slabs.

### 3.6 GROUNDING CONNECTIONS

- A. Where noted on the Drawings, provide compression or exothermic weld connections to the building structural steel, ground grids, or to grounding rods.
- B. Either Burndy "HyGround" compression connection system or Cadweld exothermic welding system may be used for connection of copper conductors to copper conductors, or for connection of copper conductors to steel components.
- C. Follow manufacturer's guidelines for installing all components of the system.

### 3.7 FIELD QUALITY CONTROL

- A. Test the main building grounding system for ground resistance per Section 26 05 90.
- B. Perform ground resistance testing in accordance with IEEE 142.
- C. Perform continuity testing in accordance with IEEE 142.
- D. If resistance is greater than 5 ohms to ground, provide the following as required:
  1. Additional ground rods spaced a minimum of 20 feet apart.
  2. Modifications to the area surrounding the rods as follows:
    - a. Concrete encasement of rods.
    - b. Encasement of rods in material such as Erico GEM (Ground Enhancement Material) low resistivity material.
    - c. The addition of bentonite ("driller's mud") to surround ground rods.
    - d. Sodium chloride (salt) or magnesium sulfate installed in a trench approximately 18 inches away from the rod(s) and approximately 12 inches deep. Provide approximately 50 pounds of material per rod.
  3. Manufactured cylindrical tube assemblies, such as Lyncole XIT Systems, with the following characteristics:
    - a. Straight tubes 10 feet long, 2 inch nominal diameter, constructed of copper and filled with metallic salts. Salts shall dissolve to form an electrolytic solution that leaches into the adjacent soil to lower the ground resistance.
    - b. A copper stranded cable connection to the remainder of the grounding system.
    - c. Install tubes per the manufacturer's recommendations in a shaft filled with bentonite or similar material.

### END OF SECTION





**SECTION 26 05 29**  
**HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Conduit supports.
  - 2. Formed steel channel.
  - 3. Spring steel clips.
  - 4. Sleeves.
  - 5. Mechanical sleeve seals.
  - 6. Firestopping relating to electrical work.
  - 7. Firestopping accessories.
  - 8. Equipment bases and supports.
- B. Related Sections:
  - 1. Section 03 30 00 - Cast-In-Place Concrete: Product requirements for concrete for placement by this section.

**1.2 REFERENCES**

- A. ASTM International:
  - 1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 2. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
  - 3. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
  - 4. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.
- B. FM Global:
  - 1. FM - Approval Guide, A Guide to Equipment, Materials & Services Approved By Factory Mutual Research For Property Conservation.
- C. National Fire Protection Association:
  - 1. NFPA 70 - National Electrical Code.
- D. Underwriters Laboratories Inc.:
  - 1. UL 263 - Fire Tests of Building Construction and Materials.
  - 2. UL 723 - Tests for Surface Burning Characteristics of Building Materials.
  - 3. UL 1479 - Fire Tests of Through-Penetration Firestops.
  - 4. UL 2079 - Tests for Fire Resistance of Building Joint Systems.
  - 5. UL - Fire Resistance Directory.
- E. Intertek Testing Services (Warnock Hersey Listed):
  - 1. WH - Certification Listings.

**1.3 DEFINITIONS**

- A. Firestopping (Through-Penetration Protection System): Sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire rated construction.

**1.4 SYSTEM DESCRIPTION**

- A. Firestopping Materials: UL 1479 to achieve fire ratings as noted on Drawings for adjacent construction, but not less than 1 hour fire rating.

## 1.5 PERFORMANCE REQUIREMENTS

- A. Firestopping: Conform to applicable code for fire resistance ratings and surface burning characteristics.

## 1.6 SUBMITTALS

- A. Section 01 30 00 - Submittals: Requirements for submittals.
- B. Shop Drawings: Indicate system layout with location and detail of trapeze hangers.
- C. Product Data:
  - 1. Hangers and Supports: Submit manufacturers catalog data including load capacity.
  - 2. Firestopping: Submit data on product characteristics, performance and limitation criteria.
- D. Firestopping Schedule: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.
- E. Design Data: Indicate load carrying capacity of trapeze hangers and hangers and supports.
- F. Manufacturer's Installation Instructions:
  - 1. Hangers and Supports: Submit special procedures and assembly of components.
  - 2. Firestopping: Submit preparation and installation instructions.
- G. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- H. Engineering Judgements: For conditions not covered by UL or WH listed designs, submit judgements by licensed professional engineer suitable for presentation to authority having jurisdiction for acceptance as meeting code fire protection requirements.

## 1.7 QUALITY ASSURANCE

- A. Through Penetration Firestopping of Fire Rated Assemblies: UL 1479 with 0.10 inch water gage minimum positive pressure differential to achieve fire F-Ratings and temperature T-Ratings as indicated on Drawings, but not less than 1-hour.
  - 1. Wall Penetrations: Fire F-Ratings as indicated on Drawings, but not less than 1-hour.
- B. Through Penetration Firestopping of Non-Fire Rated Floor and Roof Assemblies: Materials to resist free passage of flame and products of combustion.
  - 1. Noncombustible Penetrating Items: Noncombustible materials for penetrating items connecting maximum of three stories.
  - 2. Penetrating Items: Materials approved by authorities having jurisdiction for penetrating items connecting maximum of two stories.
- C. Fire Resistant Joints in Fire Rated Floor, Roof, and Wall Assemblies: UL 2079 to achieve fire resistant rating as indicated on Drawings for assembly in which joint is installed.
- D. Fire Resistant Joints Between Floor Slabs and Exterior Walls: ASTM E119 with 0.10 inch water gage minimum positive pressure differential to achieve fire resistant rating as indicated on Drawings for floor assembly.
- E. Surface Burning Characteristics: 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 – Material and Equipment: Requirements for transporting, handling, storing, and protecting products.
- B. Accept materials on site in original factory packaging, labeled with manufacturer's identification.
- C. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. Section 01 60 00 – Material and Equipment: Environmental conditions affecting products on site.
- B. Do not apply firestopping materials when temperature of substrate material and ambient air is below 60 degrees F.
- C. Maintain this minimum temperature before, during, and for minimum 3 days after installation of firestopping materials.
- D. Provide ventilation in areas to receive solvent cured materials.

# PART 2 PRODUCTS

## 2.1 CONDUIT SUPPORTS

- A. Hanger Rods: Threaded high tensile strength galvanized carbon steel with free running threads.
- B. Beam Clamps: Malleable Iron, with tapered hole in base and back to accept either bolt or hanger rod. Set screw: hardened steel.
- C. Conduit clamps for trapeze hangers: Galvanized steel, notched to fit trapeze with single bolt to tighten.
- D. Conduit clamps - general purpose: One hole malleable iron for surface mounted conduits.
- E. Cable Ties: High strength nylon temperature rated to 185 degrees F. Self locking.

## 2.2 FORMED STEEL CHANNEL

- A. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

## 2.3 SPRING STEEL CLIPS

- A. Product Description: Mounting hole and screw closure.

## 2.4 SLEEVES

- A. Sleeves for conduit Through Fire Rated and Fire Resistive Floors and Walls, and Fire Proofing: Prefabricated fire rated sleeves including seals, UL listed.
- B. Fire-stopping Insulation: Glass fiber type, non-combustible.

## 2.5 FIRESTOPPING

- A. Manufacturers:
  - 1. Dow Corning Corp..
  - 2. Hilti Corp.
  - 3. Substitutions: Section 01 60 00 – Material and Equipment

- B. Product Description: Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
1. Silicone Firestopping Elastomeric Firestopping: Single or Multiple component silicone elastomeric compound and compatible silicone sealant.
  2. Foam Firestopping Compounds: Single or Multiple component foam compound.
  3. Formulated Firestopping Compound of Incombustible Fibers: Formulated compound mixed with incombustible non-asbestos fibers.
  4. Fiber Stuffing and Sealant Firestopping: Composite of mineral fiber stuffing insulation with silicone elastomer for smoke stopping.
  5. Mechanical Firestopping Device with Fillers: Mechanical device with incombustible fillers and silicone elastomer, covered with sheet stainless steel jacket, joined with collars, penetration sealed with flanged stops.
  6. Intumescent Firestopping: Intumescent putty compound which expands on exposure to surface heat gain.
  7. Firestop Pillows: Formed mineral fiber pillows.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Section 01 50 00 – Construction Facilities and Temporary Controls: Verification of existing conditions before starting work.
- B. Verify openings are ready to receive sleeves.
- C. Verify openings are ready to receive firestopping.

### **3.2 PREPARATION**

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material.
- B. Remove incompatible materials affecting bond.
- C. Do not drill or cut structural members.

### **3.3 INSTALLATION - HANGERS AND SUPPORTS**

- A. Anchors and Fasteners:
  1. Concrete Structural Elements: Provide precast inserts , expansion anchors and preset inserts.
  2. Steel Structural Elements: Provide beam clamps, spring steel clips, steel ramset fasteners, and welded fasteners.
  3. Concrete Surfaces: Provide self-drilling anchors and expansion anchors.
  4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Provide toggle bolts and hollow wall fasteners.
  5. Solid Masonry Walls: Provide expansion anchors and preset inserts.
  6. Sheet Metal: Provide sheet metal screws.
  7. Wood Elements: Provide wood screws.
- B. Inserts:
  1. Install inserts for placement in concrete forms.
  2. Install inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.

3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
  4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
  5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut flush with top of slab.
- C. Install conduit and raceway support and spacing in accordance with NEC.
  - D. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
  - E. Install multiple conduit runs on common hangers.
  - F. Supports:
    1. Fabricate supports from structural steel or formed steel channel. Install hexagon head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
    2. Install surface mounted cabinets and panelboards with minimum of four anchors.
    3. In wet and damp locations install steel channel supports to stand cabinets and panelboards 1 inch off wall.

### 3.4 INSTALLATION - FIRESTOPPING

- A. Install material at fire rated construction perimeters and openings containing penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.

### 3.5 INSTALLATION - EQUIPMENT BASES AND SUPPORTS

- A. Provide housekeeping pads of concrete, minimum 4 inches thick and extending 6 inches beyond supported equipment. Refer to Section 03 30 00.
- B. Using templates furnished with equipment, install anchor bolts, and accessories for mounting and anchoring equipment.

### 3.6 INSTALLATION - SLEEVES

- A. Exterior watertight entries: Seal with adjustable interlocking rubber links.
- B. Conduit penetrations not required to be watertight: Sleeve and fill with silicon foam.
- C. Set sleeves in position in forms. Provide reinforcing around sleeves.
- D. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.

### 3.7 FIELD QUALITY CONTROL

- A. Inspect installed firestopping for compliance with specifications and submitted schedule.

### 3.8 CLEANING

- A. Section 01 70 00 – Contract Closeout: Requirements for cleaning.
- B. Clean adjacent surfaces of firestopping materials.

### 3.9 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 – Contract Closeout: Requirements for protecting finished Work.

- B. Protect adjacent surfaces from damage by material installation.

**END OF SECTION**

**SECTION 26 05 33**  
**CONDUITS AND BACKBOXES FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section includes conduit and tubing, surface raceways, wireways, outlet boxes, pull and junction boxes, and handholes.
- B. Related Sections:
  - 1. Section 26 07 26 – Wiring Devices.

**1.2 REFERENCES**

- A. American National Standards Institute:
  - 1. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
  - 2. ANSI C80.3 - Specification for Electrical Metallic Tubing, Zinc Coated.
  - 3. ANSI C80.5 - Aluminum Rigid Conduit - (ARC).
- B. National Electrical Manufacturers Association:
  - 1. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
  - 2. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
  - 3. NEMA OS 1 - Sheet Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
  - 4. NEMA OS 2 - Nonmetallic Outlet Boxes, Device Boxes, Covers, and Box Supports.
  - 5. NEMA RN 1 - Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit.
  - 6. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Tubing and Conduit.
  - 7. NEMA TC 3 - PVC Fittings for Use with Rigid PVC Conduit and Tubing.

**1.3 DESIGN REQUIREMENTS**

- A. Minimum Raceway Size: 1/2 inch unless otherwise specified.

**1.4 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Submittal procedures.
- B. Product Data: Submit for the following:
  - 1. Flexible metal conduit.
  - 2. Liquidtight flexible metal conduit.
  - 3. Nonmetallic conduit.
  - 4. Flexible nonmetallic conduit.
  - 5. Nonmetallic tubing.
  - 6. Raceway fittings.
  - 7. Conduit bodies.
  - 8. Surface raceway.
  - 9. Wireway.
  - 10. Pull and junction boxes.
- C. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by Product testing agency specified under Regulatory Requirements. Include instructions for storage, handling, protection, examination, preparation, and installation of Product.



## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- B. Protect PVC conduit from sunlight.

## 1.6 COORDINATION

- A. Section 01 50 00 – Construction Facilities and Temporary Controls: Coordination and project conditions.
- B. Coordinate mounting heights, orientation and locations of outlets mounted above counters, benches, and backsplashes.

# PART 2 PRODUCTS

## 2.1 RIGID METAL CONDUIT

- A. Manufacturers:
  - 1. LTV Steel Tubular Products.
  - 2. Allied Tube and Conduit.
  - 3. Substitutions: Not Permitted.
- B. Product Description:
  - 1. Usage restrictions per NEC.
  - 2. Used for:
    - a. Above-grade service entrance and panel feeder runs.
    - b. Runs in any areas subject to damage.
    - c. Below grade raceways only where completely protected against corrosion.
    - d. Wet or damp locations such as carwash or detail wash bay areas.
    - e. Hazardous locations such as Class I, Division II environments.
  - 3. Hot dipped galvanized low carbon strip steel with threads galvanized after cutting.
  - 4. Fittings:
    - a. All joints made with threaded couplings with 3/4" taper per foot dies installed wrench tight.
    - b. Provide unions in lieu of couplings where required due to installation space or for final attachment of rigid conduit runs.
    - c. Straight runs of conduit may utilize factory installed couplings (such as Allied "quick coupling") instead of standard separate couplings.
    - d. Set-screw type fittings are prohibited.
  - 5. Slab or below grade installations:
    - a. Use only where protected with an exterior corrosion protective layer.
    - b. Coating may be field or factory applied.
    - c. Factory applied coating requirements:
      - 1) Permanently fused to galvanized steel surface. Coatings that require the galvanized surface to be compromised prior to application of the coating are not acceptable.
      - 2) Smooth and continuous.
      - 3) Comply with NEMA RN1 and applicable ASTM standards for immersion in boiling water and application of humidity and acetone.
      - 4) Exterior coating:

- a) Field strippable.
    - b) Nominal 40 mil thickness of polyvinyl chloride (PVC).
    - c) Applied after the surface has been primed to receive the coating.
  - 5) Interior coating:
    - a) Permanently coated.
    - b) Nominal 2 mil thickness of polyurethane.
    - c) Resistant to abrasion from pulling of conductors through conduit.
  - d. Use for ells or bends in rigid PVC conduit runs where pulling conductors into the conduit may damage or pull through plastic ells (see Part 3—Execution).
- 6. Coated rigid steel:
  - a. Clean the steel surfaces of grease, oil, or other contaminants and prime for coating application.
  - b. Add a 40 mil PVC plastic coating, free of blisters, bubbles, and pinholes, permanently fused to the entire exterior surface except for the threads. Coating adhesion properties shall be greater than the coating itself.
  - c. Include an interior conduit coating of polyurethane for internal corrosion resistance.
  - d. Clear polyurethane coating of factory threads.
  - e. Couplings and fittings:
    - 1) Similar internal and external coatings as conduit.
    - 2) Flexible square-cut PVC skirts or sleeves extending at least one pipe diameter (or 2", whichever is less) to completely seal the conduit system.
    - 3) Couplings require longitudinal ribs to allow use of installation tools without damaging the coating.
  - f. Comply with:
    - 1) ANSI C80.1.
    - 2) UL Standard #6.
    - 3) NEMA Standard 5.19.
  - g. Provide touch-up compound for field treatment of scars or tears.

## 2.2 FLEXIBLE METAL CONDUIT

- A. Manufacturers:
  - 1. Alfex.
  - 2. Substitutions: Not Permitted.
- B. Product Description:
  - 1. Usage restrictions:
    - a. As per NEC Article 348.
    - b. Flexible metallic conduit shall not be used as the general wiring system.
    - c. Flexible metallic conduit shall not be used to "daisy-chain" branch circuit connections to recessed lighting fixtures except for inaccessible ceiling locations where approved by the Engineer.
    - d. The Engineer shall be consulted on all questions regarding the use of flexible conduit and shall interpret the intent of the Specifications regarding the locations for which flexible conduit is allowed.
  - 2. Approved for general use in the following situations or locations:

- a. Vibration isolation for all interior dry location motor operated equipment such as fan powered boxes, unit heaters, and exhaust fans where the connected horsepower is less than 3/4HP.
  - b. Interwiring of millwork and cabinets for feeds to receptacles, outlet boxes, and under cabinet low profile lighting fixtures.
  - c. Final whip connections to recessed interior lighting fixtures, smoke detectors, and similar equipment installed in accessible ceiling tiles that can be removed for maintenance or accessibility to the ceiling space.
  - d. Locations where equipment, ductwork, structure, or other hindrance makes it impractical or impossible to install straight or offset tubing or conduit. This provision does not provide for the use of flexible conduit where improper prior planning or delay in conduit installation make the location subsequently inconvenient for the use of straight or offset runs of conduit or tubing.
- 3. The use of flexible conduit in old work is extended to include installation of conduits fished in existing walls or other special or unusual situations approved by the Engineer.
- 4. Use of 3/8" flexible conduit in lieu of 1/2" trade size:
  - a. Local Code restrictions prohibiting the use of 3/8" flexible conduit take precedent over NEC allowed use of 3/8" flex conduit.
  - b. Provided local Code allows, the minimum flexible conduit size may be reduced for 1/2" to 3/8" where installed for any of the following conditions:
    - 1) Final whip connections to recessed single circuit and non-split-wired interior lighting fixtures mounting only in accessible ceilings.
    - 2) Connections to equipment with motors rated less than 1/6HP, motorized fire dampers, and similar equipment.
    - 3) Final connections to mechanical system controls, where raceways for mechanical controls are installed under Division 16.
  - c. Additional restrictions effecting use and installation of 3/8" flex:
    - 1) Conduit must not contain more than 3 #12AWG or smaller insulated conductors.
    - 2) Conduit may serve no more than one light fixture.
    - 3) Length of flex is limited to 6 feet.
    - 4) Restrictions of NEC 350-10 are met.
- 5. Constructed of interlocking galvanized steel.
- 6. Used with fittings specifically approved for use with flex.

## 2.3 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Manufacturers:
  - 1. Alfex.
  - 2. Substitutions: Not Permitted.
- B. Product Description:
  - 1. Usage restrictions per NEC.
  - 2. Used for:
    - a. Final connections to vibration-producing equipment such as motors rated 3/4HP or more.
    - b. Final connections to all exterior motorized equipment.
    - c. Final connections to dry-type transformers.
  - 3. Constructed with a sunlight resistant non-metallic jacket over an inner flexible metallic core.

4. Conduit without an inner metallic core (all plastic construction) is prohibited.
5. Used with water-tight fittings approved for use with liquid-tight conduit.
6. Generally limited to six foot lengths.
7. Internal grounding conductor required for all lengths.

## 2.4 ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
  1. LTV Steel Tubular Products.
  2. Allied Tube and Conduit.
  3. Substitutions: Not Permitted.
- B. Product Description:
  1. Usage restrictions per NEC.
  2. Used for above-grade wiring only. EMT is not permitted in slabs or below grade.
  3. Used to enclose:
    - a. General use above-grade wiring lighting, receptacle and equipment branch circuit conductors.
    - b. General equipment feeds.
    - c. Fire alarm and related wiring or cabling.
    - d. Control wiring.
    - e. Similar types of wiring unless noted otherwise in the specifications or on the Drawings.
  4. Galvanized mild strip steel with interior UL approved coating.
  5. Fittings:
    - a. The following types of fittings, couplings, and connectors may be used:
      - 1) Die-cast non-insulated zinc compression type.
      - 2) Steel non-insulated compression type.
      - 3) [Conduits trade size 1-1/4" and smaller may have set screw fittings where used in dry interior locations only if the circuit contains a separate grounding conductor].
    - b. The following types of fittings, couplings, and connectors are prohibited:
      - 1) Expanded conduit ends with factory pre-installed set-screw attachments.
      - 2) Indentor type.
      - 3) Set-screw type.

## 2.5 NONMETALLIC RIGID CONDUIT (PVC)

- A. Manufacturers:
  1. Carlon Electrical Products.
  2. Can-Tex.
  3. J-M Pipe.
  4. Substitutions: Not Permitted.
- B. Product Description:
  1. Usage restrictions per NEC Article 352
  2. General requirements:
    - a. Polyvinyl chloride compound.
    - b. Schedule 40-wall thickness.
    - c. Flame retardant type.
    - d. Resistant to bending and cracking.
    - e. UV resistant.

3. Used for horizontal runs of underslab or underground conduits. Vertical risers and all ells installed below grade must be rigid steel installed as noted previously.
4. No above ground installation.
5. Couplings and fitting designed for permanent glued connection to the conduit.

## 2.6 INTERIOR OUTLET AND JUNCTION BOXES

- A. Manufacturers:
  1. Steel City.
  2. Raco.
  3. Appleton.
  4. Substitutions: Not Permitted.
- B. Standard interior outlet boxes for connection to concealed conduit raceways, or for exposed surface mounted conduit raceways in mechanical spaces, electrical rooms, and similar non-public areas:
  1. General requirements:
    - a. Of proper size and shape for conduits and conductors entering them.
    - b. UL and NEC listed for their application.
    - c. Constructed of code gauge steel.
    - d. Galvanized or plated.
    - e. Complete with conduit knockouts (boxes 4" square and smaller).
  2. A minimum of 1-1/2" deep unless the following conditions are met:
    - a. Construction requires a smaller depth box.
    - b. Engineer specifically approves the use of such shallow boxes.
    - c. Depth is not reduced below 1-1/4".
  3. Box construction:
    - a. Formed (drawn) one piece, for single gang boxes.
    - b. Formed (drawn) one piece or stamped and welded for double gang boxes.
    - c. Formed (drawn), stamped and welded, or sectional type for boxes greater than 2 gang.
    - d. Masonry type stamped and welded boxes (with continuous overlapping device screw attachment trim) may be used where recessed in concrete or concrete block (CMU) wall construction.
  4. Box size:
    - a. 4" square for up to two devices and solid ganged boxes for over two devices.
    - b. Single gang "handy boxes" may be used for device boxes in limited areas (such cabinet work) only with the Engineer's permission. Do not use bevel corner boxes.
    - c. 4-11/16" square boxes for specific devices (such as fire alarm equipment) where required. Consult with manufacturer to determine use and location of special boxes.
  5. Include steel partitions between box sections where required by operating voltage between switches greater than 300V.
- C. Standard interior outlet boxes for connection to surface mounted two piece raceway systems:
  1. Stamped enamel painted steel.
  2. Of proper size and shape for surface raceways and conductors entering them.
  3. UL and NEC listed for their application.

4. A minimum of 1-1/2" deep unless a shallower device box is approved.
  5. Single gang unless used for two devices.
- D. Interior junction boxes mounted above the ceiling line for connection and distribution of branch circuit wiring to receptacles, lighting fixtures, and small motor loads shall be of the same type as standard 4" square outlet boxes except that they shall have flat steel covers.

## 2.7 CAST BOXES

- A. Manufacturers:
1. Crouse-Hinds.
  2. Appleton.
  3. Substitutions: Not Permitted.
- B. Where specified on the Drawings or required for surface mounted exterior or wet interior locations, provide cast outlet boxes.
- C. Cast outlet box standards:
1. Threaded hub type with drilled mounting lugs.
  2. Constructed of ferrous (malleable iron) alloy.
  3. Equal to Crouse-Hinds "Condulet" or Appleton "Unilet" type. Fixture outlet boxes equal to type VFX or GRF type; wiring device outlet boxes equal to type FS or FD.
  4. Provide with plugs for all unused openings, gaskets, and covers compatible with the function of the box.
  5. Where required to be coated for corrosion resistance, provide as follows:
    - a. Permanently fused to galvanized surface. Coatings that require the galvanized surface to be compromised prior to application of the coating are not acceptable.
    - b. Smooth and continuous.
    - c. Comply with NEMA RN1 and applicable ASTM standards for immersion in boiling water and application of humidity and acetone.
    - d. Exterior coating:
      - 1) Field strippable.
      - 2) Nominal 40-mil thickness of polyvinyl chloride (PVC).
      - 3) Applied after the surface has been primed to receive the coating.
    - e. Interior coating:
      - 1) Permanently coated.
      - 2) Nominal 2-mil thickness of polyurethane.
      - 3) Resistant to abrasion from pulling of conductors through conduit.

## 2.8 PULL AND JUNCTION BOXES

- A. Manufacturers:
1. Hoffman.
  2. Wiegmann.
  3. Milbank.
  4. Substitutions: Not Permitted.
- B. Install:
1. Where noted on the Drawings.
  2. Where the total number of bends exceeds 360 degrees.
  3. At other locations required by the NEC.

- C. Use boxes constructed of code gauge steel with standard size knockouts or suitable for field drilling.
- D. Provide junction or pull boxes required by the Drawings or by codes larger than the standard 4" square where required.

## 2.9 EXTERIOR GRADE PULL AND JUNCTION BOXES

- A. Manufacturers:
  - 1. Strongwell Quazite.
  - 2. Newbasis.
  - 3. Carson.
  - 4. Substitutions: Not Permitted.
- B. Provide where required for termination and intermediate pulling access.
- C. General requirements:
  - 1. Polymer cast concrete construction reinforced with fiberglass. Plastic construction is not acceptable.
  - 2. Designed for flush grade mounting.
  - 3. Solid wall construction without knockouts unless approved otherwise.
  - 4. Load ratings:
    - a. General Duty UL Tier 5 for grassy and pedestrian traffic areas.
    - b. Heavy Duty UL Tier 10 for sidewalks, driveways, and similar areas accessible to vehicular traffic.
  - 5. Lid:
    - a. Single or two-piece.
    - b. Attached with stainless recessed head bolts.
    - c. Logo as directed, molded into top of lid.
  - 6. Bottom:
    - a. Provide bottom in box where noted.
    - b. Provide open bottom if not noted.
  - 7. See Drawings for sizes required.

## 2.10 FIRE SEALING REQUIREMENTS

- A. All electrical penetrations through fire rated walls, floors, and ceilings shall be fire sealed to prevent the propagation of smoke and fire, regardless of whether they are enclosed by a raceway or not.
- B. Provide fire sealing in all locations required by applicable Codes.
- C. Utilize materials suitable for the intended service.
- D. Fire sealing shall be provided for both raceway and free-wired low voltage cabling through firewalls or fire barriers.
- E. Generally required UL ratings:
  - 1. Floors:
    - a. Utilize FA rating for concrete floors less than 5 inches thick.
    - b. Utilize FB rating for concrete floors more than 5 inches thick.
    - c. Utilize FC for wood framed floors.
  - 2. Walls:
    - a. Utilize WL rating for framed walls.
    - b. Utilize WJ rating for concrete or masonry walls less than 8 inches thick
    - c. Utilize WK ratings for concrete or masonry walls more than 8 inches thick.

- F. Putties and sealants:
  - 1. Utilize for openings of less than 6 inches in diameter.
  - 2. Generally preferred method for sealing conduit penetrations through walls, ceilings, and floors.
  - 3. May be manufactured in caulk tubes, sticks, buckets, or similar manner to allow easy field insertion for fire stopping.
  - 4. Communication wiring and similar seals must remain permanently soft to allow reuse and re-entry into the sealed opening. Seals for permanent conduit penetrations may become hard after installation.
  - 5. Do not use materials that give off toxic fumes when curing.
  - 6. UL listed for the same rating as the wall the raceway penetrates (typically 1 or 2 hours).
- G. Pipe wrap:
  - 1. Utilize for conduit penetrations of walls, floors, and ceilings.
  - 2. May be used instead of putties and sealants where approved by the Engineer.
  - 3. Intumescent type that expands upon being heated.
- H. Floor-to-floor conduit sleeves:
  - 1. Provide rigid steel conduit sleeves where installed for upper wood or precast concrete tee floors.
  - 2. Provide fire stop assembly for cast-in-place applications where above grade concrete floors are poured in place on site. Assembly requirements:
    - a. Plastic sleeve with integral rubber gasket and intumescent ring of fire stopping material to provide both fire and smoke sealing.
    - b. Top plug to exclude concrete during pouring of slab and dust and dirt after installation is completed.
    - c. Suitable for replacement of conduit once installed without replacement of assembly.
    - d. Suitable for use in floors between 2.5" and 6" of thickness.
    - e. Resistance to normal temperatures up to 100 deg. C.
    - f. Equal to Hilti CP 680 series.

## 2.11 CORROSION PROTECTIVE TAPE

- A. General requirements:
  - 1. Use for any metallic conduit installed in concrete or below grade.
  - 2. Pressure sensitive PVC based type suitable for direct burial applications.
  - 3. Impact resistant
  - 4. Resistant to moisture, acids, salt, and alkalies.
- B. Equal to Scotch #50 or #51.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify outlet locations and routing and termination locations of raceway prior to rough-in.

### 3.2 FIRE SEALING REQUIREMENTS

- A. Install fire sealing in all locations required by applicable Codes.
- B. Fire sealing shall be installed for all raceway and sleeve penetrations of fire rated walls, ceilings, or floors above grade.



- C. Fire sealing shall consist of fire rated putty, sealants, boards, poured or sprayed materials, pillows, or sheets of fire sealing material of required sizes and quantities to completely and effectively seal the associated fire barriers.
- D. Wall penetrations of conduit shall generally be sealed with putty or caulk type sealant. Thoroughly seal penetration to avoid any air spaces around the wall penetrations.
- E. Floor penetrations shall be sealed as follows:
  - 1. For wood floors and pre-cast steel concrete tees:
    - a. Install rigid steel nipple through concrete floor. Stub both above and below floor line approximately 1 inch.
    - b. Securely attach nipple with pipe clamps or other suitable method to prevent nipple from shifting.
    - c. Pack between nipple and concrete opening with ceramic fiber or mineral wool for areas not requiring fire-stopping putty.
    - d. Install fire-stopping putty at top and bottom of penetration. Thickness shall be as recommended by manufacturer.
  - 2. For cast-in-place concrete floor and concrete floors above metal decks with total floor thickness between 2.5" and 6.0" with dimensions of sleeves up to 4" in diameter.
    - a. Provide pre-manufactured firestop assembly instead of field fabrication method noted previously.
    - b. Assembly shall be Hilti #CP 680 series or other approved by the Engineer.
    - c. For total concrete construction:
      - 1) Attach bottom flange to bottom floor form with top of shaft above top of concrete pour.
      - 2) Close all openings with temporary plugs.
      - 3) Support assembly prior to pour to prevent movement.
      - 4) After floor is poured, cut off top of assembly flush with floor line and re-insert top plug.
    - d. For concrete topping slab installed on top of metal decking:
      - 1) Cut circular hole through decking and install metal deck adapter for assembly.
      - 2) Attach bottom flange of assembly to deck adapter and to screw bottom flange to deck. Place with top of assembly shaft above top of concrete pour.
      - 3) Close all openings with temporary plugs.
      - 4) Support assembly prior to pour to prevent movement.
      - 5) After floor is poured, cut off top of assembly flush with floor line and re-insert top plug.
- F. Install all fire seal materials in accordance with manufacturer's recommendations and NEC Article 300-21.

### 3.3 INSTALLATION- RACEWAY

- A. Install all wiring in NEC approved raceways (unless specifically approved otherwise) sized as shown on the Drawings, or, if not sized on the Drawings, in accordance with NEC conduit fill tables.
- B. Install raceway systems in a neat, straight, and workmanlike manner complete with all J-boxes and pull boxes as necessary or noted on plans.
- C. Raceway general installation notes:
  - 1. All raceways are to be concealed unless noted or approved otherwise.
  - 2. Run concealed conduits as follows:

- a. Straight and parallel to building lines where installed in walls and above ceiling lines.
  - b. In a direct line (unless interferences with other trades prevent) where installed under slabs or below grade.
  - c. Do not run conduit horizontally in concrete block (CMU) walls, whether cells are filled or unfilled. Conduits must run vertically inside the CMU cells and be fed from overhead or underground, as appropriate.
- 3. Exposed or surface raceways:
  - a. Difficulty in installing concealed conduit in existing or new construction is not in itself reason for installing surface raceways in lieu of concealed conduit.
  - b. Surface raceways shall generally be installed only in the following locations:
    - 1) Existing mechanical or boiler rooms.
    - 2) New outlets on existing solid masonry walls.
    - 3) Raceway is installed on the roof.
  - c. Install only at right angles to the building lines.
  - d. Conceal the appearance as best as possible even if this requires additional materials or longer routes. Homerun for outlet boxes on interior or exterior walls shall generally be run:
    - 1) From the outlet box down to accessible floor or tunnel space.
    - 2) From the outlet box to the room corner and then up to the accessible ceiling space.
    - 3) Do not run homeruns vertically from each outlet box.
  - e. Confirm the exact routing of any exposed raceways in the field with the A/E prior to roughing in.
- 4. Do not install wiring in exit stairwells except for that wiring associated with the stairwell itself (such as lighting or ADA communication systems).
- D. Mechanical details of conduit and raceway installation:
  - 1. Make all cuts squarely, ram after cutting, and butt conduits solidly into fittings.
  - 2. All conduit and raceway systems must be mechanically continuous and installed complete before conductors are pulled.
  - 3. Bend conduit with approved bending devices. Remove and replace deformed or damaged conduit.
  - 4. Temporarily plug opening if conductors are not immediately installed in the raceway. Install plugs to exclude plaster or other foreign materials.
  - 5. Treat field cut rigid steel conduit threads subject to moisture with paint-on or spray-on galvanizing equal to "Z.R.C. Cold Galvanizing Compound."
- E. When a metallic conduit enters an enclosure, provide an insulated throat connector and or an insulating bushing where the conduit contains conductors sized #4AWG or larger.
- F. Do not run conduit or raceway adjacent to steam piping or hot vent piping unless authorization is provided.
- G. Conductor sets:
  - 1. Run feeders and service entrance conductor sets in individual conduits enclosing the associated phase, neutral, and grounding conductors for each set.
  - 2. Run branch circuits generally in individual conduits. When branch circuits run in common directions or serve loads within common areas, the

conductors may be combined as follows (grounding conductors are not counted in the total) where THHN/THWN conductors are used:

- a. Lighting circuits: Maximum of 6 #10AWG or smaller current carrying conductors in a single conduit.
  - b. Receptacle circuits: Maximum of 9 #10AWG or smaller current carrying conductors in a single conduit.
3. Install conductor sets sized #8AWG and larger in individual conduits unless noted otherwise on the Drawings.

H. Sleeves:

1. Install where noted on the Drawings.
2. Provide for conduit entrances into exterior building walls below grade as follows:
  - a. Provide steel conduit sleeves, cutouts, chases or knockouts for passage of the raceways through the exterior wall(s).
  - b. Sleeves or knockouts shall be of adequate size to allow for reasonable settlement or movement of the raceway or building wall without damage to the enclosed conduits and wiring.
  - c. Completely seal all sleeves, chases, or knockouts to prevent moisture from entering basement areas or from migrating under footings.
  - d. Steel sleeves significantly larger than the enclosed conduit shall have a steel plate welded to the exterior of the sleeve to properly close the wall opening prior to waterproofing.
  - e. Consult the Engineer for determination of specific problem resolution which may include special construction.

### 3.4 INSTALLATION - UNDERGROUD RACEWAY

- A. Carefully plan excavations for electrical systems and utilities in advance, paying particular attention to other utilities in the project area, both existing and new. Use hand and/or machine excavation cautiously to prevent damage to installed systems. The Contractor is responsible for repairing all damages caused as a result of excavation.
- B. Standard conduit depths:
1. Slightly less than 60" deep for utility primary cables and conduits where ditching is provided by the Contractor.
  2. Minimum of 36" below grade outside of the building lines for service entrance and feeder circuits.
  3. Minimum of 24" below grade outside of the building lines for branch circuit conduits.
  4. Below concrete building slabs:
    - a. Conduits installed under sidewalks, driveways, porches, and similar areas outside of the main building slab shall maintain the minimum depths listed above.
    - b. Conduit installed under the main building slab:
      - 1) Do not install horizontal conduit runs in the slab itself.
      - 2) Place conduit in sand cushion region below the building slab or place in the lower soil below the sand cushion.
      - 3) Conduits placed in the lower soil shall have their surrounding ditch area filled with compacted sand with the bottom of the conduit placed at least 1" above the bottom of the ditch soil.

- 4) Adjust conduit depth so there is adequate room to turn up risers so that risers are vertical after passing through the top surface of the slab.

C. Ditch backfill:

1. Backfill with "flowable fill":
  - a. Flowable fill shall contain Portland cement, water, fly ash, and fin aggregate.
  - b. Portland cement:
    - 1) Mix shall contain a minimum of 3.5 sacks of Portland cement per cubic yard of fill.
    - 2) Type I or type II conforming to ASTM C150 or ASTM C595.
  - c. Fly ash shall conform to ASTM C618 Class C or Class F. Fly ash may be eliminated only with written approval of the Engineer.
  - d. Batching and mixing shall conform to ASTM C94. Place with chutes, conveyors, or pumps.
  - e. Flowable fill shall "flow" with little head or mounding, with a slump of approximately 10" to 11".
  - f. 28-day compressive strength shall be no more than 100 psi and no less than 75 psi.
  - g. Depth of flowable fill:
    - 1) Asphalted areas: Entire ditch depth except for within 7.5" of final grade.
    - 2) Grassy areas: Entire ditch depth except for within 12" of final grade.

D. Tracer wire:

1. Provide and install in conduit ditches for spare or unused conduits.
2. Install one #12AWG solid copper THHN/THWN insulated conductor in the ditch with the conduit.
3. Temporarily attach the tracer wire to the outer top surface of the conduit to keep the tracer wire from falling off of the conduit and into the ditch prior to backfilling. Utilize electrical tape, duct tape, or similar material for attachment of tracer wire.
4. Stub up tracer wire above grade on each end of conduit run as the conduit penetrates grade level. Provide loop of wire at each end to allow for future easy attachment of tracer equipment. Attach wire loops to sides of conduit.
5. Internal pull wire may not be substituted for tracer wire.
6. Tracer wire is required outside of the building slab perimeter for non-metallic conduits only under the following conditions:
  - a. Empty service entrance and feeder non-metallic conduits installed without conductors and in a direction other than that of other service entrance or feeder conduits (spare or empty conduits run with active conduits do not require tracer wires).
  - b. Active or inactive conduits for fiber optic cables.
  - c. Service entrance, feeder, or branch circuit conduit stub-outs for future use.

E. Ditch marking tape:

1. Install in the ditch where utility or service entrance conduits are buried outside the building perimeter.
2. Tape is not required for exterior branch circuit ditches.
3. Install approximately 6" to 12" below final grade.
4. Tape requirements:

- a. Equal to 6 ply extra stretch "Terra-Tape 540" manufactured by Reef Industries, Inc.
- b. Nominally 6" wide.
- c. Yellow or red background with black block letters continuously printed with the statement "Caution Electric Line Buried Below" or similar acceptable wording.

### 3.5 INSTALLATION- PVC RACEWAY

- A. Joints:
  - 1. Thoroughly clean conduit and fitting or coupling prior to application of glue.
  - 2. Utilize solvent type glue compound, which will provide a watertight permanent joint by welding both PVC surfaces together.
  - 3. Do not use aerosol or spray-on joint compound.
- B. Bends and offsets:
  - 1. Make any PVC field offsets with a hot box bender specifically approved for the purpose.
  - 2. PVC offsets of less than 45 degrees may be field or factory made.
  - 3. Install factory PVC bend where angle of bend is 45 degrees or more.
  - 4. Provide rigid steel or IMC factory ell or offset in conduit run, instead of PVC, where:
    - a. Conduits 2" trade size or larger.
    - b. Length of run exceeds 125 ft.
    - c. Ropes larger than 1/4" diameter are used for pulling conductors.
    - d. Any location where the installation of the conductors may pull through the interior wall of PVC elbows or offsets.
- C. Transition to the type of metallic conduit used above grade or above slab as the PVC conduit passes through the grade or slab.
- D. Protection of steel fittings, couplings, elbows, and offsets utilized below grade in PVC conduit runs:
  - 1. Protect metallic conduit and fittings with either factory-applied coating or field applied coating.
  - 2. Coatings or fitting skirts shall extend past the metallic conduit or fittings onto the PVC conduit run to make a watertight seal.
  - 3. Field applied tape coatings:
    - a. Overall coating must be a minimum of 20 mils thickness.
    - b. Provide at least one half-lapped layer of Scotch #50 (10 mil) tape or one layer of Scotch #51 (20 mil) tape with overlapped edges.
    - c. Prime conduit with Scotch Pipe Primer (or equal) prior to application of tape.

### 3.6 INSTALLATION- HDPE RACEWAY

- A. Lay the conduit in the ditch as straight as possible, taking care to avoid "snaking" of conduit.
- B. Conduit shall be installed complete, end-to-end, without joints in the HDPE run. If conduit installed is too short, replace with single continuous run.
- C. Take precautions to avoid deforming the internal diameter of the conduit. Any conduit which is kinked or has excess "ovaling" shall be removed and replaced.
- D. Provide couplers where transitioning from HDPE to PVC or steel conduit.  
Coupler installation:

1. Thoroughly clean conduit and fitting or coupling prior to application of couplers
  2. Prepare cut conduit ends by beveling the outside edge of the conduit prior to inserting into the coupler.
  3. Remove any stray burrs or conduit shavings with a deburring tool.
  4. Install coupler onto conduits at the correct docking depth. Tighten stainless steel bands to provide a watertight joint.
- E. Transition to the type of metallic conduit used above grade or above slab before the HDPE conduit passes through the grade or slab. HDPE may be run complete without transition only where the conduit terminates in a poured concrete base (such as a pole base).

### 3.7 GENERAL INSTALLATION – BOXES

- A. Refer to the Drawings for the general location of boxes and outlets.
- B. Switch boxes near doors:
1. Install close to trim when located by doors.
  2. Place wall switch outlets at door locations on the lock side of the door. If no usable wall space adjacent to the lock side jamb is available, place switch outlets on the wall against which the door swings and in a location accessible after the door is fully opened.
- C. Boxes required by code due to conduit bends are generally not indicated on the Drawings.
- D. The Contractor shall familiarize himself with the details of all rooms, spaces, and construction requirements so that the installation of outlets and other electrical equipment shall not interfere with work of other trades or render the outlets or equipment inaccessible for maintenance or repair.
- E. Any outlet, box, or related item may be relocated within 10 feet of its indicated location without additional cost to others.
- F. General Requirements:
1. Close unused openings with knock-out closures.
  2. Properly support to prevent movement.
  3. Reduced in size if necessary when indicated to be installed in window mullions or other areas requiring narrower or smaller boxes. Substitutions require the Engineer's approval.

### 3.8 INSTALLATION – WALL OUTLET BOXES

- A. Offset to reduce sound transmission between rooms.
- B. Outlet boxes in smoke control walls (such as egress corridor walls) shall be offset at least 24" from each other where mounted on opposite side of the wall. If smoke control wall outlet boxes are not placed at least 24" apart, then the rear of the box shall be covered with a fire rated pad (such as "Metacaulk Box Guard") which will expand and seal off the box in the event of a fire, or must be completely covered with a fire rated putty along the top, bottom, and sides of the box.
- C. If new switches, receptacles, or similar devices are installed in existing outlet boxes, the following shall be provided:
1. Existing outlet boxes must be of sufficient size to accommodate new devices.
  2. Existing outlet boxes must be of correct heights to conform with ADA and similar code heights. See subsequent information for correct mounting

heights. Existing boxes that do not meet the new mounting height requirements shall not be reused for new devices or shall be moved to the new correct mounting heights.

### 3.9 INSTALLATION – RECESSED BOXES

- A. Install so that device and/or coverplates shall be tight and plumb with wall finish.
- B. Box supports are required of all interior switch and receptacle boxes unless excluded by the Engineer.
- C. Install with device box supports equal to Caddy “H” series “Quick-mount” for interior use.
- D. Boxes installed masonry walls may use the mortar fill or block sides to support the boxes provided the fill or sides are in close contact with the boxes and permanently prevent movement.
- E. Ganging boxes:
  - 1. Gang where possible.
  - 2. Where interior multiple receptacle, switch, or communication outlets are indicated on the Drawings, boxes to be closely grouped, use Caddy “SGB” series of box brackets.
  - 3. Do not widely space outlets indicated on the Drawings to be grouped.
- F. Covers and rings:
  - 1. Cover with ½” raised galvanized device covers for exposed conduit work.
  - 2. Furnish with raised galvanized plaster rings for concealed conduit work.
  - 3. Provide single gang rings for single device mounts even if box is double gang.

### 3.10 INSTALLATION – CEILING BOXES

- A. Install so that device and/or coverplates shall be tight and plumb with ceiling line or tight to exposed structural mounting.
- B. Furnish with raised galvanized plaster rings for concealed box installation in plaster, wood, or gypboard ceilings.
- C. Furnish 4” square or octagonal 4” nominal sized boxes for connecting to standard fixtures.
- D. Structurally support boxes used for hanging lighting fixtures or other items in accordance with the Drawings and NEC Articles 410.

### 3.11 INSTALLATION – BOX MOUNTING HEIGHTS

- A. Mounting heights of outlets: The height of each outlet shall be in accordance with the Specifications and as directed by Architect for special décor or other architectural features. Heights are given above finished floor to the center of the outlet box unless noted otherwise.
- B. Standard Mounting Heights:
  - 1. Wall switches 48”
  - 2. Receptacles—General use 15”-18” (\*1)
  - 3. Receptacles—Storage 24”
  - 4. Receptacles—Cabinet work Above splash
  - 5. Receptacles-Sinks Above lip of sink
  - 6. Desk Telephone/Data 15”-18” (\*1)
  - 7. Disconnect Switches 48”-60”
  - 8. Receptacles in Service areas 24”
- (\*1) Locate outlet boxes as follows:

- a. Minimum height of receptacles and communication outlets is 15". This minimum height is for the lowest operable part of the receptacle, and reflects the final height after all floor finishes (such as carpet) have been installed. For vertically mounted duplex wall outlets, this places the center of the box at no less than 16.5" AFF assuming vinyl tile (carpet or thicker floor covering will increase this height).
- b. Outlets in close proximity to each other shall be set at the same height to satisfy the most restrictive condition so as to avoid a staggered appearance.

### 3.13 CLEANING

- C. Section 01 70 00 – Contract Closeout: Final cleaning.
- D. Clean interior of boxes to remove dust, debris, and other material.
- E. Clean exposed surfaces and restore finish.

**END OF SECTION**





**SECTION 26 05 53**  
**IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Nameplates.
  - 2. Labels.
  - 3. Wire markers.
  - 4. Conduit markers.
  - 5. Stencils.
  - 6. Underground Warning Tape.
  - 7. Lockout Devices.
- B. Related Sections:
  - 1. Section 09 90 00 - Painting: Execution requirements for painting specified by this section.

**1.2 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Submittal procedures.
- B. Product Data:
  - 1. Submit manufacturer's catalog literature for each product required.
  - 2. Submit electrical identification schedule including list of wording, symbols, letter size, color coding, tag number, location, and function.
- C. Manufacturer's Installation Instructions: Indicate installation instructions, special procedures, and installation.

**1.3 CLOSEOUT SUBMITTALS**

- A. Section 01 70 00 – Contract Closeout: Requirements for submittals.
- B. Project Record Documents: Record actual locations of tagged devices; include tag numbers.

**1.4 DELIVERY, STORAGE, AND HANDLING**

- A. Section 01 60 00 – Material and Equipment: Requirements for transporting, handling, storing, and protecting products.
- B. Accept identification products on site in original containers. Inspect for damage.
- C. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- D. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

**1.5 ENVIRONMENTAL REQUIREMENTS**

- A. Section 01 50 00 – Construction Facilities and Temporary Controls :  
Environmental conditions affecting products on site.
- B. Install labels and nameplates only when ambient temperature and humidity conditions for adhesive are within range recommended by manufacturer.

## **PART 2 PRODUCTS**

### **2.1 NAMEPLATES**

- A. Product Description: Laminated three-layer plastic with engraved white letters on black contrasting background color.
- B. Letter Size:
  - 1. 5/16 inch high letters for identifying individual equipment and loads.
  - 2. 3/4 inch high letters for identifying grouped equipment and loads.
- C. Minimum nameplate thickness: 1/8 inch.

### **2.2 LABELS**

- A. Labels: Embossed adhesive tape, with 5/16 white letters on black background.

### **2.3 WIRE MARKERS**

- A. Description: Cloth tape, split sleeve, or tubing type wire markers.
- B. Legend:
  - 1. Power and Lighting Circuits: Branch circuit or feeder number as indicated on Drawings.
  - 2. Control Circuits: Control wire number as indicated on schematic and interconnection diagrams.

### **2.4 UNDERGROUND WARNING TAPE**

- A. Description: 4 inch wide plastic tape, detectable type, colored red with suitable warning legend describing buried electrical lines.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. Degrease and clean surfaces to receive adhesive for identification materials.
- B. Prepare surfaces in accordance with Section 09 90 00 for stencil painting.

### **3.2 INSTALLATION**

- A. Install identifying devices after completion of painting.
  - 1. Lighting panelboards: Provide an engraved label indicating the panel name.
  - 2. Power and distribution panelboards: Provide an engraved label indicating the panel name. Provide engraved labels for each circuit breaker and switch position as well as main, spares and spaces. Typed directory cards are not acceptable.
- B. Nameplate Installation:
  - 1. Install nameplate parallel to equipment lines.
  - 2. Install nameplate for each electrical distribution and control equipment enclosure with corrosive-resistant mechanical fasteners, or adhesive.
  - 3. Install nameplates for each control panel and major control components located outside panel with corrosive-resistant mechanical fasteners, or adhesive.
  - 4. Secure nameplate to equipment front using rivets, or adhesive.
  - 5. Secure nameplate to inside surface of door on recessed panelboard in finished locations.
  - 6. Install nameplates for the following:

- a. Switchboards: Provide an engraved label indicating the switchboard name. Provide engraved labels for each circuit breaker as well as main, spares and spaces. Typed directory cards are not acceptable.
  - b. Power and distribution panelboards: Provide an engraved label indicating the panel name. Provide engraved labels for each circuit breaker and switch position as well as main, spares and spaces. Typed directory cards are not acceptable.
  - c. Panelboards.
  - d. Transformers.
  - e. Service Disconnects.
  - f. Starters and Disconnect Switches.
- C. Panelboard Labels:
  - 1. Provide typed interior door index card identifying all circuits in lighting and appliance panelboards.
- D. Label Installation:
  - 1. Install label parallel to equipment lines.
- E. Underground Warning Tape Installation:
  - 1. Install underground warning tape along length of each underground conduit, raceway, or cable 6 to 8 inches below finished grade, directly above buried conduit, raceway, or cable.

**END OF SECTION**



**SECTION 26 05 90**  
**ELECTRICAL SYSTEMS TESTING**

**PART 1 GENERAL**

**1.1 SUMMARY**

- A. Provide all work required to test the electrical systems as required by these Specifications.

**1.2 SCOPE OF WORK**

- A. The following systems will require written test reports submitted to the Owner and the Engineer or Architect:
  - 1. Megger Tests.
  - 2. Grounding Test.
- B. Test all wiring installed or connected by Division 26 for absence from damage, short circuits, accidental ground, and continuity. Report any instances of improper installation to the Engineer.
- C. Test all remaining electrical equipment and systems. Perform equipment and system tests on site with equipment in installed position and as left for permanent use. The Contractor may keep his own knots as to the scope of items tested, date of tests, and a record of his findings provided they are complete, accurate, and reproducible.

**1.3 SUBMITTALS**

- A. Where required, certify that test were performed, that systems tested performed successfully, and list conditions and names of persons present.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

- A. Provide all test equipment, temporary wiring, labor, etc., required to fully perform required or requested testing.
- B. No additional compensation will be given to the Contractor for testing of electrical systems installed under this division of the specifications.

**PART 3 - EXECUTION**

**3.01 REQUIRED TESTS**

- A. Conductor megger tests:
  - 1. After wires and cables are installed in conduits or raceways, but before being connected to devices and equipment, test the wiring systems for unintentional shorts, open circuits, or grounds by means of an approved type of portable "megger" tests.
  - 2. Do not subject ground fault circuit interrupter type breakers or receptacle to megger tests.
- B. Electrical measurements:

1. With the system energized, make line voltage and current measurements at all switchboards, panelboards, motors, HVAC equipment, and other electrically operated equipment under full load conditions.
  2. Notify Engineer of all unusual readings or results, such as voltages above or below normal bands or operation or currents that exceed equipment or conductor ratings.
- C. Equipment tests and adjustments:
1. Test feeder circuits to ensure that panelboards and related equipment are connected to the proper feeder breakers or switches.
  2. Compare actual conductors installed with those required on the Drawings. Notify the Engineer of any deviation from the Drawings.
  3. Check all branch circuits to determine if wiring is connected to the proper circuit and identified correctly on the panelboard circuit label.
  4. Test all branch circuit receptacles for proper polarity and to make sure that they are correctly energized.
  5. Check dry-type transformer output voltages. Ensure that neutrals are properly grounded to the system ground. Adjust taps if necessary.
  6. Check lighting fixtures for proper lamping and full light output from all lamps.
  7. Set any circuit breakers with adjustable trip functions to the values selected by the Engineer or recommended by the manufacturer.
  8. Set ground fault protective device time and current trip levels as selected by the Engineer
  9. Install thermal overload elements in all electro-mechanical starter, as determined from the manufacturer's charts and actual motor running load amperage.
  10. Adjust any solid state overload relays in starters as determined from manufacture's charts and actual motor running load amperage.
  11. Program, test and adjust fire alarm system components.
  12. Test other items of electrical equipment to insure that each and every one is properly connected and that voltage is properly applied to the device.
  13. Make and other special tests where specified under other Sections of Division 26.
- D. Remove and replace any electrical wiring that is damaged by unintentional grounding or shorting, faulty connection, or during the testing process.
- E. Special system testing:
1. Fire alarm and other special systems shall be tested by the system installer or supplier.
  2. Refer to other Sections of the Specifications for performance requirements of these systems.
  3. Any portion of these systems that require programming, setting, initialization, identification, or related work shall be performed by the Contractor to place the system in complete, adjusted working order.
- F. Submit three copies of all required written test, certified by the Contractor for approval. Test data shall include the name of the building, location, Architect and Engineer, Contractor's name, equipment supplier, and other pertinent data required.
- G. Provide any instruction to the Owner or Owner's Representative regarding operation of equipment, systems, or features, and assist as required in informing and educating the Owner regarding the electrical equipment's operating parameters.

- H. Demonstrate the proper operation of all the electrical systems in the presence of the Architect, the Engineer, or the Architect's designated representative. All systems shall perform to the Architect's complete satisfaction.

**END OF SECTION**





## **SECTION 26 09 23**

### **LIGHTING CONTROL DEVICES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Occupancy sensors.
- B. Related Sections:
  - 1. Section 26 05 53 - Electrical Identification: Product requirements for electrical identification items for placement by this section.
  - 2. Section 26 05 19 - Building Wire and Cable.
  - 3. Section 26 05 33 - Raceway and Boxes: Product requirements for raceway and boxes for placement by this section.
  - 4. Section 26 27 26 - Wiring Devices: Product requirements for wiring devices for placement by this section.
  - 5. Section 26 24 16 - Panelboards.

##### **1.2 REFERENCES**

- A. National Electrical Manufacturers Association:
  - 1. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.
  - 2. NEMA FU 1 - Low Voltage Cartridge Fuses.
  - 3. NEMA ICS 2 - Industrial Control and Systems: Controllers, Contractors, and Overload Relays, Rated Not More Than 2000 Volts AC or 750 Volts DC.
  - 4. NEMA ICS 4 - Industrial Control and Systems: Terminal Blocks.
  - 5. NEMA ICS 5 - Industrial Control and Systems: Control Circuit and Pilot Devices.
  - 6. NEMA ICS 6 - Industrial Control and Systems: Enclosures.
  - 7. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).

##### **1.3 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Requirements for submittals.
- B. Product Data: Submit manufacturer's standard product data for each system component.
- C. Manufacturer's Installation Instructions: Submit for each system component.

##### **1.4 CLOSEOUT SUBMITTALS**

- A. Section 01 70 00 – Contract Closeout: Requirements for submittals.
- B. Project Record Documents: Record the following information:
  - 1. Actual locations of components and record circuiting and switching arrangements.
  - 2. Wiring diagrams reflecting field installed conditions with identified and numbered system components and devices.
- C. Operation and Maintenance Data:
  - 1. Submit replacement parts numbers.

2. Submit manufacturer's published installation instructions and operating instructions.
  3. Recommended renewal parts list.
- 1.5 QUALIFICATIONS
  - A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.
- 1.6 DELIVERY, STORAGE, AND HANDLING
  - A. Section 01 50 00 – Construction Facilities and Temporary Controls: Requirements for transporting, handling, storing, and protecting products.
  - B. Accept components on site in manufacturer's packaging. Inspect for damage.
  - C. Protect components by storing in manufacturer's containers indoor protected from weather.
- 1.7 WARRANTY
  - A. Furnish five year manufacturer warranty for components.
- 1.8 EXTRA MATERIALS
  - A. Furnish two of each occupancy sensor type.

## **PART 2 PRODUCTS**

- 2.1 OCCUPANCY SENSOR
  - A. Manufacturers:
    1. Watt Stopper.
    2. Novitas.
    3. Hubbell.
    4. Substitutions: Not Permitted.
  - B. Product Description:
    1. General requirements:
      - a. Technology:
        - 1) Utilize passive infrared technology for smaller offices, storage rooms, and similar areas.
        - 2) Utilize ultrasonic technology for restrooms and areas of significant occupant movements.
        - 3) Utilize combination passive infrared/ultrasonic technology for areas such as classrooms, workrooms, and other areas in which occupancy requires more sophisticated detection.
      - b. Mount as follows:
        - 1) Wall mount in the same location as the standard room entrance lighting switch in smaller single occupancy rooms. To utilize wall mounted sensors, the room must meet the following criteria:
          - a) Rectangular shaped of 200 sq. ft. or less.
          - b) Normally used by single occupant.
          - c) Unobstructed view of occupant from standard wall switch location.

- d) Do not use for irregularly shaped rooms, rooms with wall partitions that block sensor operation, longer hallways, or rooms larger than 200 sq. ft.
  - 2) Ceiling mount in all other occupancies.
- c. Sensor operation and requirements:
  - 1) Self contained, operated at line lighting voltage (120VAC or 277VAC), for wall mounted locations as defined previously. Rating shall be 20A minimum for ballast loads and 16A minimum for incandescent loads.
  - 2) Sensor shall operate at 24VDC (approx. 14-30ma) for ceiling mount installations. Include power packs or similar devices to operate the actual lighting circuits controlled by the sensor.
  - 3) LED in face of sensor that activates to indicate motion or presence of occupant.
  - 4) Provide built-in:
    - a) Automatic detection and energization (non-time-delay) upon sensing occupant.
    - b) Field adjustable Off time delay.
    - c) Field adjustable sensitivity.
- 2. Types of sensors:
  - a. Wall mounted passive infrared or ultrasonic sensors:
    - 1) Manual On/Off control switch in faceplate.
    - 2) 180 degree motion sensing.
    - 3) Able to detect vertical and horizontal motion.
    - 4) Color of plate shall match color of standard wiring devices.
    - 5) Equal to Watt Stopper #WM series.
  - b. Large area sensors:
    - 1) Dual technology passive infrared and ultrasonic, unless noted otherwise on the Drawings.
    - 2) Wide angle lens for office.
    - 3) Utilize long range narrow dispersion angle lens for detection of occupancy in longer hallways.
    - 4) Complete with any required adjustable mounting ceiling brackets.
    - 5) Equal to Watt Stopper DT-100 series.
- 3. Relays or "power packs" shall be used with low voltage sensors to control the lighting circuits as follows:
  - a. Provide 24VDC unswitched power to operate sensors.
  - b. Be controlled by 24VDC input from sensors.
  - c. Include single normally open electro-mechanical or solid state output contact rated at 20A, 12VAC or 277VAC.
  - d. Equal to the following Watt Stopper "power pack" components:
    - 1) A120-EP for 120V "master" applications.
    - 2) A277-EP for 277V "master" applications.
    - 3) S-120/277/347-EP for "slave" applications where more than 1 lighting circuit is controlled by the sensor.
- 4. System control (low voltage) wiring:
  - a. Low voltage multi-conductor cable between sensor and controls.
  - b. Minimum #24AWG copper conductors.
  - c. Conduit is required where wiring is installed in walls.

- d. Conduit is required where wiring is installed in ceiling spaces unless:
      - 1) Ceiling is not a return air plenum.
      - 2) Plenum rated cable is installed in return air plenum.
  - 5. System performance requirements:
    - a. Sensors and associated relays, if used, shall perform in a completely acceptable manner based upon the intended function of the space or room which they control.
    - b. Anticipated use of a room is defined by the room title. Unusual or multiple use rooms shall have their operation defined by the Engineer.
    - c. Siting of sensing devices is critical to proper operation and shall be confirmed with the Engineer prior to installation.
    - d. Manufacturer's standard sensor products are not necessarily substitutable on a one-for-one basis with those indicated or specified. Manufacturer shall submit adequate number of sensors, devices, or additional equipment required to perform the intended functions.

## **PART 3 EXECUTION**

### **3.1 INSTALLATION**

- A. General
  - 1. Furnish and install all lighting controls complete as herein specified and as called for on the Drawings.
  - 2. Clean all controls and leave free of any dirt, dust, grease, etc., at the completion of the job.
- B. Coordination
  - 1. The Contractor is responsible for verifying door schedules and room finishes to insure proper clearances from obstructions such as door openings.
  - 2. Interferences:
    - a. Carefully examine the complete areas as well as each individual room where controls are to be installed for interference with structure, wall finishes, bulletin boards, and similar items.
    - b. Revise or relocate, after approval of the Engineer, items which conflict with structure, finishes, or equipment.
  - 3. Thermostats:
    - a. Coordinate with mechanical drawings to determine any conflicts with wall mounted thermostats adjacent to or above dimmer switches producing heat while in the dimmed mode.
    - b. Relocate dimmer switches or coordinate with Division 15 to relocate wall thermostats to avoid false temperature sensing by thermostats.
- C. Occupancy Sensors and Controls
  - 1. Wall mount single small room self-contained occupancy sensors in same location as normal room light switch. Connect to line voltage lighting circuit.
  - 2. Ceiling mount all occupancy sensors as follows:

- a. Locate office and classroom sensors in center of room or in corner of room as directed. Provide with proper lens to sense occupancy in either square or rectangular pattern as required by the area served.
3. Install relays or "power packs" in or adjacent to junction boxes to allow make-up of wiring. Mount relay junction boxes as follows:
  - a. In accessible ceiling spaces, mount in ceiling space adjacent to sensor.
  - b. In substantially inaccessible ceilings (such as gypboard, concealed spline, or similar types), mount as follows in the following order of priority:
    - 1) Adjacent to ceiling access door where door is provided.
    - 2) In wall switch box where On/Off wall switches are provided.
    - 3) In junction box located where normal wall switch would be located if wall switches are not provided.
    - 4) Alternate location as approved by Engineer.
4. Install and connect all power and control wiring.
5. Adjust sensor and controls as follows:
  - a. Adjust sensitivity of each sensor.
  - b. Adjust Off time delay of each sensor.
  - c. Sensors may require additional adjustments after space or room occupancy and occupant behavior have been established.
6. Provide complete testing to ensure sensor system is properly functioning. If equipment as installed fails to perform as required, Contractor shall relocate existing sensors or add additional sensor(s) to make the control system function properly with anticipated use of the space(s).
7. See Drawings to determine if standard wall switches shall be installed in any areas served by occupancy sensors. If so, connect wall switches ahead of the power to the relays or "power packs" and in series with the relay or "power pack" output relay to allow definite On/Off control to the sensor system.

### 3.2 ADJUSTING

- A. Test each system component after installation to verify proper operation.
- B. Confirm correct loads are recorded on directory card in each panel.

### 3.3 DEMONSTRATION:

1. Provide Owner training in the operation and capabilities of the entire system at the conclusion of the project.
2. Training shall be on the Owner's premises at mutually agreed dates and times. Notify the Owner at least 5 working days prior to the demonstration.
3. Training shall be for a period of not less than 4 continuous hours on two different days, or additional time, not to exceed 4 additional hours, if so required by the Owner. Training shall be videotaped and a copy of the recorded training provided to the owner.
4. Inadequate or incomplete training shall be repeated at the Contractor's expense.

END OF SECTION

## **SECTION 26 24 16**

### **PANELBOARDS**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes branch circuit panelboards.
- B. Related Sections:
  - 1. Section 26 05 53 - Electrical Identification

##### **1.2 REFERENCES**

- A. Institute of Electrical and Electronics Engineers:
  - 1. IEEE C62.41 - Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
- B. National Electrical Manufacturers Association:
  - 1. NEMA AB 1 - Molded Case Circuit Breakers and Molded Case Switches.
  - 2. NEMA PB 1 - Panelboards.
  - 3. NEMA PB 1.1 - General Instructions for Proper Installation, Operation, and Maintenance of Panelboards Rated 600 Volts or Less.
- C. International Electrical Testing Association:
  - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- D. National Fire Protection Association:
  - 1. NFPA 70 - National Electrical Code.
- E. Underwriters Laboratories Inc.:
  - 1. UL 67 - Safety for Panelboards.
  - 2. UL 1283 - Electromagnetic Interference Filters.
  - 3. UL 1449 - Transient Voltage Surge Suppressors.

##### **1.3 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Requirements for submittals.
- B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and fusible switch arrangement and sizes.
- C. Product Data:
  - 1. Submit manufacturer's data demonstrating compliance with this Specification and the Drawings in accordance with Section 26 05 00. Information on each panel shall include but not be limited to the following:
    - a. Voltage, phase, and number of wires.
    - b. Schedule or description of each panel indicating number, trip (or size), number of poles, and type of circuit protective devices.
    - c. Integrated interrupting capacity of the panel.
    - d. Bus material and bus bar or main lug ampacity.
    - e. Ground bars and isolated ground bars.
    - f. RMS symmetrical ampere interrupting rating.
    - g. Enclosure mounting and details of construction.
    - h. Identification plates if supplied by manufacturer.
    - i. All dimensions.



#### 1.4 CLOSEOUT SUBMITTALS

- A. Section 01 789 - Closeout Submittals: Requirements for submittals.
- B. Project Record Documents: Record actual locations of panelboards and record actual circuiting arrangements.
- C. Operation and Maintenance Data: Submit spare parts listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

#### 1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

### PART 2 PRODUCTS

#### 2.1 BRANCH CIRCUIT PANELBOARDS

- A. Manufacturers:
  - 1. Cutler-Hammer.
  - 2. GE Electrical.
  - 3. Siemens.
  - 4. Square D.
  - 5. Substitutions: As permitted by the Engineer.
- B. Product Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
- C. Panelboard Bus: Copper current carrying components, ratings as indicated on Drawings. Furnish copper ground bus in each panelboard; furnish insulated ground bus as indicated on Drawings.
- D. Minimum Integrated Short Circuit Rating: 10,000 amperes rms symmetrical for 240 volt panelboards; 14,000 amperes rms symmetrical for 480 volt panelboards, or as indicated on Drawings.
- E. Molded Case Circuit Breakers: NEMA AB 1, bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits, Class A ground fault interrupter circuit breakers as indicated on Drawings. Do not use tandem circuit breakers.
- F. Enclosure: NEMA PB 1, Type 1.
- G. Cabinet Box: 6 inches deep, 20 inches inches wide for 240 volt and less panelboards, 20 inches wide for 480 volt panelboards.
- H. Cabinet Front: Flush or Surface cabinet front with concealed trim clamps, concealed hinge, metal directory frame, and flush lock keyed alike. Finish in manufacturer's standard gray enamel. Door-in-door construction.

## **PART 3 EXECUTION**

### **3.1 INSTALLATION**

- A. Provide all work as necessary to erect and supply the panelboards.
- B. Install panelboards in accordance with NEMA PB 1.1.
- C. Install panelboards plumb.
- D. Install recessed panelboards flush with wall finishes.
- E. Install filler plates for unused spaces in panelboards.
- F. Provide typed circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes to balance phase loads.
- G. Install engraved plastic nameplates in accordance with Section 26 05 53.
- H. Ground and bond panelboard enclosure according to Section 26 05 26. Connect equipment ground bars of panels in accordance with NFPA 70.

### **3.2 FIELD QUALITY CONTROL**

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform circuit breaker inspections and tests listed in NETA ATS, Section 7.6.

### **3.3 ADJUSTING**

- A. Section 26 05 90 – Electrical System Testing: Requirements for starting and adjusting.
- B. Measure steady state load currents at each panelboard feeder; rearrange circuits in panelboard to balance phase loads to within 20 percent of each other. Maintain proper phasing for multi-wire branch circuits.

**END OF SECTION**



## **SECTION 26 27 26**

### **WIRING DEVICES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes wall switches; receptacles; multioutlet assembly; and device plates and decorative box covers.
- B. Related Sections:
  - 1. Section 26 05 33 - Raceway and Boxes: Outlet boxes for wiring devices.

##### **1.2 REFERENCES**

- A. National Electrical Manufacturers Association:
  - 1. NEMA WD 1 - General Requirements for Wiring Devices.
  - 2. NEMA WD 6 - Wiring Devices-Dimensional Requirements.

##### **1.3 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Submittal procedures.
- B. Product Data: Submit manufacturer's catalog information showing dimensions, colors, and configurations.

##### **1.4 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

#### **PART 2 PRODUCTS**

##### **2.1 WALL SWITCHES**

- A. Manufacturers:
  - 1. Hubbell.
  - 2. Leviton.
  - 3. Pass & Seymour.
  - 4. Cooper (Arrow Hart).
  - 5. Substitutions: Not permitted.
- B. Product Description: NEMA WD 1, General-Duty, AC only general-use snap switch.
  - 1. General requirements:
    - a. Quite type.
    - b. Rated for use at 120-277VAC.
    - c. Rated for 20A unless noted otherwise on the Drawings.
    - d. Silver alloy contacts.
    - e. Plated (not galvanized) mounting strip with self-grounding clip mounted at screw end of strap.
    - f. Permanently lubricated spring and pivot points.

##### **2.2 RECEPTACLES**

- A. Manufacturers:
  - 1. Hubbell.
  - 2. Leviton.
  - 3. Pass & Seymour.
  - 4. Cooper (Arrow Hart).

5. Substitutions: Not permitted.
- B. Product Description:
1. General requirements:
    - a. Grounding type.
    - b. Double-wipe or triple-wipe plug attachment contacts.
  2. General convenience receptacles (20A or less):
    - a. Duplex type.
    - b. Provide with self-grounding clip on mounting strap.
    - c. Flat face flush with plate.
    - d. Nylon face.
  3. Ground fault circuit interrupter (GFI or GFCI) receptacles:
    - a. UL listed as a Class A ground fault protective device that trips at a ground fault current level of 6 milliamps or more.
    - b. Have "test" and "reset" pushbuttons on the face of the receptacle.
    - c. Rectangular face.
    - d. Meet the requirements of UL 943, effective 1/1/2003, including:
      - 1) Prevent functioning if miswired (reversed line/load).
      - 2) Increased corrosion and moisture resistance.
      - 3) Overvoltage and surge test.
      - 4) Improved radio frequency immunity.
  4. Devices greater than 20A:
    - a. Simplex type.
    - b. Grounding type unless noted otherwise on the Drawings.

## 2.3 WALL PLATES

- A. Manufacturers:
1. Hubbell.
  2. Leviton.
  3. Pass & Seymour.
  4. Cooper (Arrow Hart).
  5. Substitutions: Not permitted.
- B. Product Description:
1. Provide all device plates standard size. Large sizes may be provided to conceal installation irregularities only where specifically approved by the A/E.
  2. Wet or damp location installations shall conform to NEC Article 410-57 with the following provisions:
    - a. Damp locations:
      - 1) Double "flap" covers (one flap per receptacle plug-in position) that are weatherproof in the closed or sealed position for non-GFCI receptacles.
      - 2) Single "flap" covers that are weatherproof in the closed or sealed position for GFCI receptacles.
    - b. Exterior and all interior wet locations:
      - 1) Provide GFCI receptacles in these locations.
      - 2) Single covers that are weatherproof when cord plugs are installed in the receptacle.
      - 3) Provide covers with gaskets or grooves that prevent the entry of moisture between the cover and the device.
      - 4) Covers shall be manufactured by Leviton, Taymac, or approved equal.
  3. Interior locations:

- a. #302/304 alloy 0.032" minimum thickness non-magnetic smooth or brushed stainless steel plates for heavy duty use in mechanical rooms, machine rooms, storage areas, and similar locations.
- b. #430 alloy 0.030" minimum thickness smooth or brushed stainless steel plates for use in standard mechanical rooms, machine rooms, storage areas, and similar locations.
- c. Nylon or high impact hospital grade plastic plates (standard plastic or phenolic plates are not acceptable) for other areas.
- 4. Coverplates in special areas will require being coordinated as to color of exposed parts and coverplates. Coordinate with the Architect prior to installation of these types of plates.

## 2.4 DEVICE COLORS

- A. White finish is the standard color for all switches and receptacles unless noted.
- B. Install brown or black finish devices on dark colored surfaces or where receptacles are of higher amperage rating than 20A.
- C. Coordinate with the Architect where special surfaces are encountered.
- D. Special receptacle colors:
  - 1. Orange finish or orange indications when of the isolated ground type.

## 2.5 SCHEDULE OF DEVICES

- A. Schedule of Standard Devices includes device numbers for Hubbell for the purpose of setting a quality standard.
- B. Cross-reference: Hubbell 5352 series of receptacles are considered equivalent to other manufacturer's 5362 series. Hubbell 1200 series of switches are considered equivalent to other manufacturer's 1200 series.
- C. Schedule of Standard Devices
 

|  |               |
|--|---------------|
| SPST Wall Switch, 20A:                       | #HBL1221      |
| 3-Way Wall Switch, 20A:                      | #HBL1223      |
| 4-Way Wall Switch, 20A:                      | #HBL1224      |
| Simplex Receptacle:                          | Type as noted |
| Duplex Receptacle, 20A:                      | #5352         |
| Duplex Receptacle, EWC, 20A:                 | #5352         |
| Duplex Receptacle, GFI, 20A:                 | #GF5352A      |
| Duplex Receptacle, 15A, IG & Hospital Grade: | #IG8200       |
| Duplex Receptacle, 20A, safety type:         | #HBLSG63H     |

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify outlet boxes are installed at proper height.
- B. Verify wall openings are neatly cut and completely covered by wall plates.
- C. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

### 3.2 PREPARATION

- A. Clean debris from outlet boxes.

### 3.3 INSTALLATION

- A. General device installation requirements:

1. All devices and plates plumb and parallel to adjacent surfaces or trim.
  2. Mount switches with the long dimension of the device vertical.
  3. Mount general convenience receptacles with the long dimension vertical with the ground pin on the bottom.
  4. Where receptacles are installed over counter splashes or in exterior locations, install horizontally.
  5. Device face must be flush with the finished trim coverplates and plates must be tight to surfaces over which they are installed.
- B. Coordination
1. The Contractor is responsible for verifying door schedules and room finishes to insure proper clearances from obstructions such as door openings.
  2. Interferences:
    - a. Carefully examine the complete areas as well as each individual room where controls are to be installed for interference with structure, wall finishes, bulletin boards, and similar items.
    - b. Revise or relocate, after approval of the Engineer, items which conflict with structure, finishes, or equipment.
- C. Receptacles:
1. Generally install by a pigtail connection to the branch circuit, where the branch circuit is fed-through the outlet box.
  2. Where the receptacle is the last outlet on the branch circuit, connect the branch circuit conductors directly to the last receptacle.
  3. Unless the branch circuit is protected by GFCI circuit breaker in the panelboard feeding the branch circuit, provide GFCI receptacles, whether specifically indicated on the Drawings or not.
    - a. Install where noted on the Drawings or where required by Code, all exterior locations, including wall and roof receptacles, within 6 feet of sinks, in elevator pits and elevator machine rooms.
    - b. GFCI receptacles are to be pigtailed to branch circuit conductors and shall not be installed in "feed-through" applications unless specifically noted otherwise.
  4. Safety receptacles:
    - a. Install where noted on the Drawings.
    - b. Install in rooms or areas accessible to and normally occupied by children under the age of 12.
- D. Switches:
1. Connect switches to the proper circuits and lighting fixtures as indicated on the Drawings. Consult the Engineer for interpretations of fixture switching if required.
  2. Where more than one switch occurs in one outlet box and causes 300V or more to exist between devices (typical for two or more snap switches on separate branch circuits in a 480Y/277V system), a barrier must be provided for isolation to meet NEC 404.8(B) requirements.
  3. Snap (toggle) switches may be used for disconnect of smaller single phase motor and equipment loads rated 277V and below where switches are rated for motor use.
- E. Plates:
1. Use single piece plates for all ganged device locations.
  2. Where coverplates do not completely conceal the rough openings for the devices, it is the responsibility of the Contractor to patch, paint, etc., around the opening to the satisfaction of the A/E.

3. Refer to Section 26 05 53 for labeling.

#### 3.4 ADJUSTING

- A. Section 26 05 90 –Electrical System Testing: Testing, adjusting, and balancing.
- B. Adjust devices and wall plates to be flush and level.

#### 3.5 CLEANING

- A. Section 01 70 00 – Contract Closeout: Final cleaning.
- B. Clean exposed surfaces to remove splatters and restore finish.

### **END OF SECTION**





## **SECTION 26 28 13**

### **FUSES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes fuses.

##### **1.2 REFERENCES**

- A. National Electrical Manufacturers Association:
  - 1. NEMA FU 1 - Low Voltage Cartridge Fuses.

##### **1.3 DESIGN REQUIREMENTS**

- A. The contractor shall be responsible for coordination with other trades and equipment suppliers to verify exact load and connection requirements.
- B. Reasonable modifications shall be made without cost to the Owner to the specified fuse sizes if dictated by the exact equipment selected.
- C. See Part 3- Execution for possible changes required by modifications to specified HVAC or motor operated equipment.
- D. Select fuses to provide appropriate levels of short circuit and overcurrent protection for the following components: wire, cable, bus structures, and other equipment.
- E. Select fuses to coordinate with time current characteristics of other overcurrent protective elements, including other fuses, circuit breakers, and protective relays.

##### **1.4 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Submittal procedures.
- B. Submit manufacturer's data demonstrating compliance with this Specification. Include the following data:
  - 1. Device's catalogue data.
  - 2. Ampere rating.
  - 3. Voltage rating.
  - 4. UL Class.
  - 5. Physical fuse construction.
  - 6. Dimensions.
  - 7. Interrupting rating.

##### **1.5 CLOSEOUT SUBMITTALS**

- A. Section 01 70 00 – Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual sizes, ratings, and locations of fuses.

## 1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

## 1.7 MAINTENANCE MATERIALS

- A. Furnish two fuse pullers.

## 1.8 EXTRA MATERIALS

- A. Furnish three spare fuses of each Class, size, and rating installed.

# PART 2 PRODUCTS

## 2.1 FUSES

- A. Manufacturers:
  - 1. Bussmann.
  - 2. Littelfuse.
  - 3. Shawmut.
  - 4. Cefco.
  - 5. Substitutions: Not Permitted.
- B. Dimensions and Performance: NEMA FU 1, Class as specified or as indicated on Drawings.
- C. Voltage: Rating suitable for circuit phase-to-phase voltage.
- D. UL listed for 250VAC, 300VAC, or 600VAC as required by the voltage of the system on which the fuse is installed.
- E. Fuses rated 600a and below:
  - 1. UL Class RK5:
    - a. Rejection feature.
    - b. Dual element time delay with copper link short circuit sections.
    - c. Current limiting.
    - d. Capable of interrupting a 200,000A RMS symmetrical short circuit when applied at the rated fuse voltage.
    - e. Equal to Buss FRN-R or FRS-R).
    - f. Used for protection of:
      - 1) HVAC equipment and motors.
      - 2) Transformers.
      - 3) Feeder circuits.
      - 4) Main service entrance switch.
  - 2. UL Class CC:
    - a. Rejection feature may be provided, but is not required.
    - b. Time delay (not fast-acting)
    - c. Capable of interrupting at least 10,000A RMS symmetrical short circuit when applied at the rated fuse voltage.
    - d. Miniature 13/32" X 1-1/2" cartridge size.
    - e. Equal to Buss FNQ, Littlefuse FLQ, Shawmut ATQ, or Cefco CNQ.
    - f. Used for protection of:

- 1) Control circuits.
- 2) Control transformers.
- 3) Exterior lighting fixtures. Refer to Section 26 50 00 for details on fuse sizing and installation details.

## **PART 3 EXECUTION**

### **3.1 EXISTING WORK**

- A. Remove fuses from abandoned circuits.
- B. Maintain access to existing fuses and other installations remaining active and requiring access. Modify installation or provide access panel.

### **3.2 INSTALLATION**

- A. Install fuse with label oriented so manufacturer, type, and size are easily read.
- B. Fuse sizes for HVAC and motor operated equipment:
  1. Approximate fuse sizes are indicated on the Drawings and are based on estimated equipment characteristics of the specified mechanical equipment.
  2. Field determine exact HVAC equipment provided and size fuses for equipment that is actually installed, paying close attention to the equipment label.
  3. Provide increased fuse or disconnect sizes if required to accommodate larger equipment than that originally specified.
  4. Costs for increasing disconnect ampacity, fuse cartridge size, or other similar changes shall be compensated by Division 25 where selection, purchase, and installation of electrically larger or more demanding equipment is made at the discretion of Division 25.
  5. Equipment data shall be interpreted by the Engineer as necessary where recommended fuse size deviates from the estimated sizes shown on the Drawings.

**END OF SECTION**



## **SECTION 26 28 19**

### **ENCLOSED SWITCHES**

#### **PART 1 GENERAL**

##### **1.1 SUMMARY**

- A. Section includes fusible and nonfusible switches.
- B. Related Sections:
  - 1. Section 26 28 13 - Fuses.

##### **1.2 REFERENCES**

- A. National Electrical Manufacturers Association:
  - 1. NEMA FU 1 - Low Voltage Cartridge Fuses.
  - 2. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum).
- B. International Electrical Testing Association:
  - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

##### **1.3 SUBMITTALS**

- A. Section 01 30 00 - Submittals: Submittal procedures.
- B. Product Data: Submit switch ratings and enclosure dimensions.

##### **1.4 CLOSEOUT SUBMITTALS**

- A. Section 01 70 00 – Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual locations of enclosed switches and ratings of installed fuses.

##### **1.5 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

#### **PART 2 PRODUCTS**

##### **2.1 FUSIBLE SWITCH ASSEMBLIES**

- A. Manufacturers:
  - 1. Square D.
  - 2. General Electric.
  - 3. Cutler Hammer.
  - 4. Siemens.
  - 5. Substitutions: Not Permitted.
- B. Product Description:
  - 1. Safety switch requirements:
    - a. Horsepower rated for use as a motor disconnect.
    - b. Capable of interrupting the locked rotor current of the load served.
    - c. Dead-front construction.
    - d. Steel exterior disconnect handles that are not a part of the cover. Curved wire or rod type handles are not acceptable.
    - e. Quick-make, quick-break over-center toggle action to preclude contact teasing.

- f. Individual open switch blades which are fully visible in the OFF position when the door is open.
  - g. All current carrying parts plated by electrolytic process.
  - h. General duty where:
    - 1) Rated for a nominal voltage of 240VAC or less.
    - 2) Rated 400A or less.
  - i. Heavy duty with blade arc suppressor where:
    - 1) Rated for a nominal voltage above 240VAC.
    - 2) Rated above 400A.
    - 3) Required to be furnished to accommodate Class R fuse rejection clips (see below).
    - 4) Noted on the Drawings.
  - j. Provide Class R fuse rejection clips if the switch is designated as fusible type and is rated 600A and below.
- C. Fuse clips: Designed to accommodate NEMA FU 1, fuses.
- D. Enclosure: NEMA KS 1, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.
  - 1. Interior Dry Locations: Type 1.
  - 2. Exterior Locations: Type 3R.
- E. Service Entrance: Switches identified for use as service equipment are to be labeled for this application. Furnish solid neutral assembly and equipment ground bar.

## 2.2 NONFUSIBLE SWITCH ASSEMBLIES

- A. Manufacturers:
  - 1. Square D.
  - 2. General Electric.
  - 3. Cutler Hammer.
  - 4. Siemens.
  - 5. Substitutions: Not Permitted.
- B. Product Description:
  - 1. Safety switch requirements:
    - a. Horsepower rated for use as a motor disconnect.
    - b. Capable of interrupting the locked rotor current of the load served.
    - c. Dead-front construction.
    - d. Steel exterior disconnect handles that are not a part of the cover. Curved wire or rod type handles are not acceptable.
    - e. Quick-make, quick-break over-center toggle action to preclude contact teasing.
    - f. Individual open switch blades which are fully visible in the OFF position when the door is open.
    - g. All current carrying parts plated by electrolytic process.
    - h. General duty where:
      - 1) Rated for a nominal voltage of 240VAC or less.
      - 2) Rated 400A or less.
    - i. Heavy duty with blade arc suppressor where:
      - 1) Rated for a nominal voltage above 240VAC.
      - 2) Rated above 400A.
      - 3) Required to be furnished to accommodate Class R fuse rejection clips (see below).
      - 4) Noted on the Drawings.

- j. Provide Class R fuse rejection clips if the switch is designated as fusible type and is rated 600A and below.
  - C. Enclosure: NEMA KS 1, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.
    - 1. Interior Dry Locations: Type 1.
    - 2. Exterior Locations: Type 3R.
  - D. Service Entrance: Switches identified for use as service equipment are to be labeled for this application. Furnish solid neutral assembly and equipment ground bar.
  - E. Furnish switches with entirely copper current carrying parts.
- 2.3 SNAP TOGGLE SWITCH ASSEMBLIES.
- A. Snap (toggle) switch requirements:
    - 1. Single Phase 115V or 277V fractional horsepower motors, variable air volume boxes, electric duct heaters, and related items that do not require an external (Contractor furnished) starter may use a general use 120-277V rated snap switch or manual motor starter (as indicated) for the disconnect means where local code allows and the Drawings specifically indicate.
    - 2. Minimum snap switch ampacity as follows:
      - a. Rated for motor use.
      - b. Rated minimum of 15A.
      - c. Rated minimum of 20A for full load currents of 10A to 15A.
      - d. Provide enclosed safety switch or MCS for loads greater than 15A.
    - 3. Refer to Section 26 27 26 for snap switch specifications.
- 2.4 CORD AND PLUG ASSEMBLIES
- A. Cord and plug connected devices and equipment:
    - 1. Provide a cord with a plug to attach the fixed electrical system to appliances, motors less than 1/8HP, control panels, and similar installations served at 120V (nominal) and above, unless the device includes an integral disconnect switch.
    - 2. Cords shall be minimum #14AWG and include a grounding conductor. Voltage rating shall meet or exceed the branch circuit operating voltage. See Section 26 05 19 for additional requirements for cords.
    - 3. Provide a matching plug, NEMA style, for each plug. Plugs shall be grounded unless specifically approved otherwise.
- 2.5 SWITCH RATINGS
- A. Switch Rating: Horsepower rated for AC or DC as indicated on Drawings.
  - B. Short Circuit Current Rating: UL listed for 10,000A RMS symmetrical amperes when used with or protected by Class H or K fuses (30-600 ampere).

## **PART 3 EXECUTION**

### **3.1 INSTALLATION**

- A. Furnish and install motor, circuit, and equipment disconnects required for all electrically operated equipment unless said disconnects are furnished under another Division of the Specifications or are furnished as an integral part of the equipment.



- B. Mount disconnect switches, circuit breakers, molded case switches, and related items adjacent to the equipment controlled unless indicated otherwise on the Drawings.
- C. Properly proper structural support for the disconnecting equipment. Support may include Unistrut type channels, brackets steel angles, factory-made support shelves, proper anchoring to concrete, steel, or masonry walls, or other support suitable to the Architect and Engineer.
- D. Install enclosed switches plumb. Provide supports in accordance with Section 26 05 29.
- E. Height: 5 feet to operating handle.
- F. Install fuses for fusible disconnect switches. Refer to Section 26 28 13 for product requirements.
- G. Install engraved plastic nameplates in accordance with Section 26 05 53.
- H. Apply adhesive tag on inside door of each fused switch indicating NEMA fuse class and size installed.

**END OF SECTION**

## **SECTION 26 51 00**

### **LIGHTING FIXTURES**

#### **PART 1 GENERAL**

##### **1.1 DESCRIPTION OF WORK**

- A. Extent of Work as shown on the Drawings and described in these Specifications.
- B. Prior to submittal, examine Architect's reflected ceiling plan in detail and insure that every fixture submitted has proper mounting accessories for ceiling and layout indicated.

##### **1.2 STANDARDS**

- A. ANSI Standards:
  - 1. LE 4 Recessed luminaires.
- B. IES Standards:
  - 1. LM-79 Lighting Measurements of Solid-State Lighting Products.
  - 2. LM-80 Measuring Lumen Maintenance of LED Light Sources.
- C. CBM standards.

##### **1.3 SUBMITTALS**

- A. Submit manufacturer's data demonstrating compliance with these Specifications and the schedule on the Drawings in accordance with Section 26 05 00.

#### **PART 2 PRODUCTS**

##### **2.1 ACCEPTABLE MANUFACTURERS**

- A. Fixtures:
  - 1. As scheduled on the Drawings.
  - 2. Substitutions according to Section 26 05 00. Prior approval is required for substitutions.

##### **2.2 GENERAL FIXTURE REQUIREMENTS**

- A. Provide hangers, hardware, supports, grid attachment clips, canopy extensions, and related items as required by applicable codes and standards.
- B. Provide factory or field assembled frames for recessed gypboard or plaster mounted fixtures.
- C. Furnish fixtures with specified or scheduled finishes.
- D. Diffusers shall be of the thickness as specified in the Fixture Schedule on the Drawings. If no thickness is specified, the minimum diffuser thickness is 0.125" (0.140" nominal thickness).
- E. All painted fixtures shall be painted after fabrication.

##### **2.3 LIGHT EMITTING DIODE (LED) LIGHTING FIXTURES**

- A. Refer to the Lighting Fixture Schedule on the Drawings for specific details.

- B. General requirements:
  - 1. Fixtures shall comply with the following UL standards, where applicable:
    - a. UL 8750 (new fixtures).
    - b. IES LM-79 (Testing for energy use, light output and color temperature).
    - c. IES LM-80 (Testing of light sources).
    - d. U.S. Department of Energy CALiPER testing certification, where available.
  - 2. Testing under IES shall be for a minimum of 6,000 hours, with lifetimes projected from this information.
  - 3. Testing results for individual fixture types shall be submitted to the Engineer when requested.
- C. LED fixtures shall be warranted by the manufacturer for a minimum of five years.
- D. Heat dissipation from all LED fixtures, modules or drivers shall be controlled via passive convection methods. No fans shall be required for proper operation.

## 2.4 LIGHTING FIXTURE FUSES AND FUSEHOLDERS

- A. Fuse requirements: See Section 26 28 13.

## PART 3 EXECUTION

### 3.1 GENERAL

- A. Furnish and install all fixtures complete as herein specified and as called for in the Fixture Schedule on the Drawings.
- B. Interferences: Carefully examine the complete areas as well as each individual room where fixtures are to be installed for interference with piping, beams, ducts, etc. Where any such interferences occur, provide fixtures with proper type suspension to overcome such interferences.
- C. The fixtures in each room or area must all be hung the same distance above the floor except where noted.
- D. Unless otherwise directed, must not be hidden or obstructed, wholly, or in part, by any piping, ducts, etc., running directly under the fixtures.
- E. Where the bodies of fluorescent fixtures are used as raceways for branch circuit wiring, use wiring with an insulation rating of at least 90 deg. C. Carefully and securely clamp wiring within the fixture body to positively prevent contact of the wires with the ballast.
- F. Clean all fixtures and leave free of any dirt, dust, grease, etc., at the completion of the job.

### 3.2 INTERIOR FIXTURE SUPPORT AND WIRING

- A. Provide fixtures with any mounting accessories or supports required. Items required for support may include structural supports, mounting bolts, beam clamps, suspension items, or similar materials required to suspend and/or support the fixtures.
- B. Recessed mounted fixtures installed in lay-in ceilings:
  - 1. Attach to lay-in grid with clips as required by NEC 410-16(C).

2. Connect the fixtures to the branch circuit wiring system by short lengths of flexible metal conduit ("whips") to allow easy removal and servicing of the fixtures.
  3. No more than one fixture may be served by a single flexible whip. Do not "daisy chain" between fixtures with flexible conduit.
  4. Do not connect the lighting fixture to the branch circuit wiring system with EMT or other rigid conduit means.
  5. Feed whips from permanently mounted junction boxes above the ceiling lines. An individual junction box shall serve no more than four recessed fixtures.
  6. Support surface and recessed linear fluorescent fixtures by means other than the ceiling grid where the fixtures are of a weight greater than the grid can support. In these cases, provide at least two independent support wires connected to diagonal corners of the fixtures, and run directly from the corner connection to the permanent structure.
  7. Provide downlight fixture suspension bars equal to Caddy "517" series.
- C. Recessed mounted fixtures installed in gypboard or plaster ceilings:
1. Junction boxes feeding lighting fixtures shall not be installed above inaccessible ceilings.
  2. Connect fixtures to the branch circuit wiring system in one of the following methods:
    - a. If fixtures can be completely serviced from below, including ballast replacement, or if there is not equipment above the ceiling line that would require removal of the fixture for servicing of equipment, EMT or similar rigid steel conduit or tubing may be used to connect between fixtures.
    - b. If fixtures require removal for servicing, or if other equipment located above the ceiling line requires removal of the fixture for servicing of equipment, flexible metal conduit shall be used to interconnect the fixtures.
  3. Troffers:
    - a. Include a support frame on all four sides of the fixture. Frame may be field fabricated or supplied by the lighting fixture manufacturer.
    - b. Field fabricated support frames may include metal wall studs or ceiling splines turned edge-wise and screwed or bolted to the ceiling, or other suitable methods approved by the A/E.
  4. Downlights:
    - a. Include flat mounting pan with fixture components.
    - b. Attach to ceiling structure with slips, bolts, anchors, or extendable bars. Do not lay on top of ceiling surface without attaching to permanent structure or ceiling suspension members.
    - c. Provide any required trim extension for recessed downlights reflector cones in needed due to thick ceiling surfaces.
- D. Surface mounted fixtures:

1. On grid ceilings attach to the ceiling with grid clips (Caddy "4G" series or equal) or other adequate support mechanism. Support fixtures that exceed the weight capabilities of the grid by directly anchoring the fixture to the structure in at least two locations on diagonal ends of the fixture.
2. On non-accessible ceilings (such as gypboard) support by means of sheet metal brackets, steel channel or angles, or similar means installed above the permanent ceiling line and bolted through the ceiling material to the fixture housing. Do not attach surface mounted fixtures on gypboard with only toggle bolts or screw anchors unless specifically so approved by the Engineer.
3. On masonry walls support independently of the back box or junction box with masonry anchors unless the box has been specifically listed for such application. Support fixtures longer than two feet by masonry anchors at each end of the fixture in addition to any intermediate support required.
4. Under counter or under cabinet task lighting fixtures:
  - a. Mount fixtures so that the top of the fixture is securely attached to the bottom of the upper cabinet or counter top.
  - b. Do not mount with back of fixture against back wall.
  - c. Back of fixture is defined as the side if the fixture opposite the lensed side.

E. Suspended fixtures:

1. Cable suspension:
  - a. Concrete structure:
    - 1) Install inserts into the bottom of structural concrete beams, braces, tee legs, tee flanges, box or carton formed floors, or poured concretes floors shall be epoxy-filled type equal to Hilti. Do not provide standard expansion inserts.
    - 2) Inserts installed into the sides of poured concrete walls may be either standard expansion type or epoxy-filled inserts.
  - b. Metal structure:
    - 1) Coordinate with the Architect to determine load bearing capacity of corrugated metal decks or similar materials.
    - 2) Provide rigid attachment to the metal deck materials.
    - 3) If deck materials are not capable of adequate support of the fixtures, install additional steel channels, angles, beams, or similar structural reinforcing materials to support the fixtures and their hanging mechanism.
  - c. Concrete block walls:
    - 1) Inserts installed in the sides of block walls may be standard expansion type unless block wall cells are unfilled.
    - 2) Unfilled blocks may require additional reinforcement of anchors to properly support the cable attachment and

avoid breaking the block wall. Consult the Engineer for resolution.

2. Stem and rod suspension:
  - a. Stem requirements:
    - 1) Hollow to allow the passage of branch circuit conductors down to the fixture.
    - 2) Furnished by the fixture manufacturer.
    - 3) Of sufficient length, including any adjustments necessary for varying structure height above grade to provide uniform suspension height above finish floor lines.
    - 4) Include canopies for attachment to junction or outlet boxes.
  - b. Rod requirements:
    - 1) Suspend fixture with all-thread type rod from the structure where required or noted.
    - 2) Rod shall attach to a suitably supported junction box.
    - 3) Suspension may require the installation of uni-strut type bracing or additional support plates on the back of the fixture(s) to avoid pull-out of the fixture housing from the rod attachment.
  - c. Metal structure:
    - 1) Coordinate with the Architect to determine load bearing capacity of corrugated metal decks or similar materials.
    - 2) Provide rigid attachment to the metal deck materials.
    - 3) If deck materials are not capable of adequate support of the fixtures, install additional steel channels, angles, beams, or similar structural reinforcing materials to support the fixtures and their hanging mechanism.

### 3.3 EXIT AND EMERGENCY BALLASTED FIXTURES

- A. Exit signs:
  1. Exit signs shall generally be ceiling or wall mounted as indicated on the Drawings and Fixture Schedule or as required by the mounting surfaces and wall treatments.
  2. The Contractor is responsible for verifying door schedules and room finishes to insure proper clearances from obstructions such as door openings.
- B. Connect exit and emergency fixtures to:
  1. Unswitched lighting circuit from exit switch or panel lock-on circuit breaker(s), or
  2. Emergency powered panel branch circuit as noted on the Drawings.
- C. Exit and emergency fixtures that are uncircuited on the Drawings shall be uniformly balanced between the available number of emergency/exit lighting circuits.
- D. Minimum conductor size for all exit circuits is #10AWG.

- E. Contractor may elect to leave emergency fixtures with charger/battery packs disconnected prior to the energization of the system to avoid complete discharge of the battery packs. Connect all fixtures prior to final inspection.

### 3.4 EXTERIOR LIGHTING FIXTURES

- A. Connect fixture ballast to correct voltage tap. Install "wire nuts" or other suitable protection for any unused leads on multi-tap drivers.
- B. Wall mounted fixtures:
  - 1. Provide cast junction boxes for surface mounted fixtures.
  - 2. Provide gaskets for recessed junction boxes.
  - 3. Boxes shall be approved for either damp or wet location installation (as required).
- C. Grade mounted fixtures with pole bases:
  - 1. Provide fixtures with poured-in-place reinforced concrete bases constructed as detailed on the Drawings.
  - 2. Refer to Division 3 for general specifications for concrete work.
  - 3. Rest pole base sides and bottom against undisturbed earth.
  - 4. Anchor bolts shall be furnished by the pole manufacturer.
  - 5. Dimensions of concrete bases:
    - a. Refer to the Drawings for specifics on pole base dimensions.
    - b. Drawings indicate general dimensions of bases based on specified poles or general pole dimensions, as noted.
    - c. Contractor shall coordinate with actual pole dimensions to ensure that bases are of adequate size. Poured bases shall meet the following minimum width or diameter requirements:
      - 1) Where round concrete bases are designed, base diameter shall be at least 4" greater than the diagonal distance across the square pole base plate.
      - 2) Where square or tapered square concrete bases are specified, the horizontal base dimensions at the top of the base shall each be 4" greater than the side dimension of the base plate.
    - d. Verify all dimensions, anchor bolt patterns, or similar arrangements prior to any drilling or pouring of bases.
  - 6. Distance of top of pole bases above final grade:
    - a. 4" above grade where mounted in landscape areas not subject to damage by traffic.
    - b. 12" above grade where mounted in landscape areas adjacent to parking lot sidewalks.
    - c. 30" above grade where mounted in areas subject to damage by traffic (such as parking lots).
  - 7. Concrete pole bases poured with off-center anchor bolts, twisted bolts, incorrect dimensions, incorrect reinforcing bar positioning, conduits placed outside of pole opening, or similar deficiencies shall be removed in

their entirety and replaced with correctly installed bases at the Contractor's expense.

8. Arrange base conduits as closely as practical to allow all of conduit to be covered with the interior of the pole shaft.
9. Make all wiring joints accessible for connections at the pole handhole.
10. Ground pole through a driven ground rod installed inside of or adjacent to the concrete pole base. Connect grounding conductor to the branch circuit system ground, ground rod, and to the metallic pole or fixture body.
11. Setting of poles on concrete bases:
  - a. Set poles on concrete bases after bases are sufficiently cured.
  - b. Level pole by installing and adjusting nuts on both top and bottom of base plate.
  - c. Base plate shall not sit directly on the top of the concrete base, but shall instead be supported by the anchor bolts and nuts.
  - d. Tighten all nuts securely after leveling is completed.
12. Install and connect fuseholders and fuses.
13. Install and connect wiring inside pole from fuseholders to ballast in fixture head.
14. Conductors between the pole base branch circuit connection and the fixture ballast leads shall be a minimum of #12AWG unless approved otherwise. Include grounding conductor between base branch circuit and fixture housing.
15. Adjust lighting fixture for proper throw of light pattern. Refer to Drawings for orientation of fixtures. Confirm orientation at night.

D. Fuses:

1. Install in the following locations:
  - a. For all pole mounted fixtures.
  - b. For "wall-pack" type fixtures where scheduled on the Drawings to be provided with fuses.
2. Pole mounted fixtures requiring fuses:
  - a. Fuses required:
    - 1) Provide one fuse per fixture for fixtures connected 120V or 277V.
    - 2) Provide two fuses per fixture for fixtures connected 208V, 240V, or 480V.
    - 3) See Section 26 28 16 for types of fuses required.
  - b. Fuse holders:
    - 1) Install where accessible from the pole handhole or the stanchion junction box.
    - 2) Crimp line and load side of fuses to fuseholder.
    - 3) Install insulating boot over both line and load side conductors.
    - 4) Tape joint at each insulating boot with at least 4 layers of insulating electrical tape to seat the boot and prevent slippage down the conductor.



- c. Size fuses as follows:
  - 1) Approximately 150%-250% of maximum fixture current (during either starting or running conditions) if time delay fuses are used.
  - 2) Approximately 300% of maximum fixture current (during either starting or running conditions) if fast acting fuses are used.
  - 3) As recommended by fixture manufacturer if the manufacturer publishes the recommended fuse size.
- 3. Coordinate fuse and fuseholder installation in "wall-pack" fixtures to assure that fuses are provided by either the Contractor or the fixture manufacturer.

### 3.5 SPARE DRIVERS

- A. Provide spare drivers directly to the Owner at the completion of the project. Drivers shall be new and in the original boxes. Obtain a receipt from the Owner for delivery of the spare drivers to his care.
- B. Spare drivers are for Owner's spare stock only and are not to be used by the Contractor for replacement of drivers installed in lighting fixtures on the project that are defective or have shortened lifetimes and require replacement during the warranty period.
- C. All drivers shall be the same as those provided in the particular fixtures furnished on the project.
- D. Provide the following spare drivers:
  - 1. Two drivers for each driver type installed on the project.

### END OF SECTION

## **SECTION 26 53 00**

### **LAMPS AND LIGHT SOURCES**

#### **PART 1 GENERAL**

##### **1.1 DESCRIPTION OF WORK**

- A. Extent of Work as shown on the Drawings and described in these Specifications.

##### **1.2 SUBMITTALS**

- A. Submit manufacturer's data demonstrating compliance with these Specifications and the schedule on the Drawings in accordance with Section 26 05 00.

#### **PART 2 PRODUCTS**

##### **2.1 GENERAL REQUIREMENTS**

- A. Refer to Drawings and Fixture Schedule for further details.

##### **2.2 LIGHT EMITTING DIODE (LED) LIGHT SOURCES:**

- A. LED light sources shall comply with the following general requirements. Refer to the Lighting Fixture Schedule on the Drawings for additional information.
- B. General requirements:
  - 1. See Lighting Fixture Schedule for minimum initial lumen output required for each LED product.
  - 2. Minimum lamp lifetime shall be 50,000 hours unless noted otherwise. LED lifetime shall be stated based on reaching L70 (70% of initial lighting output) as a minimum (L80 or L90 ratings are preferred).
  - 3. Luminous efficacy shall be 80 lumens per watt minimum.
  - 4. Color temperatures required are noted on the Lighting Fixture Schedule on the Drawings. In general, interior fixture temperature is 3,500 deg. K and exterior fixture temperature is 5,000 deg. K. Stated color temperatures shall be within a maximum of 2 MacAdam ellipses of each other.
  - 5. Color rendering index (CRI) shall not be less than 80.
  - 6. Drivers shall be integral with the display and designed for line voltage input with lower LED array output (voltage and nominal ampacity in milliamps) as required to produce rated initial light output.

#### **PART 3 EXECUTION**

##### **3.1 GENERAL**

- A. Furnish and install all lamps and lighting sources complete as herein specified and as called for in the Fixture Schedule on the Drawings.
- B. Clean all lamps and leave free of any dirt, dust, grease, etc., at the completion of the job.

### **END OF SECTION**

# APPENDIX



## **LEAD PAINT REMOVAL WORKPLAN**

**Duval County Courthouse  
400 E. Gravis Ave.  
San Diego, Texas 78384**

**June 19, 2025**

**Project No. 25-1213**

**Prepared for:**

**Duval County  
400 E. Gravis Ave.  
San Diego, Texas 78384**

**Prepared by:**

A handwritten signature in black ink that reads "Wade Champion". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

---

**Wade Champion  
Project Manager  
TDLR Lead Inspector/Risk Assessor 2070357**

## LEAD BASED PAINT WORKPLAN

### DIVISION 1 – GENERAL REQUIREMENTS

01014 Summary of the Work

### DIVISION 2 – SITE WORK

Section 02064 - Removal of Lead-Based Paint Substrates

Section 02065 - Removal of Loose and Flaking Lead-Based Paint

Section 02066 - Chemical Stripping of Lead-Based Paint

Section 02067 - Disposal of Lead-Based Paint Waste Material

## SECTION 01014 - SUMMARY OF THE WORK

### PART 1 - GENERAL

The project name is “**Duval County Courthouse Roof Remediation, Exterior Windows and Electrical**” Areas Lead Based Paint Workplan” as shown on the Contract Documents prepared by Owner. The workplan is dated **June 19, 2025**.

All phases of the Work shall be executed by skilled craftsmen experienced in their respective trades. This section includes a general scope of work, while Division 2 includes a description of procedures for work procedures in each work area.

#### 1.1 RELATED DOCUMENTS

General provisions of the Contract, including the General and Supplementary Conditions and other Division 1 General Requirements, apply to work of this section. Additional sections include:

##### Division 2 - Site Work

Section 02064 - Removal of Lead-Based Paint Substrates

Section 02065 - Removal of Loose and Flaking Lead-Based Paint

Section 02066 - Chemical Stripping of Lead-Based Paint

Section 02067 - Disposal of Lead-Based Paint Waste Material

#### 1.2 SUMMARY OF WORK

The Work includes the removal or partial removal of lead-based paint or lead-based paint substrates identified in the designated areas of the Project which include.

##### **Duval County Courthouse -Basement Level Windows**

- Restore Windows [Remove/Replace upper and lower sashes per architects' direction and restore remaining windows elements (return to sound and tight condition)]
- Alternate No. 3 Strip paint coatings from exterior stone

The Work at the project shall commence on the date established by the Notice to Proceed and shall be completed within the time specified on the proposal form. The Work shall be performed in accordance with the requirements of all applicable sections of these Workplans. Contractor shall perform the Work in a manner that minimizes disruption to construction operations.

The Work includes the removal and disposal of lead-based paint, lead-based paint contaminated building materials according to the requirements of the following workplan sections in the sequence indicated:

##### Work:

Contractor will comply with applicable Codes, Regulations, and Standards. governmental agencies before starting work.

Contractor will provide for Air Monitoring - Test Laboratory Services to demonstrate to the Owner so that the building areas beyond the work areas will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of Contractor.

Contractor will provide Worker Protection. Contractor will provide the equipment and procedures for protecting workers against lead contamination and other workplace hazards.

#### Work Procedures:

Section 02064 - Removal of Lead-Based Paint Substrates  
Section 02065 - Removal of Loose and Flaking Lead-Based Paint  
Section 02066 - Chemical Stripping of Lead-Based Paint  
Section 02067 - Disposal of Lead-Based Paint Waste Material

### 1.3 WORK PLAN

Submit detailed plans of the procedures proposed for use in complying with the requirements of these Workplans. Include in the plans the locations and layouts of decontamination areas; the sequencing of lead work; the interface of trades involved in the performance of work; methods to be used to assure the safety of building occupants and visitors to the site; the disposal plan, including location of approved disposal site; and a detailed description of the methods to be employed to control pollution. Expand upon the use of the portable high-efficiency particulate air (HEPA) ventilation system, closing out of the building's heating, ventilation, and air conditioning (HVAC) system, method of removal to prevent visible emissions in work areas, and bagging of removed lead debris. The plan must be approved by the Consultant prior to commencement of work.

### 1.4 INSPECTION

Prior to commencement of work, inspect areas in which work will be performed. List damage to structure, surfaces, equipment, or surrounding properties noted during the inspection that could be misconstrued as damage resulting from the Work. Submit to Consultant prior to starting work.

### 1.5 POTENTIAL LEAD HAZARD

The disturbance or dislocation of lead-based painted materials may cause lead dust to be released into the building's atmosphere, thereby creating a potential health hazard to workers and building occupants. Apprise all workers, supervisory personnel, subcontractors, and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures, which must be followed.

Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-based paint, take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to lead dust. Such measures shall include the procedures and methods described herein, and compliance with regulations and guidelines of applicable federal, state, and local agencies.

### 1.6 STOP WORK

If Owner or Consultant presents a written Stop Work Order, immediately and automatically stop all work. Do not recommence work until authorized by Consultant.

## 1.7 CONTRACTOR USE OF PREMISES

Limit use of the premises to the Work indicated, so as to allow for Owner occupancy and use by other trades required in the buildings. Confine operations at the site to the areas permitted under the Contract.

Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the Work while engaged in project construction.

Keep existing driveways and entrances serving the premises clear and available to Owner and his employees at all times. Do not use these areas for parking or storage of materials.

Do not encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas designated by Owner. If additional storage is necessary, obtain and pay for such storage off-site.

Lock automotive-type vehicles, such as passenger cars and trucks, and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

Maintain existing buildings in a safe and weather tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the buildings and their occupants during the construction period.

Keep public areas such as hallways, stairs, elevator lobbies, and toilet rooms free from accumulation of waste, rubbish, or construction debris.

Smoking or open fires will not be permitted within any of the buildings on the premises.

Except for toilet rooms designated by Owner for use by Contractor's personnel, use of existing toilets within the buildings, by Contractor and his personnel, will not be permitted.

## 1.8 LOADS AND STRESSES

Contractor shall have full responsibility for preventing overstresses of any structure or any part or member of the structure during the Work. Contractor shall fully check the effect of the operation in this regard and shall provide all support necessary.

## 1.9 VERIFICATION OF QUANTITIES

It is the responsibility of Contractor to verify all LBP locations and quantities of LBP in each work area. Contractor shall fully inform himself of the conditions relating to construction of the Work and employment of labor thereon. Failure to do so will not relieve a successful Offeror of his obligation to furnish all material, equipment, and labor necessary to carry out the provisions of the Contract.

## 1.10 OWNER OCCUPANCY

Separate Contract: Owner has awarded a separate contract for performance of certain construction operations at the site. Those operations will be conducted simultaneously with work



under this Contract and Contractor shall work in cooperation with the other trades performing said operations.

Owner reserves the right to place and install equipment as necessary in areas of the building in which all lead removal and project decontamination procedures have been completed and to occupy such completed areas prior to substantial completion, provided that such occupancy does not substantially interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the Work or any part of the Work.

#### 1.11 SUBMITTALS

Submit all required documents, identified in Section 01301 - Submittals, to Consultant for review prior to the start of work in any given work area. Do not begin work until these submittals are returned, approved by Owner and Consultant.

#### 1.12 PROJECT SCHEDULE

The project is scheduled to begin on the date established in the Notice to Proceed and shall be completed as specified on the Proposal Form and in these Contract Documents. Contractor shall submit his work schedule to the Owner for approval. Work schedule shall be coordinated based on the availability of the work area and whether or not the building is occupied. Work hours will initially be scheduled as outlined in paragraph 1.2 of this Section.

Removal of lead-containing waste material from temporary storage inside containment to waste dumpsters shall be approved by the Owner or shall be conducted as otherwise specifically approved in writing. During transportation of all waste materials, the lead bags, dumpsters, and warning labels will be visually obscured from public view.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01014

## SECTION 02064 - REMOVAL OF LEAD-BASED PAINTED SUBSTRATES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Workplan sections, apply to work of this section.

#### 1.2 SUMMARY OF WORK

Work of this section includes the removal and off-site disposal of the following lead-based painted substrates

##### **Duval County Courthouse -Basement Level Windows**

- Restore Windows [Remove/Replace upper and lower sashes per architects' direction and restore remaining windows elements (return to sound and tight condition)]
- Alternate No. 3 Strip paint coatings from exterior stone

#### 1.3. EXISTING CONDITIONS

Existing conditions are reflected accurately to the best of Owner's knowledge. Should minor conditions be encountered that are not exactly as indicated, modification to the Work shall be made as required at no additional expense to Owner. Contractor is responsible for thoroughly familiarizing himself with all conditions and requirements of the Work, including Lead-Based Paint (LBP) locations and quantities, prior to submittal of a Proposal. Contractor shall refer to the attached tables, hereby listed in Appendix B of the Contract Documents for assistance in identifying LBP locations.

### PART 2 - PRODUCTS

#### 2.1 DISPOSAL BAGS/PLASTIC SHEETING

Provide 6 mil polyethylene disposal bags or wrap substrates to be disposed of in 6 mil polyethylene, sealed with duct tape.

#### 2.2 WET DETERGENT WASH

Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by the manufacturer's instructions.

Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

### PART 3 - EXECUTION

Prior to initiating Work, Contractor shall ensure compliance with Section 01555 - Worker Protection - Lead Based Paint

#### 3.1 SECURING WORK AREA:

Secure work area from access by occupants, staff, or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area.

### 3.2 DEMARCATION OF REGULATED AREA:

Demarcate each exterior regulated area with a sheet plastic drop sheet and barricade fence. Provide barricade fence with support posts four feet (4') on center. Provide barrier-warning tape at perimeter with the following legend "Caution Lead Hazard - Do Not Enter Work Area Unless Authorized." Barricade fence shall be securely fastened and no closer than twelve feet (12') radius from the work.

### 3.3 EXTERIOR RENOVATION GENERAL PROCEDURES

The following precautions and procedures have application to the work of this section. Workers must exercise caution to avoid the release of lead dust into the air and to contain lead dust and debris on drop sheet.

Before start of work comply with requirement for worker protection and respiratory requirements as specified in the Contract Documents.

Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the regulated area.

Provide one layer of 6-mil polyethylene sheeting as close to foundation as possible. Extend the sheeting out from the foundation a distance of 3 feet per story being abated or a minimum of 6 feet and a maximum of 15 feet. Weight the sheeting at the foundation and along edges and seams. Erect vertical shrouds or suspend work if constant wind speed exceeds 20 mph or there is visible movement of debris beyond ground sheeting.

On a daily basis, collect dust and debris by HEPA vacuuming the surface and by wet sweeping. At the end of each workday, remove polyethylene sheeting and place it in 6 mil disposal bags. Visually examine the immediate area to ensure that no lead debris has escaped containment. Wet sweep or rake up any debris found and place in 6 mil disposal bags. Securely store with other waste.

Suspend work activities during inclement weather; including but not limited to rain, snow, ice, and hail.

### 3.4 GENERAL

Score paint at edges, corners etc. to reduce chipping of paint. Carefully remove by wet scraping loose and flaking paint prior to removal of substrate in accordance with the following procedure:

- Fine mist the painted surface with wet wash detergent or water using plant mister or garden sprayer and carefully scrape loose and flaking material.
- Clean up paint chips and flakes by HEPA vacuuming or wet wiping with wet towels. Care shall be taken to avoid damage to adjacent areas during the removal of substrates.
- Using wet-demolition techniques, remove substrate from building framing or structural members by tooling the substrate from the structural members. Substrates coated with LBP shall be kept wet at all times during the removal, cleanup, and containerizing of the

substrates. Under no circumstances shall the contractor let the removed substrate drop more than six feet from its location to the floor or ground.

- Carefully remove the lead based painted substrates to minimize the disturbance of lead-based paint and the generation of lead dust.
- HEPA vacuum and/or wet wipe to remove all paint chips, debris and dust generated during the work. Do not allow dust or debris to accumulate.
- Substrates that are removed shall be wrapped, labeled and disposal or disposed of in accordance with section 02067 - Disposal of Waste Materials - Lead-Based-Paint.

END OF SECTION 02064

## SECTION 02065 - REMOVAL OF LOOSE AND FLAKING LEAD-BASED PAINT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS:

General provisions of the Contract, including General and Supplementary Conditions and other Division-1 Workplan sections, apply to work of this section.

#### 1.2 SUMMARY OF WORK

Work of this section includes the removal and off-site disposal of lead-based paint from the following substrates.

#### **Duval County Courthouse =Basement Level Windows**

- Restore Windows [Remove/Replace upper and lower sashes per architects' direction and restore remaining windows elements (return to sound and tight condition)]

The Architect/ Engineer or their designated representative, will be responsible for final inspection on completeness of preparation of the work surface

### PART 2 - PRODUCTS

2.1 DISPOSAL BAGS/PLASTIC SHEETING: Provide 6 mil polyethylene disposal bags or wrap substrates to be disposed of in 6 mil polyethylene, sealed with duct tape.

2.2 Wet Detergent Wash: Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by the manufacturer's instructions.

### PART 3 - EXECUTION

#### 3.1 GENERAL

Carefully remove by wet scraping and/or sanding all loose and flaking paint in accordance with the procedures set forth in this section.

#### 3.2 CRITICAL BARRIERS

Remove all removable furniture that has been designated uncontaminated by the Work Procedures or Consultant's Project Manager. Also remove uncontaminated equipment and/or supplies from the work area before commencing work, or completely cover with two (2) layers of polyethylene sheet at least 6 mil in thickness, securely taped in place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached.

Completely separate the work area from other portions of the building and the outside environment by closing all openings with sheet plastic barriers at least 6 mil in thickness or by sealing cracks with spray-foam, poly sheeting, and/or duct tape.

Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convactor casings, spandrel panels, and speakers, and other openings into the work area polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain seal until all work, including project decontamination, is completed. Take care in sealing off lighting fixtures to avoid melting or burning the sheeting.

Clean all contaminated furniture, equipment, and/or supplies, prior to moving or covering, with a HEPA-filtered vacuum cleaner or with wet cleaning. All equipment or furniture is to be deemed contaminated unless specifically declared uncontaminated in writing by Consultant's Project Manager. Clean all surfaces in the work area with a HEPA-filtered vacuum or by wet wiping prior to installing the primary barrier.

Provide sheet plastic barriers at least 6 mil in thickness as required to completely seal openings from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement. Erect the entire assembly so that it hangs vertically without a "shelf" upon which debris could collect.

Provide a pressure differential system per Title 0900, Section 01513 - Temporary Pressure Differential and Air Circulation System.

### 3.3 PRIMARY BARRIER

Cover floors and other building surfaces not scheduled for removal with a primary barrier, as described below to protect these surfaces from water damage and high humidity and from contamination by lead dust.

Cover the floor of the work area with two individual layers of clear polyethylene sheeting, each at least 6 mil in thickness, lapped up on the walls at least 12 inches. Plastic shall be sized to minimize seams.

Form a sharp right-angle bend at the juncture of floor and wall so that there is no area of the sheeting that, if stepped on, would cause the wall attachment to be pulled loose.

### 3.4 SECONDARY BARRIER

Install as a drop cloth, a clear 6-mil sheet plastic in all areas where LBP removal work is to be carried out. Completely cover the floor with sheet plastic. Secure the sheet plastic in place with duct tape so that debris cannot filter behind it. Provide cross-strips of duct tape at the floor supports as necessary to support the sheet plastic and prevent its displacement during removal operations.

Install the secondary barrier at the beginning of each work shift. Install only sufficient plastic for work of that shift. Remove the secondary barrier at the end of each work shift or as work in an area is completed. Fold the plastic toward the center of the sheet and pack into disposal bags. Keep the material on the sheet continually wet until bagged.

### 3.5 REMOVAL OF LOOSE AND FLAKING PAINT

Apply a fine mist surface with wet wash detergent using plant mister or garden sprayer. Score the damaged paint at edges and corners to reduce chipping of paint. Carefully scrape loose and flaking material.

Where identified in the Reference Drawings, wet sanding will be required to prepare the substrate for repainting. Lightly sand with a moist sanding sponge or wet sandpaper to obtain a smooth transition edge between the remaining paint and the substrate.

HEPA vacuum and/or wet wipe to remove all paint chips, debris and dust generated during the work. Do not allow dust or debris to accumulate. Clean up paint chips and flakes by wet sweeping, HEPA vacuuming, or collecting in wet towels. Care shall be taken to avoid damage to adjacent areas during the removal of the loose and flaking paints.

At the end of each work shift, remove any paint chips, dust, and debris that collects on the sheeting and other surfaces by using a HEPA vacuum and by spraying with wet wash solution, collect debris with wet paper towels, place in disposal bags while still wet, and clean surface of sheeting and surfaces with wet cloths.

Empty HEPA vacuum and place contents into disposal bags. Place all rags, wet towels, and other disposable items used during the project into disposal bags. Tape the disposal bags shut with duct tape and wet wipe the exterior surfaces of all disposal bags and place in 55-gallon drums prior to exiting the work areas.

At the completion of work activities in each work area, wet wipe all surfaces, including floor sheeting with a wet detergent wash. Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by the manufacturer's instructions.

### 3.6 PRIMING AND SEALING

After complete drying, prepare the substrate and seal all surfaces where the loose and flaking lead-based paint was removed with a primer or encapsulant that is compatible with the substrate.

### 3.7 DAMAGES

Protect areas adjacent to substrates that are removed for replacement from damage caused by this work. Damages to non-protected areas or from lack of care shall be repaired or replaced at the Contractor's expense.

END OF SECTION 02065

## SECTION 02066 - CHEMICAL STRIPPING OF LEAD-BASED PAINT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Workplan sections, apply to work of this section.

#### 1.2 GENERAL

The following is a list of prohibited lead hazard removal methods:

- Open flame burning;
- Chemical stripping with methylene chloride-based paint strippers;
- Uncontained abrasive blasting;
- Uncontained power washing;
- Dry sanding or scraping;
- Power sanding;
- Sanding of wood after chemical stripping.

#### 1.3 SUMMARY OF WORK

Work of this section includes the removal and off-site disposal of lead-based paint from the following substrates.

**Chemical stripping of substrates is not anticipated as part of this project if alternate No.3 is accepted.**

#### 1.4 SUBMITTALS

Before starting work: Submit the following to the Consultant for review. Do not start work until these submittals are returned with Consultant approval indicating that the submittal is returned for unrestricted use.

##### 1.4.1 Chemical Stripping Removers and Neutralizers

Submit product data, use instructions and recommendations from manufacturer for use intended. Include data substantiating that material complies with requirements.

##### 1.4.2 Material Safety Data Sheet

Submit material safety data sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each chemical stripper and neutralizer, include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.



## PART 2 - PRODUCTS

### 2.1 Chemical Stripping Removers

Shall contain no methylene chloride products. Chemical removers shall be compatible with, and not harmful to the substrate to which they are applied. The contractor shall comply with the manufacturer's recommendations for use of the product supplied.

### 2.2 Chemical Stripping Agent Neutralizer

Provide chemical agent neutralizer in accordance with manufacturer's recommendations. Neutralizers shall be compatible with and not harmful to the substrate. Neutralizers shall also be compatible with the stripping agent used.

### 2.3 Wet Detergent Wash

Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by the manufacturer's instructions.

## PART 3 - EXECUTION

### 3.1 CHEMICAL LEAD-BASED PAINT REMOVAL ON-SITE

Chemical Stripping Agents and neutralizers shall be applied in accordance with the recommendations of the manufacturer.

### 3.2 Caustic Stripper Neutralization

Caustic strippers shall be neutralized in accordance with manufacturer's recommendations. Provide workers with proper protective equipment, including but not limited to; protective clothing (non-paper), chemically resistant gloves, eye protection and respiratory protection with filters selected for the hazards to be encountered.

### 3.3 Remove Stripper Sludge

Place lead containing stripper sludge in corrosion-proof containers and place in a secure waste storage area. The surface from which lead-based paint has been removed shall be thoroughly scrubbed, while still damp from the stripper, in accordance with the manufacturer's recommendation. Monitor pH of the neutralizing solution to ensure it has not become neutralized in the process. If the pH exceeds 6.5, or the solution becomes overly soiled, change solution. Solution may be classified as hazardous waste. Place in 55-gallon drums and test in accordance with Section 02067- Disposal of Waste Materials - Lead-Based Paint. The surface shall be tested with litmus paper following this process. If the litmus paper turns pink, the acid has effectively neutralized the alkali. If litmus turns blue continue scrubbing until satisfactory results are achieved.

### 3.4 Final Cleaning Of Surfaces

Prepare wet detergent wash. Workers must wear eye shields and chemically resistant gloves when working with this solution. Thoroughly scrub stripped surface to remove as much remaining lead

residue as possible. The wash solution may also be hazardous waste, treat in accordance with Section 02067- Disposal of Waste Materials - Lead-Based Paint. Following wet detergent wash, perform a final wash with clear water to remove any traces of detergent. Sponges used in the clean-up process may not be reused and must be placed in double 4 mil or single 6 mil plastic bags, which will be sealed, labeled, and placed in the secure waste storage area. Surfaces must be allowed to dry thoroughly before repainting. A grayish film indicates that significant lead residues remain, and the cleaning process must be repeated. If a white powder appears, the surface is Alkaline and requires further neutralization.

### 3.4 Painting and Sealing

After complete drying, prepare the substrate and seal all surfaces where lead-based paint was removed with a primer or encapsulant that is compatible with the substrate.

END OF SECTION 02066

## SECTION 02067 - DISPOSAL OF WASTE MATERIALS - LEAD-BASED PAINT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Workplan Sections, apply to work of this section.

#### 1.2 DESCRIPTION OF THE WORK

This section describes the disposal of lead-containing or lead contaminated waste materials. Disposal includes packaging of waste materials.

#### 1.3 SUBMITTALS:

Before the start of work, Contractor shall submit the following to the Owner's Consultant for review. Do not start work until these submittals are returned with Owner's Consultant action stamp indicating that the submittal is returned for unrestricted use.

- Contractor must ascertain that the facility owner is registered with the U.S. EPA as a generator of hazardous waste. If there is no generator status established, the contractor shall assist the owner in obtaining generator identification numbers.
- Copy of state or local license for waste hauler.
- U.S. EPA identification number of waste hauler.
- Name and address of waste disposal facility where hazardous waste materials are to be disposed. Include contact person and telephone number. Copy of state license and permit. Provide disposal facility permits.
- Copy of EPA "uniform hazardous waste manifest" form.
- Copy of EPA "notification of hazardous waste activity" form.
- Copy of forms required by state or local agencies.
- Sample of disposal bag and labels to be used.

Submit copies of all manifests and disposal site receipts to Owner's Consultant

### PART 2 - PRODUCTS

Disposal Bags: Provide 6 mil thick leak tight polyethylene bags or wrap components in 6 mil polyethylene sheeting and seal with duct tape. "Label with specific Hazardous Waste Label."

For wrapped materials provide stick-on labels.

### PART 3 - EXECUTION

#### 3.1 GENERAL

All lead-based paint and lead-contaminated paint shall be treated as hazardous waste unless testing identifies the waste stream otherwise:

It shall be the responsibility of the Contractor to have each waste stream evaluated for determination of hazardous waste. Testing of waste shall be performed by a laboratory accredited by either the American Industrial Hygiene Association (AIHA) or the American Association of Laboratory Accreditation (AALA) retained by the contractor. Contractor shall include the cost of testing in the contract sum and supply all test results to the owner.

Sample analysis of each waste stream generated at the Site be performed by a qualified laboratory for Toxicity Characteristic Leaching Procedure (TCLP). The contractor shall pay for all samples obtained at the site for his use.

Waste streams tested that results in a lead content in the TCLP of greater than or equal to five parts per million (5ppm) is to be considered hazardous and shall be handled and disposed according to local, city, state, and federal regulations.

Place all waste generated during the project in a minimum of a single 6-mil disposal bags (or wrap in 6-mil polyethylene sheeting), place bag in DOT Approved 55-gallon steel drum and store in the designated storage area or in an enclosed dumpster.

Properly store and secure waste at all times. Do not leave debris in uncovered or unlocked trucks or dumpsters. Do not incinerate debris or use an unauthorized dumpster. Do not introduce lead contaminated water into storm or sanitary sewers. Do not permit recycling of building components coated with Lead-Based Paint.

### 3.2 DISPOSAL OF HAZARDOUS LIQUID OR SOLID WASTES

Comply with RCRA, DOT, STATE, and local regulations. Comply with DOT and STATE regulations for containers. The most stringent regulation shall apply.

Apply for an EPA identification number from the appropriate regional office if more than 100 kg of hazardous waste is generated from the lead hazard reduction process during any calendar month.

All waste is to be hauled by a licensed waste hauler with all required licenses from all state and local authorities with jurisdiction. Load all waste material into properly labeled disposal bags, polyethylene sheeting and leak-tight drums. All materials are to be contained as follows:

- One 6 mil layer of sheet polyethylene (duct tape all seams) or One 6 mil disposal bag; and
- Sealed steel drum

Protect interior of truck or dumpster with two layers of 6 mil polyethylene sheeting with all seams sealed with duct tape.

Carefully load containerized waste in fully enclosed dumpsters, trucks, or other appropriate vehicles for transport. Exercise care before and during transport, to ensure that no unauthorized persons have access to the material.

Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to the designated storage area, sealed truck, or dumpster,

Retain all documents from the disposal or treatment facility. At completion of hauling and disposal of each load submit copy of Uniform Hazardous Waste Manifest, to Owner's Project Monitor.

### 3.5 BACKCHARGES

Where Contractor fails to fulfill packaging, handling, or disposal requirements as outlined herein, Owner will charge back to Contractor all costs associated with insuring that hazardous wastes are packaged and segregated in accordance with EPA and DOT regulations.

Environmental pollution of Owner's property resulting from Contractor's hazardous waste management activities shall be promptly remediated under Owner direction, to the Owner's sole satisfaction, and at the Contractor's sole expense.

Contractor agrees to either reimburse the Owner or reduce the Contract amount by change order to cover all costs associated with waste repackaging, waste re-segregation, or pollution remediation efforts.

END OF SECTION - 02067

**APPENDIX A**  
**REFERENCE DRAWING**





## **LIMITED LEAD BASED PAINT INSPECTION REPORT**

**Duval County Courthouse  
400 E. Gravis Ave.  
San Diego, Texas 78384**

**Project #21-1141**

**Prepared for:**

**Judge Gilbert Saenz  
Duval County  
400 E. Gravis Ave.  
San Diego, Texas 78384**

**March 4, 2021**



# LIMITED LEAD INSPECTION REPORT

Duval County Courthouse

Prepared by:

A handwritten signature in black ink, reading "Wade Champion", written over a horizontal line.

Wade Champion

Lead Inspector / Risk Assessor

Certificate No. 2070357

## TABLE OF CONTENTS

### EXECUTIVE SUMMARY

|     |                                       |   |
|-----|---------------------------------------|---|
| 1.0 | INTRODUCTION .....                    | 1 |
| 1.1 | Standard of Care and Limitations..... | 1 |
| 2.0 | BUILDING SURVEY .....                 | 1 |
| 2.1 | General .....                         | 1 |
| 2.2 | Lead-Based Paint Analysis .....       | 2 |

### APPENDICES

|            |                      |
|------------|----------------------|
| Appendix A | Accreditation        |
| Appendix B | Analytical Results   |
| Appendix C | Reference Drawing(s) |

## EXECUTIVE SUMMARY<sup>1</sup>

Champion Environmental Consulting, Inc. (CECI) was retained by **Judge Gilbert Saenz** (hereinafter the Client) to conduct a lead-based paint inspection of the **Duval County Courthouse** (hereinafter the Site). CECI's approach to this assessment was to inspect the designated areas of the Site, for lead-based paint (LBP) by physically accessing the painted substrates throughout the selected areas of the Site and to verify the uniformity (homogeneity) of the paints used in the construction of the Site.

During the sampling event a total of **254** assay points, including calibration and standardizing samples, of suspect paints from areas throughout the interior of the Site were analyzed for determination of lead content. An x-ray fluorescence (XRF) analyzer was utilized for LBP detection for this project. All operators of the XRF analyzer are certified for proper use by CECI.

LBP is defined as any homogeneous paint that detects lead content at 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>) or greater by the XRF Analyzer. ***LBP was identified in the following painted substrates analyzed at the Site:***

| Room/Location                             | Substrate          | Location   |
|---|--------------------|--|
| East & South Staircase Noses              | Gray Metal         | Basement to 3 <sup>rd</sup> Floor                  |
| 6 Vault Doors and Frames                  | Black & Gray Metal | Basement and 1 <sup>st</sup> Floor                 |
| Spiral Staircase Handrails & Risers       | Gray Metal         | Basement and 1 <sup>st</sup> Floor Vault Staircase |
| Exterior Courthouse Window Frames & Sills | White Wood         | Exterior Basement to 3 <sup>rd</sup> Floor         |
| 11 Down Spouts                            | Red Metal          | Exterior Courthouse/Annex                          |
| Exterior Door Header                      | White Metal        | South Exterior Annex                               |

---

<sup>1</sup>This is a summary of the contents of this report. Please refer to the full text for a complete explanation and supporting information.

## 1.0 INTRODUCTION

Champion Environmental Consulting, Inc. (CECI) was retained by the Client to conduct a lead-based paint inspection of the Site. CECI's approach to this assessment was to inspect the designated areas of the Site, for lead-based paint (LBP) by physically accessing the painted substrates throughout the selected areas of the Site and to verify the uniformity (homogeneity) of the paints used in the construction of the Site.

CECI conducted its sampling program at the Site utilizing an X-Ray Fluorescence (XRF) Analyzer. LBP is identified as those paints that were analyzed to have lead content at *1.0 milligram per square centimeter (mg/cm<sup>2</sup>)* or greater.

### 1.1 Standard of Care and Limitations

This report was prepared for the exclusive use of the Client named herein to aid in the identification and management of LBP at the Site. CECI performed its services in a manner consistent with the level of care and expertise exercised by environmental professionals performing the same or similar services at the same time and in the same geographic area.

Samples for this LBP sampling program were collected from discrete sample locations associated with the areas specifically identified herein (i.e., Target Areas). While attempts were made to obtain representative samples most likely to contain LBP, findings and conclusions herein are necessarily limited by the number of samples taken and access provided for sampling activities. Conclusions and recommendations herein represent the professional opinions of the CECI personnel involved with the project. CECI assumes no responsibility or liability for errors in information or data provided by third party sources.

## 2.0 BUILDING SURVEY

### 2.1 General

The LBP sampling inspection was of the designated substrates of the site for the identification of homogeneous areas accessible at the time of the site visits. Copies of CECI's certifications and licenses are in Appendix A of this report.

## 2.2 Lead-Based Paint Analysis

The LBP sampling and analysis involved the physical inspection of the Site, a sampling program for suspect LBP, and field analysis utilizing a Niton XRF Analyzer to determine the lead content of each painted surface. Locations of components tested are designated as room locations (e.g., Room Numbers) and location within each room (e.g., North [N], East [E], South [S], West [W]). CECI identified substrates with homogeneous areas of suspect LBP that, based on historical uses, have the potential of containing lead.

*LBP was identified in the following painted substrates analyzed at the Site:*

| Room/Location                             | Substrate          | Location   |
|---|--------------------|--|
| East & South Staircase Noses              | Gray Metal         | Basement to 3 <sup>rd</sup> Floor                  |
| 6 Vault Doors and Frames                  | Black & Gray Metal | Basement and 1 <sup>st</sup> Floor                 |
| Spiral Staircase Handrails & Risers       | Gray Metal         | Basement and 1 <sup>st</sup> Floor Vault Staircase |
| Exterior Courthouse Window Frames & Sills | White Wood         | Exterior Basement to 3 <sup>rd</sup> Floor         |
| 11 Down Spouts                            | Red Metal          | Exterior Courthouse/Annex                          |
| Exterior Door Header                      | White Metal        | South Exterior Annex                               |

All paints that contain any level of lead are regulated by the OSHA Lead in Construction Standard 29CFR 1926.62. Construction work covered by this standard includes demolition or salvage of structures where lead-containing materials are present; removal or encapsulation of lead-containing materials; renovation of structures, substrates, or portions thereof that have lead-containing materials; installation of materials containing lead; lead contamination cleanup; transportation, storage, and disposal of lead-containing materials; and maintenance operations associated with these construction activities.

In performing these activities, OSHA requires an initial determination that the construction activities used at the job site do not create airborne emissions of lead above the Action Level of 30  $\mu\text{g}/\text{m}^3$  (i.e., negative exposure assessment). This exposure assessment may include initial exposure monitoring, historical data that meet certain requirements, or objective data demonstrating that a product or material containing lead, or a specific process cannot result in employee exposures to lead above the Action Level.

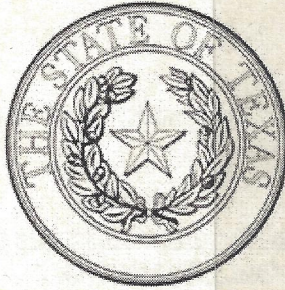
During the exposure assessment, the workers must be protected in the assumption that the work process is going to create airborne concentrations above the Permissible Exposure Level (PEL) of 50  $\mu\text{g}/\text{m}^3$ . This requires medical monitoring (blood test) for blood lead levels, personal

protective equipment (PPE), respiratory protection, a Hazard Communication Program, and a written Compliance Program. If a negative initial determination is achieved during a certain work process, no further monitoring is required. Additional exposure assessment and monitoring is required with any change in process, equipment, controls, or environmental conditions. Employers subject to these work conditions should refer to the OSHA Lead Standard for complete compliance.


## **APPENDIX A**

### **ACCREDITATION**





Department of State Health Services certifies that  
WADE E CHAMPION  
is certified as a  
Lead Risk Assessor  
Certification No: 2070357  
Control No: 7644  
Expires: 7/16/2021

  
John Hellerstedt, M.D.,  
Commissioner of Health

## Texas Department of State Health Services

*BE IT KNOWN THAT*

**WADE E CHAMPION**

*is certified to perform as a*

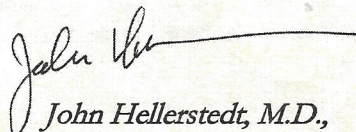
**Lead Risk Assessor**

*in the State of Texas and is hereby governed by the rights, privileges and responsibilities  
set forth in Texas Occupations Code, Chapter 1955 and Title 25, Texas Administrative Code, Chapter 295  
relating to Texas Environmental Lead Reduction, as long as this license is not suspended or revoked.*

*Certification Number: 2070357*

*Expiration Date: 07/16/2021*

*Control Number: 7644*

  
John Hellerstedt, M.D.,  
Commissioner of Health

*(Void After Expiration Date)*

VOID IF ALTERED NON-TRANSFERABLE

SEE BACK



**APPENDIX B**  
**ANALYTICAL RESULTS**

Lead-Based Paint XRF Survey  
Duval County Courthouse  
Inspection Date(s) 2-9-21  
Project # 21-1141

| No | Type                 | Component    | Substrate | Side | Color   | Results  | PbC  | PbC E | PbL  | PbL E | PbK  | PbK E |
|----|----------------------|--------------|-----------|------|---------|----------|------|-------|------|-------|------|-------|
| 1  | ShutterCal           |              |           |      |         |          | 2.75 | 0     | 0.43 | 0     | 0.01 | 0     |
| 2  | Calibrate            |              |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | <LOD | 1.35  |
| 3  | Calibrate            |              |           |      |         | Positive | 1.3  | 0.4   | 1.3  | 0.4   | <LOD | 3.75  |
| 4  | Calibrate            |              |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | <LOD | 1.05  |
| 5  | Calibrate            |              |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | 1.3  | 0.5   |
| 6  | 3rd Floor Courthouse | Door         | Wood      | N    | Natural | Negative | <LOD | 0.12  | <LOD | 0.12  | <LOD | 1.98  |
| 7  | 3rd Floor Courthouse | Door Frame   | Wood      | N    | Natural | Negative | <LOD | 0.1   | <LOD | 0.1   | <LOD | 2.21  |
| 8  | 3rd Floor Courthouse | Window Frame | Wood      | N    | Tan     | Negative | <LOD | 0.17  | <LOD | 0.17  | <LOD | 2.46  |
| 9  | 3rd Floor Courthouse | Window Sill  | Wood      | N    | Tan     | Negative | <LOD | 0.19  | <LOD | 0.19  | <LOD | 2.72  |
| 10 | 3rd Floor Courthouse | Door         | Wood      | W    | Blue    | Negative | <LOD | 0.15  | <LOD | 0.15  | <LOD | 2.55  |
| 11 | 3rd Floor Courthouse | Door         | Wood      | W    | White   | Negative | <LOD | 0.18  | <LOD | 0.18  | <LOD | 2.08  |
| 12 | 3rd Floor Courthouse | Door Frame   | Wood      | W    | Blue    | Negative | <LOD | 0.3   | <LOD | 0.3   | <LOD | 2.79  |
| 13 | 3rd Floor Courthouse | Wall         | Plaster   | S    | Tan     | Negative | 0.07 | 0.02  | 0.07 | 0.02  | <LOD | 0.4   |
| 14 | 3rd Floor Courthouse | Attic Ladder | Wood      | E    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.4   |
| 15 | 3rd Floor Courthouse | Wall         | Plaster   | N    | Tan     | Negative | 0.11 | 0.04  | 0.11 | 0.04  | <LOD | 1.11  |
| 16 | 3rd Floor Courthouse | Wall         | Plaster   | N    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.5   |
| 17 | 3rd Floor Courthouse | Wall         | Paneling  | S    | Brown   | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 1.98  |
| 18 | 3rd Floor Courthouse | Wall         | Paneling  | N    | Brown   | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 2.04  |
| 19 | 2nd Floor Courthouse | Pedestal     | Wood      | N    | Natural | Negative | <LOD | 0.07  | <LOD | 0.07  | <LOD | 2.7   |
| 20 | 2nd Floor Courthouse | Hand Rail    | Wood      | S    | Natural | Negative | <LOD | 0.07  | <LOD | 0.07  | <LOD | 2.56  |
| 21 | 2nd Floor Courthouse | Riser        | Plaster   | N    | Tan     | Negative | 0.13 | 0.03  | 0.13 | 0.03  | <LOD | 0.75  |
| 22 | 2nd Floor Courthouse | Riser        | Plaster   | N    | Tan     | Negative | 0.15 | 0.05  | 0.15 | 0.05  | <LOD | 1.05  |
| 23 | 2nd Floor Courthouse | Riser        | Plaster   | N    | Tan     | Negative | 0.12 | 0.04  | 0.12 | 0.04  | <LOD | 1.05  |
| 24 | 2nd Floor Courthouse | Door Frame   | Wood      | N    | Purple  | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.94  |
| 25 | 2nd Floor Courthouse | Door Frame   | Wood      | E    | Brown   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.8   |
| 26 | 2nd Floor Courthouse | Wall Panel   | Paneling  | E    | Brown   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.41  |
| 27 | 2nd Floor Courthouse | Wall         | Drywall   | W    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.29  |
| 28 | 2nd Floor Courthouse | Door Frame   | Wood      | E    | Natural | Negative | <LOD | 0.05  | <LOD | 0.05  | <LOD | 2.56  |
| 29 | 2nd Floor Courthouse | Wall         | Wood      | S    | Natural | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.96  |
| 30 | 2nd Floor Courthouse | Wall         | Plaster   | S    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.15  |
| 31 | 2nd Floor Courthouse | Wall         | Plaster   | S    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.3   |
| 32 | 2nd Floor Courthouse | Window Frame | Wood      | S    | Tan     | Negative | <LOD | 0.62  | <LOD | 0.62  | <LOD | 4.28  |
| 33 | 2nd Floor Courthouse | Window Frame | Wood      | S    | Tan     | Negative | <LOD | 0.26  | <LOD | 0.26  | <LOD | 2.25  |
| 34 | 2nd Floor Courthouse | Window Sill  | Wood      | S    | Tan     | Negative | <LOD | 0.17  | <LOD | 0.17  | <LOD | 2.8   |
| 35 | 2nd Floor Courthouse | Baseboard    | Wood      | S    | Tan     | Negative | <LOD | 0.19  | <LOD | 0.19  | <LOD | 2.59  |
| 36 | 2nd Floor Courthouse | Shutters     | Wood      | S    | Green   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.97  |
| 37 | 2nd Floor Courthouse | Door         | Wood      | W    | Natural | Negative | <LOD | 0.09  | <LOD | 0.09  | <LOD | 2.38  |
| 38 | 2nd Floor Courthouse | Wall         | Drywall   | N    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.16  |
| 39 | 2nd Floor Courthouse | Door Trim    | Wood      | E    | Brown   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.11  |
| 40 | 2nd Floor Courthouse | Door Frame   | Wood      | E    | Natural | Negative | <LOD | 0.11  | <LOD | 0.11  | <LOD | 2.67  |
| 41 | 2nd Floor Courthouse | Door         | Wood      | E    | Natural | Negative | <LOD | 0.14  | <LOD | 0.14  | <LOD | 2.46  |
| 42 | 2nd Floor Courthouse | Wall         | Plaster   | W    | Tan     | Negative | <LOD | 0.06  | <LOD | 0.06  | <LOD | 0.9   |
| 43 | 2nd Floor Courthouse | Wall         | Plaster   | W    | Tan     | Negative | <LOD | 0.73  | 0.09 | 0.05  | <LOD | 0.73  |
| 44 | 2nd Floor Courthouse | Wall         | Plaster   | W    | Tan     | Negative | <LOD | 0.4   | 0.12 | 0.04  | <LOD | 0.4   |
| 45 | 2nd Floor Courthouse | Door Frame   | Wood      | N    | Tan     | Negative | <LOD | 0.28  | <LOD | 0.28  | <LOD | 2.48  |
| 46 | 2nd Floor Courthouse | Door         | Wood      | S    | Natural | Negative | <LOD | 0.08  | <LOD | 0.08  | <LOD | 2.23  |
| 47 | 2nd Floor Courthouse | Stair Tread  | Concrete  | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.5   |
| 48 | 2nd Floor Courthouse | Stair Tread  | Concrete  | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.11  |
| 49 | 2nd Floor Courthouse | Baluster     | Metal     | S    | Black   | Negative | <LOD | 0.14  | <LOD | 0.14  | <LOD | 3.89  |
| 50 | 2nd Floor Courthouse | Riser        | Concrete  | W    | Gray    | Negative | <LOD | 0.76  | <LOD | 0.76  | <LOD | 15.58 |
| 51 | 2nd Floor Courthouse | Riser        | Concrete  | W    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.31  |
| 52 | Stairs Landing       | Window Sill  | Wood      | E    | Natural | Negative | <LOD | 0.19  | <LOD | 0.19  | <LOD | 2.85  |
| 53 | Stairs Landing       | Window Frame | Wood      | E    | Natural | Negative | <LOD | 0.1   | <LOD | 0.1   | <LOD | 2.25  |

Lead-Based Paint XRF Survey  
Duval County Courthouse  
Inspection Date(s) 2-9-21  
Project # 21-1141

| No  | Type                 | Component        | Substrate | Side | Color      | Results  | PbC  | PbC E | PbL  | PbL E | PbK  | PbK E |
|-----|----------------------|------------------|-----------|------|------------|----------|------|-------|------|-------|------|-------|
| 54  | Stairs Landing       | Wall Trim        | Wood      | N    | Natural    | Negative | <LOD | 0.17  | <LOD | 0.17  | <LOD | 2.55  |
| 55  | Stairs Landing       | Hand Rail        | Wood      | E    | Natural    | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 2.02  |
| 56  | 1st Floor Courthouse | Wall Tile        | Ceramic   | S    | Yellow     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 0.9   |
| 57  | 1st Floor Courthouse | Wall Tile        | Ceramic   | S    | Yellow     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 0.9   |
| 58  | 1st Floor Courthouse | Door Frame       | Wood      | S    | Natural    | Negative | <LOD | 0.07  | <LOD | 0.07  | <LOD | 2.56  |
| 59  | 1st Floor Courthouse | Door             | Wood      | S    | Natural    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.22  |
| 60  | 1st Floor Courthouse | Door             | Wood      | S    | Dark Brown | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.63  |
| 61  | 1st Floor Courthouse | Door Frame       | Wood      | S    | Dark Brown | Negative | <LOD | 0.11  | <LOD | 0.11  | <LOD | 2.23  |
| 62  | 1st Floor Courthouse | Wall             | Plaster   | W    | White      | Negative | <LOD | 0.03  | <LOD | 0.03  | 0.7  | 0.4   |
| 63  | 1st Floor Courthouse | Wall Trim        | Wood      | W    | White      | Negative | <LOD | 0.12  | <LOD | 0.12  | <LOD | 2.29  |
| 64  | 1st Floor Courthouse | Wall             | Plaster   | W    | Natural    | Negative | <LOD | 0.4   | 0.09 | 0.04  | <LOD | 0.4   |
| 65  | 1st Floor Courthouse | Vault Frame      | Metal     | W    | White      | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.69  |
| 66  | 1st Floor Courthouse | Vault Door       | Metal     | N    | Gray       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.12  |
| 67  | 1st Floor Courthouse | Wall             | Ceramic   | E    | Gray       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.25  |
| 68  | 1st Floor Courthouse | Wall             | Drywall   | S    | Yellow     | Negative | <LOD | 0.3   | <LOD | 0.3   | <LOD | 3.01  |
| 69  | 1st Floor Courthouse | Stringer         | Concrete  | N    | White      | Negative | <LOD | 0.14  | <LOD | 0.14  | <LOD | 3.68  |
| 70  | 1st Floor Courthouse | Baluster         | Metal     | N    | White      | Negative | <LOD | 0.05  | <LOD | 0.05  | <LOD | 2.03  |
| 71  | 1st Floor Courthouse | Hand Rail        | Wood      | S    | Black      | Negative | <LOD | 0.14  | <LOD | 0.14  | <LOD | 3.61  |
| 72  | 1st Floor Courthouse | Newel Cap        | Metal     | S    | Natural    | Negative | <LOD | 0.09  | <LOD | 0.09  | <LOD | 3.59  |
| 73  | 1st Floor Courthouse | Newel            | Metal     | E    | Black      | Negative | 0.24 | 0.16  | 0.24 | 0.16  | <LOD | 3.21  |
| 74  | 1st Floor Courthouse | Stair Tread      | Concrete  | E    | Black      | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.62  |
| 75  | 1st Floor Courthouse | Stair Tread      | Concrete  | E    | Gray       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 0.9   |
| 76  | 1st Floor Courthouse | Stair Nose       | Metal     | E    | Gray       | Positive | 4.9  | 1.1   | 4.9  | 1.1   | 5    | 2.8   |
| 77  | 1st Floor Courthouse | Stair Nose       | Metal     | E    | Gray       | Positive | <LOD | 6.3   | 5.2  | 1.6   | <LOD | 6.3   |
| 78  | 2nd Floor Stairs     | Stair Nose       | Metal     | W    | Gray       | Positive | 6.2  | 3.1   | 6.2  | 3.1   | <LOD | 11.25 |
| 79  | 2nd Floor Stairs     | Stair Tread      | Concrete  | W    | Red        | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.42  |
| 80  | 1st Floor Courthouse | Vault Door Frame | Metal     | S    | Black      | Positive | 8    | 3.9   | 8    | 3.9   | <LOD | 13.2  |
| 81  | 1st Floor Courthouse | Vault Door Frame | Metal     | S    | Black      | Positive | 10.1 | 5.2   | 10.1 | 3.6   | 10.1 | 5.2   |
| 82  | 1st Floor Courthouse | Vault Door Frame | Metal     | S    | Black      | Positive | 9.1  | 4.5   | 9.1  | 4.5   | <LOD | 14.7  |
| 83  | 1st Floor Courthouse | Vault Door       | Metal     | S    | Black      | Positive | <LOD | 13.35 | 9.1  | 4     | <LOD | 13.35 |
| 84  | 1st Floor Courthouse | Vault Door       | Metal     | S    | Black      | Positive | 10.1 | 5.5   | 10.1 | 5.5   | <LOD | 12    |
| 85  | 1st Floor Courthouse | Vault Door       | Metal     | S    | Black      | Positive | 10.1 | 5.3   | 10.1 | 5.3   | <LOD | 14.55 |
| 86  | 1st Floor Courthouse | Vault Door       | Metal     | W    | Gray       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.62  |
| 87  | 1st Floor Courthouse | Wall             | Plaster   | E    | White      | Negative | <LOD | 0.34  | <LOD | 0.34  | <LOD | 3.45  |
| 88  | 1st Floor Courthouse | Door Frame       | Wood      | E    | Brown      | Negative | <LOD | 0.19  | <LOD | 0.19  | <LOD | 2.99  |
| 89  | 1st Floor Courthouse | Hand Rail        | Metal     | N    | Gray       | Positive | 2.6  | 1.3   | 2.6  | 1.3   | <LOD | 3.75  |
| 90  | 1st Floor Courthouse | Hand Rail        | Metal     | S    | Gray       | Positive | 1.7  | 0.5   | 1.7  | 0.5   | <LOD | 1.2   |
| 91  | 1st Floor Courthouse | Hand Rail        | Metal     | S    | Gray       | Positive | 3.1  | 1.2   | 2    | 0.7   | 3.1  | 1.2   |
| 92  | 1st Floor Courthouse | Stair Tread      | Metal     | N    | Gray       | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 4.06  |
| 93  | 1st Floor Courthouse | Riser            | Metal     | N    | Gray       | Positive | 2.1  | 0.9   | 2.1  | 0.9   | <LOD | 3.45  |
| 94  | 1st Floor Courthouse | Riser            | Metal     | N    | Gray       | Positive | <LOD | 5.4   | <LOD | 5.4   | <LOD | 25.2  |
| 95  | 1st Floor Courthouse | Riser            | Metal     | N    | Gray       | Positive | 2.9  | 1.4   | 2.9  | 1.4   | <LOD | 5.25  |
| 96  | Basement Courthouse  | Vault Door Frame | Metal     | N    | Gray       | Negative | <LOD | 0.24  | <LOD | 0.24  | <LOD | 4.24  |
| 97  | Basement Courthouse  | Vault Door       | Metal     | E    | Gray       | Positive | 3.9  | 1.7   | 3.9  | 1.7   | <LOD | 9.45  |
| 98  | Basement Courthouse  | Vault Door       | Metal     | E    | Gray       | Positive | 4.7  | 1.5   | 4.7  | 1.5   | <LOD | 6     |
| 99  | Basement Courthouse  | Vault Door       | Metal     | E    | Gray       | Positive | 3.5  | 1.8   | 3.5  | 1.8   | <LOD | 10.65 |
| 100 | Basement Courthouse  | Wall             | Concrete  | S    | White      | Negative | <LOD | 1.04  | <LOD | 0.07  | <LOD | 1.04  |
| 101 | Basement Courthouse  | Door Frame       | Wood      | N    | White      | Negative | <LOD | 0.17  | <LOD | 0.17  | <LOD | 2.4   |
| 102 | 1st Floor Stairs     | Stair Nose       | Metal     | E    | Gray       | Positive | 4.1  | 2.2   | 4.1  | 2.2   | <LOD | 9     |
| 103 | 1st Floor Stairs     | Stair Nose       | Metal     | E    | Gray       | Positive | 4.8  | 3     | 4.8  | 3     | <LOD | 12    |
| 104 | 1st Floor Stairs     | Stair Nose       | Metal     | E    | Gray       | Positive | 6.5  | 4     | 6.5  | 4     | <LOD | 10.35 |
| 105 | Basement Courthouse  | Baluster         | Metal     | E    | Black      | Negative | 0.4  | 0.2   | 0.4  | 0.2   | <LOD | 4.2   |
| 106 | Basement Courthouse  | Hand Rail        | Wood      | E    | Natural    | Negative | <LOD | 0.18  | <LOD | 0.18  | <LOD | 3.01  |

Lead-Based Paint XRF Survey  
Duval County Courthouse  
Inspection Date(s) 2-9-21  
Project # 21-1141

| No  | Type                | Component     | Substrate | Side | Color   | Results  | PbC  | PbC E | PbL  | PbL E | PbK  | PbK E |
|-----|---------------------|---------------|-----------|------|---------|----------|------|-------|------|-------|------|-------|
| 107 | Basement Courthouse | Newel         | Metal     | E    | Black   | Negative | <LOD | 0.22  | <LOD | 0.22  | <LOD | 4.28  |
| 108 | Basement Courthouse | Newel Cap     | Metal     | E    | Black   | Negative | <LOD | 0.13  | <LOD | 0.13  | <LOD | 4.64  |
| 109 | Basement Courthouse | Wall          | Plaster   | N    | White   | Negative | <LOD | 0.75  | <LOD | 0.03  | <LOD | 0.75  |
| 110 | Basement Courthouse | Door Frame    | Wood      | N    | Brown   | Negative | <LOD | 0.11  | <LOD | 0.11  | <LOD | 2.21  |
| 111 | Basement Courthouse | Door          | Wood      | N    | Natural | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.2   |
| 112 | Basement Courthouse | Paneling      | Wood      | W    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.6   |
| 113 | Basement Courthouse | Window Frame  | Wood      | N    | Natural | Negative | <LOD | 0.45  | <LOD | 0.45  | <LOD | 2.65  |
| 114 | Basement Courthouse | Window Sill   | Wood      | E    | Natural | Negative | <LOD | 0.14  | <LOD | 0.14  | <LOD | 2.62  |
| 115 | Basement Courthouse | Door Frame    | Wood      | N    | Natural | Negative | <LOD | 0.05  | <LOD | 0.05  | <LOD | 2.46  |
| 116 | Basement Courthouse | Door          | Wood      | N    | Natural | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.39  |
| 117 | Calibrate           |               |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | 1.2  | 0.5   |
| 118 | Calibrate           |               |           |      |         | Positive | 1    | 0.1   | 1    | 0.1   | 1.5  | 0.7   |
| 119 | Calibrate           |               |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | 1.3  | 0.7   |
| 120 | Exterior Courthouse | Hand Rail     | Metal     | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.83  |
| 121 | Exterior Courthouse | Stair Tread   | Concrete  | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.65  |
| 122 | Exterior Courthouse | Riser         | Concrete  | E    | Gray    | Negative | <LOD | 0.81  | <LOD | 0.81  | <LOD | 3     |
| 123 | Exterior Courthouse | Riser         | Concrete  | E    | Gray    | Negative | <LOD | 0.16  | <LOD | 0.16  | <LOD | 3.9   |
| 124 | Exterior Courthouse | Newel         | Concrete  | E    | White   | Negative | 0.12 | 0.03  | 0.12 | 0.03  | <LOD | 0.9   |
| 125 | Exterior Courthouse | Wall          | Concrete  | E    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.65  |
| 126 | Exterior Courthouse | Hand Rail     | Metal     | N    | Black   | Negative | <LOD | 0.09  | <LOD | 0.09  | <LOD | 3.82  |
| 127 | Exterior Courthouse | Window Frame  | Wood      | W    | White   | Positive | 7.1  | 4.5   | 5.6  | 2.4   | 7.1  | 4.5   |
| 128 | Exterior Courthouse | Window        | Wood      | W    | White   | Negative | <LOD | 0.28  | <LOD | 0.28  | <LOD | 2.4   |
| 129 | Exterior Courthouse | Window Frame  | Wood      | W    | White   | Positive | 6.6  | 1.6   | 5.6  | 1.4   | 6.6  | 1.6   |
| 130 | Exterior Courthouse | Window Frame  | Wood      | W    | White   | Positive | 1.4  | 0.5   | 1.4  | 0.5   | <LOD | 3.3   |
| 131 | Exterior Courthouse | Security Bars | Metal     | W    | Red     | Negative | <LOD | 0.07  | <LOD | 0.07  | <LOD | 3.71  |
| 132 | Exterior Courthouse | Window Sill   | Wood      | W    | White   | Negative | 0.4  | 0.2   | 0.4  | 0.2   | <LOD | 2.4   |
| 133 | Exterior Courthouse | Window Sill   | Wood      | W    | White   | Positive | 11.8 | 5.8   | 2    | 0.9   | 11.8 | 5.8   |
| 134 | Exterior Courthouse | Window Sill   | Wood      | W    | White   | Positive | 13.1 | 6.2   | 2.4  | 1.1   | 13.1 | 6.2   |
| 135 | Exterior Courthouse | Window Sill   | Wood      | W    | White   | Positive | 12.5 | 5.2   | 2.8  | 1.1   | 12.5 | 5.2   |
| 136 | Exterior Courthouse | Window Frame  | Wood      | N    | White   | Positive | 11.3 | 5.5   | 6.9  | 3.4   | 11.3 | 5.5   |
| 137 | Exterior Courthouse | Window        | Wood      | N    | White   | Negative | 0.4  | 0.2   | 0.4  | 0.2   | <LOD | 2.1   |
| 138 | Exterior Courthouse | Door Entry    | Wood      | N    | Brown   | Negative | <LOD | 0.3   | <LOD | 0.3   | <LOD | 2.1   |
| 139 | Exterior Courthouse | Door Frame    | Wood      | N    | Brown   | Negative | <LOD | 0.17  | <LOD | 0.17  | <LOD | 2.31  |
| 140 | Exterior Courthouse | Wall Trim     | Wood      | N    | Brown   | Negative | <LOD | 0.12  | <LOD | 0.12  | <LOD | 2.4   |
| 141 | Exterior Courthouse | Ceramic Floor | Ceramic   | N    | Red     | Negative | 0.05 | 0.03  | 0.05 | 0.03  | <LOD | 1.65  |
| 142 | Exterior Courthouse | Door          | Metal     | N    | Black   | Negative | <LOD | 0.18  | <LOD | 0.18  | <LOD | 4.05  |
| 143 | Exterior Courthouse | Window Frame  | Wood      | N    | White   | Positive | 1.7  | 0.4   | 1.7  | 0.4   | <LOD | 2.7   |
| 144 | Exterior Courthouse | Window        | Wood      | N    | White   | Negative | <LOD | 0.21  | <LOD | 0.21  | <LOD | 2.06  |
| 145 | Exterior Courthouse | Hand Rail     | Metal     | E    | Black   | Negative | <LOD | 0.06  | <LOD | 0.06  | <LOD | 3.73  |
| 146 | Exterior Courthouse | Window Frame  | Wood      | E    | White   | Positive | 4.1  | 2.6   | <LOD | 1.8   | 4.1  | 2.6   |
| 147 | Exterior Courthouse | Window Frame  | Wood      | E    | White   | Positive | 1.7  | 0.6   | 1.7  | 0.6   | <LOD | 2.1   |
| 148 | Exterior Courthouse | Window        | Wood      | E    | White   | Negative | 0.8  | 0.1   | 0.8  | 0.1   | 1    | 0.4   |
| 149 | Exterior Courthouse | Downspout     | Metal     | E    | Red     | Positive | 1.1  | 0.1   | 1.1  | 0.1   | 1.6  | 0.8   |
| 150 | Exterior Courthouse | Downspout     | Metal     | E    | Red     | Negative | <LOD | 1.05  | <LOD | 1.05  | <LOD | 10.8  |
| 151 | Exterior Courthouse | Downspout     | Metal     | E    | Red     | Negative | 0.4  | 0.2   | 0.4  | 0.2   | <LOD | 3.3   |
| 152 | Exterior Courthouse | Downspout     | Metal     | E    | Red     | Negative | 0.8  | 0.1   | 0.8  | 0.1   | <LOD | 1.65  |
| 153 | Exterior Courthouse | Downspout     | Metal     | W    | Red     | Negative | <LOD | 0.19  | <LOD | 0.19  | <LOD | 3.91  |
| 154 | Calibrate           |               |           |      |         | Positive | 1.9  | 0.8   | 1.1  | 0.1   | 1.9  | 0.8   |
| 155 | Calibrate           |               |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | <LOD | 1.65  |
| 156 | Calibrate           |               |           |      |         | Positive | 1.1  | 0.1   | 1.1  | 0.1   | 1.5  | 0.7   |
| 157 | 99 Addition         | Door          | Metal     | W    | Blue    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.13  |
| 158 | Holding Cell        | Door          | CMU       | W    | Blue    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.43  |
| 159 | Holding Cell        | Door Frame    | Brick     | S    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.35  |

Lead-Based Paint XRF Survey  
Duval County Courthouse  
Inspection Date(s) 2-9-21  
Project # 21-1141

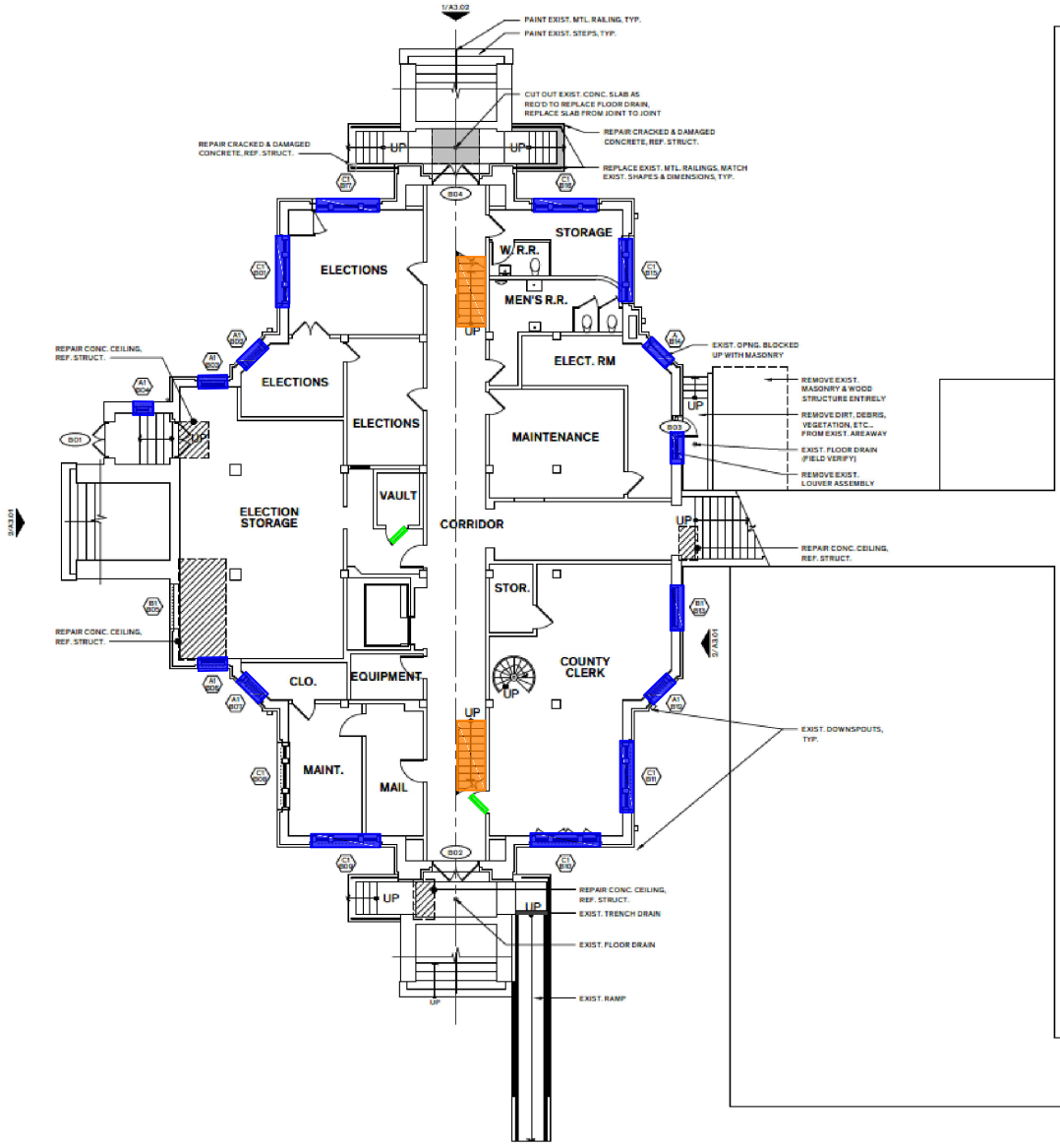
| No  | Type              | Component    | Substrate | Side | Color   | Results  | PbC  | PbC E | PbL  | PbL E | PbK  | PbK E |
|-----|-------------------|--------------|-----------|------|---------|----------|------|-------|------|-------|------|-------|
| 160 | Holding Cell      | Wall         | Concrete  | N    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 0.9   |
| 161 | Holding Cell      | Wall         | Concrete  | N    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.65  |
| 162 | Holding Cell      | Floor        | CMU       | N    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.5   |
| 163 | Holding Cell      | Floor        | Metal     | S    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.35  |
| 164 | Holding Cell      | Wall         | CMU       | S    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.9   |
| 165 | Observation Room  | Window Frame | Metal     | N    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.5   |
| 166 | Observation Room  | Wall         | CMU       | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.82  |
| 167 | Observation Room  | Door Jamb    | Metal     | N    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.88  |
| 168 | Observation Room  | Ceiling      | Drywall   | S    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.65  |
| 169 | Observation Room  | Door Jamb    | Metal     | S    | Natural | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.7   |
| 170 | Observation Room  | Door         | Wood      | S    | Purple  | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.02  |
| 171 | Observation Room  | Door Jamb    | Metal     | N    | Blue    | Negative | <LOD | 0.12  | <LOD | 0.12  | <LOD | 3.47  |
| 172 | Observation Room  | Door Jamb    | Metal     | S    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.75  |
| 173 | Storage           | Wall         | CMU       | S    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.49  |
| 174 | Storage           | Wall         | CMU       | E    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.44  |
| 175 | Storage           | Wall         | Drywall   | E    | Yellow  | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.19  |
| 176 | Storage           | Wall         | Drywall   | E    | Brown   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.22  |
| 177 | 99 Addition/Annex | Stair Tread  | Concrete  | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.65  |
| 178 | 99 Addition/Annex | Stringer     | Metal     | E    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.3   |
| 179 | 99 Addition/Annex | Stair Nose   | Metal     | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.95  |
| 180 | 99 Addition/Annex | Riser        | Concrete  | E    | Gray    | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.75  |
| 181 | 99 Addition/Annex | Floor        | Ceramic   | E    | Tan     | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 1.26  |
| 182 | 99 Addition/Annex | Floor        | Ceramic   | W    | Red     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.14  |
| 183 | 99 Addition/Annex | Floor        | Ceramic   | W    | Red     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 0.9   |
| 184 | 99 Addition/Annex | Floor        | Ceramic   | W    | Red     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.05  |
| 185 | 99 Addition/Annex | Floor        | Ceramic   | W    | Red     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.01  |
| 186 | 99 Addition/Annex | Wall         | Ceramic   | N    | Tan     | Negative | <LOD | 0.05  | <LOD | 0.05  | <LOD | 3.85  |
| 187 | 99 Addition/Annex | Floor        | Ceramic   | N    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.62  |
| 188 | 99 Addition/Annex | Door Frame   | Metal     | N    | Red     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.42  |
| 189 | 99 Addition/Annex | Door         | Wood      | N    | Brown   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.4   |
| 190 | 99 Addition/Annex | Wall         | Plaster   | N    | Pink    | Negative | <LOD | 0.23  | <LOD | 0.23  | <LOD | 2.55  |
| 191 | 99 Addition/Annex | Wall         | Plaster   | N    | Pink    | Negative | <LOD | 0.73  | <LOD | 0.73  | <LOD | 8.85  |
| 192 | 99 Addition/Annex | Wall         | Plaster   | N    | Pink    | Negative | <LOD | 0.07  | <LOD | 0.07  | <LOD | 1.35  |
| 193 | 99 Addition/Annex | Door Trim    | Wood      | N    | White   | Negative | <LOD | 0.48  | <LOD | 0.48  | <LOD | 3.87  |
| 194 | 99 Addition/Annex | Door         | Wood      | N    | Natural | Negative | <LOD | 0.09  | <LOD | 0.09  | <LOD | 2.34  |
| 195 | 99 Addition/Annex | Wall         | Paneling  | N    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.61  |
| 196 | 99 Addition/Annex | Door Frame   | Wood      | N    | White   | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.35  |
| 197 | 99 Addition/Annex | Door         | Wood      | N    | Natural | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 1.38  |
| 198 | 99 Addition/Annex | Window       | Metal     | N    | White   | Negative | <LOD | 0.3   | <LOD | 0.3   | <LOD | 4.05  |
| 199 | 99 Addition/Annex | Wall         | Plaster   | S    | Tan     | Negative | <LOD | 0.75  | <LOD | 0.09  | <LOD | 0.75  |
| 200 | 99 Addition/Annex | Door Frame   | Wood      | E    | Brown   | Negative | <LOD | 0.87  | <LOD | 0.87  | <LOD | 17.1  |
| 201 | 99 Addition/Annex | Door Frame   | Wood      | E    | Brown   | Negative | <LOD | 0.26  | <LOD | 0.26  | <LOD | 3.72  |
| 202 | 99 Addition/Annex | Door         | Wood      | S    | Brown   | Negative | <LOD | 0.11  | <LOD | 0.11  | <LOD | 2.14  |
| 203 | 99 Addition/Annex | Window       | Metal     | N    | Brown   | Negative | <LOD | 0.28  | <LOD | 0.28  | <LOD | 4.05  |
| 204 | 99 Addition/Annex | Window Sill  | Wood      | N    | Natural | Negative | <LOD | 0.05  | <LOD | 0.05  | <LOD | 2.55  |
| 205 | 99 Addition/Annex | Window Sill  | Wood      | N    | Natural | Negative | <LOD | 0.31  | <LOD | 0.31  | <LOD | 2.42  |
| 206 | 99 Addition/Annex | Window Frame | Metal     | N    | Brown   | Negative | <LOD | 0.6   | <LOD | 0.6   | <LOD | 3.75  |
| 207 | 99 Addition/Annex | Door Frame   | Wood      | E    | Brown   | Negative | <LOD | 0.18  | <LOD | 0.18  | <LOD | 1.8   |
| 208 | 99 Addition/Annex | Wall         | Paneling  | N    | Tan     | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.1   |
| 209 | 99 Addition/Annex | Window Sill  | Wood      | E    | Brown   | Negative | <LOD | 0.1   | <LOD | 0.1   | <LOD | 2.85  |
| 210 | 99 Addition/Annex | Window Frame | Metal     | E    | Brown   | Negative | <LOD | 0.59  | <LOD | 0.59  | <LOD | 3.74  |
| 211 | 99 Addition/Annex | Door         | Wood      | W    | Brown   | Negative | <LOD | 0.13  | <LOD | 0.13  | <LOD | 2.52  |
| 212 | 99 Addition/Annex | Wall         | Drywall   | S    | Yellow  | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.38  |

Lead-Based Paint XRF Survey  
Duval County Courthouse  
Inspection Date(s) 2-9-21  
Project # 21-1141

| No  | Type                       | Component     | Substrate | Side | Color       | Results  | PbC  | PbC E | PbL  | PbL E | PbK  | PbK E |
|-----|----------------------------|---------------|-----------|------|-------------|----------|------|-------|------|-------|------|-------|
| 213 | 99 Addition/Annex          | Wall          | Drywall   | S    | Yellow      | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.21  |
| 214 | 99 Addition/Annex          | Baseboard     | Wood      | N    | Brown       | Negative | <LOD | 0.14  | <LOD | 0.14  | <LOD | 2.7   |
| 215 | 99 Addition/Annex          | Door Frame    | Wood      | N    | Tan         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.07  |
| 216 | 99 Addition/Annex          | Door          | Wood      | S    | Tan         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.22  |
| 217 | 99 Addition/Annex          | Wall          | CMU       | S    | Tan         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.35  |
| 218 | 99 Addition/Annex          | Wall Paneling | Wood      | E    | Light Brown | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.53  |
| 219 | ShutterCal                 |               |           |      |             |          | 2.53 | 0     | 0.48 | 0     | 0    | 0     |
| 220 | Calibrate                  |               |           |      |             | Positive | 1    | 0.1   | 1    | 0.1   | 1.1  | 0.4   |
| 221 | Calibrate                  |               |           |      |             | Positive | 1    | 0.1   | 1    | 0.1   | 1.1  | 0.7   |
| 222 | Calibrate                  |               |           |      |             | Positive | 1.1  | 0.1   | 1.1  | 0.1   | <LOD | 1.5   |
| 223 | 99 Addition/Annex          | Door Frame    | Metal     | N    | Red         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.5   |
| 224 | 99 Addition/Annex          | Door          | Wood      | N    | Brown       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.73  |
| 225 | 99 Addition/Annex          | Wall          | Drywall   | N    | Tan         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.2   |
| 226 | 99 Addition/Annex          | Door Frame    | Metal     | W    | Red         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 3.43  |
| 227 | 99 Addition/Annex          | Door          | Wood      | N    | Brown       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.14  |
| 228 | 99 Addition/Annex          | Wall          | CMU       | W    | Tan         | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 7.51  |
| 229 | 99 Addition/Annex          | Wall          | CMU       | W    | Tan         | Negative | <LOD | 0.2   | <LOD | 0.2   | <LOD | 4.31  |
| 230 | 99 Addition/Annex          | Wall          | CMU       | W    | Tan         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.76  |
| 231 | 99 Addition/Annex          | Door Frame    | Metal     | S    | Brown       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 4.05  |
| 232 | 99 Addition/Annex          | Door          | Wood      | E    | Brown       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.86  |
| 233 | 99 Addition/Annex          | Column        | Concrete  | E    | White       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.35  |
| 234 | Exterior 99 Addition/Annex | Door Header   | Metal     | W    | White       | Positive | 7.1  | 3.7   | 7.1  | 3.7   | <LOD | 11.85 |
| 235 | Exterior 99 Addition/Annex | Door Header   | Metal     | W    | White       | Positive | 3.5  | 2.1   | 3.5  | 2.1   | <LOD | 9.75  |
| 236 | Exterior 99 Addition/Annex | Door Header   | Metal     | W    | White       | Positive | 6.1  | 3.4   | 6.1  | 3.4   | <LOD | 13.65 |
| 237 | Exterior 99 Addition/Annex | Stair Tread   | Concrete  | W    | Gray        | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.81  |
| 238 | Exterior 99 Addition/Annex | Riser         | Concrete  | W    | Gray        | Negative | <LOD | 0.04  | <LOD | 0.04  | <LOD | 2.94  |
| 239 | Exterior 99 Addition/Annex | Riser         | Concrete  | W    | Gray        | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.68  |
| 240 | Exterior 99 Addition/Annex | Window        | Metal     | W    | White       | Negative | <LOD | 0.24  | <LOD | 0.24  | <LOD | 4.2   |
| 241 | Exterior 99 Addition/Annex | Window        | Metal     | W    | White       | Negative | 0.7  | 0.3   | 0.7  | 0.3   | <LOD | 2.85  |
| 242 | Exterior 99 Addition/Annex | Window        | Metal     | W    | White       | Negative | 0.5  | 0.3   | 0.5  | 0.3   | <LOD | 3.9   |
| 243 | Exterior 99 Addition/Annex | Curb          | Concrete  | S    | Red         | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.64  |
| 244 | Exterior 99 Addition/Annex | Planter Wall  | Concrete  | S    | White       | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 1.65  |
| 245 | Exterior 99 Addition/Annex | Down Spout    | Metal     | S    | Red         | Positive | 12.5 | 5.6   | 10.1 | 3.7   | 12.5 | 5.6   |
| 246 | Exterior 99 Addition/Annex | Down Spout    | Metal     | S    | Red         | Positive | 18.8 | 7.7   | <LOD | 17.7  | 18.8 | 7.7   |
| 247 | Exterior 99 Addition/Annex | Down Spout    | Metal     | S    | Red         | Positive | <LOD | 16.8  | <LOD | 10.5  | <LOD | 16.8  |
| 248 | Exterior 99 Addition/Annex | Window        | Metal     | N    | White       | Negative | 0.9  | 0.1   | 0.9  | 0.1   | <LOD | 1.05  |
| 249 | Exterior 99 Addition/Annex | Down Spout    | Metal     | S    | Gray        | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.82  |
| 250 | Exterior 99 Addition/Annex | Down Spout    | Metal     | S    | Gray        | Negative | <LOD | 0.03  | <LOD | 0.03  | <LOD | 2.83  |
| 251 | Calibrate                  |               |           |      |             | Positive | 1    | 0.1   | 1    | 0.1   | 1.1  | 0.6   |
| 252 | Calibrate                  |               |           |      |             | Positive | 1    | 0.1   | 1    | 0.1   | 1.3  | 0.5   |
| 253 | Calibrate                  |               |           |      |             | Positive | 1    | 0.1   | 1    | 0.1   | 1.2  | 0.7   |
| 254 | Calibrate                  |               |           |      |             | Positive | 1.1  | 0.1   | 1.1  | 0.1   | 1.4  | 0.6   |

**APPENDIX C**  
**REFERENCE DRAWING(S)**





- Window Frames/Sills
- Stair Nosing (80 EA, throughout building)
- Vault Doors (2 EA, this floor)

CLIENT:  
**Judge Gilbert Soenz**  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

SITE:  
Duval County Courthouse  
BASEMENT  
400 E. Gravis Avenue  
San Diego, Texas 78384

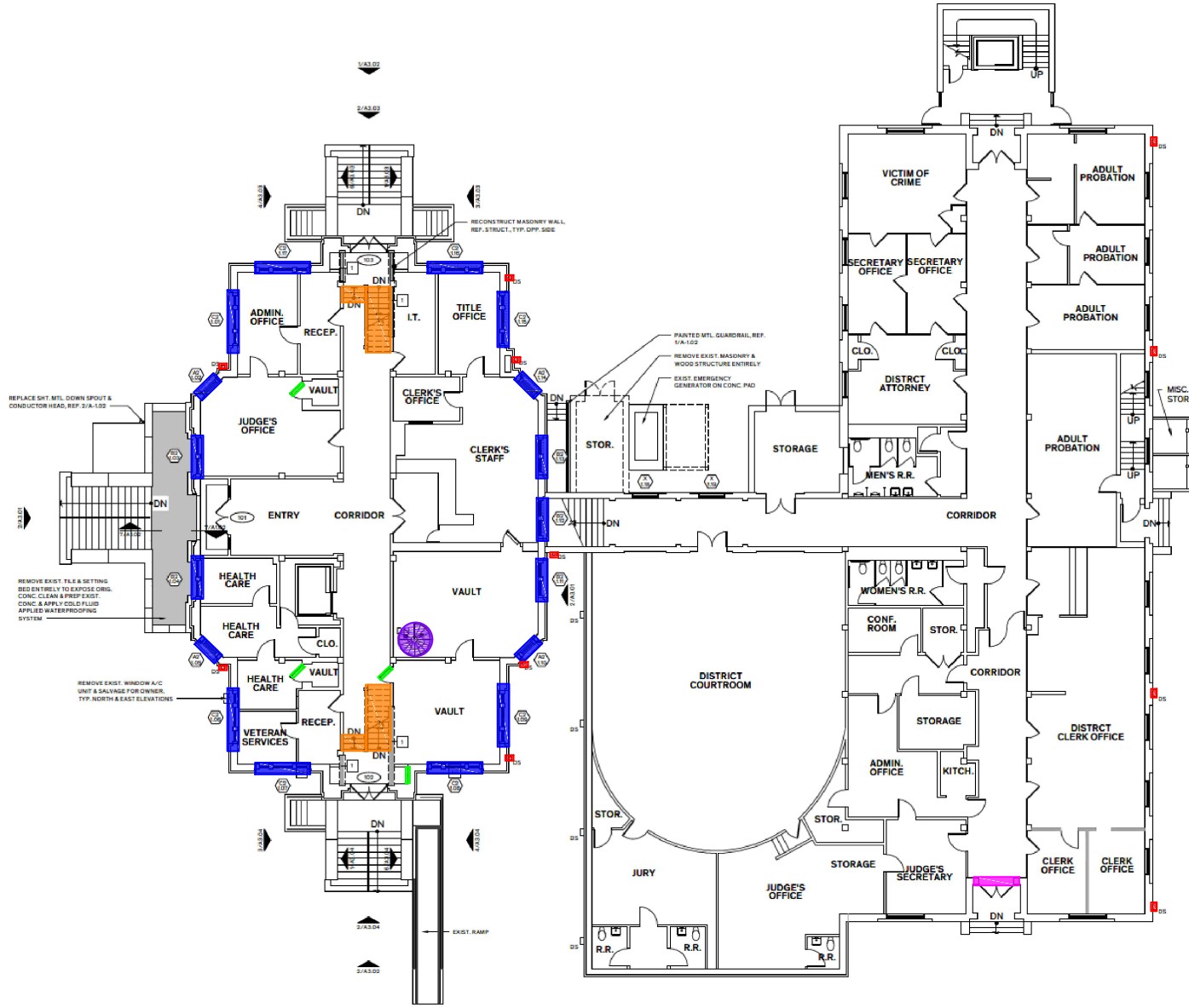
**C-ECI Project No. 21-1141**  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale



Lead-Based Paint  
Location  
Plan

**Figure 1**





- Window Frames/Sills
- Stair Nosing (80 EA, throughout building)
- Vault Doors (4 EA, this floor)
- Hand Rail/Stair Risers, Spiral Staircase
- Down Spouts (11 EA, 75 LN FT)
- Door Header (6 LN FT)

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

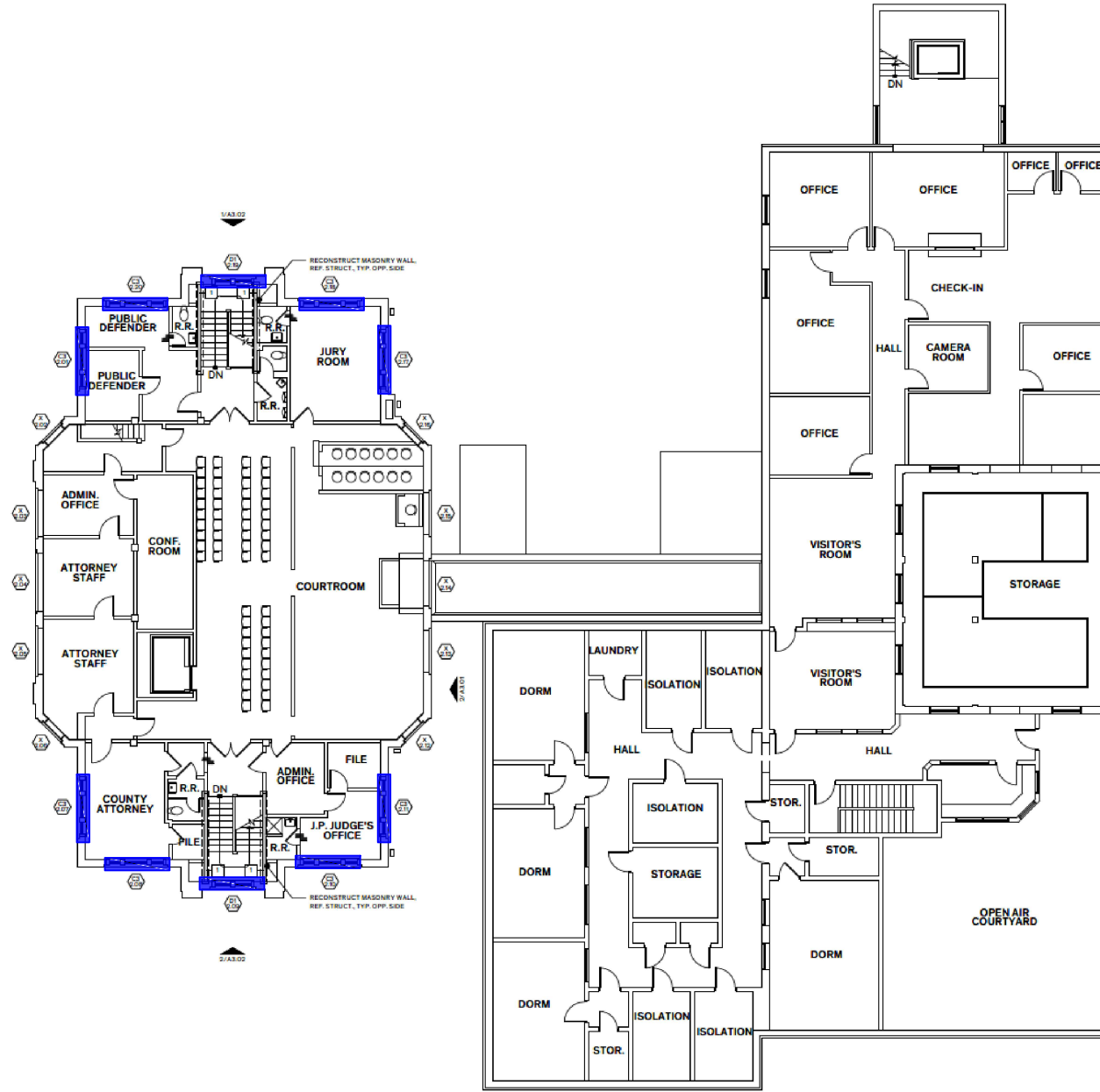
SITE:  
Duval County Courthouse  
FIRST FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384

**C-ECI Project No. 21-1141**  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale



Lead-Based Paint  
Location  
Plan

**Figure 2**



Window Frames/Sills



109 West 7th Street  
Suite 210  
Georgetown, Texas 78626

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

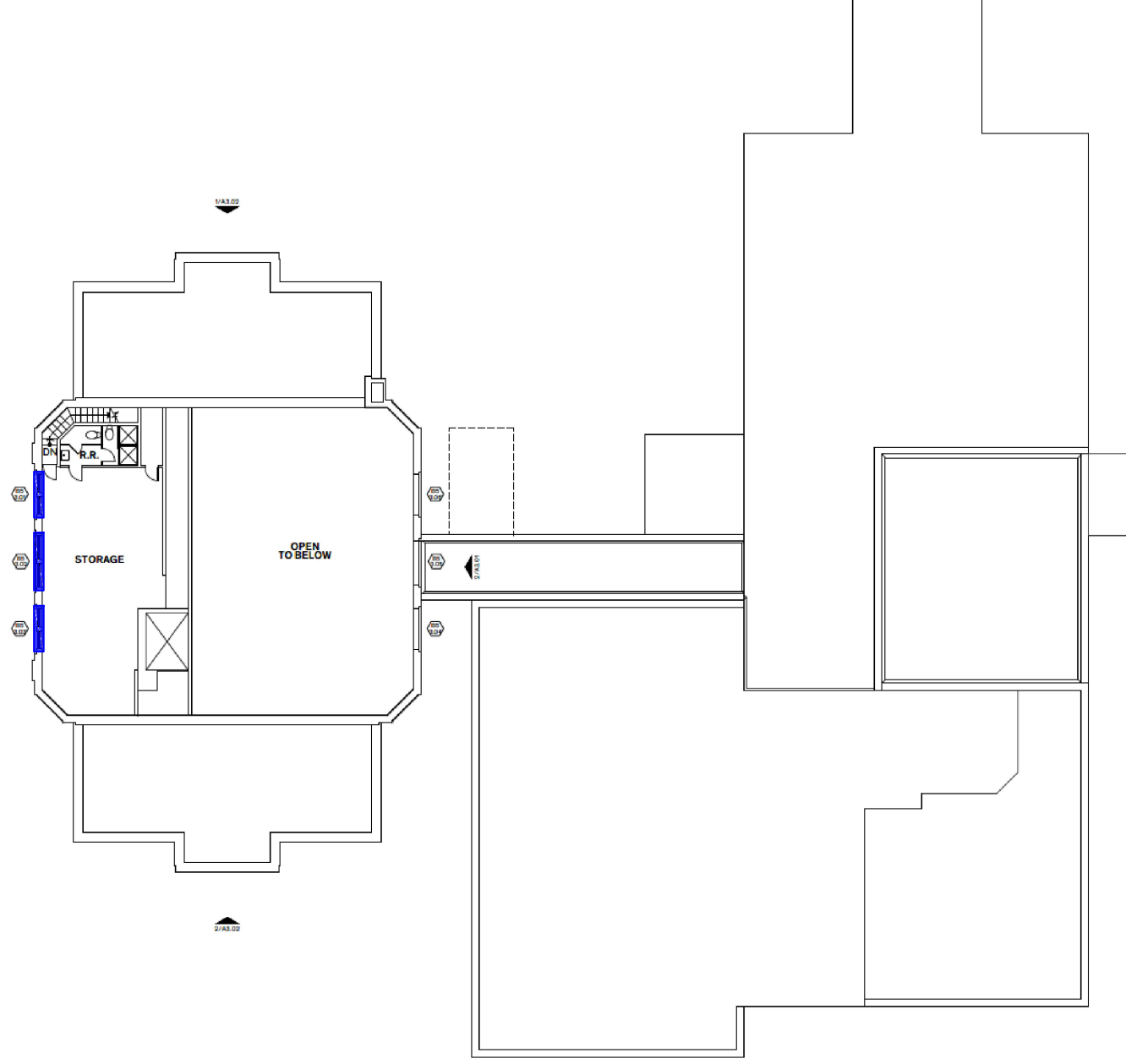
SITE:  
Duval County Courthouse  
SECOND FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384

C-ECI Project No. 21-1141  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale



Lead-Based Paint  
Location  
Plan

Figure 3



 Window Frames/Sills

Lead-Based Paint  
Location  
Plan



**C-ECI Project No. 21-1141**  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale

SITE: Duval County Courthouse  
THIRD FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384



109 West 7th Street  
Suite 210  
Georgetown, Texas 78626

**Figure 4**



**ASBESTOS ABATEMENT PROJECT DESIGN**

**Duval County Courthouse  
400 E. Gravis Ave.  
San Diego, Texas 78384**

**PROJECT NUMBER 25-1213**

**June 19, 2025**



CLIENT: Duval County  
400 E. Gravis Ave.  
San Diego, Texas 78384

SITE: Duval County  
400 E. Gravis Ave.  
San Diego, Texas 78384

CONTRACTOR: Texas Licensed Asbestos Abatement Contractor

---

## SCOPE OF ASBESTOS ABATEMENT PROJECT

### 1.0 SCOPE OF WORK

The Scope of the asbestos abatement project consists of removal of the following (quantities are approx.):

#### *Base Scope of Work:*

##### **Courthouse Exterior Roof**

- Roof Cap Mastic (Tar, Felt, Sealant) ~300 LF

Damaged coping stones will be removed/disposed, ACM coatings will be abated from remaining stones

#### *Alternate No 2 (Rehabilitate Men's RR at Basement Level, if alternate is accepted)*

##### **Courthouse Basement Restroom and Jan/Utility**

- 12x12 Brown Floor Tile/Mastic -Spot abate ~8 SF to facilitate new door installation
- Cove base/Mastic ~5 SF to facilitate new door installation
- Thermal System Insulation (TSI)~15 LF -abate all ACM TSI

#### NOTES:

\*The project is phased, and only limited ACMs may need to be abated as part of this phase Refer to attached asbestos location drawings and demolition drawings for detail.

\* It is the responsibility of Contractor to verify all ACM quantities of materials in each work area. Contractor shall fully inform himself of the conditions relating to the Work and employment of labor thereon. Failure to do so will not relieve a successful Proposer of his obligation to furnish all material, equipment, and labor necessary to carry out the provisions of the Contract.

Contractor shall abate, under negative pressure enclosure, using adequately wet methods, and properly dispose of the aforementioned building materials as asbestos containing material (ACM) or asbestos contaminated materials for this project. Additionally, Contractor may utilize the Resilient Floor Covering Institute (RFCI) methods for localized areas of flooring removal.

This project will be completed under the guidelines of all applicable federal, state, and local regulations regarding the removal of asbestos containing materials as well as this project specification. Final clearance for this project will utilize Phase Contrast Microscopy (PCM) and aggressive sampling techniques. OSHA Compliance Air Monitoring will be the responsibility of the contractor. It is the Contractor's responsibility to verify the quantities of all materials.

A handwritten signature in black ink that reads 'Wade Champion'.

Wade Champion, IAC  
DSHS License Number 10-5410  
Expiration Date 08/25/2025

A handwritten signature in black ink that reads 'Wade Champion'.

## 2.0 BUILDING SECURITY

Contractor shall maintain personnel on the site at all times and shall be responsible for all portions of the work area that is open or not properly secured. Contractor will ensure that a minimum of one Contractor Representative is on site at the job site at all times during work hours including the lunch break. Contractor will ensure that the work areas are secure at the end of each workday. Contractor may elect to have a company representative stay on sight to maintain security during times other than normal working hours.

## 3.0 PRE-JOB DAMAGE SURVEY

Contractor shall verify existing conditions with Champion Environmental Consulting, Inc. (CEC) prior to mobilization. Contractor is advised that damages not noted prior to mobilization will be deemed to have been caused by the Contractor and shall be repaired at the Contractor's expense to the satisfaction of the Owner.

## 4.0 PROJECT MONITORING

To determine if the elevated airborne asbestos structure concentration encountered during abatement operations has been reduced to the specified level, the Owner will secure and analyze samples according to the procedures set forth in this section. All samples, including clearance samples, will be collected by either a licensed project manager/air monitoring technician or a licensed consultant. The sample pumps will be monitored during the sampling period by the person collecting the samples, or some other means of control will be established to ensure the integrity of the samples and prevent tampering.

The Consultant will provide and perform the analysis of all air samples collected during the work performed under this Project Design to determine general compliance therewith. The Consultant has delegated the authority of collecting and analyzing all PCM (Phase Contrast Microscopy) air samples to his onsite Project Manager. All air samples, including final clearance samples, will be analyzed by the latest edition of NIOSH 7400 Protocol, Counting Rules A. Air samples will be collected on 0.8-micron mixed cellulose ester (MCE) filters loaded in conducting cassettes with extension cowls.

The Consultant has designed the air sampling strategy for this project as follows:

- \* PCM baseline air samples will be collected and archived (when feasible and schedule allows). Samples may be analyzed at the discretion of the Consultant. A minimum of three samples will be collected with a minimum sample volume of 1,250 liters of air. The flow rate will be between 1 and 15 liters per minute.
- \* Ambient, PCM, samples will be collected in the following locations:
  - (a) inside containment(s).
  - (b) outside containment(s), but inside the building (if applicable).
  - (c) the negative air unit(s) discharge.
  - (d) immediately outside the entrance to the decontamination facility (representative of the air being drawn into the facility).
  - (e) outside any critical barriers separating the containment(s) from other areas of the building; and
  - (f) and any other locations as deemed necessary by the Consultant.
- \* Three clearance samples collected from inside the containment area will be collected for clearance of the work area. Clearance will be achieved if all three samples collected inside the containment are less than 0.01 fibers per cubic centimeter (f/cc) as reported from the licensed laboratory. Any area where air tests do not meet clean air standards will be re-tested following re-cleaning of those areas. Any related costs associated with any re-testing will be the responsibility of the Contractor.
- \* Before sampling pumps are started the exhaust from forced-air equipment (leaf blower with an approximately 1 horsepower electric motor) will be swept against all walls, ceilings, floors, ledges, and other surfaces in the Work Area. Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors, or vents.

## 5.0 REGULATORY DOCUMENTATION

The following documents are required to be posted conspicuously by the Contractor to be visible at the entrance to the regulated area and must not be covered by any other documents:

- (1) the asbestos information poster issued by the department; and
- (2) copies of any violations issued as evidenced by an order from the federal or state asbestos-regulating authorities within the preceding 12 months from any asbestos project.

Documents required to be on-site are as follows:

- (1) all current licenses, registrations, and accreditation certificates (worker picture identification cards ***must be current***), current physical examination and current respirator fit test records.
- (2) EPA "Green Book" for O&M work.
- (3) appropriate publications as listed in §296 of this title (relating to Adoption by Reference of Federal Standards) for the asbestos activity which is being performed; and
- (4) a copy of the "Recommended Work Practices for the Removal of Resilient Floor Coverings", published by the Resilient Floor Covering Institute, if floor removal is being conducted utilizing this method.

## 6.0 PROHIBITIONS

The following are prohibited from the site:

- (1) Solvents with a flash point of 140 degrees Fahrenheit or below shall not be used.
- (2) Disposal of improperly labeled or classified asbestos containing waste material as defined in 40 CFR Part 61, Subpart M is prohibited.

## 7.0 PROJECT MANAGER

The Project Manager is employed by Champion Environmental Consulting, Inc. (CEC), a licensed asbestos consultant agency, and is to perform in the capacity of the owner's representative to evaluate the quality of the work being performed during an asbestos abatement project. The asbestos Project Manager will:

- (1) monitor the project to document the standards designed to protect project personnel and building occupants, and the adequacy of controls.
- (2) observe that contractual requirements are being met by the abatement contractor; and
- (3) consult with contractors on behalf of their clients on the selection and use of appropriate personal protective equipment related to the asbestos abatement activities.

## 8.0 WORK SITE PREPARATIONS

### 8.1 Warning Signs

Establish regulated areas with proper signage and barrier tape. Danger signs in accordance with 29 Code of Federal Regulations 1926.1101 shall be displayed, in both the Spanish and English languages, at all entrances to regulated areas, and on the outside of all critical barriers.

### 8.2 Critical Barriers

Regulated areas within which asbestos abatement is to be conducted shall be separated from adjacent areas by impermeable barriers of six- (6) mil polyethylene sheeting attached securely in place. All openings between containment areas and adjacent areas, including but not limited to windows, doorways, plenum areas above walls, elevator openings, corridor entrances, ventilation openings (both supply air and return air), drains, ducts, grills, grates, diffusers and skylights, shall be sealed with a minimum of a single layer of six- (6) mil polyethylene sheeting. All penetrations that could permit air infiltration or air leaks through the barrier shall be sealed, with exceptions of the make-up air provisions and the means of entry and exit.

### **8.3 Moveable Objects and Trash Debris**

All moveable objects shall be removed from the containment areas. Cleaning of contaminated items shall be performed if the items are to be salvaged or reused. Otherwise, they shall be properly disposed of as asbestos waste. All non-moveable objects that remain in the containment shall be covered with a minimum of two layers of four- (4) mil polyethylene sheeting or a single layer of true weight six- (6) mil polyethylene sheeting secured in place.

### **8.4 Decontamination System**

A worker decontamination enclosure system shall be installed in the established regulated area and shall be constructed consisting of a clean room, shower room, and equipment room, each separated from the other by airlocks accessible through doorways. (An "airlock" as defined by the Texas Department of State Health Services is a mechanism consisting of doors and/or curtains that control air-flow patterns in the doorway such that the air flows only towards the inside of the enclosure to which the decontamination system is attached).

Except for the doorways and the make-up air provisions for the enclosure, the worker decontamination system shall be sealed against leakage of air. All personnel must exit the containment area through the shower before entering the clean room. No asbestos-contaminated individuals or items shall enter the clean room. The abatement contractor shall ensure that workers and supervisors:

- (1) remove all gross contamination and debris from their protective clothing before leaving the containment area.
- (2) remove their protective clothing in the equipment room and deposit the clothing in impermeable bags or containers labeled in accordance with applicable regulatory requirements.
- (3) do not remove their respirators in the equipment room.
- (4) shower prior to entering the clean room; and
- (5) enter the clean room before changing into street clothes.

The shower filtration unit will be installed with discharge of the filtered water to the nearest floor drain or other access to the sanitary sewer. Trap shower wastewater using filters having a pore size of not larger than 5.0 microns.

### **8.5 Waste Load-Out Chamber**

A separate waste load-out chamber will be installed for the removal of all ACM waste material. Except for the doorway and the make-up air provisions for the enclosure, the waste load-out chamber shall be sealed against leakage of air. A water filtration unit will be installed with discharge of the filtered water to the nearest floor drain or other access to the sanitary sewer. Trap shower wastewater using filters having a pore size of not larger than 5.0 microns.

### **8.6 Heating, Ventilation, and Air Conditioning System Equipment (HVAC)**

All HVAC equipment in or passing through the work areas should be shut down, wherever feasible. Where HVAC supply cannot be shut down, critical barriers shall include a rigid block (e.g., cardboard barrier) prior to polyethylene sheeting. All intake and exhaust openings and any seams in system components shall be sealed with at least six- (6) mil polyethylene sheeting and/or duct tape if possible.

### **8.7 High-Efficiency Particulate Air (HEPA) Cleaning**

Except with prior written approval from the Consultant, cleaning procedures shall use wet methods and HEPA vacuuming. All loose debris must be thoroughly wet with a solution of amended water and picked up and placed in a six-mil poly disposal bag. A working HEPA vacuum shall remain on site every day of the asbestos abatement project, from the start date and through the completion of the project. The unit(s) shall have proper HEPA filter(s) in place.



## 8.8 Containment Area Ventilation

Units with HEPA filtration and in sufficient number to provide a negative pressure of at least 0.02 inches of water column differential, *verified by a manometer with tape print-out*, between the containment and outside and a minimum of four containment air changes per hour, shall be operated continuously for the duration of the project. The duration of the asbestos abatement project for the purposes of this requirement shall be considered from the time a regulated area is established until acceptable final clearance results are obtained. These units shall exhaust filtered air to the outside of the building wherever technically feasible.

## 8.9 Work Area Preparation

Cover areas not part of the abatement, (i.e., walls, floors and other building surfaces with a primary barrier), as described below to protect these surfaces from water damage and high humidity or from contamination by asbestos-containing debris, slurry, or high airborne fiber levels. Protect surfaces in the work area with two (2) layers of plastic sheeting or as otherwise directed on the Contract Drawings or in writing by Consultant's Project Manager. Perform work in the following sequence:

- \* Cover the floor of the work area with two individual layers of clear polyethylene sheeting, each at least 6-mil in thickness, lapped up on the walls at least 12 inches. Plastic shall be sized to minimize seams.
  - Form a sharp right-angle bend at the juncture of floor and wall so that there is no area of the sheeting that would cause the wall attachment to be pulled loose.
  - Both spray-glue and tape with duct tape all seams in the floor covering. Locate seams in the poly sheeting at least 6 feet from, or at right angles to, the seams in the underlying layers. Install the sheeting so that each layer can be removed independently of the underlying layers.
- \* Cover all walls in the work (including the sheet plastic barriers used as the critical barrier but excluding those walls scheduled for abatement) with two layers of polyethylene sheeting, at least 4-mil in thickness, sealed with duct tape or spray-glue in the same manner as the critical barriers.
- \* Overlap the wall sheeting and floor sheeting by at least 12 inches beyond the wall/floor joint to provide a better seal against water damage and to allow for negative pressure. Tape all joints, including the joint with the floor covering, with duct tape or as otherwise indicated on the Contract Documents or in writing by Consultant's Project Manager. Wall sheeting shall be secured adequately to prevent it from falling away from the walls when negative pressure ventilation is utilized.
- \* ***Six-foot splashguards (minimum one layer of 6-mil) may be used in lieu of two layers of wall sheeting for the work areas consisting of only floor tile and/or floor tile mastic removal.***

All plastic sheeting will be certified by the Underwriters Laboratory (UL) as being fire retardant (as necessary). Where feasible, when containment walls which exceed 260 linear feet must be constructed, a viewing window will be included in the wall for each 260 linear feet or fraction of that distance which will permit the viewing of at least 51% of the abatement work area. The window shall be constructed of Plexiglas, which measures approximately 18 inches by 18 inches. The bottom of the window will be at a reasonable viewing height from the outside floor.

## 9.0 SAFETY REQUIREMENTS

The following safety requirements shall be in effect for the duration of the project:

- (1) Fire Safety -- At least one fire extinguisher with a minimum National Fire Protection Association rating of 10BC (dry chemical) shall be placed within each abatement project containment for every 1,000 square feet, or fraction, of containment area (number of fire extinguishers shall satisfy TDSHS Regulations).
- (2) Electrical Safety -- All active electrical service used within the regulated and containment areas shall be connected through ground fault circuit interrupters (GFCI). The source of all electrical service must originate from outside of the containment areas unless authorized by Consultant.
- (3) Lock out/tag out all electricity as needed.
- (4) No aluminum or wooden ladders will be allowed on the job site. ***No exceptions will be allowed.***

## 10.0 ASBESTOS REMOVAL

Asbestos workers will don personal protective clothing consisting of, at a minimum, ½ face respirators with P100 cartridges, or equivalent and full body disposable coveralls from the time the potential for disturbance of ACM is expected. However, it is the Contractor's responsibility to ensure that his employees are afforded the respiratory protection as required by the OSHA standard for respiratory protection (29 CFR 1910.134, September 1988, as amended January 5, 1999) or the respiratory protection requested by the employee.

Create a negative pressure containment utilizing HEPA filtration and in sufficient numbers to provide a negative pressure of at least 0.02 inches of water column differential between the containment and outside and a minimum of four containment air changes per hour, operating continuously for the duration of the project. The duration of the asbestos abatement project for the purpose of this requirement shall be considered from the time a regulated area is established through the time acceptable final clean air monitoring results are obtained. The units shall exhaust filtered air to the outside of the building wherever technically feasible. Contractor shall verify pressure differential by manometer print-out.

All ACM shall be thoroughly wetted prior to and during removal and the air inside the containment will be continually misted during removal process. ACM may be performed by manual or motorized chipping mechanisms; however, contractor shall ensure that material is maintained in a wet condition for the duration of the project.

During each day's Work, the wet ACM debris shall be bagged in 6-mil thick bags. All asbestos-containing waste shall be cleaned from the Work area floor prior to the end of each work shift. No ACM shall be allowed to lay on the floor overnight. Place warning labels on containers in accordance with OSHA Regulations 29 CFR 1910.1001 and 1926.1101 if not already preprinted on the containers.

## 11.0 GLOVEBAG REMOVAL PROCEDURES (provided for encountered TSI)

Remove asbestos-containing material inside a glove bag according to the following procedures. At a minimum, one layer of 6-mil polyethylene sheeting shall be installed, as a drop cloth, beneath all work areas.

- Check pipe where the work will be performed. Wrap damaged (broken lagging, hanging, etc.), pipe in 6 mil plastic and "candy-stripe" with duct tape. Place one layer of duct tape around undamaged pipe at each end where the glove bag will be attached.
- Slit top of the glove bag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter). Place necessary tools into pouch located inside glove bag. This will usually include bone saw, utility knife, rags, scrub brush, wire cutters, tin snips, and pre-wetted cloth. Place one strip of duct tape along the edge of the open top slit of glove bag for reinforcement.
- Place the glove bag around section of pipe to be worked on and staple top together through reinforcing duct tape. Next, duct tape the ends of glove bag to pipe itself, where previously covered with plastic or duct tape.
- Use smoke tube and aspirator bulb to test seal. Place tube into water sleeve (two-inch opening to glove bag) squeezing bulb and filling bag with visible smoke. Remove smoke tube and twist water sleeve closed. While holding the water sleeve tightly, gently squeeze glove bag and look for smoke leaking out, (especially at the top and ends of the glove bag). If leaks are found, tape closed using duct tape and re-test.
- Insert wand from garden sprayer through water sleeve. Duct tape water sleeve tightly around the wand to prevent leakage. Thoroughly wet material to be worked on with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.
- One worker shall place his hands into the long-sleeved gloves while a second worker directs garden sprayer at the work. Use bone saw, if required, to cut insulation at each end of the section to be removed. A bone saw is a serrated heavy gauge wire with ring-type handles at each end. Throughout this process, spray amended water or removal encapsulant on the cutting area to keep dust to a minimum.

- Remove insulation using putty knives or other tools. Place pieces in bottom of bag without dropping. Rinse all tools with water inside the bag and place back into pouch. Using scrub brush, rags and water, scrub and wipe down the exposed pipe. Remove water wand from water sleeve and attach the small nozzle from HEPA-filtered vacuum. Turn on the vacuum only briefly to collapse the bag. Remove the vacuum nozzle, twist water sleeve closed and seal with duct tape.
- From outside the bag, pull the tool pouch away from the bag. Place duct tape over twisted portion and then cut the tool bag from the glove bag, cutting through the twisted/taped section. Contaminated tools may then be placed directly into next glove bag without cleaning. Alternatively, tool pouch with the tools can be placed in a bucket of water, opened underwater, and tools cleaned and dried. Discard rags and scrub brush with asbestos waste.
- If more than one adjacent section of pipe is to be removed, glove bags may be used only once and may not be moved. Glove bags shall not be used on surfaces whose temperatures exceeds 150° F.
- With removed insulation in the bottom of the bag, twist the bag several times and tape it to keep the material in the bottom during removal of the glove bag from the pipe. Slip a 6-mil disposal bag over the glove bag (still attached to the pipe). Remove tape or cut bag and open the top of the glove bag and fold it down into disposal bag.
- Clean all surfaces in the Work Area using disposable cloths wetted with water with surfactant or removal encapsulant added. When these surfaces have dried, clean with a HEPA filtered vacuum. Material adhered to a surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning. Seal exposed ends of remaining pipe insulation.

## 12.0 FINAL VISUAL INSPECTION

Upon completion of all removal and cleanup, Consultant has delegated all responsibilities for final visual inspections to CEC's on-site Project Manager. Following completion of visual inspection by Project Manager and upon approval of the Project Manager, Contractor will encapsulate the work area with an approved encapsulant in preparation for final air clearances.

## 13.0 WASTE DISPOSAL

- A. Follow "bag-out" decontamination procedures as follows:
1. All ACM shall be double bagged in true thickness six (6) mil poly disposal bags. Documentation from the manufacturer of the bags shall be on site. All bags shall be marked per the applicable Occupational Safety and Health Administration (OSHA) and the NESHAP regulations.
  2. Wrapped material must be wet wiped or washed and cleaned prior to removal from the bag out chamber or decontamination chamber.
  3. As the bagged materials are moved out through the bag-out chamber, place the previously bagged ACM into another six- (6) mil plastic bag and seal it with duct tape. In order to double bag, the asbestos waste, the inner bag must be no more than half full, excess air must be squeezed out, the top twisted closed, folded over, sealed with duct tape, rinsed off or HEPA vacuumed to remove asbestos contamination, and placed inside another bag (or in a fiberboard drum). If an outer bag is used, excess air must be evacuated while in containment and the outer bag twisted closed, the top folded over and sealed with duct tape.
  4. The exterior bag or fiberboard drum shall have warning and generator labels applied as specified in 40 CFR §61.150(a)(1)(iv)-(v). Fiberboard drums shall require the application of a self-adhesive placard identifying the contents as asbestos-containing material. If a fiberboard drum is used, the top must be sealed. It is a violation of the Texas Asbestos Health Protection Rules (TAHPR) to have a container leak or break due to overfilling. ***All labeling of asbestos-containing waste material containers must be done prior to removal from the regulated areas.***
  5. In the event of a bag or fiberboard drum leak, the drum or bag shall be placed into a third bag or wrapped in a minimum of one layer of true weight six- (6) polyethylene sheeting and be sealed and labeled as identified in Paragraph 4 above.
  6. Any additional bags or wrapping must be properly identified as being asbestos-contaminated and shall have proper generator labels attached.

- B. Remove sealed and labeled bags of contaminated material and wastes and place in a ***lockable closed-top dumpster*** lined with true weight six- (6) mil polyethylene sheeting and transport them for disposal to a TCEQ approved sanitary landfill as follows:
1. Notify owner or owner's representative a sufficient amount of time prior to removing each trailer or other waste transport from the jobsite. Prepare contaminated waste manifest for material to be transported. Submit to owner or owner's representative for signature as Generator. Owner or owner's representative will retain green copy of manifest.
  2. Transporter must be licensed by the Texas Department of State Health Services as required by the Texas Asbestos Health Protection Rules as amended to be effective July 8, 2021 (TAC 25 Chapter 296).
  3. Final disposal of asbestos-containing waste material shall be within 30 days of project completion or when receiving container is full, whichever is sooner.

#### 14.0 TECHNICAL SPECIFICATION USE AND RELIANCE

The technical specifications presented herein are an instrument of professional service developed by Champion Environmental Consulting, Inc. (CEC) in contemplation of a wide array of project-specific variables, including how the documents will be used, by whom and under what project management scheme. Because CEC may be liable for the adequacy of these technical specifications and any unauthorized reuse could result in misuse of CEC's findings, recommendations or other service elements for which CEC cannot anticipate risk and liability, use of these technical specifications (including reliance, duplication, copying, quoting or excerpting) is limited to CEC, as project manager of the above-referenced project for the client named herein. Any other party, including contractors or consultants, wishing to use, rely upon, excerpt, copy, duplicate or otherwise reproduce these specifications must apply to CEC for written authorization to do so with such approval in the sole discretion of CEC.

## APPENDIX A LICENSES



Texas Department of State Health Services

CHAMPION ENVIRONMENTAL CONSULTING INC

*is certified to perform as an*

Asbestos Consultant Agency

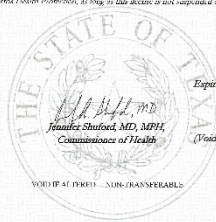
*in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas  
Occupations Code, Chapter 1304 and Title 12, Texas Administrative Code, Chapter 291 relating to Texas  
Asbestos Health Protection, as long as this license is not suspended or revoked*



License Number: 100522

Expiration Date: 04/01/2027

Control Number: 97738



(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

SEE BACK



Texas Department of State Health Services

CA LABS LLC

*is certified to perform as an*

Asbestos Laboratory

PCM, PLM, TEM

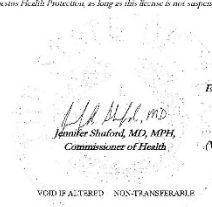
*in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas  
Occupations Code, Chapter 1304 and Title 12, Texas Administrative Code, Chapter 291 relating to Texas  
Asbestos Health Protection, as long as this license is not suspended or revoked*



License Number: 300370

Expiration Date: 01/04/2027

Control Number: 96861



(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

SEE BACK



## Texas Department of State Health Services

### Asbestos Individual Consultant

WADE E CHAMPION

License No. 105410

Control No. 98246

Expiration Date: 25-Aug-2025



**APPENDIX B  
NOTIFICATION(S)**

**(as submitted by abatement contractor)**

**APPENDIX C**  
**REFERENCE DRAWING(S)**





109 West 7th Street  
Suite 210  
Georgetown, Texas 78626

**CLIENT:**  
**Judge Gilbert Saenz**  
**Duval County**  
400 E. Gravis Avenue  
San Diego, Texas 78384

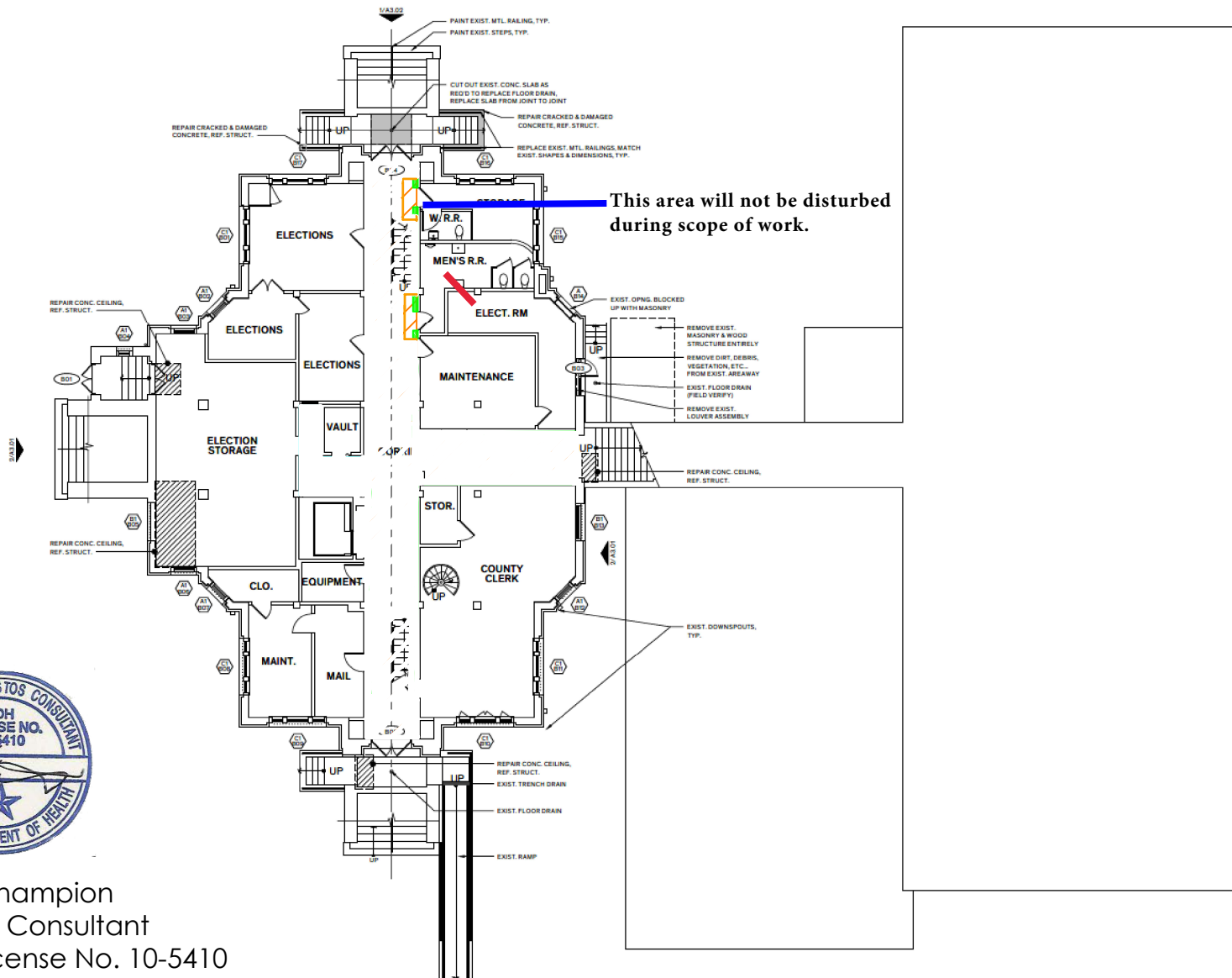
**SITE:** Duval County Courthouse  
BASEMENT  
400 E. Gravis Avenue  
San Diego, Texas 78384

C-ECI Project No. 25-1213  
By: Ian Siverly  
Approved By: W Champion  
Submitted: 4/10/25  
Not To Scale






Asbestos Abatement Plan

## Figure 1

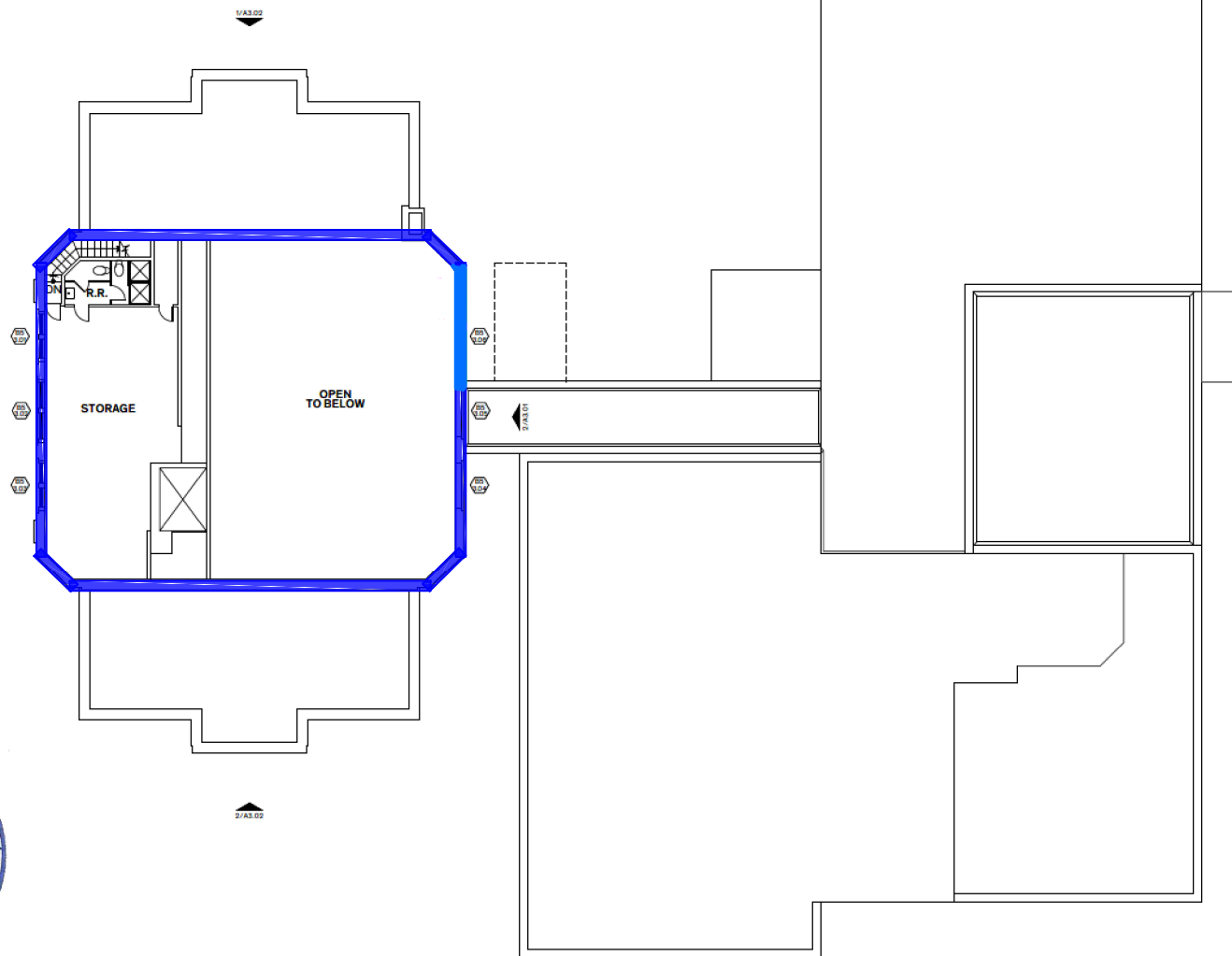



Wade Champion  
Asbestos Consultant  
TDSHS License No. 10-5410  
Renews 8/25/2025

-  12"x12" Brown Floor Tile/Mastic - Spot abate ~8 SF to facilitate new door installation  
 Cove base/Mastic ~5 SF to facilitate new door installation  
 Thermal System Insulation (TSI) ~15 LF -abate all ACM TSI



Wade Champion  
Asbestos Consultant  
TDSHS License No. 10-5410  
Renews 8/25/2025



 Roof Cap Mastic (Tar, Felt, Sealant) ~300 LF

\* Damaged coping stones will be removed/disposed,  
ACM coatings will be abated from remaining stones \*



107 West 7th Street  
Suite 210  
Georgetown, Texas 78626

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

SITE:  
Duval County Courthouse  
THIRD FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384

C-ECI Project No. 25-1213  
By: Ian Siverly  
Approved By: W Champion  
Submitted: 4/10/25  
Not To Scale



Asbestos  
Abatement  
Plan

**Figure 4**



March 4, 2021

Judge Gilbert Saenz  
Duval County  
400 E. Gravis Ave.  
San Diego, Texas 78384

**RE: Limited Asbestos Survey of Target Areas at the Site Related to Proposed Demolition/Renovation  
Duval County Courthouse 400 E. Gravis Ave. San Diego, Texas 78384  
Project #21-1141**

**Dear Judge Saenz:**

Champion Environmental Consulting Inc. (Champion Environmental) was retained by **Duval County** (Hereinafter, the Client) to conduct a limited asbestos survey at the Site within the following Target Areas as identified by the Client.

**Duval County Courthouse 400 E. Gravis Ave. San Diego, Texas 78384**

The attached report summarizes these services in accordance with our discussion. **Regulated amounts of asbestos were detected in the following materials and in the approximate quantities:**

| Location                         | Sample #(s) | Material                               | Result - Asbestos % | APPROXIMATE Quantity |
|----------------------------------|-------------|--|---------------------|----------------------|
| Annex 2 <sup>nd</sup> floor      | 10-12       | Floor Tile/Black Mastic (bottom layer) | 4% Chrysotile       | 1200 SF              |
| Annex 2 <sup>nd</sup> Floor      | 16-18       | Floor Tile/Black Mastic                | 4% Chrysotile       | 144 SF               |
| Annex 2 <sup>nd</sup> Floor      | 22-24       | Brown Floor Tile/Black Mastic          | 4% Chrysotile       | 180 SF               |
| Annex 1 <sup>st</sup> Floor      | 58-60       | Yellow Linoleum/Mastic                 | 15% Chrysotile      | 240 SF               |
| Annex 1 <sup>st</sup> Floor      | 65-66       | Yellow Linoleum/Mastic                 | 15% Chrysotile      | 75 SF                |
| Annex Exterior                   | 100-102     | Exterior Window Sealant                | 3% Chrysotile       | 350 SF               |
| Annex Exterior                   | 103-105     | Exterior Door Sealant                  | 3% Chrysotile       | 40 SF                |
| Courthouse 3 <sup>rd</sup> Floor | 139-141     | Black Duct Mastic                      | 4% Chrysotile       | 20 LF                |
| Courthouse 3 <sup>rd</sup> Floor | 143-145     | White Duct Mastic                      | 4% Chrysotile       | 40 LF                |
| Courthouse 1 <sup>st</sup> Floor | 196-198     | 12x12 Green Floor Tile/Mastic          | 2%-4% Chrysotile    | 800 SF               |
| Courthouse Basement              | 214-216     | Linoleum/Mastic bottom layer           | 5%-20% Chrysotile   | 160 SF               |
| Courthouse Basement              | 217-219     | Linoleum/Mastic top layer              | 3%-20% Chrysotile   | 160 SF               |
| Courthouse Basement              | 223-225     | 12x12 Brown Floor Tile/Mastic          | 3% Chrysotile       | 1000 SF              |
| Courthouse Basement              | 229-231     | Covebase/Mastic                        | 3% Chrysotile       | 250 SF               |
| Courthouse Basement              | 232-234     | TSI                                    | 25% Chrysotile      | 15 LF                |
| Courthouse Exterior Roof         | 262-264     | Roof Cap Mastic (Tar, Felt, Sealant)   | 3%-6% Chrysotile    | 300 LF               |

**CHAMPION ENVIRONMENTAL CONSULTING, INC.**

109 W 7<sup>th</sup> St. Suite 210 Georgetown Texas 78626 main (512) 992-5383



The laboratory analytical results are attached in Appendix A of this report. Licenses are attached in Appendix B of this report. Site drawings are attached in Appendix C of this report. If you have any questions on this report or any other matter, please do not hesitate to call me at (512) 992-5383.

Sincerely,

Champion Environmental Consulting, Inc.

A handwritten signature in black ink that reads "Wade Champion". The signature is written in a cursive, flowing style.

Wade Champion  
Individual Asbestos Consultant  
DSHS License No. 10-5410  
Expiration Date 8/25/21



## 1.0 Services

| Table I Services Summary  |  |
|---|--|
| Client  | Duval County<br>400 E. Gravis Ave.<br>San Diego, Texas 78384   |
| Site Address  | 400 E. Gravis Ave. San Diego, Texas 78384  |
| Target Areas identified by Client   | Duval County Courthouse  |
| <b>Scope of Work</b> <ol style="list-style-type: none"> <li>1. Conduct a preliminary visual reconnaissance of the renovation /demolition Target Areas identified by the client to visually determine the presence of suspect ACM</li> <li>2. In the event suspect ACM is identified, visually assess suspect ACM for variations in color, texture, thickness, and other characteristics useful in determining the material's uniformity and homogenous area</li> <li>3. In the event suspect ACM is identified, evaluate current physical condition, friability and potential for damage, assign hazard ratings and estimate quantities</li> <li>4. Collect samples of identified and reasonably accessible suspect ACM within Target Areas</li> <li>5. Send suspect ACM samples to laboratory for analysis of asbestos content, if any</li> <li>6. Prepare report summarizing results</li> </ol>   |  |
| Sample Date(s)/<br>#of samples  | February 19, 2021<br>264 Samples Analyzed  |
| Inspector(s)<br>DSHS License #  | Cole Allen<br>60-3654  |
| Samples Collected:  | A total of 264 samples of suspect asbestos-containing materials were collected, as agreed with the Client, within reasonably accessible portions of the Target Areas   |
| Analytical Lab:   | CA Labs, LLC asbestos laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) through the National Institute for Standards and Technology (ID Code No 200772-0) and licensed as a DSHS licensed asbestos bulk laboratory (License No. 30-0370) |
| Analyzed Date:  | February 25, 2021  |
| Report Numbers:   | CBR21020914  |
| Analytical Method:  | Polarized Light Microscopy (PLM) using the Environmental Protection Agency (EPA) "Interim Method for Determination of Asbestos in Bulk Insulation Samples" [40 CFR Chapter 1 (1-1-87 Edition) Part 763, Subpart F, Attachment III]   |
| <b>General Information about Suspect ACM</b> <p>Asbestos has historically been a component of a wide variety of building materials. These types of building materials, which may potentially contain asbestos, are termed suspect asbestos-containing materials" or suspect ACM). Suspect ACM may or may not contain asbestos. The actual asbestos content of a suspect material can be determined only through proper sampling and analysis performed by a qualified building inspector and laboratory.</p> <p>Pursuant to the National Emission Standards for Hazardous Air Pollutants (NESHAP) asbestos regulations (40 CFR§61:141, et seq) ACM can be classified into two categories; friable ACM which can be reduced to powder or crumbled under light hand pressure (e.g. ceiling textures and thermal system insulation) and non-friable ACM, which are materials that cannot be easily crumbled (e.g. floor tile and floor tile mastic).</p> <p>Regulated asbestos containing materials (RACM) which are those materials containing over 1% asbestos as defined under asbestos NESHAP.</p> |  |

## 2.0 Standard of Care and Limitations:

This report was prepared for the exclusive use of the Client named herein to aid in the identification and management of ACM and RACM in the renovation/demolition Target Areas identified by the Client. Champion Environmental performed its service in a manner consistent with the level of care and expertise exercised by asbestos professional performing the same or similar services at the same time and in the same geographic area.

Samples for this asbestos survey were collected from discrete sample location within the rooms and areas specifically identified herein (i.e., Target Areas). While attempts were made to obtain representative samples most likely to contain asbestos, finding and conclusions herein are necessarily limited by the number of samples taken and access provided for sampling activities. *The results herein cannot guarantee that no asbestos is present in any area not sampled.* This asbestos survey *was not intended to be a comprehensive asbestos inspection of the site*, nor was it intended to be used for evaluation of worker health and safety conditions. To determine whether regulated ACM is present at other locations not sampled herein, *a comprehensive asbestos inspection of the site* would be necessary.

Conclusions and recommendations herein represent the professional opinions of the Champion Environmental Consulting personnel involved with the project. The results of this report should not be considered as legal interpretation of existing federal, state or local environmental, health and safety laws or regulations. Champion Environmental Consulting, Inc., assumes no responsibility or liability for errors in information or data provided by third party sources.

## 3.0 Report Use and Reliance:

This report represents Champion Environmental's services as of the sampling date. As our final document, it may not be altered after final issuance. This study and report were prepared on behalf of and for the exclusive use of the Client solely its use and reliance in determining the presence of FACM in identified Target Areas of the site. The Client was the only party to which Champion Environmental explained the risks and was solely involved in shaping the scope of the services. Accordingly, reliance on this report by any other party may involve assumptions leading to an unintended interpretation of findings and opinions. With the consent of Champion Environmental and the Client, Champion Environmental may offer reliance to third parties or contract with other parties to develop findings and opinions related to such party's unique risk management concerns. Notwithstanding the foregoing, any and all third-party reliance upon this Report shall be limited to the fair market value of services undertaken to perform this Report as of the report date.

## 4.0 Methodologies:

### 4.1 Sampling

This limited inspection was guided by the Texas Asbestos Health Protection Rules (TAHPR) (see 25 TAC §295.58) and generally in accord with AHERA (the Asbestos Hazard Emergency Response Act of 1986, Public law 99-519) sampling protocols (see 40 CFR §§ 763.86 and 763.88). The AHERA sampling protocols are statistically-based and were originally developed to implement AHERA which amends the Federal Toxic Substances Control Act (see 15 USC, §2641, et seq). These rules are often followed by the OSHA, and the Department of State Healthy Services (DSHS). Champion Environmental generally followed these sampling protocols to in an effort to collect representative samples of the various suspect building materials in the Target Areas.

Suspect ACM samples were collected by physically removing a small portion (approximately one square inch) of the suspect material using a sharp instrument. All layers of the material samples were penetrated and registered as separate samples. Disturbance of adjacent material was minimized during the sampling activities. Each sample was place into a separate container and then sealed. Each sample was labeled with the sample number and collected location, and a chain-of-custody form was completed. The sampling instrument was cleaned between each sample collected to mitigate potential cross contamination between samples collected.

## 4.2 Analytical Procedures

If the results of the bulk laboratory analysis reveal asbestos, the percentage of asbestos contained within the sample is compared with the criteria outlined in the EPA definition of asbestos-containing material (and which value is also followed by OSHA and DSHS). If a concentration of greater than one percent (1%) asbestos is reported, it is defined by the Asbestos NESHAP as a positive identification and the material could be considered RACM depending upon the nature of the ACM and its coverage.

The Asbestos NESHAP states the RACM (as defined in 40 CFR §61.141) containing less than 10% asbestos should be verified by point counting. If bulk sampling analysis determines that asbestos content of a friable asbestos sample is less than 10%, the building owner may;(i) elect to assume the asbestos content to be greater than 1% and treat the material as RACM, or (ii) require verification of asbestos content by point counting. If a result obtained by point counting is different from a result obtained by visual estimation, the point count result is used.

## 5.0 Recommendations:

Based upon the forgoing results, if applicable, Champion Environmental Consulting, Inc. offers the recommendations presented below. Such recommendations should be implemented prior to the commencement of any renovation or demolition activities or any other activities that would potentially disturb the identified ACM or RACM at the site.

- Identified ACM. Including non-friable ACM *that will be disturbed by renovation or demolition activities* should be removed as soon as feasibly possible by appropriately licensed personnel and in accordance with applicable laws and regulations.
- Identified ACM which *will not be disturbed by renovation or demolition activities, but which is damaged* should be repaired or encapsulated (by appropriately licensed personnel and in accordance with applicable laws and regulations) to prevent future damage.
- *ACM to remain* in place should be enclosed in airtight impermeable barrier or encapsulated to prevent damage.
- An *Asbestos Operation and Maintenance Program* should be implemented to manage existing ACM in place.

In the event renovation or demolition activities are slated for portions of the site outside of the Target Areas, an asbestos survey should be performed for those portions of the site -prior to the initiation of renovation or demolition activities.

## APPENDIX A

### Laboratory Analytical Results and Summary



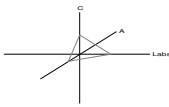
## Laboratory Analytical Results Summary

Project #21-1141

Duval County Court House  
400 E. Gravis Ave.  
San Diego, Texas 78384

| Location                         | Sample #(s) | Material                               | Result - Asbestos % | APPROXIMATE Quantity |
|----------------------------------|-------------|--|---------------------|----------------------|
| Annex 2 <sup>nd</sup> floor      | 10-12       | Floor Tile/Black Mastic (bottom layer) | 4% Chrysotile       | 1200 SF              |
| Annex 2 <sup>nd</sup> Floor      | 16-18       | Floor Tile/Black Mastic                | 4% Chrysotile       | 144 SF               |
| Annex 2 <sup>nd</sup> Floor      | 22-24       | Brown Floor Tile/Black Mastic          | 4% Chrysotile       | 180 SF               |
| Annex 1 <sup>st</sup> Floor      | 58-60       | Yellow Linoleum/Mastic                 | 15% Chrysotile      | 240 SF               |
| Annex 1 <sup>st</sup> Floor      | 65-66       | Yellow Linoleum/Mastic                 | 15% Chrysotile      | 75 SF                |
| Annex Exterior                   | 100-102     | Exterior Window Sealant                | 3% Chrysotile       | 350 SF               |
| Annex Exterior                   | 103-105     | Exterior Door Sealant                  | 3% Chrysotile       | 40 SF                |
| Courthouse 3 <sup>rd</sup> Floor | 139-141     | Black Duct Mastic                      | 4% Chrysotile       | 20 LF                |
| Courthouse 3 <sup>rd</sup> Floor | 143-145     | White Duct Mastic                      | 4% Chrysotile       | 40 LF                |
| Courthouse 1 <sup>st</sup> Floor | 196-198     | 12x12 Green Floor Tile/Mastic          | 2%-4% Chrysotile    | 800 SF               |
| Courthouse Basement              | 214-216     | Linoleum/Mastic bottom layer           | 5%-20% Chrysotile   | 160 SF               |
| Courthouse Basement              | 217-219     | Linoleum/Mastic top layer              | 3%-20% Chrysotile   | 160 SF               |
| Courthouse Basement              | 223-225     | 12x12 Brown Floor Tile/Mastic          | 3% Chrysotile       | 1000 SF              |
| Courthouse Basement              | 229-231     | Covebase/Mastic                        | 3% Chrysotile       | 250 SF               |
| Courthouse Basement              | 232-234     | TSI                                    | 25% Chrysotile      | 15 LF                |
| Courthouse Exterior Roof         | 262-264     | Roof Cap Mastic (Tar, Felt, Sealant)   | 3%-6% Chrysotile    | 300 LF               |

*Note: Refer to attached laboratory report for details*



## **Materials Characterization - Bulk Asbestos Analysis**

### **Laboratory Analysis Report - Polarized Light**

#### **Champion Environmental**

8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Attn:** Wade Champion

**Customer Project:** Duval County Courthouse, 21-1141

**Reference #:** CBR21020914

**Date:** 2/25/2021

#### **Analysis and Method**

Summary of polarizing light microscopy (PLM / Stereomicroscopy bulk asbestos analysis) using the methods described in 40CFR Part 763 Appendix E to Subpart E (Interim and EPA 600 / R-93 / 116 (Improved)). The sample is first viewed with the aid of stereomicroscopy. Numerous liquid slide preparations are created for analysis under the polarized microscope where identifications and quantifications are performed. Calibrated liquid refractive oils are used as liquid mounting medium. These oils are used for identification (dispersion staining). A calibrated visual estimation is reported, should any asbestiform mineral be present. Other techniques such as acid washing are used in conjunction with refractive oils for detection of smaller quantities of asbestos. All asbestos percentages are based on calibrated visual estimation traceable to NIST standards for regulated asbestos. Traceability to measurement and calibration is achieved by using known amounts and types of asbestos from standards where analyst and laboratory accuracy are measured. As little as 0.001% asbestos can be detected in favorable samples, while detection in unfavorable samples may approach the detection limit of 0.50% (well above the laboratory definition of trace).

#### **Discussion**

Vermiculite containing samples may have trace amounts of actinolite-tremolite, where not found by PLM should be analyzed using TEM methods and / or water separation techniques. Suspected actinolite/vermiculite presence will be indicated through the sample comment section of this report.

Fibrous talc containing samples may even contain a related asbestos fiber known as anthophyllite. Under certain conditions the same fiber may actually contain both talc and anthophyllite (a phenomenon called intergrowth). Again, TEM detection methods are recommended. CA Labs PLM report comments will denote suspected amounts of asbestiform anthophyllite with talc, where further analysis is recommended.

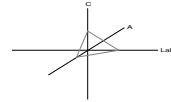
Some samples (floor tiles, surfacings, etc.) may contain fibers too small to be detectable by PLM analysis and should be analyzed by TEM bulk protocols.

A "trace asbestos" will be reported if the analyst observes far less than 1% asbestos. CA Labs defines "trace asbestos" as a few fibers detected by the analyst in several preparations and will indicate as such under these circumstances.

Quantification of <1% will actually be reported as ≤1% (allowable variance close to 1% is high). Such results are ideal for point counting, and the technique is mandatory for friable samples (NESHAP, Nov. 1990 and clarification letter 8 May 1991) under 1% percent asbestos and the "trace asbestos". **In order to make all initial PLM reports issued from CA Labs NESHAP compliant, all <1% asbestos results (except floor tiles) will be point counted at no additional charge.**

#### **Qualifications**

CA Labs is accredited by the National Voluntary Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM), and for bulk asbestos fiber analysis (PLM). All analysts have a college degree in a natural science (geology, biology, or environmental science) or are recognized by a state professional board in one of these disciplines. Extensive in-house training programs are used to augment education background of the analyst. The group leader of polarized light has received supplemental McCrone Research training for asbestos identification. This report is not covered by the scope of AIHA accreditation. Analysis performed at CA Labs, LLC 12232 Industriplex, Suite 32 Baton Rouge, LA 70809.



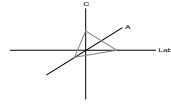
## Overview of Project Sample Material Containing Asbestos

| Customer Project: |         | Duval County Courthouse, 21-1141           |  | CA Labs Project #:  | CBR21020914 |
|-------------------|---------|--|--|---|-------------|
| Sample #          | Layer # | Analysts Physical Description of Subsample | Asbestos type / calibrated visual estimate percent | List of Affected Building Material Types  |             |
| 10                | 10-2    | Black Mastic                               | 4% Chrysotile                                      | <b>Black Mastic</b><br><b>Tan Linoleum</b><br><b>Gray Sealant</b><br><b>White Sealant on Wrap</b><br><b>Green Floor Tile</b><br><b>Yellow and Black Mastic</b><br><b>Brown Floor Tile</b><br><b>White Insulation on Mesh</b><br><b>White Surfaced White Insulation on Mesh</b><br><b>Black Tar</b><br><b>Black Tar and Felt</b> |             |
| 11                | 11-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |
| 12                | 12-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |
| 16                | 16-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |
| 17                | 17-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |
| 18                | 18-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |
| 22                | 22-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |
| 23                | 23-2    | Black Mastic                               | 4% Chrysotile                                      |   |             |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastonite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.



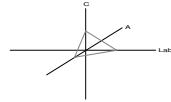
## Overview of Project Sample Material Containing Asbestos

| <b>Customer Project:</b>         |         | <b>CA Labs Project #:</b>                  |  |
|----------------------------------|---------|--|--|
| Duval County Courthouse, 21-1141 |         | CBR21020914                                |  |
| Sample #                         | Layer # | Analysts Physical Description of Subsample | Asbestos type / calibrated visual estimate percent |
|                                  |         |  | List of Affected Building Material Types           |
| <hr/>                            |         |  |  |
| 24                               | 24-2    | Black Mastic                               | 4% Chrysotile                                      |
| 58                               | 58-1    | Tan Linoleum                               | 15% Chrysotile                                     |
| 59                               | 59-1    | Tan Linoleum                               | 15% Chrysotile                                     |
| 60                               | 60-1    | Tan Linoleum                               | 15% Chrysotile                                     |
| 64                               | 64-1    | Tan Linoleum                               | 15% Chrysotile                                     |
| 65                               | 65-1    | Tan Linoleum                               | 15% Chrysotile                                     |
| 66                               | 66-1    | Tan Linoleum                               | 15% Chrysotile                                     |
| 100                              | 100-1   | Gray Sealant                               | 3% Chrysotile                                      |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastinite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.



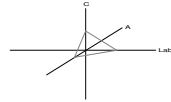
## Overview of Project Sample Material Containing Asbestos

| Customer Project: |         | Duval County Courthouse, 21-1141 |                                   | CA Labs Project #: CBR21020914                     |  |
|-------------------|---------|----------------------------------|-----------------------------------|--|--|
| Sample #          | Layer # | Analysts                         | Physical Description of Subsample | Asbestos type / calibrated visual estimate percent | List of Affected Building Material Types |
| 101               | 101-1   |                                  | Gray Sealant                      | 3% Chrysotile                                      |  |
| 102               | 102-1   |                                  | Gray Sealant                      | 3% Chrysotile                                      |  |
| 103               | 103-1   |                                  | Gray Sealant                      | 3% Chrysotile                                      |  |
| 104               | 104-1   |                                  | Gray Sealant                      | 3% Chrysotile                                      |  |
| 105               | 105-1   |                                  | Gray Sealant                      | 3% Chrysotile                                      |  |
| 139               | 139-1   |                                  | Black Mastic                      | 4% Chrysotile                                      |  |
| 140               | 140-1   |                                  | Black Mastic                      | 4% Chrysotile                                      |  |
| 141               | 141-1   |                                  | Black Mastic                      | 4% Chrysotile                                      |  |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastonite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.



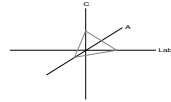
## Overview of Project Sample Material Containing Asbestos

| Customer Project: |         | Duval County Courthouse, 21-1141 |                                   | CA Labs Project #: CBR21020914                     |  |
|-------------------|---------|----------------------------------|-----------------------------------|--|--|
| Sample #          | Layer # | Analysts                         | Physical Description of Subsample | Asbestos type / calibrated visual estimate percent | List of Affected Building Material Types |
| <hr/>             |         |                                  |                                   |  |  |
| 142               | 142-1   |                                  | White Sealant on Wrap             | 2% Chrysotile                                      |  |
| 143               | 143-1   |                                  | White Sealant on Wrap             | 2% Chrysotile                                      |  |
| 144               | 144-1   |                                  | White Sealant on Wrap             | 2% Chrysotile                                      |  |
| 196               | 196-1   |                                  | Green Floor Tile                  | 2% Chrysotile                                      |  |
|                   | 196-2   |                                  | Black Mastic                      | 4% Chrysotile                                      |  |
| 197               | 197-1   |                                  | Green Floor Tile                  | 2% Chrysotile                                      |  |
|                   | 197-2   |                                  | Black Mastic                      | 4% Chrysotile                                      |  |
| 198               | 198-1   |                                  | Green Floor Tile                  | 2% Chrysotile                                      |  |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastonite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.



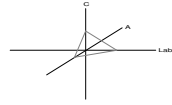
## Overview of Project Sample Material Containing Asbestos

| <b>Customer Project:</b>         |         | <b>CA Labs Project #:</b>                  |  |
|----------------------------------|---------|--|--|
| Duval County Courthouse, 21-1141 |         | CBR21020914                                |  |
| Sample #                         | Layer # | Analysts Physical Description of Subsample | Asbestos type / calibrated visual estimate percent |
|                                  |         |  | List of Affected Building Material Types           |
| <hr/>                            |         |  |  |
| 198                              | 198-2   | Black Mastic                               | 4% Chrysotile                                      |
| <hr/>                            |         |  |  |
| 214                              | 214-1   | Tan Linoleum                               | 20% Chrysotile                                     |
| <hr/>                            |         |  |  |
|                                  | 214-2   | Black Mastic                               | 5% Chrysotile                                      |
| <hr/>                            |         |  |  |
| 215                              | 215-1   | Tan Linoleum                               | 20% Chrysotile                                     |
| <hr/>                            |         |  |  |
|                                  | 215-2   | Black Mastic                               | 5% Chrysotile                                      |
| <hr/>                            |         |  |  |
| 216                              | 216-1   | Tan Linoleum                               | 20% Chrysotile                                     |
| <hr/>                            |         |  |  |
|                                  | 216-2   | Black Mastic                               | 5% Chrysotile                                      |
| <hr/>                            |         |  |  |
| 217                              | 217-2   | Yellow and Black Mastic                    | 3% Chrysotile                                      |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastinite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.



## Overview of Project Sample Material Containing Asbestos

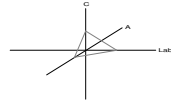
| <b>Customer Project:</b>         |         | <b>CA Labs Project #:</b> |                                   |  |
|----------------------------------|---------|---------------------------|-----------------------------------|--|
| Duval County Courthouse, 21-1141 |         | CBR21020914               |                                   |  |
| Sample #                         | Layer # | Analysts                  | Physical Description of Subsample | Asbestos type / calibrated visual estimate percent |
|                                  |         |                           |                                   | List of Affected Building Material Types           |
| <hr/>                            |         |                           |                                   |  |
| 218                              | 218-2   | Yellow and Black Mastic   |                                   | 3% Chrysotile                                      |
| 219                              | 219-1   | Tan Linoleum              |                                   | 20% Chrysotile                                     |
| 223                              | 223-1   | Brown Floor Tile          |                                   | 3% Chrysotile                                      |
| 224                              | 224-1   | Brown Floor Tile          |                                   | 3% Chrysotile                                      |
| 225                              | 225-1   | Brown Floor Tile          |                                   | 3% Chrysotile                                      |
| 229                              | 229-2   | Yellow and Black Mastic   |                                   | 3% Chrysotile                                      |
| 230                              | 230-2   | Yellow and Black Mastic   |                                   | 3% Chrysotile                                      |
| 231                              | 231-2   | Yellow and Black Mastic   |                                   | 3% Chrysotile                                      |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastonite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.





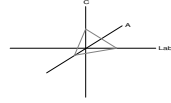
## Overview of Project Sample Material Containing Asbestos

| <b>Customer Project:</b>         |         | <b>CA Labs Project #:</b>                  |  |  |
|----------------------------------|---------|--|--|--|
| Duval County Courthouse, 21-1141 |         | CBR21020914                                |  |  |
| Sample #                         | Layer # | Analysts Physical Description of Subsample | Asbestos type / calibrated visual estimate percent | List of Affected Building Material Types |
| <hr/>                            |         |  |  |  |
| 232                              | 232-1   | White Insulation on Mesh                   | 25% Chrysotile                                     |  |
| <hr/>                            |         |  |  |  |
| 233                              | 233-1   | White Surfaced White Insulation on Mesh    | 25% Chrysotile                                     |  |
| <hr/>                            |         |  |  |  |
| 234                              | 234-1   | White Surfaced White Insulation on Mesh    | 25% Chrysotile                                     |  |
| <hr/>                            |         |  |  |  |
| 262                              | 262-1   | Black Tar                                  | 3% Chrysotile                                      |  |
| <hr/>                            |         |  |  |  |
| 263                              | 263-1   | Black Tar and Felt                         | 6% Chrysotile                                      |  |
| <hr/>                            |         |  |  |  |
| 264                              | 264-1   | Black Tar and Felt                         | 6% Chrysotile                                      |  |

### **Glossary of abbreviations (non-asbestos fibers and non-fibrous minerals):**

|                  |              |                    |                          |
|------------------|--------------|--------------------|--------------------------|
| ca - carbonate   | pe - perlite | fg - fiberglass    | pa - palygorskite (clay) |
| gypsum - gypsum  | qu - quartz  | mw - mineral wool  |                          |
| bi - binder      |              | wo - wollastonite  |                          |
| or - organic     |              | ta - talc          |                          |
| ma - matrix      |              | sy - synthetic     |                          |
| mi - mica        |              | ce - cellulose     |                          |
| ve - vermiculite |              | br - brucite       |                          |
| ot - other       |              | ka - kaolin (clay) |                          |

This report relates to the items tested. This report is not to be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, AIHA LAP, LLC, or any other agency of the federal government. This report may not be reproduced except in full without written permission from CA Labs. These results are submitted pursuant to CA Labs' current terms and sale, condition of sale, including the company's standard warranty and limitations of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping or handling fee may be assessed for the return of any samples.



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 1        |             | 1-1        | Tan Textured Surfacing                        | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
|          |             | 1-2        | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 2        |             |            | White Surfaced White<br>Compound              | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |
|          |             | 2-2        | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 3        |             | 3-1        | White Compound                                | Y                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
|          |             | 3-2        | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 4        |             | 4-1        | White Surfaced White<br>Compound              | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

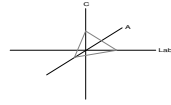
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 5        |             | 5-1        | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu ,mi, bi, ca           |
| 6        |             | 6-1        | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu ,mi, bi, ca           |
| 7        |             | 7-1        | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 7-2        | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 8        |             | 8-1        | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 8-2        | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 9        |             | 9-1        | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

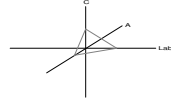
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical<br>Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|--|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             | 9-2        | Tan Mastic                                       | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 10       |             | 10-1       | Tan Floor Tile                                   | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 10-2       | Black Mastic                                     | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 11       |             | 11-1       | Tan Floor Tile                                   | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 11-2       | Black Mastic                                     | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 12       |             | 12-1       | Tan Floor Tile                                   | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 12-2       | Black Mastic                                     | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

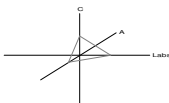
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|    |  |      |            |   |               |  |             |
|----|--|------|------------|---|---------------|--|-------------|
| 13 |  | 13-1 | Tan Mastic | Y | None Detected |  | 100% qu, bi |
|----|--|------|------------|---|---------------|--|-------------|

|  |  |      |            |   |               |  |             |
|--|--|------|------------|---|---------------|--|-------------|
|  |  | 13-2 | Black Foam | Y | None Detected |  | 100% qu, ot |
|--|--|------|------------|---|---------------|--|-------------|

|    |  |      |            |   |               |  |             |
|----|--|------|------------|---|---------------|--|-------------|
| 14 |  | 14-1 | Tan Mastic | Y | None Detected |  | 100% qu, bi |
|----|--|------|------------|---|---------------|--|-------------|

|  |  |      |            |   |               |  |             |
|--|--|------|------------|---|---------------|--|-------------|
|  |  | 14-2 | Black Foam | Y | None Detected |  | 100% qu, ot |
|--|--|------|------------|---|---------------|--|-------------|

|    |  |      |            |   |               |  |             |
|----|--|------|------------|---|---------------|--|-------------|
| 15 |  | 15-1 | Tan Mastic | Y | None Detected |  | 100% qu, bi |
|----|--|------|------------|---|---------------|--|-------------|


|  |  |      |            |   |               |  |             |
|--|--|------|------------|---|---------------|--|-------------|
|  |  | 15-2 | Black Foam | Y | None Detected |  | 100% qu, ot |
|--|--|------|------------|---|---------------|--|-------------|

|    |  |      |                |   |               |  |             |
|----|--|------|----------------|---|---------------|--|-------------|
| 16 |  | 16-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ca |
|----|--|------|----------------|---|---------------|--|-------------|


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

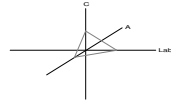
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            | 16-2 Black Mastic                             | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 17       |             |            | 17-1 Tan Floor Tile                           | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             |            | 17-2 Black Mastic                             | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 18       |             |            | 18-1 Tan Floor Tile                           | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             |            | 18-2 Black Mastic                             | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 19       |             |            | 19-1 Tan Floor Tile                           | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             |            | 19-2 Tan Mastic                               | Y                             | None Detected  |                                      | 100% qu, bi                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

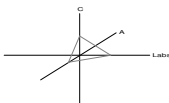
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 20       |             | 20-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 20-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 21       |             | 21-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 21-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 22       |             | 22-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 22-2       | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 23       |             | 23-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

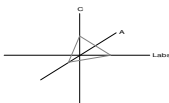
Approved Signatories:

  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br>#     | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|----------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          | 23-2        | Black Mastic   |   | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 24       | 24-1        | Tan Floor Tile |   | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          | 24-2        | Black Mastic   |   | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 25       | 25-1        | Red Cove Base  |   | Y                             | None Detected  |                                      | 100% qu, ma                   |
| 26       | 26-1        | Red Cove Base  |   | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          | 26-2        | Tan Mastic     |   | Y                             | None Detected  | 4% wo                                | 96% qu, bi                    |
| 27       | 27-1        | Red Cove Base  |   | Y                             | None Detected  |                                      | 100% qu, ma                   |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

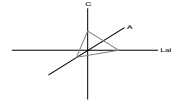
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested





## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

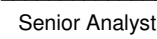
| Sample # | Com<br>ment | Layer<br># | Analysts Physical<br>Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|--|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            | 27-2 Tan Mastic                                  | Y                             | None Detected  | 4% wo                                | 96% qu, bi                    |
| 28       |             | 28-1       | Tan Surfaced Gray CMU                            | N                             | None Detected  |                                      | 100% qu, ma, bi,<br>ca        |
| 29       |             | 29-1       | Tan Surfaced Gray CMU                            | N                             | None Detected  |                                      | 100% qu, ma, bi,<br>ca        |
| 30       |             | 30-1       | Tan Surfaced Gray CMU                            | N                             | None Detected  |                                      | 100% qu, ma, bi,<br>ca        |
| 31       |             | 31-1       | Tan Ceramic Tile                                 | Y                             | None Detected  |                                      | 100% qu, ma, ot               |
|          |             | 31-2       | White Grout                                      | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 32       |             | 32-1       | Tan Ceramic Tile                                 | Y                             | None Detected  |                                      | 100% qu, ma, ot               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

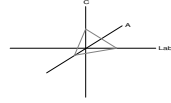
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br>#        | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|-------------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          | 32-2        | White Grout       |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
| 33       | 33-1        | Tan Ceramic Tile  |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ot               |
|          | 33-2        | White Grout       |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
| 34       | 34-1        | Gray Ceiling Tile |   | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 35       | 35-1        | Gray Ceiling Tile |   | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 36       | 36-1        | Gray Ceiling Tile |   | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 37       | 37-1        | Gray Sealant      |   | Y                             | <b>None Detected</b>                                     | 6% ce                                | 94% qu, ma                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

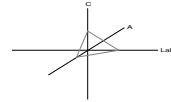
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 38       |             | 38-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     | 6% ce                                | 94% qu, ma                    |
| 39       |             | 39-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     | 6% ce                                | 94% qu, ma                    |
| 40       |             | 40-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 41       |             | 41-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 42       |             | 42-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 43       |             |            | White Surfaced White                          |                               |  |                                      | 100% qu ,mi, bi, ca           |
|          |             | 43-1       | Compound                                      | N                             | <b>None Detected</b>                                     |                                      |                               |
|          |             | 43-2       | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

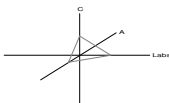
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 44       |             | 44-1       | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |
|          |             | 44-2       | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 45       |             | 45-1       | Tan Surfaced White Compound                   | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |
|          |             | 45-2       | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 46       |             | 46-1       | Tan Surfaced White Compound                   | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |
|          |             | 46-2       | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 47       |             | 47-1       | White Textured Surfacing                      | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

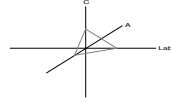
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          | 47-2        |            | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 48       | 48-1        |            | Tan Surfaced White Compound                   | N                             | None Detected  |                                      | 100% qu ,mi, bi,<br>ca        |
|          | 48-2        |            | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 49       | 49-1        |            | Tan Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          | 49-2        |            | White Grout                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 50       | 50-1        |            | Tan Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          | 50-2        |            | White Grout                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

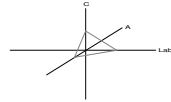
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 51       |             | 51-1       | Tan Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             | 51-2       | White Grout                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 52       |             | 52-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 52-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 53       |             | 53-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |
|          |             | 53-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 54       |             | 54-1       | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ca                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

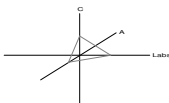
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|    |      |                |  |   |                |  |             |
|----|------|----------------|--|---|----------------|--|-------------|
|    | 54-2 | Tan Mastic     |  | Y | None Detected  |  | 100% qu, bi |
| 55 | 55-1 | Brown Flooring |  | Y | None Detected  |  | 100% qu, ma |
| 56 | 56-1 | Brown Flooring |  | Y | None Detected  |  | 100% qu, ma |
| 57 | 57-1 | Brown Flooring |  | Y | None Detected  |  | 100% qu, ma |
| 58 | 58-1 | Tan Linoleum   |  | Y | 15% Chrysotile |  | 85% qu, ma  |
| 4  | 58-2 | Tan Mastic     |  | N |                |  |             |
| 59 | 59-1 | Tan Linoleum   |  | Y | 15% Chrysotile |  | 85% qu, ma  |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

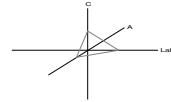
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical<br>Subsample | Description of | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|--------------------------------|----------------|-------------------------------|--|--------------------------------------|-------------------------------|
| 60       |             | 60-1       | Tan Linoleum                   |                | Y                             | 15% Chrysotile   |                                      | 85% qu, ma                    |
| 61       |             | 61-1       | Tan Linoleum                   |                | Y                             | None Detected  | 15% ce                               | 85% qu, ma                    |
| 62       |             | 62-1       | Tan Linoleum                   |                | Y                             | None Detected  | 15% ce                               | 85% qu, ma                    |
| 63       |             | 63-1       | Tan Linoleum                   |                | Y                             | None Detected  | 15% ce                               | 85% qu, ma                    |
|          |             | 63-2       | Tan Mastic                     |                | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 64       |             | 64-1       | Tan Linoleum                   |                | Y                             | 15% Chrysotile   |                                      | 85% qu, ma                    |
| 65       |             | 65-1       | Tan Linoleum                   |                | Y                             | 15% Chrysotile   |                                      | 85% qu, ma                    |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

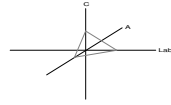
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested





## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 66       |             | 66-1       | Tan Linoleum                                  | Y                             | 15% Chrysotile   |                                      | 85% qu, ma                    |
| 67       |             | 67-1       | Tan Cove Base                                 | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          |             | 67-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 68       |             | 68-1       | Tan Cove Base                                 | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          |             | 68-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 69       |             | 69-1       | Tan Cove Base                                 | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          |             | 69-2       | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

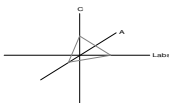
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 70       |             | 70-1       | Yellow Ceramic Tile                           | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca, ot               |
|          |             | 70-2       | Tan Mastic                                    | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |
| 71       |             | 71-1       | Yellow Ceramic Tile                           | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca, ot               |
|          |             | 71-2       | Gray Grout                                    | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
| 72       |             | 72-1       | Yellow Ceramic Tile                           | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca, ot               |
|          |             | 72-2       | Gray Grout                                    | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
| 73       |             | 73-1       | Red Ceramic Tile                              | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca, ot               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

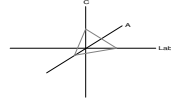
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            |   |                               |  |                                      |                               |
|          |             |            | 73-2 Gray Grout                               | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 74       |             |            | 74-1 Red Ceramic Tile                         | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             |            | 74-2 Gray Grout                               | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 75       |             |            | 75-1 Red Ceramic Tile                         | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             |            | 75-2 Gray Grout                               | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 76       |             |            | 76-1 Gray Plaster                             | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 77       |             |            | 77-1 Tan Surfaced White Compound              | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

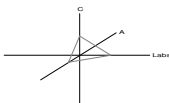
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            | 77-2 Gray Plaster                             | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 78       |             |            | 78-1 Gray Plaster                             | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 79       |             |            | 79-1 Tan Covering                             | Y                             | None Detected  | 70% ce                               | 30% qu, ma                    |
| 80       |             |            | 80-1 Tan Covering                             | Y                             | None Detected  | 70% ce                               | 30% qu, ma                    |
| 81       |             |            | 81-1 Tan Covering                             | Y                             | None Detected  | 70% ce                               | 30% qu, ma                    |
| 82       |             |            | 82-1 Pink Ceramic Tile                        | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             |            | 82-2 Tan Grout                                | Y                             | None Detected  |                                      | 100% qu, ma, ca               |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

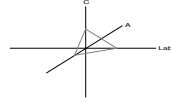
Approved Signatories:

  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

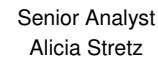
| Sample # | Com<br>ment | Layer<br># | Analysts Physical<br>Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|--|-------------------------------|--|--------------------------------------|-------------------------------|
| 83       |             | 83-1       | Pink Ceramic Tile                                | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
| 84       |             | 84-1       | Pink Ceramic Tile                                | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
| 85       |             | 85-1       | White Surfaced Gray CMU                          | N                             | None Detected  |                                      | 100% qu, ma, ca               |
| 86       |             | 86-1       | White Surfaced Gray CMU                          | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
| 87       |             | 87-1       | White Surfaced Gray CMU                          | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
| 88       |             | 88-1       | Gray Sealant                                     | Y                             | None Detected  | 6% ce                                | 94% qu, ma                    |
| 89       |             | 89-1       | Gray Sealant                                     | Y                             | None Detected  | 6% ce                                | 94% qu, ma                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

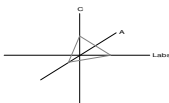
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 90       |             | 90-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     | 6% ce                                | 94% qu, ma                    |
| 91       |             | 91-1       | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 92       |             | 92-1       | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 93       |             | 93-1       | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 94       |             | 94-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 95       |             | 95-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 96       |             | 96-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

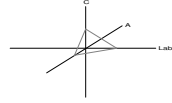
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

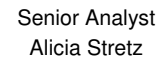
| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 97       |             | 97-1       | Gray Sealant                                  | N                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, bi,<br>ca        |
| 98       |             | 98-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, bi,<br>ca        |
| 99       |             | 99-1       | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, bi,<br>ca        |
| 100      |             | 100-1      | Gray Sealant                                  | N                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, ma, bi,<br>ca         |
| 101      |             | 101-1      | Gray Sealant                                  | N                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, ma, bi,<br>ca         |
| 102      |             | 102-1      | Gray Sealant                                  | N                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, ma, bi,<br>ca         |
| 103      |             | 103-1      | Gray Sealant                                  | N                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, ma, bi,<br>ca         |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

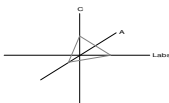
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 104      |             | 104-1      | Gray Sealant                                  | N                             | 3% Chrysotile  |                                      | 97% qu, ma, bi,<br>ca         |
| 105      |             | 105-1      | Gray Sealant                                  | N                             | 3% Chrysotile  |                                      | 97% qu, ma, bi,<br>ca         |
| 106      |             | 106-1      | Gray Mortar                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 107      |             | 107-1      | Gray Mortar                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 108      |             | 108-1      | Gray Mortar                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 109      |             | 109-1      | Gray Sealant                                  | Y                             | None Detected  |                                      | 100% qu, ma                   |
| 110      |             | 110-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, ma                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

  
David Darby  
Analyst

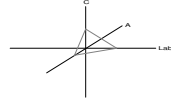
  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested





## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 111      |             | 111-1      | White Sealant                                 | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 112      |             | 112-1      | Tan Covering                                  | Y                             | <b>None Detected</b>                                     | 70% ce                               | 30% qu, ma                    |
|          |             | 112-2      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |
| 113      |             | 113-1      | Tan Covering                                  | Y                             | <b>None Detected</b>                                     | 70% ce                               | 30% qu, ma                    |
|          |             | 113-2      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |
| 114      |             | 114-1      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |
| 115      |             | 115-1      | White Compound                                | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

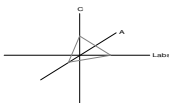
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 116      |             | 116-1      | White Compound                                | Y                             | None Detected  |                                      | 100% qu, mi, ca               |
| 117      |             | 117-1      | White Compound                                | Y                             | None Detected  |                                      | 100% qu, mi, ca               |
| 118      |             | 118-1      | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 119      |             | 119-1      | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 120      |             | 120-1      | Tan Mastic                                    | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 121      |             | 121-1      | Gray Sealant                                  | Y                             | None Detected  | 6% ce                                | 94% qu, ma                    |
| 122      |             | 122-1      | Gray Sealant                                  | Y                             | None Detected  | 6% ce                                | 94% qu, ma                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

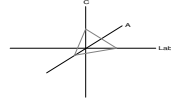
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 123      |             | 123-1      | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     | 6% ce                                | 94% qu, ma                    |
| 124      |             | 124-1      | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 125      |             | 125-1      | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 126      |             | 126-1      | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 127      |             | 127-1      | Gray Mortar                                   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
| 128      |             | 128-1      | Gray Mortar                                   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
| 129      |             | 129-1      | Gray Mortar                                   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

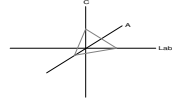
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 130      |             | 130-1      | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 131      |             | 131-1      | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 132      |             | 132-1      | Gray Sealant                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma                   |
| 133      |             | 133-1      | Gray Plaster                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
|          |             | 133-2      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |
|          |             |            | Tan Surfaced White Finishing                  |                               |  |                                      | 100% qu, ma, bi,              |
| 134      |             | 134-1      | Plaster                                       | N                             | <b>None Detected</b>                                     |                                      | ca                            |
|          |             | 134-2      | Gray Plaster                                  | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

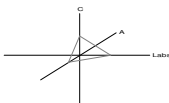
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 135      |             | 135-1      | Tan Surfaced White Finishing<br>Plaster       | N                             | None Detected  |                                      | 100% qu, ma, bi,<br>ca        |
|          |             | 135-2      | Gray Plaster                                  | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 136      |             | 136-1      | Gray Sealant                                  | Y                             | None Detected  |                                      | 100% qu, ma                   |
| 137      |             | 137-1      | Gray Sealant                                  | Y                             | None Detected  |                                      | 100% qu, ma                   |
| 138      |             | 138-1      | Gray Sealant                                  | Y                             | None Detected  |                                      | 100% qu, ma                   |
| 139      |             | 139-1      | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 140      |             | 140-1      | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

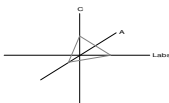
Approved Signatories:

  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 141      |             | 141-1      | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 142      |             | 142-1      | White Sealant on Wrap                         | N                             | 2% Chrysotile  | 40% ce                               | 58% qu, ma                    |
| 143      |             | 143-1      | White Sealant on Wrap                         | N                             | 2% Chrysotile  | 40% ce                               | 58% qu, ma                    |
| 144      |             | 144-1      | White Sealant on Wrap                         | N                             | 2% Chrysotile  | 40% ce                               | 58% qu, ma                    |
| 145      |             | 145-1      | Black Tar                                     | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 146      |             | 146-1      | Black Tar                                     | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 147      |             | 147-1      | Black Tar                                     | Y                             | None Detected  |                                      | 100% qu, bi                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

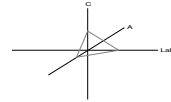
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 148      |             | 148-1      | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |
|          |             | 148-2      | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 149      |             | 149-1      | White Compound                                | Y                             | None Detected  |                                      | 100% qu, mi, ca               |
|          |             | 149-2      | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 150      |             | 150-1      | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 151      |             | 151-1      | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |
| 152      |             | 152-1      | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

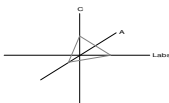
Approved Signatories:

  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          | 152-2       |            | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 153      | 153-1       |            | White Compound                                | Y                             | None Detected  |                                      | 100% qu, mi, ca               |
|          | 153-2       |            | White Drywall with Paper                      | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 154      | 154-1       |            | Tan Flooring                                  | Y                             | None Detected  |                                      | 100% qu, ca                   |
| 155      | 155-1       |            | Tan Flooring                                  | Y                             | None Detected  |                                      | 100% qu, ca                   |
| 156      | 156-1       |            | Tan Flooring                                  | Y                             | None Detected  |                                      | 100% qu, ca                   |
| 157      | 157-1       |            | White Linoleum                                | Y                             | None Detected  | 15% ce                               | 85% qu, ma                    |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

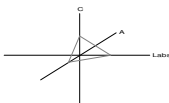
  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested





## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 158      |             | 158-1      | White Linoleum                                | Y                             | <b>None Detected</b>                                     | 15% ce                               | 85% qu, ma                    |
| 159      |             | 159-1      | White Linoleum                                | Y                             | <b>None Detected</b>                                     | 15% ce                               | 85% qu, ma                    |
| 160      |             | 160-1      | Tan Floor Tile                                | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca                   |
|          |             | 160-2      | Tan Mastic                                    | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |
| 161      |             | 161-1      | Tan Floor Tile                                | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca                   |
|          |             | 161-2      | Tan Mastic                                    | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |
| 162      |             | 162-1      | Tan Floor Tile                                | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ca                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

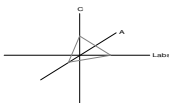
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            | 162-2 Tan Mastic                              | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 163      |             |            | 163-1 Tan Mastic                              | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 164      |             |            | 164-1 Tan Mastic                              | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 165      |             |            | 165-1 Tan Mastic                              | Y                             | None Detected  |                                      | 100% qu, bi                   |
|          |             |            | 165-2 Gray Felt                               | Y                             | None Detected  | 80% ce                               | 20% qu, ma                    |
| 166      |             |            | 166-1 Tan Fiberboard                          | Y                             | None Detected  | 100% ce                              |                               |
| 167      |             |            | 167-1 Tan Fiberboard                          | Y                             | None Detected  | 100% ce                              |                               |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

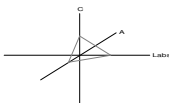
Approved Signatories:

  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 168      |             | 168-1      | Tan Fiberboard                                | Y                             | None Detected  | 100% ce                              |                               |
| 169      |             | 169-1      | Brown Mastic                                  | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 170      |             | 170-1      | Brown Mastic                                  | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 171      |             | 171-1      | Brown Mastic                                  | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 172      |             | 172-1      | White Ceiling Tile                            | Y                             | None Detected  | 80% ce                               | 20% qu, ma                    |
| 173      |             | 173-1      | White Ceiling Tile                            | Y                             | None Detected  | 80% ce                               | 20% qu, ma                    |
| 174      |             | 174-1      | White Ceiling Tile                            | Y                             | None Detected  | 80% ce                               | 20% qu, ma                    |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

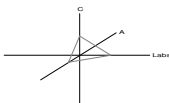
Approved Signatories:

  
David Darby  
Analyst

  
Senior Analyst  
Alicia Stretz  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 175      |             | 175-1      | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 176      |             | 176-1      | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 177      |             | 177-1      | Gray Ceiling Tile                             | Y                             | <b>None Detected</b>                                     | 15% fg<br>50% ce                     | 35% qu, ma, pe                |
| 178      |             | 178-1      | White Textured Surfacing                      | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |
|          |             | 178-2      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |
| 179      |             | 179-1      | White Compound                                | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, ca               |
|          |             | 179-2      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

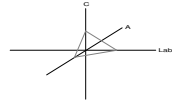
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 180      |             | 180-1      | White Drywall with Paper                      | N                             | <b>None Detected</b>                                     | 10% ce                               | 90% qu, gy                    |
| 181      |             | 181-1      | White Surfaced White<br>Compound              | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |
| 182      |             | 182-1      | White Surfaced White<br>Compound              | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |
| 183      |             | 183-1      | White Surfaced White<br>Compound              | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |
| 184      |             | 184-1      | White Surfaced Gray Plaster                   | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |
| 185      |             | 185-1      | White Surfaced Gray Plaster                   | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |
| 186      |             | 186-1      | White Surfaced Gray Plaster                   | N                             | <b>None Detected</b>                                     |                                      | 100% qu, mi, bi,<br>ca        |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

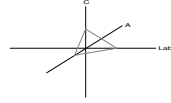
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 187      |             | 187-1      | Brown Mastic                                  | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 188      |             | 188-1      | Brown Mastic                                  | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 189      |             | 189-1      | Brown Mastic                                  | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 190      |             | 190-1      | Tan Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             | 190-2      | Tan Grout                                     | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 191      |             | 191-1      | Tan Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             | 191-2      | Tan Grout                                     | Y                             | None Detected  |                                      | 100% qu, ma, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

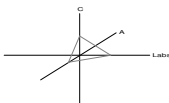
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|     |  |       |                  |   |               |  |                 |
|-----|--|-------|------------------|---|---------------|--|-----------------|
| 192 |  | 192-1 | Tan Ceramic Tile | Y | None Detected |  | 100% qu, ca, ot |
|-----|--|-------|------------------|---|---------------|--|-----------------|

|  |  |       |           |   |               |  |                 |
|--|--|-------|-----------|---|---------------|--|-----------------|
|  |  | 192-2 | Tan Grout | Y | None Detected |  | 100% qu, ma, ca |
|--|--|-------|-----------|---|---------------|--|-----------------|

|     |  |       |                |   |               |  |             |
|-----|--|-------|----------------|---|---------------|--|-------------|
| 193 |  | 193-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ca |
|-----|--|-------|----------------|---|---------------|--|-------------|

|  |  |       |            |   |               |  |             |
|--|--|-------|------------|---|---------------|--|-------------|
|  |  | 193-2 | Tan Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|------------|---|---------------|--|-------------|

|     |  |       |                |   |               |  |             |
|-----|--|-------|----------------|---|---------------|--|-------------|
| 194 |  | 194-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ca |
|-----|--|-------|----------------|---|---------------|--|-------------|


|  |  |       |            |   |               |  |             |
|--|--|-------|------------|---|---------------|--|-------------|
|  |  | 194-2 | Tan Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|------------|---|---------------|--|-------------|

|     |  |       |                |   |               |  |             |
|-----|--|-------|----------------|---|---------------|--|-------------|
| 195 |  | 195-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ca |
|-----|--|-------|----------------|---|---------------|--|-------------|


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

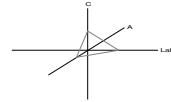
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          | 195-2       |            | Black and Tan Mastic                          | N                             | None Detected  |                                      | 100% qu, bi                   |
| 196      | 196-1       |            | Green Floor Tile                              | Y                             | 2% Chrysotile  |                                      | 98% qu, ma, ca                |
|          | 196-2       |            | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 197      | 197-1       |            | Green Floor Tile                              | Y                             | 2% Chrysotile  |                                      | 98% qu, ma, ca                |
|          | 197-2       |            | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |
| 198      | 198-1       |            | Green Floor Tile                              | Y                             | 2% Chrysotile  |                                      | 98% qu, ma, ca                |
|          | 198-2       |            | Black Mastic                                  | Y                             | 4% Chrysotile  |                                      | 96% qu, bi                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

  
David Darby  
Analyst

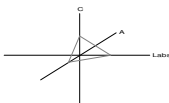
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested





## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 199      |             | 199-1      | Yellow Ceramic Tile                           | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             | 199-2      | Gray Grout                                    | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 200      |             | 200-1      | Yellow Ceramic Tile                           | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             | 200-2      | Gray Grout                                    | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 201      |             | 201-1      | Yellow Ceramic Tile                           | Y                             | None Detected  |                                      | 100% qu, ca, ot               |
|          |             | 201-2      | Gray Grout                                    | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 202      |             | 202-1      | White Compound                                | Y                             | None Detected  |                                      | 100% qu, mi, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

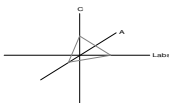
  
David Darby  
Analyst

Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            | 202-2 White Drywall with Paper                | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 203      |             |            | White Surfaced White<br>203-1 Compound        | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
|          |             |            | 203-2 White Drywall with Paper                | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 204      |             |            | White Surfaced White<br>204-1 Compound        | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
|          |             |            | 204-2 White Drywall with Paper                | N                             | None Detected  | 10% ce                               | 90% qu, gy                    |
| 205      |             |            | White Surfaced White<br>205-1 Compound        | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |
| 206      |             |            | White Surfaced White<br>206-1 Compound        | N                             | None Detected  |                                      | 100% qu, mi, bi,<br>ca        |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

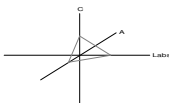
Zo Andriampenanana  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787

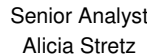
| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 207      |             | 207-1      | White Surfaced White Compound                 | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |
| 208      |             | 208-1      | White Surfaced Tan Compound                   | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |
|          |             | 208-2      | Tan Plaster                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 209      |             | 209-1      | White Surfaced Tan Compound                   | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |
|          |             | 209-2      | Tan Plaster                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 210      |             | 210-1      | White Surfaced Tan Compound                   | N                             | None Detected  |                                      | 100% qu, mi, bi, ca           |
|          |             | 210-2      | Tan Plaster                                   | Y                             | None Detected  |                                      | 100% qu, ma, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

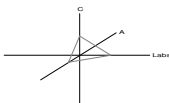
  
Zo Andriampenomanana  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|     |  |       |                |   |               |  |                 |
|-----|--|-------|----------------|---|---------------|--|-----------------|
| 211 |  | 211-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ma, ca |
|-----|--|-------|----------------|---|---------------|--|-----------------|

|  |  |       |               |   |               |  |             |
|--|--|-------|---------------|---|---------------|--|-------------|
|  |  | 211-2 | Yellow Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|---------------|---|---------------|--|-------------|

|     |  |       |                |   |               |  |                 |
|-----|--|-------|----------------|---|---------------|--|-----------------|
| 212 |  | 212-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ma, ca |
|-----|--|-------|----------------|---|---------------|--|-----------------|

|  |  |       |               |   |               |  |             |
|--|--|-------|---------------|---|---------------|--|-------------|
|  |  | 212-2 | Yellow Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|---------------|---|---------------|--|-------------|

|     |  |       |                |   |               |  |                 |
|-----|--|-------|----------------|---|---------------|--|-----------------|
| 213 |  | 213-1 | Tan Floor Tile | Y | None Detected |  | 100% qu, ma, ca |
|-----|--|-------|----------------|---|---------------|--|-----------------|

|  |  |       |               |   |               |  |             |
|--|--|-------|---------------|---|---------------|--|-------------|
|  |  | 213-2 | Yellow Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|---------------|---|---------------|--|-------------|

|     |  |       |              |   |                |  |            |
|-----|--|-------|--------------|---|----------------|--|------------|
| 214 |  | 214-1 | Tan Linoleum | N | 20% Chrysotile |  | 80% qu, ma |
|-----|--|-------|--------------|---|----------------|--|------------|

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

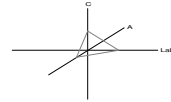
Zo Andriampenanana  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


**Phone #** 512-992-5383  
**Fax #** 512-597-8787


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          |             |            | 214-2 Black Mastic                            | Y                             | 5% Chrysotile  |                                      | 95% qu, bi                    |
| 215      |             |            | 215-1 Tan Linoleum                            | N                             | 20% Chrysotile   |                                      | 80% qu, ma                    |
|          |             |            | 215-2 Black Mastic                            | Y                             | 5% Chrysotile  |                                      | 95% qu, bi                    |
| 216      |             |            | 216-1 Tan Linoleum                            | N                             | 20% Chrysotile   |                                      | 80% qu, ma                    |
|          |             |            | 216-2 Black Mastic                            | Y                             | 5% Chrysotile  |                                      | 95% qu, bi                    |
| 217      |             |            | 217-1 Tan Floor Tile                          | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
|          |             |            | 217-2 Yellow and Black Mastic                 | N                             | 3% Chrysotile  |                                      | 97% qu, bi                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

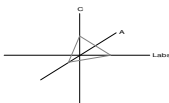
  
Zo Andriampenanana  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 218      |             | 218-1      | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
|          |             | 218-2      | Yellow and Black Mastic                       | N                             | 3% Chrysotile  |                                      | 97% qu, bi                    |
| 219      |             | 219-1      | Tan Linoleum                                  | N                             | 20% Chrysotile   |                                      | 80% qu, ma                    |
|          |             | 4          | 219-2 Brown Mastic                            | Y                             |  |                                      |                               |
| 220      |             | 220-1      | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
|          |             | 220-2      | Yellow Mastic                                 | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 221      |             | 221-1      | Tan Floor Tile                                | Y                             | None Detected  |                                      | 100% qu, ma, ca               |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

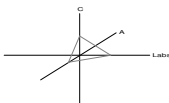
  
Zo Andriampenanana  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787


**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**


| Sample # | Com<br>ment            | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|------------------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 221-2    | Yellow Mastic          |            |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |
| 222      | 222-1 Tan Floor Tile   |            |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, ma, ca               |
|          | 222-2 Yellow Mastic    |            |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |
| 223      | 223-1 Brown Floor Tile |            |   | Y                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, ma, ca                |
|          | 223-2 Yellow Mastic    |            |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |
| 224      | 224-1 Brown Floor Tile |            |   | Y                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, ma, ca                |
|          | 224-2 Yellow Mastic    |            |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi                   |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

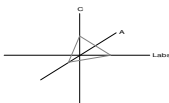
  
Zo Andriampenanana  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers
2. Fire Damage no significant fiber damages effecting fibrous percentages
3. Actinolite in association with Vermiculite
4. Layer not analyzed - attached to previous positive layer and contamination is suspected
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc
7. Contamination suspected from other building materials
8. Favorable scenario for water separation on vermiculite for possible analysis by another method
9. < 1% Result point counted positive
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|     |  |       |                  |   |               |  |                |
|-----|--|-------|------------------|---|---------------|--|----------------|
| 225 |  | 225-1 | Brown Floor Tile | Y | 3% Chrysotile |  | 97% qu, ma, ca |
|-----|--|-------|------------------|---|---------------|--|----------------|

|  |  |       |               |   |               |  |             |
|--|--|-------|---------------|---|---------------|--|-------------|
|  |  | 225-2 | Yellow Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|---------------|---|---------------|--|-------------|

|     |  |       |                |   |               |  |                 |
|-----|--|-------|----------------|---|---------------|--|-----------------|
| 226 |  | 226-1 | Red Floor Tile | Y | None Detected |  | 100% qu, ma, ca |
|-----|--|-------|----------------|---|---------------|--|-----------------|

|  |  |       |               |   |               |  |             |
|--|--|-------|---------------|---|---------------|--|-------------|
|  |  | 226-2 | Yellow Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|---------------|---|---------------|--|-------------|

|     |  |       |                |   |               |  |                 |
|-----|--|-------|----------------|---|---------------|--|-----------------|
| 227 |  | 227-1 | Red Floor Tile | Y | None Detected |  | 100% qu, ma, ca |
|-----|--|-------|----------------|---|---------------|--|-----------------|


|  |  |       |               |   |               |  |             |
|--|--|-------|---------------|---|---------------|--|-------------|
|  |  | 227-2 | Yellow Mastic | Y | None Detected |  | 100% qu, bi |
|--|--|-------|---------------|---|---------------|--|-------------|


|     |  |       |                |   |               |  |                 |
|-----|--|-------|----------------|---|---------------|--|-----------------|
| 228 |  | 228-1 | Red Floor Tile | Y | None Detected |  | 100% qu, ma, ca |
|-----|--|-------|----------------|---|---------------|--|-----------------|


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

  
Zo Andriampenanana  
Analyst

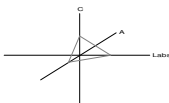
  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested





## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787

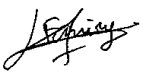
**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

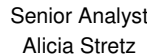
| Sample # | Com<br>ment | Layer<br>#              | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|-------------------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|          | 228-2       | Yellow Mastic           |   | Y                             | None Detected  |                                      | 100% qu, bi                   |
| 229      | 229-1       | Tan Cove Base           |   | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          | 229-2       | Yellow and Black Mastic |   | N                             | 3% Chrysotile  |                                      | 97% qu, bi                    |
| 230      | 230-1       | Tan Cove Base           |   | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          | 230-2       | Yellow and Black Mastic |   | N                             | 3% Chrysotile  |                                      | 97% qu, bi                    |
| 231      | 231-1       | Tan Cove Base           |   | Y                             | None Detected  |                                      | 100% qu, ma                   |
|          | 231-2       | Yellow and Black Mastic |   | N                             | 3% Chrysotile  |                                      | 97% qu, bi                    |


Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

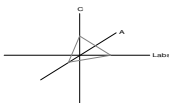
  
Zo Andriampenanana  
Analyst

  
Senior Analyst  
Alicia Stretz

  
Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|     |  |       |                          |   |                |       |                |
|-----|--|-------|--------------------------|---|----------------|-------|----------------|
| 232 |  | 232-1 | White Insulation on Mesh | N | 25% Chrysotile | 5% ce | 70% qu, ma, ca |
|-----|--|-------|--------------------------|---|----------------|-------|----------------|

|  |  |   |                  |   |  |  |  |
|--|--|---|------------------|---|--|--|--|
|  |  | 4 | 232-2 Black Felt | Y |  |  |  |
|--|--|---|------------------|---|--|--|--|

|     |  |  |  |   |                |       |                       |
|-----|--|--|--|---|----------------|-------|-----------------------|
| 233 |  |  | White Surfaced White<br>233-1 Insulation on Mesh | N | 25% Chrysotile | 5% ce | 70% qu, bi, ma,<br>ca |
|-----|--|--|--|---|----------------|-------|-----------------------|

|  |  |   |                  |   |  |  |  |
|--|--|---|------------------|---|--|--|--|
|  |  | 4 | 233-2 Black Felt | Y |  |  |  |
|--|--|---|------------------|---|--|--|--|

|     |  |  |  |   |                |       |                       |
|-----|--|--|--|---|----------------|-------|-----------------------|
| 234 |  |  | White Surfaced White<br>234-1 Insulation on Mesh | N | 25% Chrysotile | 5% ce | 70% qu, bi, ma,<br>ca |
|-----|--|--|--|---|----------------|-------|-----------------------|

|  |  |   |                  |   |  |  |  |
|--|--|---|------------------|---|--|--|--|
|  |  | 4 | 234-2 Black Felt | Y |  |  |  |
|--|--|---|------------------|---|--|--|--|

|     |  |  |                                |   |               |  |                        |
|-----|--|--|--------------------------------|---|---------------|--|------------------------|
| 235 |  |  | 235-1 White Textured Surfacing | Y | None Detected |  | 100% qu, bi, ma,<br>ca |
|-----|--|--|--------------------------------|---|---------------|--|------------------------|

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

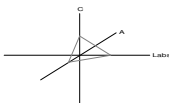
Alicia Stretz  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 236      |             | 236-1      | White Textured Surfacing                      | Y                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 237      |             | 237-1      | White Textured Surfacing                      | Y                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 238      |             | 238-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |
| 239      |             | 239-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |
| 240      |             | 240-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |
| 241      | 10          | 241-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |
| 242      | 10          | 242-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

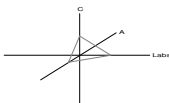
Alicia Stretz  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|

|     |    |       |               |   |               |                 |  |
|-----|----|-------|---------------|---|---------------|-----------------|--|
| 243 | 10 | 243-1 | White Sealant | Y | None Detected | 100% qu, bi, ca |  |
| 244 |    | 244-1 | Tan Mortar    | Y | None Detected | 100% qu, bi, ca |  |
| 245 |    | 245-1 | Tan Mortar    | Y | None Detected | 100% qu, bi, ca |  |
| 246 |    | 246-1 | Tan Mortar    | Y | None Detected | 100% qu, bi, ca |  |
| 247 |    | 247-1 | Black Tar     | Y | None Detected | 100% qu, bi     |  |
| 248 |    | 248-1 | Black Tar     | Y | None Detected | 100% qu, bi     |  |
| 249 |    | 249-1 | Black Tar     | Y | None Detected | 100% qu, bi     |  |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

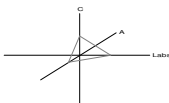
Alicia Stretz  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 250      |             | 250-1      | Black Debris                                  | N                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 251      |             | 251-1      | Black Debris                                  | N                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 252      |             | 252-1      | Black Debris                                  | N                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 253      |             | 253-1      | Red Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ma, ot,<br>ca        |
|          |             | 253-2      | Gray Grout                                    | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 254      |             | 254-1      | Red Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ma, ot,<br>ca        |
|          |             | 254-2      | Gray Grout                                    | Y                             | None Detected  |                                      | 100% qu, ma, ca               |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

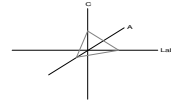
Alicia Stretz  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

**Phone #** 512-992-5383  
**Fax #** 512-597-8787

| Sample # | Com<br>ment | Layer<br># | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 255      |             | 255-1      | Red Ceramic Tile                              | Y                             | None Detected  |                                      | 100% qu, ma, ot,<br>ca        |
|          |             | 255-2      | Gray Grout                                    | Y                             | None Detected  |                                      | 100% qu, ma, ca               |
| 256      |             | 256-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 257      |             | 257-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 258      |             | 258-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ma,<br>ca        |
| 259      |             | 259-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |
| 260      |             | 260-1      | White Sealant                                 | Y                             | None Detected  |                                      | 100% qu, bi, ca               |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

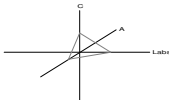
Alicia Stretz  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



## Polarized Light Asbestiform Materials Characterization

**Customer Info:** Attn: Wade Champion  
**Champion Environmental**  
8911 Capital of TX Hwy Bldg 3, Ste 3210  
Austin, TX 78759

**Customer Project:**  
Duval County Courthouse,  
21-1141  
**Turnaround Time:** 24 hr

**CA Labs Project #:**  
CBR21020914

Phone # 512-992-5383  
Fax # 512-597-8787

**Date:** 2/25/2021  
**Samples Received:** 2/24/2021  
**Date Of Sampling:** 2/9/2021  
**Purchase Order #:**

| Sample # | Com<br>ment | Layer<br>#         | Analysts Physical Description of<br>Subsample | Homo-<br>geneo<br>us<br>(Y/N) | Asbestos type /<br>calibrated visual<br>estimate percent | Non-asbestos fiber<br>type / percent | Non-fibrous type<br>/ percent |
|----------|-------------|--------------------|---|-------------------------------|--|--------------------------------------|-------------------------------|
| 261      | 261-1       | White Sealant      |   | Y                             | <b>None Detected</b>                                     |                                      | 100% qu, bi, ca               |
| 262      | 262-1       | Black Tar          |   | Y                             | <b>3% Chrysotile</b>                                     |                                      | 97% qu, bi                    |
| 263      | 263-1       | Black Tar and Felt |   | N                             | <b>6% Chrysotile</b>                                     | 10% ce                               | 84% qu, bi                    |
| 264      | 264-1       | Black Tar and Felt |   | N                             | <b>6% Chrysotile</b>                                     | 10% ce                               | 84% qu, bi                    |

Analysis Method: Interim (40CFR Part 763 Appendix E to Subpart E) / Improved (EPA-600 / R-93/116)  
Preparation Method: HCL acid washing for carbonate based samples, chemical reduction for organically bound components, oil immersion for  
identification of asbestos types by dispersion attaining / becke line method.

|                 |                  |                   |                          |
|-----------------|------------------|-------------------|--------------------------|
| ca - carbonate  | mi - mica        | fg - fiberglass   | ce - cellulose           |
| gypsum - gypsum | ve - vermiculite | mw - mineral wool | br - brucite             |
| bi - binder     | ot - other       | wo - wollastinite | ka - kaolin (clay)       |
| or - organic    | pe - perlite     | ta - talc         | pa - palygorskite (clay) |
| ma - matrix     | qu - quartz      | sy - synthetic    |                          |

Approved Signatories:

Alicia Stretz  
Analyst

Senior Analyst  
Alicia Stretz

Laboratory Director  
Chris Williams

1. Fire Damage significant fiber damage - reported percentages reflect unaltered fibers  
2. Fire Damage no significant fiber damages effecting fibrous percentages  
3. Actinolite in association with Vermiculite  
4. Layer not analyzed - attached to previous positive layer and contamination is suspected  
5. Not enough sample to analyze

6. Anthophyllite in association with Fibrous Talc  
7. Contamination suspected from other building materials  
8. Favorable scenario for water separation on vermiculite for possible analysis by another method  
9. < 1% Result point counted positive  
10. TEM analysis suggested



C.A. Labs, LLC.  
12232 Industripex  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
Mobile: 225-993-3471

### Chain of Custody

|                 |  |                  |   |
|-----------------|--|------------------|---|
| Client Name:    | Champion Environmental Consulting                    | CA Labs job #    | CBR 21020914  |
| Client Address: | 109 W 7th St<br>Suite 210<br>Georgetown, Texas 78626 | Billing Address: | (if different)  |
| phone number:   | 512 992 5383   | Send Reports to: | wchampion@c-eci.com   |
| fax number:     | 512 5978787  | Project Name:    | Duval County Courthouse   |
| Project Number: | 21-1141  | Reports Results  | VIA: EMAIL <input checked="" type="checkbox"/> FAX <input type="checkbox"/> VERBAL <input type="checkbox"/> |
| Contact:        | Wade Champion  |                  |   |

|                            |                                 |                         |
|----------------------------|---------------------------------|-------------------------|
| Total # Samples Submitted: | Total # Samples to be Analyzed: | Material Matrix:        |
| 264                        | 264                             | Air <u>Bulk</u> / Water |

Asbestos: *please call ahead for availability of all rush and/or after hours samples.*

| TEM                                | TA Time | PLM                                | TA Time | Optical / IAQ        | TA Time   |
|------------------------------------|---------|------------------------------------|---------|----------------------|-----------|
| <i>Circle analysis and TA time</i> |         | <i>Circle analysis and TA time</i> |         |                      |           |
| AHERA                              | 4 hour  | Improved                           | 4 hour  | Allergen Particle:   | 2 hour    |
| EPA Level II                       | 8 hour  | Interim                            | 8 hour  | tape/bulk/swab       | 4 hour    |
| Drinking Water                     | 16 hour |                                    | 16 hour | Cyclex-d cassettes   | 8 hour    |
| Wipe                               | 24 hour | AHERA                              | 24 hour | Air-o-cell cassettes | 16 hour   |
| Micro-vac                          | 2 days  |                                    | 2 days  | Anderson cultures    | 24 hour   |
| NIOSH 7402                         | 3 days  | Point Count -                      | 3 days  | Bulk/swab cultures   | 2 days    |
| Chatfield Bulk                     | 5 days  | (NESHAPS)                          | 5 days  | Bacteria cultures    | 3 days    |
|                                    |         |                                    |         | PCM: NIOSH 7400      | 5-10 days |

Lead: *Circle analysis and TA time*

|          |             |       |        |        |            |           |
|----------|-------------|-------|--------|--------|------------|-----------|
| Matrix:  | Paint Chips | Soil  | Air    | Wipes  | Wastewater | TCLP      |
| TA Time: | 8 hour      | 1 day | 2 days | 3 days | 5 days     | 6-10 days |

Sample Information:

| Sample Number: | Sample Location:      | Sample Date/Time: | Sample Volume (L) |
|----------------|-----------------------|-------------------|-------------------|
| 1              | DW/WT - 2nd FLR Annex | 2-9-21 11:500     |                   |
| 2              | ↓                     | ↓                 |                   |
| 3              | ↓                     | ↓                 |                   |
| 4              | 3C - 2nd FLR          | ↓                 |                   |
| 5              | ↓                     | ↓                 |                   |

\\data\wordpro\forms\ChainofCustody.lwp

Revision 2 3/12/01

Page 1 of 12

Custody Information:

Samples relinquished:

*[Signature]* 2-19-21/1800  
Signature / Date / Time

Samples received:

*[Signature]* 2-24-2021 12:15PM  
Signature / Date / Time

Samples relinquished:

Signature / Date / Time

Samples received:

Signature / Date / Time





12232 Industriplex  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting

Client Address: 109 W 7th St, Ste 210

Georgetown, Texas 78626

phone number: 512-992-5383

fax number: \_\_\_\_\_

Project Number: 21-1141

Contact: Wade Champion

CA Labs job # CBR 21020914

Billing Address: \_\_\_\_\_

(if different) \_\_\_\_\_

Send Reports to: wchampion@c-eci.com

Project Name: Dwight County Courthouse

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:               | Sample Date/Time: | Sample Volume (L) |
|----------------|--------------------------------|-------------------|-------------------|
| 6              | 3C - 2nd FLR Annex             | 2-9-21 1:500      |                   |
| 7              | 12x12 FT/M Top Layer - 2nd FLR |                   |                   |
| 8              | ↓ ↓ ↓                          |                   |                   |
| 9              |                                |                   |                   |
| 10             | FT/M Bottom Layer 2nd FLR      |                   |                   |
| 11             | ↓ ↓ ↓                          |                   |                   |
| 12             |                                |                   |                   |
| 13             | Carpet Mastic 2nd FLR          |                   |                   |
| 14             | ↓ ↓ ↓                          |                   |                   |
| 15             |                                |                   |                   |
| 16             | FT/M 2nd FLR - <del>100</del>  |                   |                   |
| 17             | ↓ ↓ ↓                          |                   |                   |
| 18             |                                |                   |                   |
| 19             | FT/M - 2nd FLR                 |                   |                   |
| 20             | ↓ ↓ ↓                          |                   |                   |
| 21             |                                |                   |                   |
| 22             | FT/M - 2nd FLR - Brown         |                   |                   |
| 23             | ↓ ↓ ↓                          |                   |                   |
| 24             |                                |                   |                   |
| 25             | CBM 2nd FLR                    |                   |                   |
| 26             | ↓ ↓ ↓                          |                   |                   |
| 27             |                                |                   |                   |
| 28             | CMU wall text 2nd FLR          |                   |                   |
| 29             | ↓ ↓ ↓                          |                   |                   |

Pg 2 of 12

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

[Signature] / 2-19-21 / 1500  
Signature / Date / Time

Samples received:

[Signature] / 2-24-2021 12:15 PM  
Signature / Date / Time

Samples relinquished:

\_\_\_\_\_  
Signature / Date / Time

Samples received:

\_\_\_\_\_  
Signature / Date / Time



12232 Industripark  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting

Client Address: 109 W 7th St, Ste 210

Georgetown, Texas 78626

phone number: 512-992-5383

fax number: \_\_\_\_\_

Project Number: 21-1141

Contact: Wade Champion

CA Labs job # CBR 21020914

Billing Address: \_\_\_\_\_

(if different) \_\_\_\_\_

Send Reports to: wchampion@c-eci.com

Project Name: Davall County Courthouse

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:              | Sample Date/Time: | Sample Volume (L) |
|----------------|-------------------------------|-------------------|-------------------|
| 30             | CMU wall text 2nd FLR-Annex   | 2-9-21 1500       |                   |
| 31             | Ceramic tile/grout 2nd FLR RR |                   |                   |
| 32             | ↓ ↓ ↓                         |                   |                   |
| 33             | ↓ ↓ ↓                         |                   |                   |
| 34             | 2x2 CT 2nd FLR-ceiling tile   |                   |                   |
| 35             | ↓ ↓ ↓                         |                   |                   |
| 36             | ↓ ↓ ↓                         |                   |                   |
| 37             | Sink under-coat 2nd FLR-Annex |                   |                   |
| 38             | ↓ ↓ ↓                         |                   |                   |
| 39             | ↓ ↓ ↓                         |                   |                   |
| 40             | Interior window Sealant       |                   |                   |
| 41             | ↓ ↓ ↓                         |                   |                   |
| 42             | ↓ ↓ ↓                         |                   |                   |
| 43             | WT/DW - 1st FLR Annex         |                   |                   |
| 44             | ↓ ↓ ↓                         |                   |                   |
| 45             | ↓ ↓ ↓                         |                   |                   |
| 46             | 3C - 1st FLR                  |                   |                   |
| 47             | ↓ ↓ ↓                         |                   |                   |
| 48             | ↓ ↓ ↓                         |                   |                   |
| 49             | 18x18 Ceramic tile/grout      |                   |                   |
| 50             | ↓ ↓ ↓                         |                   |                   |
| 51             | ↓ ↓ ↓                         |                   |                   |
| 52             | FT/M District clerk Ton       |                   |                   |
| 53             | ↓ ↓ ↓                         |                   |                   |

For internal use:


Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

 2-9-21/1800  
Signature / Date / Time

Samples received:

 12:15PM  
2-24-2021  
Signature / Date / Time

Samples relinquished:

Signature / Date / Time

Samples received:

Signature / Date / Time



12232 Industripark  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting

Client Address: 109 W 7th St, Ste 210

Georgetown, Texas 78626

phone number: 512-992-5383

fax number: \_\_\_\_\_

Project Number: 21-1141

Contact: Wade Champion

CA Labs job # CBR 21020914

Billing Address: \_\_\_\_\_

(if different) \_\_\_\_\_

Send Reports to: wchampion@c-eci.com

Project Name: Durwall County Courthouse

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:                | Sample Date/Time: | Sample Volume (L) |
|----------------|---------------------------------|-------------------|-------------------|
| 54             | FT/M - Tan District clerk Annex | 2-9-21 1500       |                   |
| 55             | Roller Flooring - Brown 1st FLR |                   |                   |
| 56             | ↓ ↓ ↓                           |                   |                   |
| 57             | ↓ ↓ ↓                           |                   |                   |
| 58             | Yellow Linoleum 1st FLR Annex   |                   |                   |
| 59             | ↓ ↓ ↓                           |                   |                   |
| 60             | ↓ ↓ ↓                           |                   |                   |
| 61             | Rock pattern Linoleum 1st FLR   |                   |                   |
| 62             | ↓ ↓ ↓                           |                   |                   |
| 63             | ↓ ↓ ↓                           |                   |                   |
| 64             | Yellow Hinder pattern Linoleum  |                   |                   |
| 65             | ↓ ↓ ↓                           |                   |                   |
| 66             | ↓ ↓ ↓                           |                   |                   |
| 67             | Cove base Mastic                |                   |                   |
| 68             | ↓ ↓ ↓                           |                   |                   |
| 69             | ↓ ↓ ↓                           |                   |                   |
| 70             | Yellow ceramic tile/grout       |                   |                   |
| 71             | ↓ ↓ ↓                           |                   |                   |
| 72             | ↓ ↓ ↓                           |                   |                   |
| 73             | Red ceramic tile/grout          |                   |                   |
| 74             | ↓ ↓ ↓                           |                   |                   |
| 75             | ↓ ↓ ↓                           |                   |                   |
| 76             | Plaster + ext                   |                   |                   |
| 77             | ↓ ↓ ↓                           |                   |                   |

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

[Signature] 2-19-21/1800  
Signature / Date / Time

Samples relinquished:

Signature / Date / Time

Samples received:

[Signature] 2-24-2021 12:15PM  
Signature / Date / Time

Samples received:

Signature / Date / Time



12232 Industripark  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting

Client Address: 109 W 7th St, Ste 210

Georgetown, Texas 78626

phone number: 512-992-5383

fax number: \_\_\_\_\_

Project Number: 21-1141

Contact: Wade Champion

CA Labs job # CBR 21020914

Billing Address: \_\_\_\_\_

(if different) \_\_\_\_\_

Send Reports to: wchampion@c-eci.com

Project Name: Duval County Courthouse

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:                   | Sample Date/Time: | Sample Volume (L) |
|----------------|------------------------------------|-------------------|-------------------|
| 78             | Plaster text 1st FLR Annex         | 2-9-21 1500       |                   |
| 79             | wallpaper 1st FLR                  |                   |                   |
| 80             | ↓                                  |                   |                   |
| 81             | ↓                                  |                   |                   |
| 82             | 2x2 ceramic tile/grout BR          |                   |                   |
| 83             | ↓                                  |                   |                   |
| 84             | ↓                                  |                   |                   |
| 85             | CMU text 1st FLR Annex             |                   |                   |
| 86             | ↓                                  |                   |                   |
| 87             | ↓                                  |                   |                   |
| 88             | Sink undercoat 1st FLR             |                   |                   |
| 89             | ↓                                  |                   |                   |
| 90             | ↓                                  |                   |                   |
| 91             | 2x4 ceiling tiles                  |                   |                   |
| 92             | ↓                                  |                   |                   |
| 93             | ↓                                  |                   |                   |
| 94             | Exterior Door/window sealant Annex |                   |                   |
| 95             | ↓                                  |                   |                   |
| 96             | ↓                                  |                   |                   |
| 97             | Window Glazing - Annex             |                   |                   |
| 98             | ↓                                  |                   |                   |
| 99             | ↓                                  |                   |                   |
| 100            | Exterior window sealant            |                   |                   |
| 101            | ↓                                  |                   |                   |

pg 5 of 12

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

[Signature] / 2-9-21 / 1800  
Signature / Date / Time

Samples received:

[Signature] / 2-24-2021  
Signature / Date / Time

12:15PM

Samples relinquished:

Signature / Date / Time

Samples received:

Signature / Date / Time



12232 Industripex  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting

CA Labs job # CBR 21020914

Client Address: 109 W 7th St, Ste 210

Billing Address:

Georgetown, Texas 78626

(if different)

phone number: 512-992-5383

fax number:

Send Reports to: wchampion@c-eci.com

Project Number: 21-1141

Project Name: Dinwiddie County Courthouse

Contact: Wade Champion

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:                | Sample Date/Time: | Sample Volume (L) |
|----------------|---------------------------------|-------------------|-------------------|
| 102            | Exterior window sealant - Annex | 2-9-21 1500       |                   |
| 103            | Ext Door sealant                |                   |                   |
| 104            | ↓ ↓                             |                   |                   |
| 105            |                                 |                   |                   |
| 106            | Brick Mortar                    |                   |                   |
| 107            | ↓ ↓                             |                   |                   |
| 108            |                                 |                   |                   |
| 109            | Roof sealant                    |                   |                   |
| 110            | ↓ ↓                             |                   |                   |
| 111            |                                 |                   |                   |
| 112            | WT/DW - 99 Addition             |                   |                   |
| 113            | ↓                               |                   |                   |
| 114            |                                 |                   |                   |
| 115            | JC                              |                   |                   |
| 116            | ↓                               |                   |                   |
| 117            |                                 |                   |                   |
| 118            | Carpet Mastic                   |                   |                   |
| 119            | ↓                               |                   |                   |
| 120            |                                 |                   |                   |
| 121            | Sink Undercoat                  |                   |                   |
| 122            | ↓ ↓                             |                   |                   |
| 123            |                                 |                   |                   |
| 124            | 1x1 ceiling tile                |                   |                   |
| 125            | ↓                               |                   |                   |

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Pg 6 of 12

Custody Information:

Samples relinquished:

[Signature] 2-19-21/1800  
Signature / Date / Time

Samples received:

[Signature] 12:15PM  
2-24-2021  
Signature / Date / Time

Samples relinquished:

\_\_\_\_\_  
Signature / Date / Time

Samples received:

\_\_\_\_\_  
Signature / Date / Time



12232 Industripex  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting

Client Address: 109 W 7th St, Ste 210

Georgetown, Texas 78626

phone number: 512-992-5383

fax number:

Project Number: 21-1141

Contact: Wade Champion

CA Labs job # CBR 21020914

Billing Address:

(if different)

Send Reports to: wchampion@c-eci.com

Project Name: DeVall County Courthouse

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:                | Sample Date/Time:       | Sample Volume (L) |
|----------------|---------------------------------|-------------------------|-------------------|
| 126            | 1x1 ceiling tile                | 99 Addition 2-9-21 1500 |                   |
| 127            | Brick Mortar                    |                         |                   |
| 128            | ↓                               |                         |                   |
| 129            | ↓                               |                         |                   |
| 130            | Expansion Joint                 |                         |                   |
| 131            | ↓                               |                         |                   |
| 132            | ↓                               |                         |                   |
| 133            | Wall Plaster 3rd FLR Courthouse |                         |                   |
| 134            | ↓                               |                         |                   |
| 135            | ↓                               |                         |                   |
| 136            | Grey Duct Mastic 3rd FLR        |                         |                   |
| 137            | ↓                               |                         |                   |
| 138            | ↓                               |                         |                   |
| 139            | Black Duct Mastic               |                         |                   |
| 140            | ↓                               |                         |                   |
| 141            | ↓                               |                         |                   |
| 142            | White Duct Mastic               |                         |                   |
| 143            | ↓                               |                         |                   |
| 144            | ↓                               |                         |                   |
| 145            | Roof Tar                        |                         |                   |
| 146            | ↓                               |                         |                   |
| 147            | ↓                               |                         |                   |
| 148            | WT/DW 2nd FLR                   |                         |                   |
| 149            | ↓                               |                         |                   |


Pg 7 of 12

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

 2-19-21/1500  
Signature / Date / Time

Samples received:

 12:15PM  
2-24-2021  
Signature / Date / Time

Samples relinquished:

\_\_\_\_\_  
Signature / Date / Time

Samples received:

\_\_\_\_\_  
Signature / Date / Time



12232 Industripex  
Suite 32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
After hours Mobile: 225-993-3471

Client Name: Champion Environmental Consulting  
Client Address: 109 W 7th St, Ste 210  
Georgetown, Texas 78626  
phone number: 512-992-5383  
fax number: \_\_\_\_\_  
Project Number: 21-1141  
Contact: Wade Champion

CA Labs job # CBR 21020914  
Billing Address: \_\_\_\_\_  
(if different) \_\_\_\_\_  
Send Reports to: wchampion@c-eci.com  
Project Name: Duval County Courthouse  
Reports Results  
VIA: EMAIL ☒ FAX ☐ VERBAL ☐


| Sample Number: | Sample Location:            | Sample Date/Time: | Sample Volume (L) |
|----------------|-----------------------------|-------------------|-------------------|
| 150            | WT/DW 2nd FLR Courthouse    | 2-9-21 1500       |                   |
| 151            | JC 2nd FLR                  |                   |                   |
| 152            | ↓ ↓                         |                   |                   |
| 153            | ↓ ↓                         |                   |                   |
| 154            | Terazzo 2nd FLR             |                   |                   |
| 155            | ↓ Landing                   |                   |                   |
| 156            | ↓ 1st Floor East            |                   |                   |
| 157            | Linoleum-white 2nd FLR      |                   |                   |
| 158            | ↓ ↓                         |                   |                   |
| 159            | ↓ ↓                         |                   |                   |
| 160            | 12x12 FT/M Tan-Woodgrain RR |                   |                   |
| 161            | ↓ ↓ ↓                       |                   |                   |
| 162            | ↓ ↓ ↓                       |                   |                   |
| 163            | Carpet Mastic 2nd FLR       |                   |                   |
| 164            | ↓ ↓ ↓                       |                   |                   |
| 165            | ↓ ↓ ↓                       |                   |                   |
| 166            | Fiber board 2nd FLR         |                   |                   |
| 167            | ↓ ↓                         |                   |                   |
| 168            | ↓ ↓                         |                   |                   |
| 169            | Buttton Mastic 2nd FLR      |                   |                   |
| 170            | ↓ ↓ ↓                       |                   |                   |
| 171            | ↓ ↓ ↓                       |                   |                   |
| 172            | 1x1 Ceiling tile ↓          |                   |                   |
| 173            | ↓ ↓ ↓                       |                   |                   |

For internal use:  
Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

pg 8 of 12

Custody Information:

Samples relinquished:

  
Signature / Date / Time

Samples received:

 12:15PM  
Signature / Date / Time

Samples relinquished:

Signature / Date / Time

Samples received:

Signature / Date / Time



C.A. Labs, LLC.  
1929 Old Denton Rd.  
Carrollton, TX 75006

Phone: 972-242-2754  
Fax: 972-242-2798  
Mobile: 469-222-6967

Client Name:

Client Address:

phone number:

fax number:

Project Number:

Contact:

CA Labs job # CBR 21020914

Billing Address:

(if different)

Send Reports to:

Project Name:

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:                    | Sample Date/Time: | Sample Volume (L) |
|----------------|-------------------------------------|-------------------|-------------------|
| 174            | 1x1 ceiling tile 2nd FLR Courthouse | 2-19-21 1500      |                   |
| 175            | 2x4 ceiling tile                    |                   |                   |
| 176            | ↓                                   |                   |                   |
| 177            | ↓                                   |                   |                   |
| 178            | WT/DW 1st FLR                       |                   |                   |
| 179            | ↓                                   |                   |                   |
| 180            | ↓                                   |                   |                   |
| 181            | JC                                  |                   |                   |
| 182            | ↓                                   |                   |                   |
| 183            | ↓                                   |                   |                   |
| 184            | Plaster                             |                   |                   |
| 185            | ↓                                   |                   |                   |
| 186            | ↓                                   |                   |                   |
| 187            | Carpet Mastic                       |                   |                   |
| 188            | ↓                                   |                   |                   |
| 189            | ↓                                   |                   |                   |
| 190            | 18x18 Ceramic FT/golf               |                   |                   |
| 191            | ↓                                   |                   |                   |
| 192            | ↓                                   |                   |                   |
| 193            | 12x12 Pink FT/M                     |                   |                   |
| 194            | ↓                                   |                   |                   |
| 195            | ↓                                   |                   |                   |
| 196            | 12x12 FT/M green                    |                   |                   |
| 197            | ↓                                   |                   |                   |

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

Samples relinquished:

Samples received:

Samples received:

Signature / Date / Time

Signature / Date / Time

pg 9 of 12

12:15PM

2-24-2021





C.A. Labs, LLC.  
1929 Old Denton Rd.  
Carrollton, TX 75006

Phone: 972-242-2754  
Fax: 972-242-2798  
Mobile: 469-222-6967

Client Name:

Client Address:

phone number:

fax number:

Project Number:

Contact:

CA Labs job # CBR 21020914

Billing Address:

(if different)

Send Reports to:

Project Name:

Reports Results

VIA: EMAIL FAX VERBAL

| Sample Number: | Sample Location:             | Sample Date/Time:         | Sample Volume (L) |
|----------------|------------------------------|---------------------------|-------------------|
| 198            | 12x12 FT/M green             | 1st FLR Courthouse 2-9-21 | 1800              |
| 199            | Yellow wall tile/grout       |                           |                   |
| 200            | ↓ ↓                          |                           |                   |
| 201            |                              |                           |                   |
| 202            | W T/Ow Basement              |                           |                   |
| 203            | ↓ ↓                          |                           |                   |
| 204            |                              |                           |                   |
| 205            | JC                           |                           |                   |
| 206            | ↓ ↓                          |                           |                   |
| 207            |                              |                           |                   |
| 208            | Plaster                      |                           |                   |
| 209            | ↓ ↓                          |                           |                   |
| 210            |                              |                           |                   |
| 211            | 12x12 FT/M Decor             |                           |                   |
| 212            | ↓ ↓                          |                           |                   |
| 213            |                              |                           |                   |
| 214            | Linoleum/mastic Bottom Layer |                           |                   |
| 215            | ↓ ↓ ↓                        |                           |                   |
| 216            |                              |                           |                   |
| 217            | Linoleum/mastic Top Layer    |                           |                   |
| 218            | ↓ ↓                          |                           |                   |
| 219            |                              |                           |                   |
| 220            | 12x12 FT/M Tan               |                           |                   |
| 221            | ↓ ↓                          |                           |                   |

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

Samples relinquished:

Samples received:

Samples received:

Signature / Date / Time

Signature / Date / Time

pg 10 of 12

12:15PM

2-24-2021



C.A. Labs, LLC.  
1929 Old Denton Rd.  
Carrollton, TX 75006

Phone: 972-242-2754  
Fax: 972-242-2798  
Mobile: 469-222-6967

Client Name:

Client Address:

phone number:

fax number:

Project Number:

Contact:

CA Labs job # CBR 21020914

Billing Address:

(if different)

Send Reports to:

Project Name:

Reports Results

VIA: EMAIL ☒ FAX ☐ VERBAL ☐

| Sample Number: | Sample Location:                     | Sample Date/Time: | Sample Volume (L) |
|----------------|--------------------------------------|-------------------|-------------------|
| 222            | 12x12 FT/M Tan - Basement Courthouse | 2-9-21 1500       |                   |
| 223            | 12x12 FT/M Brown                     |                   |                   |
| 224            | ↓ ↓                                  |                   |                   |
| 225            |                                      |                   |                   |
| 226            | 12x12 FT/M Red                       |                   |                   |
| 227            | ↓ ↓                                  |                   |                   |
| 228            |                                      |                   |                   |
| 229            | Core base/mosaic                     |                   |                   |
| 230            | ↓ ↓                                  |                   |                   |
| 231            |                                      |                   |                   |
| 232            | TSI                                  |                   |                   |
| 233            | ↓ ↓                                  |                   |                   |
| 234            |                                      |                   |                   |
| 235            | Exterior Concrete text E             |                   |                   |
| 236            | ↓ ↓ NW                               |                   |                   |
| 237            |                                      |                   |                   |
| 238            | Ext Door Sealant E                   |                   |                   |
| 239            | ↓ W                                  |                   |                   |
| 240            |                                      |                   |                   |
| 241            | Window Sealant N                     |                   |                   |
| 242            | ↓ ↓ W                                |                   |                   |
| 243            |                                      |                   |                   |
| 244            | Brick Mortar NE                      |                   |                   |
| 245            | ↓ W                                  |                   |                   |

For internal use:

Any initial changes regarding project ( indicate yes by checking line ) \_\_\_\_\_

Custody Information:

Samples relinquished:

Samples relinquished:

Samples received:

Samples received:

Signature / Date / Time

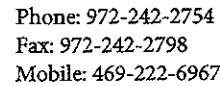
Signature / Date / Time

Signature / Date / Time

Signature / Date / Time

pg 11 of 12

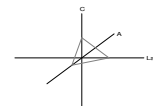
12:15PM  
2-24-2021



VIA: EMAIL X FAX        VERBAL       

Pg 12 of 12

Signature / Date / Time



LELAP #03069

**Transmission Electron Microscopy Report  
Bulk Asbestos Analysis  
Laboratory Analysis Report  
Chatfield Protocol**

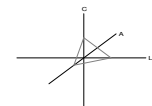
Champion Environmental Consulting  
8911 Capital of TX Hwy N Bldg 3, Suite 3210  
Austin, TX 78759  
reference number: CBR21021011

**LABORATORY ANALYSIS:**

The following bulk samples were provided to be analyzed by transmission electron microscopy (TEM) following the Chatfield Protocol. **CA Labs is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for airborne fiber analysis (TEM) and for bulk asbestos fiber analysis (PLM).** This analysis is not covered by the scope of accreditation by NVLAP. This test report relates only to the items tested. NVLAP accreditation does not imply endorsement by any US Government agency. This report may not be reproduced except in full, without written permission by CA Labs.

These results are submitted pursuant to CA Labs' current terms and condition of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety days before discarding. A shipping and handling fee may be assessed for the return of any samples.

Analysis performed at CA Labs, LLC. 12232 Industriplex Blvd, Suite 32, Baton Rouge, LA 70809. Phone 225-751-5632, fax 225-751-5634, after hours mobile 225-993-3471.



LELAP #03069

## Transmission Electron Microscopy Chatfield Report

Analysis Method: EPA 660/R-93/116 section 2.5 "AEM" (Chatfield method for bulk materials).

Preparation Method: All samples are weighed, ashed at 480°C for 12 hours, weighed, washed with hydrochloric acid filtered on PC membranes, weighed, and redistributed on a prepared Chatfield grid.

**Client Information:**Champion Environmental  
Consulting  
8911 Capital of TX Hwy N Bldg 3,  
Suite 3210  
Austin, TX 78759  
**Phone:** 512-992-5383**Fax:** 512-597-8787**Client Project:**Duval County Courthouse  
21-1141  
RE:CBR21020914**Turnaround Time:** 2 day**Attn:** Wade Champion**CA Labs Project #:**

CBR21021011

**Date:** 2/27/21**Samples Received:** 2/25/21**Purchase Order #:**

| Sample# | Asbestos Type /<br>Weight Percent<br>(lower / upper limit) | Organic Matrix<br>Weight Percent | Carbonate Matrix<br>Weight percent | Other Components<br>Weight Percent |
|---------|--|----------------------------------|------------------------------------|------------------------------------|
|---------|--|----------------------------------|------------------------------------|------------------------------------|

|  |                                  |       |       |       |
|--|----------------------------------|-------|-------|-------|
| 241                                    | Insufficient Sample for Analysis |       |       |       |
| 242                                    | NSD                              | 23.98 | 45.20 | 30.51 |
| 243                                    | NSD                              | 21.22 | 75.86 | 2.92  |
| Glass<br>Blank<br>(NIST<br>Fiberglass) | NSD                              | ----  | ----  | ----  |

**Predominant non-asbestiform fibers are:**

None

NVLAP # 200772-0

Approved Signatories:

Christopher Williams  
Analyst

TDH # 30-0370

Page 2 of 2

Christopher Williams  
Laboratory DirectorAlicia Stretz  
Senior Analyst

## Notes:

Some samples (floor tiles, surfacing, etc.) may contain fibers too small to be detectable by PLM. TEM Chatfield analysis of bulk material is recommended in this case. All asbestos percentages are based on calibrated visual estimates traceable to NIST standards for regulated asbestos types. Analysts' percentages fall within a range of acceptable percentages, depending on the actual concentration of asbestos. CA Labs is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for bulk asbestos fiber analysis (PLM) and airborne fiber analysis (TEM). This test report relates only to the items tested. NVLAP accreditation does not imply endorsement by any US Government agency. This report may not be reproduced except in full without written permission from CA Labs.

These results are submitted pursuant to CA Labs' current terms and condition of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, CA Labs will store the samples for a period of ninety (90) days before discarding. A shipping and handling fee may be assessed for the return of any samples.

# CA LABS

CA Labs, LLC  
12232 Industriplex Blvd Suite 31/32  
Baton Rouge, LA 70809

Phone: 225-751-5632  
Fax: 225-751-5634  
Mobile: 225-993-3471

## Chain of Custody

CA Labs job#: CBR 21021011

CA Labs Client Name: Champion

Billing Address: \_\_\_\_\_

Client Address: \_\_\_\_\_

(If Different) \_\_\_\_\_

Phone Number: \_\_\_\_\_

Send Reports to (email address): \_\_\_\_\_

Fax Number: \_\_\_\_\_

PO# \_\_\_\_\_

Project Name: RECBM1020914

Contact: \_\_\_\_\_

Project Number: \_\_\_\_\_

Results Reported Via: Email ☒ Fax ☐ Verbal ☐

|  |   |                                   |
|--|---|-----------------------------------|
| Total # Samples Submitted:<br><u>3</u> | Total # Samples to be Analyzed:<br><u>3</u> | Material Matrix:<br>Air/Bulk/Wipe |
|--|---|-----------------------------------|

Circle analysis and TA time:

Please call ahead for availability of all rush/afterhours samples.

|      |        |              |                  |                   |                   |                       |                         |
|------|--------|--------------|------------------|-------------------|-------------------|-----------------------|-------------------------|
| TEM: | AHERA  | EPA Level II | Wipe             | Micro-Vac         | <u>NIOSH 7402</u> | <u>Chatfield Bulk</u> | Amphibole Separation    |
| TAT  | 4 hour |              | 8 hour           | 24 hour           | <u>2 day</u>      | 3 day                 | 5 day                   |
| PLM: | AHERA  |              | 400 Point Counts | 1000 Point Counts |                   |                       | Gravimetric Point Count |
| TAT  | 2 hour | 4 hour       | 8 hour           | 24 hour           | 2 day             | 3 day                 | 5 day                   |

|              |                          |        |            |         |       |       |           |
|--------------|--------------------------|--------|------------|---------|-------|-------|-----------|
| Optical/IAQ: | Allergen: Tape/Bulk/Swab |        | Air-O-Cell |         | PCM   |       | PCM (TWA) |
| TAT          | 2 hour                   | 4 hour | 8 hour     | 24 hour | 2 day | 3 day | 5 day     |

|       |             |  |        |  |         |       |       |  |       |
|-------|-------------|--|--------|--|---------|-------|-------|--|-------|
| Lead: | Paint Chips |  | Soil   |  | Wipes   |       | Air   |  | TCLP  |
| TAT   | 4 hour      |  | 8 hour |  | 24 hour | 2 day | 3 day |  | 5 day |

Other analysis not listed: \_\_\_\_\_

TAT: \_\_\_\_\_

Sample Information:

| Sample Number: | Sample Location: | Sample Date/Time: | Sample Volume(L) |
|----------------|------------------|-------------------|------------------|
| <u>241</u>     |                  |                   |                  |
| <u>242</u>     |                  |                   |                  |
| <u>243</u>     |                  |                   |                  |
|                |                  |                   |                  |
|                |                  |                   |                  |
|                |                  |                   |                  |
|                |                  |                   |                  |

Custody Information:

Samples relinquished: \_\_\_\_\_  
Signature/Date/Time

Samples received: 2/15/20 4:30 PM  
Signature/Date/Time

Samples relinquished: \_\_\_\_\_  
Signature/Date/Time

Samples received: \_\_\_\_\_  
Signature/Date/Time

## APPENDIX B

### Licenses



Texas Department of State Health Services

CHAMPION ENVIRONMENTAL CONSULTING, INC.

*is certified to perform as an*

Asbestos Consultant Agency

*in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1954 and Title 12, Texas Administrative Code, Chapter 295 relating to Texas Asbestos Health Protection, as long as this license is not suspended or revoked.*

License Number: 100522

Expiration Date: 04/01/2021

Control Number: 97192

*John Hellerstedt, M.D.,  
Commissioner of Health*

(Void After Expiration Date)

VOID IF ALTERED - NON-TRANSFERABLE



Texas Department of State Health Services

CA LABS LLC

*is certified to perform as an*

Asbestos Laboratory

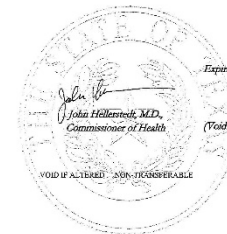
PCM, PLM, TEM

*in the State of Texas and is hereby governed by the rights, privileges and responsibilities set forth in Texas Occupations Code, Chapter 1954 and Title 12, Texas Administrative Code, Chapter 295 relating to Texas Asbestos Health Protection, as long as this license is not suspended or revoked.*



License Number: 300370

Control Number: 96509



Expiration Date: 01/04/2023

(Void After Expiration Date)

VOID IF ALTERED - NON-TRANSFERABLE

SEE BACK



**Texas Department of  
State Health Services**

**Asbestos Individual Consultant**

**WADE E CHAMPION**

**License No. 105410**

**Control No. 97588**

**Expiration Date: 25-Aug-2021**



**Texas Department of  
State Health Services**

**Asbestos Inspector**

**COLE H ALLEN**

**License No. 603654**

**Control No. 99560**

**Expiration Date: 10-Jan-2022**

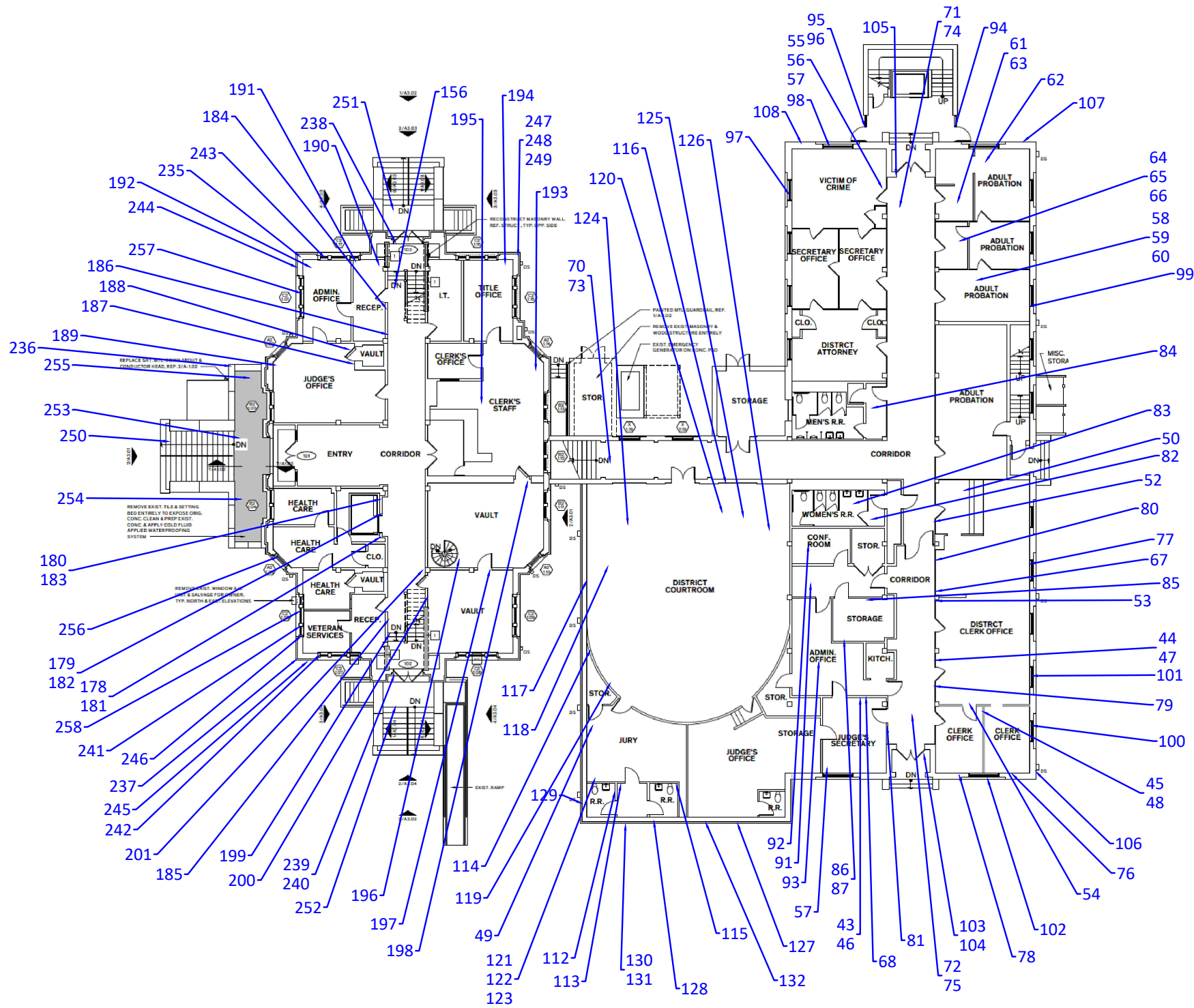




## APPENDIX C

Reference Drawing(s)





CLIENT:

Judge Gilbert Soenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

SITE: Duval County Courthouse  
FIRST FLOOR

400 E. Gravis Avenue  
San Diego, Texas 78384

Bulk  
Sample  
Location

C-ECI Project No. 21-1141

By: N Hackney

Approved By: W Champion

Submitted: 02/23/2021

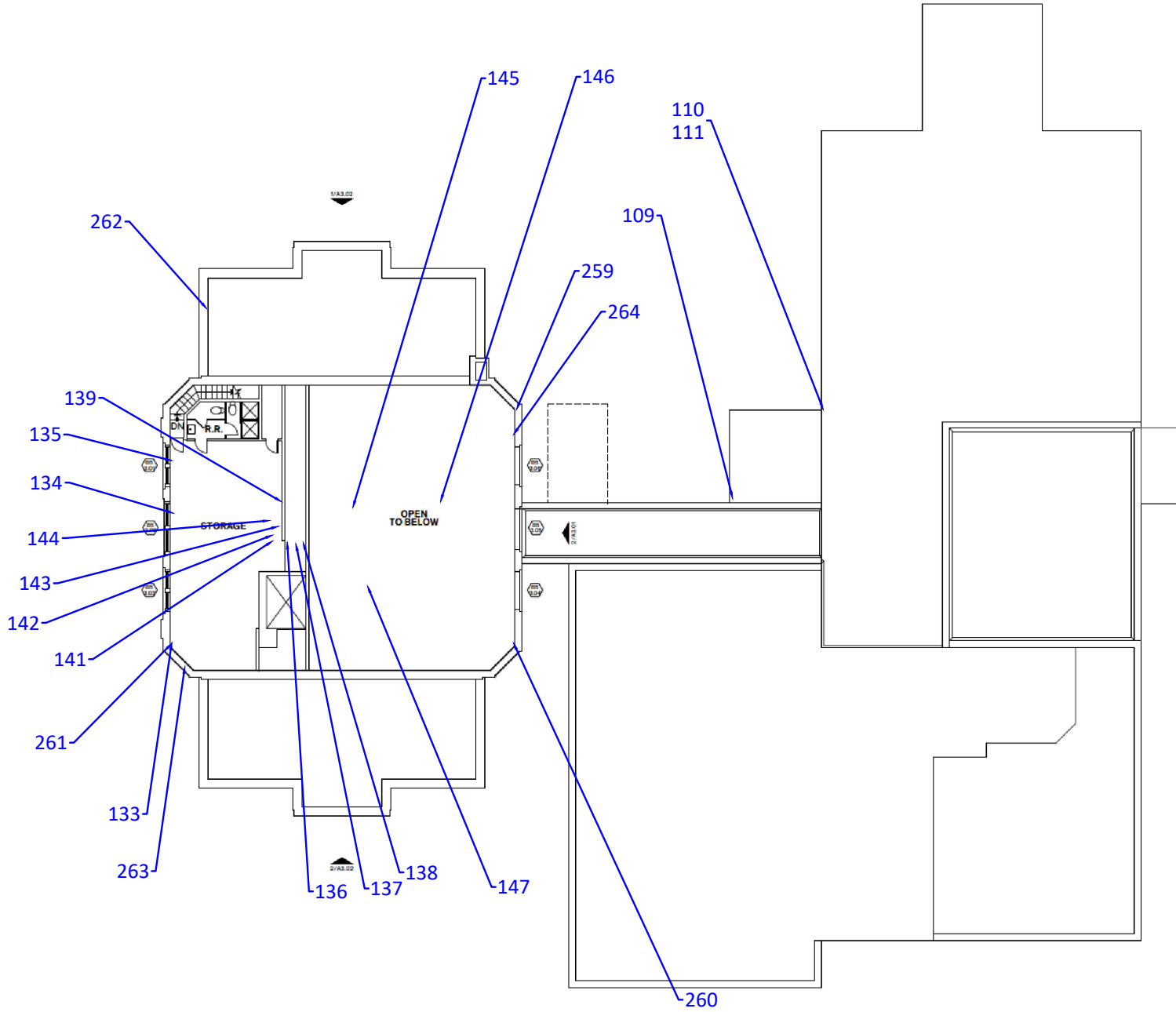
Not To Scale





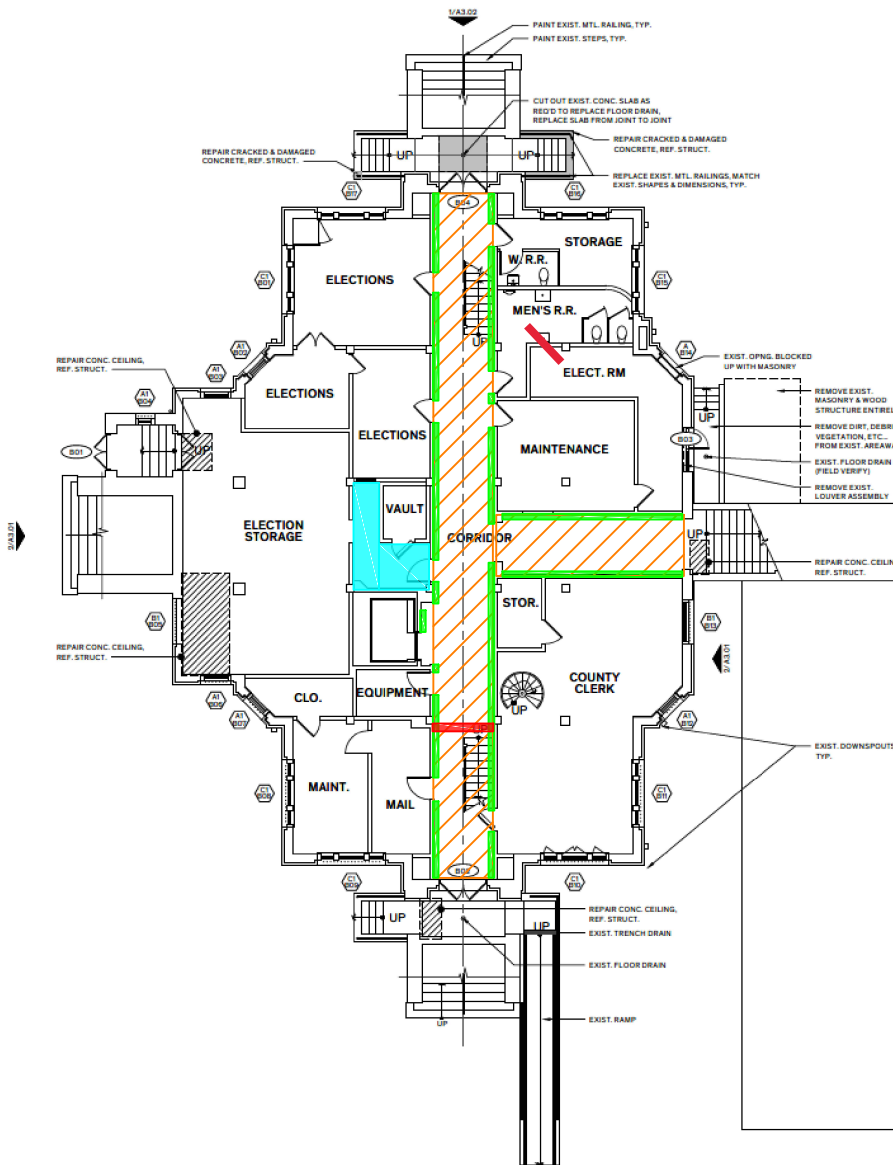
Asbestos  
Sample  
Location  
Plan

**Figure 2**





|   |   |
|---|---|
|  <p>109 West 7th Street<br/>Suite 210<br/>Georgetown, Texas 78626</p> |   |
| <p>CLIENT:</p> <p>Judge Gilbert Saenz<br/>Duval County<br/>400 E. Gravis Avenue<br/>San Diego, Texas 78384</p>  |   |
| <p>SITE:</p> <p>Duval County Courthouse<br/>THIRD FLOOR<br/>400 E. Gravis Avenue<br/>San Diego, Texas 78384</p>   |   |
| <p>Bulk Sample Location</p>   |   |
| <p><b>C-ECI Project No. 21-1141</b><br/>By: N Hackney<br/>Approved By: W Champion<br/>Submitted: 02/23/2021<br/>Not To Scale</p>                        |   |
| <p>Asbestos Sample Location Plan</p>  | <p></p> <p><b>Figure 4</b></p> |



- Linoleum/Mastic [Top Layer ~160 SQ FT, Bottom Layer ~160 SQ FT]
- Floor Tile/Mastic [Brown, ~1,000 SQ FT]
- Cove Base/Mastic [~250 LN FT]
- TSI [15 LN FT]

CLIENT:  
**Judge Gilbert Saenz**  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

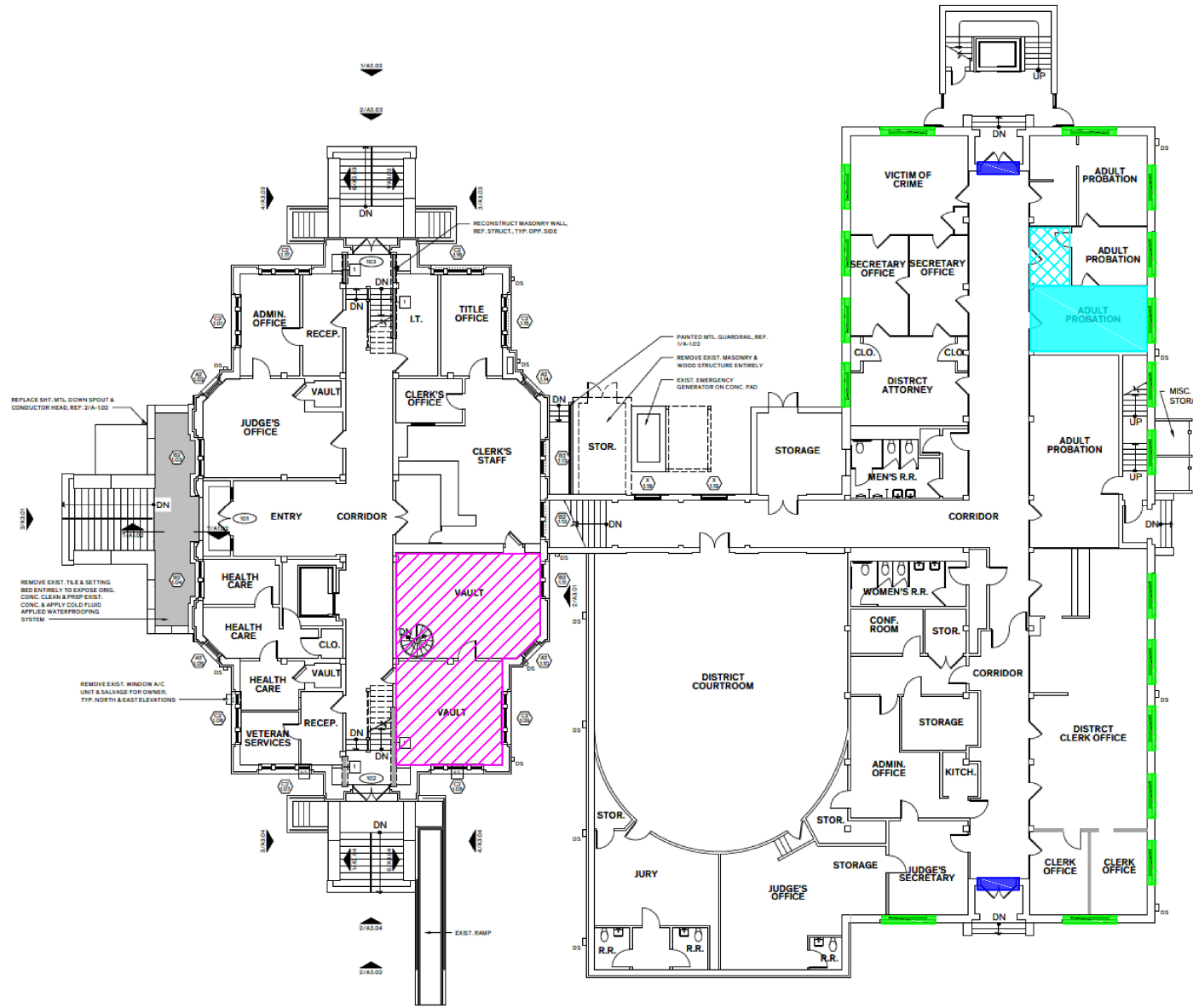
SITE:  
**Duval County Courthouse**  
BASEMENT  
400 E. Gravis Avenue  
San Diego, Texas 78384

**C-ECI Project No. 21-1141**  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale



Asbestos  
Location  
Plan

**Figure 5**



- Linoleum/Mastic [~240 SQ FT]
- Linoleum/Mastic [~75 SQ FT]
- Floor Tile/Mastic [Green, ~800 SQ FT]
- Exterior Window Sealant [~350 LN FT]
- Exterior Door Sealant [40 LN FT]

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

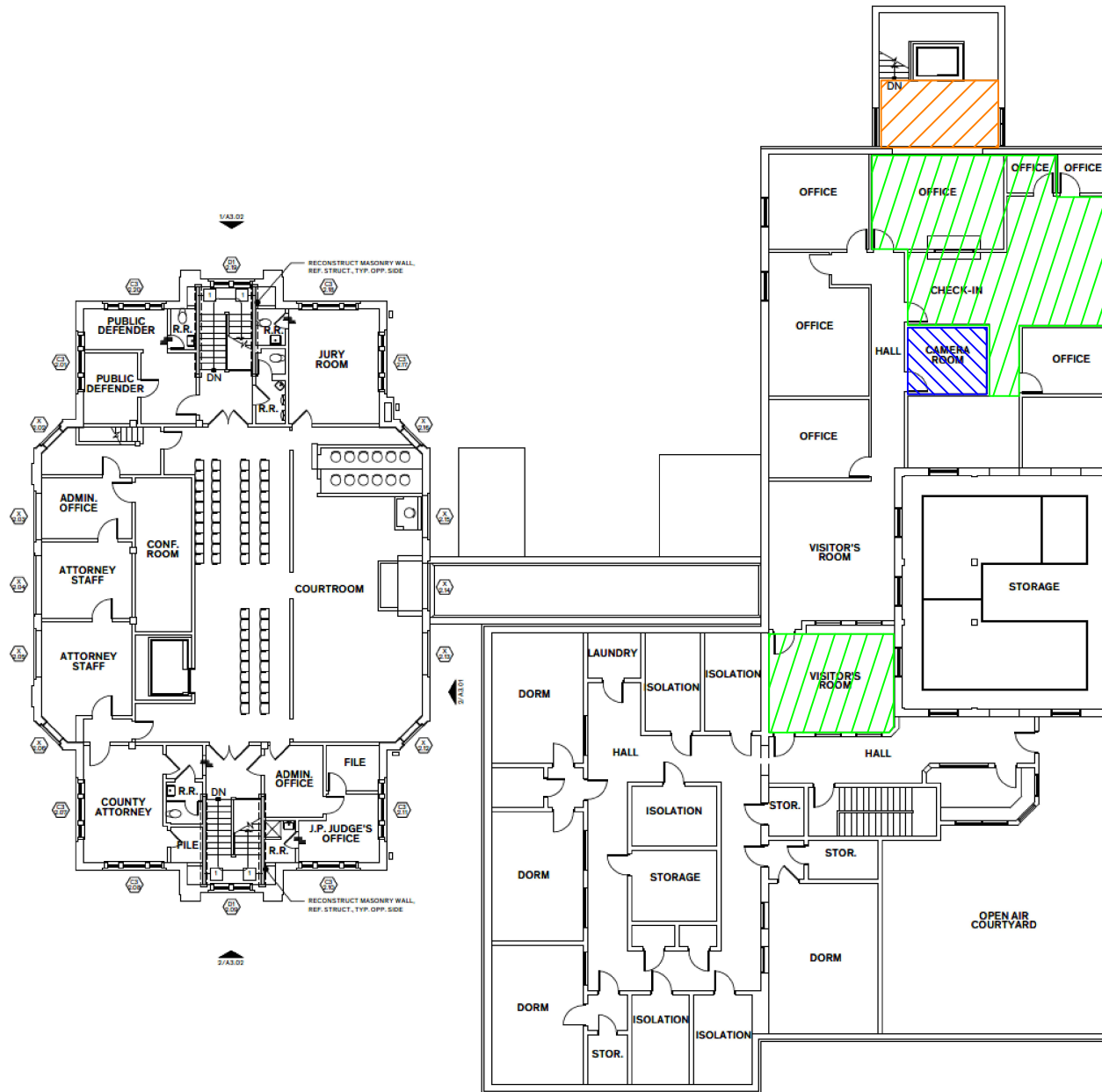
SITE:  
Duval County Courthouse  
FIRST FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384




C-ECI Project No. 21-1141  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale



Asbestos  
Location  
Plan

**Figure 6**



-  Floor Tile/Mastic [Brown, ~180 SQ FT]
-  Floor Tile/Mastic [~144 SQ FT]
-  Floor Tile/Mastic [~1,200 SQ FT]

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384

SITE:  
Duval County Courthouse  
SECOND FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384

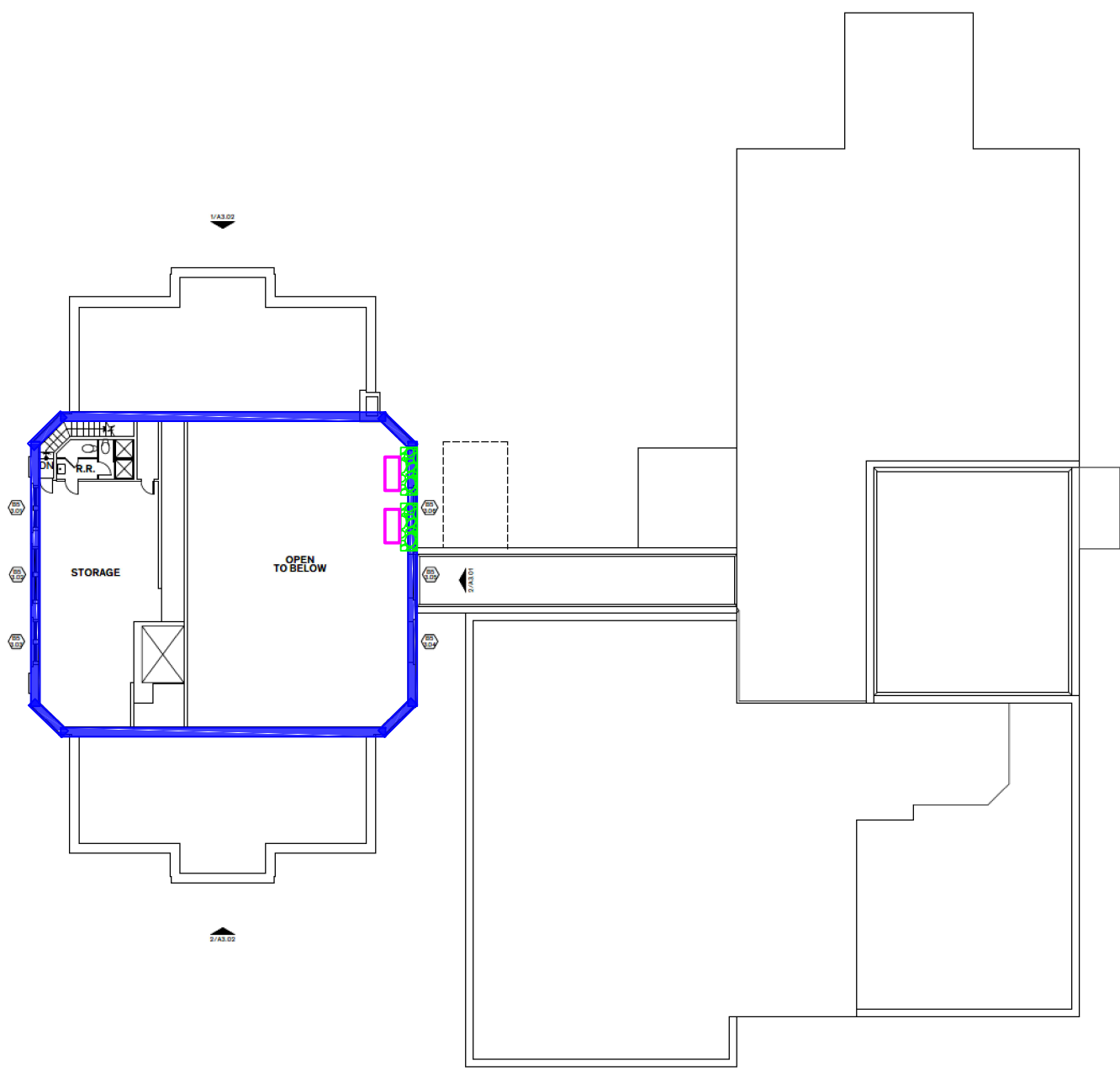
**C-ECI Project No. 21-1141**  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale



Asbestos  
Location  
Plan

**Figure 7**





-  Roof Cap Mastic [~300 LN FT]
-  White Duct Mastic [~40 LN FT]
-  Black Duct Mastic [~20 LN FT]

Asbestos  
Location  
Plan

**Figure 8**



**C-ECI Project No. 21-1141**  
By: N Hackney  
Approved By: W Champion  
Submitted: 02/23/2021  
Not To Scale

SITE: Duval County Courthouse  
THIRD FLOOR  
400 E. Gravis Avenue  
San Diego, Texas 78384

CLIENT:  
Judge Gilbert Saenz  
Duval County  
400 E. Gravis Avenue  
San Diego, Texas 78384



109 West 7th Street  
Suite 210  
Georgetown, Texas 78626



# Parsons Commercial Roofing, Inc

Serving the Building Industry Since 1948

Home Office: P.O. Box 21835 Waco, TX 76702-1835 • Fax (254) 881-1995 • www.parsonsoofing.com  
Waco (254) 881-1733 • Temple (254) 773-3777 • Killeen 254-554-5888 • Austin (512) 264-0606 • Dallas (214) 361-0174  
San Antonio (210) 340-1610 • Toll Free (877) 881-1733

Submitted To: Hon. Abel Aragon, Duval County Judge ("Purchaser") Date: September 12, 2011  
Street: 400 East Gravis Job Name: Duval County Courthouse & Annex  
City, State, Zip: San Diego, TX 78384 Job Location: Same  
Telephone: (361) 279-3322 Contractors Work To Begin: TBD  
E-Mail Address: abel.aragon@co.duval.tx.us Salesman: Phil Gustafson - (512) 560-4679  
Fax: (361) 279-3159

Subject to a prompt acceptance within 60 days from above date, and further subject to all terms and conditions on the front and reverse side hereof.  
PARSONS COMMERCIAL ROOFING, INC. ("Contractor") Proposes to furnish materials and labor as hereafter specified for the "Work" described as follows:

## Scope Of Work:

1. Remove all debris from roofing area.
2. Mechanically fasten 1/2 " expanded polystyrene (EPS) insulation over existing roofing system in accordance with membrane manufacturer specifications.
3. Contractor shall furnish and mechanically fasten a 50 mil single-ply membrane roofing system that is fabricated of a weft inserted low-shrink, anti-wicking polyester fabric and has a thermoplastic coating material laminated to both sides as manufactured by Duro-Last Roofing, Inc.
4. Install prefabricated flashings around all curbs, deck penetrations and drains, in accordance with membrane manufacturer specifications.
5. Encapsulate all parapet walls and cover expansion joints with Duro-Last membrane.
6. Install 4" fascia bar with Kynar-coated metal cover at roof perimeter. Cover color shall be chosen by building owner.
7. Dispose of all debris in an approved facility in accordance with all local, state and federal regulations.
8. Includes, as issued by manufacturer, a 20 year Labor and Material Warranty with liability of consequential damages.
9. Includes all Workmen Compensation and General Liability Insurance.
10. Includes Parsons Roofing "no-fault" puncture warranty which covers incidental damages for 15 years.
11. Includes replacement of roof hatch on courthouse with new roof hatch.
12. Includes new metal cap for chimney flue.
13. Duval County to be responsible for removal and reinstallation of razor wire and satellite dish.
14. Duval County to identify unused wires/conduit for removal.
15. Exercise area will be a modified bitumen built-up roof with a 2 year warranty due to foot traffic.

The Contract sum due Contractor for the Work is: Eighty-Three Thousand, Five Hundred, Eighteen Dollars and 00/100's - (\$83,518.00)

Terms: 1/2 contract draw upon order of materials and balance upon completion.

Sales Tax ( n/a )

## Parsons Commercial Roofing, Inc

By: Abel Aragon

By: Phil Gustafson

Title: Duval Co. Judge

Title: Region Sales Manager

ACCEPTANCE: The undersigned ("Purchaser") by execution hereof accepts this document and all of its terms and conditions contained herein and on the front and reverse hereof as a binding contract.

Date: September 22-2011

Date: September 22-2011

THE STATE OF TEXAS

COUNTY OF

THIS INSTRUMENT was acknowledged before me on September 22-2011

By: N. Garcia

Notary Public in and for The State of Texas

SEE REVERSE SIDE FOR ADDITIONAL TERMS AND CONDITIONS



My Commission Expires: 2/4/2013



**TERMS AND CONDITIONS OF CONTRACT**

1. Acceptance of this contract by Purchaser shall be acceptance of all terms and conditions recited herein or incorporated by reference. Allowing Contractor to commence the Work or preparation for the Work will constitute acceptance by Purchaser of this contract and all of its terms and conditions.
2. Unless otherwise provided herein, Contractor shall be paid monthly progress payments on or before the 10<sup>th</sup> day of each month for the value of the Work completed plus the amount of materials and equipment suitably stored thru the end of the prior month, applied to the contract sum less the aggregate of previous payments to Contractor. Final payments shall be due thirty (30) days after the Work described in this Contract at any time, provide proof satisfactory to Contractor of Purchaser's ability to pay Contractor all sums due or to become due hereunder. Failure to provide such satisfactory proof shall entitle Contractor to immediately stop work without prejudice to any other remedy Contractor may have.
3. To secure the prompt payment of this contract, a Builder's, Mechanic's, Materialman's and Laborer's Lien is hereby created and granted for the benefit of Contractor upon the hereinabove described real property, and all improvements, additions, fixtures and appurtenances now thereon and hereafter placed thereon. This contract is executed, acknowledged and delivered before any labor has been performed and before any material has been furnished for the construction of the improvement for which the liens hereby created are given. Unless this contract is executed by a husband and wife, Purchaser represents that the property upon which the Work is to be performed does not constitute any portion of any party's residential homestead. All sums not paid when due shall bear interest at the maximum contract rate provided by Article 1.04, Title 79, Revised Civil Statutes of Texas, as amended; and all costs of collection, including a reasonable attorney's fee shall be paid by Owner. If Purchaser fails to make payment to Contractor as herein provided, then contractor may stop work without prejudice to any other remedy it may have. All amounts due to Contractor pursuant to this contract shall be payable at and delivered to Contractor in Waco, McLennan County, Texas.
4. Purchaser is to prepare all work areas so as to be acceptable for Contractor's Work. Contractor will not be called upon to start the Work until sufficient areas are ready to insure continued work until job completion.
5. After acceptance of the contract, Contractor shall be given a reasonable time in which to make delivery of material and/or labor to commence and complete the performance of the Work. Contractor shall not be responsible for delays or default occasioned by any causes of any kind and extent beyond its control, including but not limited to delays caused by Purchaser, architect and/or engineers; acts of war, embargos; shortages of labor, equipment or materials; transportation; labor difficulties, civil disorders of any kind; action of civil or military authorities; vendor priorities and allocations; fires, flood, accidents and acts of God. Additional costs of any type incurred by Contractor by reason of any of the foreign or supplier-imposed increases or transportation increases and reasonable overhead and profit thereon shall be paid by Purchaser. If the job is not, for any reason, ready for Contractor to begin the Work by the date set out above, Contractor may void this contract and have no liability to Purchaser or Contractor may perform this contract when the job is ready for Contractor's Work and recoup from Purchaser all increased costs and reasonable overhead and profit on such increased costs.
6. Any changes, alterations, additions, or deletions in the Work shall be by written change order specifying such and the cost incurred or saved as a result thereof and the resulting increase or decrease in the contract sum. All such change orders shall not be effective unless and until agreed to and signed by Purchaser and Contractor.
7. Where Contractor bids from Purchaser's plans or specifications, Purchaser and Contractor acknowledge that Contractor has not prepared, approved or recommended the design, plans or specifications for any improvements, structure or project described in related to or affected by this contract. Both Purchaser and Contractor acknowledge that the only obligations of Contractor pursuant to this contract shall be to supply the type and quantity of material requested and specified in this contract, and to perform all labor requested and specified herein in a good and workmanlike manner in accordance with accepted business standards. Contractor does not warrant adequacy or correctness of design.
8. Purchaser warrants and represents to Contractor (and Contractor is relying thereon) that there is no mold, other substance or condition (whether toxic or not) in or on the premises of the Job Location or any of the systems in or on those premises, and Purchaser agrees to keep the premises free of any mold, other substance or condition (whether toxic or not) that may, could, or does cause bodily injury or harm to any person during the progress of the Work or at any time thereafter. Purchaser agrees to indemnify, pay and hold Contractor harmless of and from any and all claims, liability, damages and causes of action together with all losses, costs and expenses (including but not limited to court costs, attorney fees, expert witness fees) threatened against, incurred or suffered by Contractor as a result of the existence, now or at any time in the future and from whatever source or cause, of mold, other substance or condition (whether toxic or not) in or on the premises.
9. This contract contains the entire agreement of the parties and states the entire obligation of Contractor with respect to the matters covered hereby. Each party to this contract acknowledges that no representations, inducements, promises or agreements, verbal or otherwise, have been made by any party, or anyone acting or purporting to act on behalf of any party, other than those expressly stated herein. All parties to this contract agree that Contractor shall not be bound by any verbal expression, representation, commitment, arrangement or warranty not specifically stated herein.
10. The work shall be performed in a good and workmanlike manner. Contractor warrants that it will make such repairs as are necessary to put the Work into a good and workmanlike condition with respect to any faults or defects reported to Contractor by Purchaser in writing within one year from the completion of the Work. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CONTRACTOR WILL NOT BE RESPONSIBLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Contractor shall not be responsible for damage to its Work by other parties and any repair work necessitated by such damage will be considered an order for extra work hereunder. All materials shall be furnished in accordance with the respective industry tolerance of color variation, thickness, size, finish, texture and performance standards.

PAID OCT 11 2011  
Inv# 194884

# Parsons Commercial Roofing

**INVOICE**

Home Office  
P.O. Box 21835  
Waco TX 76702-1835

*Serving the  
Building Industry  
Since 1948*

Waco 254 881-1733  
Temple 254 773-3777  
Fax 254 881-1995

**Bill To:**  
Duvall County  
PO Box 1062

San Diego TX 78384

**Invoice No:** 4969

**Invoice Date:** 10/3/2011

**Due Date:** 10/3/2011

**Job No:** CR11-00648

**Ref:** Duval County Courthouse/Annex

**PO:** 2011002753

| Description | Extended Price |
|-------------|----------------|
|-------------|----------------|

|                            |           |
|----------------------------|-----------|
| Material Draw per proposal | 41,759.00 |
|----------------------------|-----------|

**Thank You For Your Business!**

**Terms:** DUE UPON RECEIPT

|            |      |
|------------|------|
| <b>Tax</b> | 0.00 |
|------------|------|

|                  |           |
|------------------|-----------|
| <b>Subtotal:</b> | 41,759.00 |
|------------------|-----------|

|                   |           |
|-------------------|-----------|
| <b>Total Due:</b> | 41,759.00 |
|-------------------|-----------|

*For your convenience we gladly accept your Mastercard or Visa payment by phone.*

Date Recieved

|   |  |
|---|--|
| <b>ARCHITEXAS</b><br>Architecture, Planning and Historic Preservation, Inc.<br>2900 S. Congress Avenue, Suite 200, Austin, Texas, 78704<br>512-444-4220(p) 512-444-4221(f) e-mail lirsik@architexas.com   |  |
| Project: _____  |  |
| Submittal: _____  |  |
| Section: _____  |  |
| <input type="checkbox"/> No Exception taken   | <input type="checkbox"/> Revise and Resubmit |
| <input type="checkbox"/> Revise, Resubmission not Required  | <input type="checkbox"/> Rejected            |
| <input type="checkbox"/> Revise before fabrication  |  |
| <p>This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the job site; information that pertains solely to the fabrications process or to the means, methods, techniques, sequences, and procedures of construction; corrdination of the work with all trades; and for performing all work in a safe and satisfactory manner.</p> |  |
| By: _____   | Date: _____                                  |

### Architexas Submittal Review Notes:

1. Brick repointing mock-up & re-pointing mortar composition - approved

# Duval County Courthouse Drainage, Structural, & Electrical Rehabilitation

## SUBMITTAL COVER SHEET

**Date:** 4/6/22

**Submittal:** 04905-11

**Section Description:** Masonry Restoration

**Item Description:** On site tuckpoint mockup at brick location – Reviewed on 3-30-22  
Note: tuckpoint mockup at stone will be at later date.

=====

**CONTRACTORS STAMP:**

**Premier Commercial Group**

**Project:** DUVAL COUNTY COURTHOUSE

**Subcontractor:** PREMIER COMMERCIAL GROUP

**Submittal Number:** 11 – 04905

  x   **Reviewed**          **Reviewed as Noted**          **Not Approved**

**DATE** 4/6/22       **BY**       Lee Evans

APPROVED OR REVIEW DOES NOT ALTER SUBCONTRACT  
SUBCONTRACTOR IS RESPONSIBLE FOR ERRORS AND OMISSIONS





# MOCK-UP APPROVAL #M22-010.11

|                         |   |  |
|-------------------------|---|--|
| <b>Project:</b>         | Duval County Courthouse                                 |  |
| <b>Date:</b>            | April 6, 2022   |  |
| <b>Project Manager:</b> | Jordan Crider   |  |
| <b>Supervisor:</b>      | Hugo Estrada  |  |
| <b>Specification:</b>   | 04905-11 Tuckpoint Sample                               |  |
| <b>Location:</b>        | North Addition, East of Entry Steps & Original Building |  |
| <b>Description:</b>     | Installed new mortar at masonry joints                  |  |

|   | Product                                  | Color/Notes:  | Installation Method:  | Status: |
|---|--|---|---|---------|
| 1 | Portland Cement<br>Hydrated Lime<br>Sand | Mortar Mix (A):<br>¼ parts grey Portland Cement<br><br>¾ part white Portland Cement<br><br>1 ¼ part Lime<br><br>6 ¾ part Sand | Mortar was installed at two locations with the referenced mortar mixture, per the specifications. |         |



## APPROVAL

By signing this approval form, I am agreeing that the mock-ups located at the above listed location are in compliance with the specifications, or are otherwise acceptable; the material and color selections are in compliance with the specifications, or are otherwise acceptable; the contractor is permitted to continue on with the project, completing the scope using the same products and techniques as were used in the mockup.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Date Recieved

05.12.22

**ARCHITEXAS**

Architecture, Planning and Historic Preservation, Inc.

2900 S. Congress Avenue, Suite 200, Austin, Texas, 78704

512-444-4220(p) 512-444-4221(f) e-mail lirsik@architexas.com

Project: Duval CCH, Drainage, Struct., & Elect. RehabSubmittal: 1.5.C.8 Stone re-pointing mock-upSection: 04905 - Masonry Restoration☒ No Exception taken ☐ Revise and Resubmit ☐ Rejected☐ Revise, Resubmission not Required ☐ Revise before fabrication

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections or comments made on the shop drawings during this review do not relieve the contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which item is a component. Contractor is responsible for: dimensions to be confirmed and correlated at the job site; information that pertains solely to the fabrications process or to the means, methods, techniques, sequences, and procedures of construction; coordination of the work with all trades; and for performing all work in a safe and satisfactory manner.

By: **Susan Frocheur**Date: **5/12/22****Architexas Submittal Review Notes:**

1. Repointing mock-up for stone to stone joints, approved



# Duval County Courthouse Drainage, Structural, & Electrical Rehabilitation

## SUBMITTAL COVER SHEET

**Date:** 5/12/22

**Submittal:** 04905-12

**Section Description:** Masonry Restoration

**Item Description:** On site tuckpoint at southeast corner stone coping between bare (unpainted) stone – Reviewed per on site photo taken on 5-11-22 (see attached)

=====

**CONTRACTORS STAMP:**

**Premier Commercial Group**

**Project:** DUVAL COUNTY COURTHOUSE

**Subcontractor:** PREMIER COMMERCIAL GROUP

**Submittal Number:** 12 – 04905

x  **Reviewed**        **Reviewed as Noted**        **Not Approved**

**DATE** 5/12/22    **BY**    Lee Evans

APPROVED OR REVIEW DOES NOT ALTER SUBCONTRACT  
SUBCONTRACTOR IS RESPONSIBLE FOR ERRORS AND OMISSIONS



# MOCK-UP APPROVAL #M22-010.12

|                         |  |              |
|-------------------------|--|--------------|
| <b>Project:</b>         | Duval County Courthouse                                      |              |
| <b>Date:</b>            | May 11, 2022   |              |
| <b>Project Manager:</b> | Jordan Crider  |              |
| <b>Supervisor:</b>      | Hugo Estrada   |              |
| <b>Specification:</b>   | 04905-11 Tuckpoint Sample                                    | Stone Joints |
| <b>Location:</b>        | SE Corner at stone coping between bare (unpainted) stones    |              |
| <b>Description:</b>     | Installed new mortar at <u>stone-to-stone</u> masonry joints |              |

|   | Product                                  | Color/Notes:  | Installation Method:   | Status:          |
|---|--|---|--|------------------|
| 1 | Portland Cement<br>Hydrated Lime<br>Sand | Mortar Mix (B):<br>¼ parts grey Portland Cement<br><br>¾ part white Portland Cement<br><br>1 ¼ part Lime<br><br>6 ¾ part Sand | Mortar was installed in two color variations at the stone-to-stone joints. Mix B was selected. | Approved on site |



## APPROVAL

By signing this approval form, I am agreeing that the mock-ups located at the above listed location are in compliance with the specifications, or are otherwise acceptable; the material and color selections are in compliance with the specifications, or are otherwise acceptable; the contractor is permitted to continue on with the project, completing the scope using the same products and techniques as were used in the mockup.

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# DRAFT AIA® Document A101™ – 2017

## Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

**AGREEMENT** made as of the « » day of « » in the year « »  
(In words, indicate day, month and year.)

**BETWEEN** the Owner:  
(Name, legal status, address and other information)

« »  
« »  
« »  
« »

and the Contractor:  
(Name, legal status, address and other information)

« »  
« »  
« »  
« »

for the following Project:  
(Name, location and detailed description)

« »  
« »  
« »

The Architect:  
(Name, legal status, address and other information)

« »  
« »  
« »  
« »

The Owner and Contractor agree as follows.

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

## EXHIBIT A INSURANCE AND BONDS

### ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

### ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

### ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

*(Check one of the following boxes.)*

☐ The date of this Agreement.

☐ A date set forth in a notice to proceed issued by the Owner.

☐ Established as follows:

*(Insert a date or a means to determine the date of commencement of the Work.)*

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

#### § 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

*(Check one of the following boxes and complete the necessary information.)*

[ « » ] Not later than « » ( « » ) calendar days from the date of commencement of the Work.

[ « » ] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

#### ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « » ), subject to additions and deductions as provided in the Contract Documents.

#### § 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item

Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.  
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item

Price

Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:  
(Identify each allowance.)

Item

Price

#### § 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price per Unit (\$0.00)

#### § 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

« »

#### § 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » ( « » ) days after the Architect receives the Application for Payment.

*(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

### § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

*(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)*

« »

**§ 5.1.7.1.1** The following items are not subject to retainage:  
*(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)*

<< >>

**§ 5.1.7.2** Reduction or limitation of retainage, if any, shall be as follows:  
*(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)*

<< >>

**§ 5.1.7.3** Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:  
*(Insert any other conditions for release of retainage upon Substantial Completion.)*

<< >>

**§ 5.1.8** If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

**§ 5.1.9** Except with the Owner’s prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## **§ 5.2 Final Payment**

**§ 5.2.1** Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor’s responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

**§ 5.2.2** The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

<< >>

## **§ 5.3 Interest**

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

*(Insert rate of interest agreed upon, if any.)*

<< >> % << >>

## **ARTICLE 6 DISPUTE RESOLUTION**

### **§ 6.1 Initial Decision Maker**

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

<< >>

<< >>

<< >>

<< >>



## § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

*(Check the appropriate box.)*

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017

☐ Litigation in a court of competent jurisdiction

☐ Other *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner’s convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner’s convenience.)*

« »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:

*(Name, address, email address, and other information)*

« »

« »

« »

« »

« »

« »

§ 8.3 The Contractor’s representative:

*(Name, address, email address, and other information)*

« »

« »

« »

« »

« »

« »

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.



## § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

<< >>

§ 8.7 Other provisions:

<< >>

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

*(Insert the date of the E203-2013 incorporated into this Agreement.)*

<< >>

.5 Drawings

| Number | Title | Date |
|--------|-------|------|
|        |       |      |

.6 Specifications

| Section | Title | Date | Pages |
|---------|-------|------|-------|
|         |       |      |       |

.7 Addenda, if any:

| Number | Date | Pages |
|--------|------|-------|
|        |      |       |

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

[ ☐ ] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*

<< >>

[ << >> ] The Sustainability Plan:

| Title | Date | Pages |
|-------|------|-------|
|       |      |       |

[ << >> ] Supplementary and other Conditions of the Contract:

| Document | Title | Date | Pages |
|----------|-------|------|-------|
|          |       |      |       |

**.9** Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)*

<< >>

This Agreement entered into as of the day and year first written above.

\_\_\_\_\_  
**OWNER** (Signature)

<< >><< >>

\_\_\_\_\_  
(Printed name and title)

\_\_\_\_\_  
**CONTRACTOR** (Signature)

<< >><< >>

\_\_\_\_\_  
(Printed name and title)

# DRAFT AIA® Document A201™ – 2017

## General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

<< >>  
<< >>

THE OWNER:

(Name, legal status and address)

<< >>< >>  
<< >>

THE ARCHITECT:

(Name, legal status and address)

<< >>< >>  
<< >>

### TABLE OF ARTICLES

- |    |  |
|----|--|
| 1  | GENERAL PROVISIONS                               |
| 2  | OWNER  |
| 3  | CONTRACTOR                                       |
| 4  | ARCHITECT  |
| 5  | SUBCONTRACTORS                                   |
| 6  | CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS |
| 7  | CHANGES IN THE WORK                              |
| 8  | TIME   |
| 9  | PAYMENTS AND COMPLETION                          |
| 10 | PROTECTION OF PERSONS AND PROPERTY               |
| 11 | INSURANCE AND BONDS                              |
| 12 | UNCOVERING AND CORRECTION OF WORK                |
| 13 | MISCELLANEOUS PROVISIONS                         |
| 14 | TERMINATION OR SUSPENSION OF THE CONTRACT        |
| 15 | CLAIMS AND DISPUTES                              |

### ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## INDEX

(Topics and numbers in bold are Section headings.)

### **Acceptance of Nonconforming Work**

9.6.6, 9.9.3, **12.3**

#### Acceptance of Work

9.6.6, 9.8.2, 9.9.3, 9.10.1, 9.10.3, 12.3

### **Access to Work**

**3.16**, 6.2.1, 12.1

#### Accident Prevention

10

#### Acts and Omissions

3.2, 3.3.2, 3.12.8, 3.18, 4.2.3, 8.3.1, 9.5.1, 10.2.5,  
10.2.8, 13.3.2, 14.1, 15.1.2, 15.2

#### Addenda

1.1.1

#### Additional Costs, Claims for

3.7.4, 3.7.5, 10.3.2, 15.1.5

### **Additional Inspections and Testing**

9.4.2, 9.8.3, 12.2.1, **13.4**

### **Additional Time, Claims for**

3.2.4, 3.7.4, 3.7.5, 3.10.2, 8.3.2, **15.1.6**

### **Administration of the Contract**

3.1.3, **4.2**, 9.4, 9.5

#### Advertisement or Invitation to Bid

1.1.1

#### Aesthetic Effect

4.2.13

### **Allowances**

**3.8**

### **Applications for Payment**

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5.1, 9.5.4, 9.6.3, 9.7, 9.10

#### Approvals

2.1.1, 2.3.1, 2.5, 3.1.3, 3.10.2, 3.12.8, 3.12.9,  
3.12.10.1, 4.2.7, 9.3.2, 13.4.1

#### Arbitration

8.3.1, 15.3.2, **15.4**

## **ARCHITECT**

**4**

### **Architect, Definition of**

**4.1.1**

#### Architect, Extent of Authority

2.5, 3.12.7, 4.1.2, 4.2, 5.2, 6.3, 7.1.2, 7.3.4, 7.4, 9.2,  
9.3.1, 9.4, 9.5, 9.6.3, 9.8, 9.10.1, 9.10.3, 12.1, 12.2.1,  
13.4.1, 13.4.2, 14.2.2, 14.2.4, 15.1.4, 15.2.1

#### Architect, Limitations of Authority and Responsibility

2.1.1, 3.12.4, 3.12.8, 3.12.10, 4.1.2, 4.2.1, 4.2.2,  
4.2.3, 4.2.6, 4.2.7, 4.2.10, 4.2.12, 4.2.13, 5.2.1, 7.4,  
9.4.2, 9.5.4, 9.6.4, 15.1.4, 15.2

#### Architect's Additional Services and Expenses

2.5, 12.2.1, 13.4.2, 13.4.3, 14.2.4

#### Architect's Administration of the Contract

3.1.3, 3.7.4, 15.2, 9.4.1, 9.5

#### Architect's Approvals

2.5, 3.1.3, 3.5, 3.10.2, 4.2.7

### Architect's Authority to Reject Work

3.5, 4.2.6, 12.1.2, 12.2.1

### Architect's Copyright

1.1.7, 1.5

### Architect's Decisions

3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 4.2.14, 6.3,  
7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4.1, 9.5, 9.8.4, 9.9.1,  
13.4.2, 15.2

### Architect's Inspections

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 13.4

### Architect's Instructions

3.2.4, 3.3.1, 4.2.6, 4.2.7, 13.4.2

### Architect's Interpretations

4.2.11, 4.2.12

### Architect's Project Representative

4.2.10

### Architect's Relationship with Contractor

1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2,  
3.5, 3.7.4, 3.7.5, 3.9.2, 3.9.3, 3.10, 3.11, 3.12, 3.16,  
3.18, 4.1.2, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5,  
9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.3.2, 13.4, 15.2

### Architect's Relationship with Subcontractors

1.1.2, 4.2.3, 4.2.4, 4.2.6, 9.6.3, 9.6.4, 11.3

### Architect's Representations

9.4.2, 9.5.1, 9.10.1

### Architect's Site Visits

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

### Asbestos

10.3.1

### Attorneys' Fees

3.18.1, 9.6.8, 9.10.2, 10.3.3

### Award of Separate Contracts

6.1.1, 6.1.2

### **Award of Subcontracts and Other Contracts for Portions of the Work**

**5.2**

### **Basic Definitions**

**1.1**

#### Bidding Requirements

1.1.1

#### Binding Dispute Resolution

8.3.1, 9.7, 11.5, 13.1, 15.1.2, 15.1.3, 15.2.1, 15.2.5,  
15.2.6.1, 15.3.1, 15.3.2, 15.3.3, 15.4.1

#### Bonds, Lien

7.3.4.4, 9.6.8, 9.10.2, 9.10.3

### **Bonds, Performance, and Payment**

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**, 11.1.3, **11.5**

### **Building Information Models Use and Reliance**

**1.8**

#### Building Permit

3.7.1

### **Capitalization**

**1.3**

#### Certificate of Substantial Completion

9.8.3, 9.8.4, 9.8.5

### **Certificates for Payment**

4.2.1, 4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7,  
9.10.1, 9.10.3, 14.1.1.3, 14.2.4, 15.1.4

Certificates of Inspection, Testing or Approval  
13.4.4  
Certificates of Insurance  
9.10.2  
**Change Orders**  
1.1.1, 3.4.2, 3.7.4, 3.8.2.3, 3.11, 3.12.8, 4.2.8, 5.2.3,  
7.1.2, 7.1.3, **7.2**, 7.3.2, 7.3.7, 7.3.9, 7.3.10, 8.3.1,  
9.3.1.1, 9.10.3, 10.3.2, 11.2, 11.5, 12.1.2  
**Change Orders**, Definition of  
**7.2.1**  
**CHANGES IN THE WORK**  
2.2.2, 3.11, 4.2.8, **7**, 7.2.1, 7.3.1, 7.4, 8.3.1, 9.3.1.1,  
11.5  
**Claims**, Definition of  
**15.1.1**  
Claims, Notice of  
1.6.2, 15.1.3  
**CLAIMS AND DISPUTES**  
3.2.4, 6.1.1, 6.3, 7.3.9, 9.3.3, 9.10.4, 10.3.3, **15**, 15.4  
Claims and Timely Assertion of Claims  
15.4.1  
**Claims for Additional Cost**  
3.2.4, 3.3.1, 3.7.4, 7.3.9, 9.5.2, 10.2.5, 10.3.2, **15.1.5**  
**Claims for Additional Time**  
3.2.4, 3.3.1, 3.7.4, 6.1.1, 8.3.2, 9.5.2, 10.3.2, **15.1.6**  
**Concealed or Unknown Conditions, Claims for**  
**3.7.4**  
Claims for Damages  
3.2.4, 3.18, 8.3.3, 9.5.1, 9.6.7, 10.2.5, 10.3.3, 11.3,  
11.3.2, 14.2.4, 15.1.7  
Claims Subject to Arbitration  
15.4.1  
**Cleaning Up**  
**3.15**, 6.3  
Commencement of the Work, Conditions Relating to  
2.2.1, 3.2.2, 3.4.1, 3.7.1, 3.10.1, 3.12.6, 5.2.1, 5.2.3,  
6.2.2, 8.1.2, 8.2.2, 8.3.1, 11.1, 11.2, **15.1.5**  
**Commencement of the Work**, Definition of  
**8.1.2**  
**Communications**  
3.9.1, **4.2.4**  
Completion, Conditions Relating to  
3.4.1, 3.11, 3.15, 4.2.2, 4.2.9, 8.2, 9.4.2, 9.8, 9.9.1,  
9.10, 12.2, 14.1.2, 15.1.2  
**COMPLETION, PAYMENTS AND**  
**9**  
Completion, Substantial  
3.10.1, 4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1,  
9.10.3, 12.2, 15.1.2  
Compliance with Laws  
2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 10.2.2,  
13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14.1.1, 14.2.1.3,  
15.2.8, 15.4.2, 15.4.3  
Concealed or Unknown Conditions  
3.7.4, 4.2.8, 8.3.1, 10.3  
Conditions of the Contract  
1.1.1, 6.1.1, 6.1.4

Consent, Written  
3.4.2, 3.14.2, 4.1.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3, 13.2,  
15.4.4.2  
**Consolidation or Joinder**  
**15.4.4**  
**CONSTRUCTION BY OWNER OR BY**  
**SEPARATE CONTRACTORS**  
1.1.4, **6**  
**Construction Change Directive**, Definition of  
**7.3.1**  
**Construction Change Directives**  
1.1.1, 3.4.2, 3.11, 3.12.8, 4.2.8, 7.1.1, 7.1.2, 7.1.3,  
**7.3**, 9.3.1.1  
Construction Schedules, Contractor's  
3.10, 3.11, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2  
**Contingent Assignment of Subcontracts**  
**5.4**, 14.2.2.2  
**Continuing Contract Performance**  
**15.1.4**  
**Contract**, Definition of  
**1.1.2**  
**CONTRACT, TERMINATION OR**  
**SUSPENSION OF THE**  
5.4.1.1, 5.4.2, 11.5, **14**  
Contract Administration  
3.1.3, 4, 9.4, 9.5  
Contract Award and Execution, Conditions Relating  
to  
3.7.1, 3.10, 5.2, 6.1  
Contract Documents, Copies Furnished and Use of  
1.5.2, 2.3.6, 5.3  
**Contract Documents**, Definition of  
**1.1.1**  
**Contract Sum**  
2.2.2, 2.2.4, 3.7.4, 3.7.5, 3.8, 3.10.2, 5.2.3, 7.3, 7.4,  
**9.1**, 9.2, 9.4.2, 9.5.1.4, 9.6.7, 9.7, 10.3.2, 11.5, 12.1.2,  
12.3, 14.2.4, 14.3.2, 15.1.4.2, **15.1.5**, **15.2.5**  
**Contract Sum**, Definition of  
**9.1**  
Contract Time  
1.1.4, 2.2.1, 2.2.2, 3.7.4, 3.7.5, 3.10.2, 5.2.3, 6.1.5,  
7.2.1.3, 7.3.1, 7.3.5, 7.3.6, 7, 7.3.10, 7.4, 8.1.1,  
8.2.1, 8.2.3, 8.3.1, 9.5.1, 9.7, 10.3.2, 12.1.1, 12.1.2,  
14.3.2, 15.1.4.2, 15.1.6.1, 15.2.5  
**Contract Time**, Definition of  
8.1.1  
**CONTRACTOR**  
**3**  
Contractor, Definition of  
**3.1**, **6.1.2**  
**Contractor's Construction and Submittal**  
**Schedules**  
**3.10**, 3.12.1, 3.12.2, 4.2.3, 6.1.3, 15.1.6.2  
Contractor's Employees  
2.2.4, 3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6,  
10.2, 10.3, 11.3, 14.1, 14.2.1.1  
**Contractor's Liability Insurance**  
**11.1**

Contractor's Relationship with Separate Contractors and Owner's Forces  
3.12.5, 3.14.2, 4.2.4, 6, 11.3, 12.2.4

Contractor's Relationship with Subcontractors  
1.2.2, 2.2.4, 3.3.2, 3.18.1, 3.18.2, 4.2.4, 5, 9.6.2, 9.6.7, 9.10.2, 11.2, 11.3, 11.4

Contractor's Relationship with the Architect  
1.1.2, 1.5, 2.3.3, 3.1.3, 3.2.2, 3.2.3, 3.2.4, 3.3.1, 3.4.2, 3.5.1, 3.7.4, 3.10, 3.11, 3.12, 3.16, 3.18, 4.2, 5.2, 6.2.2, 7, 8.3.1, 9.2, 9.3, 9.4, 9.5, 9.7, 9.8, 9.9, 10.2.6, 10.3, 11.3, 12, 13.4, 15.1.3, 15.2.1

Contractor's Representations  
3.2.1, 3.2.2, 3.5, 3.12.6, 6.2.2, 8.2.1, 9.3.3, 9.8.2

Contractor's Responsibility for Those Performing the Work  
3.3.2, 3.18, 5.3, 6.1.3, 6.2, 9.5.1, 10.2.8

Contractor's Review of Contract Documents  
3.2

Contractor's Right to Stop the Work  
2.2.2, 9.7

Contractor's Right to Terminate the Contract  
14.1

Contractor's Submittals  
3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 9.2, 9.3, 9.8.2, 9.8.3, 9.9.1, 9.10.2, 9.10.3

Contractor's Superintendent  
3.9, 10.2.6

Contractor's Supervision and Construction Procedures  
1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 7.3.6, 8.2, 10, 12, 14, 15.1.4

Coordination and Correlation  
1.2, 3.2.1, 3.3.1, 3.10, 3.12.6, 6.1.3, 6.2.1

Copies Furnished of Drawings and Specifications  
1.5, 2.3.6, 3.11

Copyrights  
1.5, **3.17**

Correction of Work  
2.5, 3.7.3, 9.4.2, 9.8.2, 9.8.3, 9.9.1, 12.1.2, **12.2**, 12.3, 15.1.3.1, 15.1.3.2, 15.2.1

**Correlation and Intent of the Contract Documents**  
**1.2**

**Cost**, Definition of  
**7.3.4**

Costs  
2.5, 3.2.4, 3.7.3, 3.8.2, 3.15.2, 5.4.2, 6.1.1, 6.2.3, 7.3.3.3, 7.3.4, 7.3.8, 7.3.9, 9.10.2, 10.3.2, 10.3.6, 11.2, 12.1.2, 12.2.1, 12.2.4, 13.4, 14

**Cutting and Patching**  
**3.14**, 6.2.5

Damage to Construction of Owner or Separate Contractors  
3.14.2, 6.2.4, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damage to the Work  
3.14.2, 9.9.1, 10.2.1.2, 10.2.5, 10.4, 12.2.4

Damages, Claims for  
3.2.4, 3.18, 6.1.1, 8.3.3, 9.5.1, 9.6.7, 10.3.3, 11.3.2, 11.3, 14.2.4, 15.1.7

Damages for Delay  
6.2.3, 8.3.3, 9.5.1.6, 9.7, 10.3.2, 14.3.2

**Date of Commencement of the Work**, Definition of  
**8.1.2**

**Date of Substantial Completion**, Definition of  
**8.1.3**

**Day**, Definition of  
**8.1.4**

Decisions of the Architect  
3.7.4, 4.2.6, 4.2.7, 4.2.11, 4.2.12, 4.2.13, 6.3, 7.3.4, 7.3.9, 8.1.3, 8.3.1, 9.2, 9.4, 9.5.1, 9.8.4, 9.9.1, 13.4.2, 14.2.2, 14.2.4, 15.1, 15.2

**Decisions to Withhold Certification**  
9.4.1, **9.5**, 9.7, 14.1.1.3

Defective or Nonconforming Work, Acceptance, Rejection and Correction of  
2.5, 3.5, 4.2.6, 6.2.3, 9.5.1, 9.5.3, 9.6.6, 9.8.2, 9.9.3, 9.10.4, 12.2.1

Definitions  
1.1, 2.1.1, 3.1.1, 3.5, 3.12.1, 3.12.2, 3.12.3, 4.1.1, 5.1, 6.1.2, 7.2.1, 7.3.1, 8.1, 9.1, 9.8.1, 15.1.1

**Delays and Extensions of Time**  
**3.2**, **3.7.4**, 5.2.3, 7.2.1, 7.3.1, **7.4**, **8.3**, 9.5.1, **9.7**, 10.3.2, **10.4**, 14.3.2, **15.1.6**, 15.2.5

**Digital Data Use and Transmission**  
**1.7**

Disputes  
6.3, 7.3.9, 15.1, 15.2

**Documents and Samples at the Site**  
**3.11**

**Drawings**, Definition of  
**1.1.5**

Drawings and Specifications, Use and Ownership of  
3.11

Effective Date of Insurance  
8.2.2

**Emergencies**  
**10.4**, 14.1.1.2, **15.1.5**

Employees, Contractor's  
3.3.2, 3.4.3, 3.8.1, 3.9, 3.18.2, 4.2.3, 4.2.6, 10.2, 10.3.3, 11.3, 14.1, 14.2.1.1

Equipment, Labor, or Materials  
1.1.3, 1.1.6, 3.4, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1, 4.2.6, 4.2.7, 5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1, 10.2.4, 14.2.1.1, 14.2.1.2

Execution and Progress of the Work  
1.1.3, 1.2.1, 1.2.2, 2.3.4, 2.3.6, 3.1, 3.3.1, 3.4.1, 3.7.1, 3.10.1, 3.12, 3.14, 4.2, 6.2.2, 7.1.3, 7.3.6, 8.2, 9.5.1, 9.9.1, 10.2, 10.3, 12.1, 12.2, 14.2, 14.3.1, 15.1.4

Extensions of Time  
3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3, 7.4, 9.5.1, 9.7, 10.3.2, 10.4, 14.3, 15.1.6, **15.2.5**

**Failure of Payment**  
9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Faulty Work  
(See Defective or Nonconforming Work)

**Final Completion and Final Payment**  
4.2.1, 4.2.9, 9.8.2, **9.10**, 12.3, 14.2.4, 14.4.3

Financial Arrangements, Owner's

2.2.1, 13.2.2, 14.1.1.4

## **GENERAL PROVISIONS**

### **1**

#### **Governing Law**

##### **13.1**

Guarantees (See Warranty)

#### **Hazardous Materials and Substances**

##### **10.2.4, 10.3**

Identification of Subcontractors and Suppliers

5.2.1

#### **Indemnification**

3.17, **3.18**, 9.6.8, 9.10.2, 10.3.3, 11.3

#### **Information and Services Required of the Owner**

2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10.1, 6.1.3, 6.1.4, 6.2.5,

9.6.1, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1, 13.4.2,

14.1.1.4, 14.1.4, 15.1.4

#### **Initial Decision**

##### **15.2**

#### **Initial Decision Maker, Definition of**

1.1.8

Initial Decision Maker, Decisions

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

Initial Decision Maker, Extent of Authority

14.2.4, 15.1.4.2, 15.2.1, 15.2.2, 15.2.3, 15.2.4, 15.2.5

#### **Injury or Damage to Person or Property**

##### **10.2.8, 10.4**

Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3,

9.9.2, 9.10.1, 12.2.1, 13.4

Instructions to Bidders

1.1.1

Instructions to the Contractor

3.2.4, 3.3.1, 3.8.1, 5.2.1, 7, 8.2.2, 12, 13.4.2

#### **Instruments of Service, Definition of**

##### **1.1.7**

Insurance

6.1.1, 7.3.4, 8.2.2, 9.3.2, 9.8.4, 9.9.1, 9.10.2, 10.2.5,

##### **11**

Insurance, Notice of Cancellation or Expiration

11.1.4, 11.2.3

#### **Insurance, Contractor's Liability**

##### **11.1**

Insurance, Effective Date of

8.2.2, 14.4.2

#### **Insurance, Owner's Liability**

##### **11.2**

#### **Insurance, Property**

**10.2.5**, 11.2, 11.4, 11.5

Insurance, Stored Materials

9.3.2

## **INSURANCE AND BONDS**

### **11**

Insurance Companies, Consent to Partial Occupancy

9.9.1

Insured loss, Adjustment and Settlement of

11.5

Intent of the Contract Documents

1.2.1, 4.2.7, 4.2.12, 4.2.13

## **Interest**

### **13.5**

#### **Interpretation**

1.1.8, 1.2.3, **1.4**, 4.1.1, 5.1, 6.1.2, 15.1.1

Interpretations, Written

4.2.11, 4.2.12

Judgment on Final Award

15.4.2

#### **Labor and Materials, Equipment**

1.1.3, 1.1.6, **3.4**, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2, 10.2.1,

10.2.4, 14.2.1.1, 14.2.1.2

Labor Disputes

8.3.1

Laws and Regulations

1.5, 2.3.2, 3.2.3, 3.2.4, 3.6, 3.7, 3.12.10, 3.13, 9.6.4,

9.9.1, 10.2.2, 13.1, 13.3.1, 13.4.2, 13.5, 14, 15.2.8,

15.4

Liens

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

Limitations, Statutes of

12.2.5, 15.1.2, 15.4.1.1

Limitations of Liability

3.2.2, 3.5, 3.12.10, 3.12.10.1, 3.17, 3.18.1, 4.2.6,

4.2.7, 6.2.2, 9.4.2, 9.6.4, 9.6.7, 9.6.8, 10.2.5, 10.3.3,

11.3, 12.2.5, 13.3.1

Limitations of Time

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2.7,

5.2, 5.3, 5.4.1, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3,

9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15,

15.1.2, 15.1.3, 15.1.5

#### **Materials, Hazardous**

##### **10.2.4, 10.3**

Materials, Labor, Equipment and

1.1.3, 1.1.6, 3.4.1, 3.5, 3.8.2, 3.8.3, 3.12, 3.13, 3.15.1,

5.2.1, 6.2.1, 7.3.4, 9.3.2, 9.3.3, 9.5.1.3, 9.10.2,

10.2.1.2, 10.2.4, 14.2.1.1, 14.2.1.2

Means, Methods, Techniques, Sequences and

Procedures of Construction

3.3.1, 3.12.10, 4.2.2, 4.2.7, 9.4.2

Mechanic's Lien

2.1.2, 9.3.1, 9.3.3, 9.6.8, 9.10.2, 9.10.4, 15.2.8

#### **Mediation**

8.3.1, 15.1.3.2, 15.2.1, 15.2.5, 15.2.6, **15.3**, 15.4.1,

15.4.1.1

#### **Minor Changes in the Work**

1.1.1, 3.4.2, 3.12.8, 4.2.8, 7.1, **7.4**

## **MISCELLANEOUS PROVISIONS**

### **13**

#### **Modifications, Definition of**

##### **1.1.1**

Modifications to the Contract

1.1.1, 1.1.2, 2.5, 3.11, 4.1.2, 4.2.1, 5.2.3, 7, 8.3.1, 9.7,

10.3.2

#### **Mutual Responsibility**

##### **6.2**



## **Nonconforming Work, Acceptance of**

9.6.6, 9.9.3, **12.3**

Nonconforming Work, Rejection and Correction of  
2.4, 2.5, 3.5, 4.2.6, 6.2.4, 9.5.1, 9.8.2, 9.9.3, 9.10.4,  
12.2

## **Notice**

**1.6**, 1.6.1, 1.6.2, 2.1.2, 2.2.2., 2.2.3, 2.2.4, 2.5, 3.2.4,  
3.3.1, 3.7.4, 3.7.5, 3.9.2, 3.12.9, 3.12.10, 5.2.1, 7.4,  
8.2.2 9.6.8, 9.7, 9.10.1, 10.2.8, 10.3.2, 11.5, 12.2.2.1,  
13.4.1, 13.4.2, 14.1, 14.2.2, 14.4.2, 15.1.3, 15.1.5,  
15.1.6, 15.4.1

Notice of Cancellation or Expiration of Insurance  
11.1.4, 11.2.3

## **Notice of Claims**

1.6.2, 2.1.2, 3.7.4, 9.6.8, 10.2.8, **15.1.3**, 15.1.5,  
15.1.6, 15.2.8, 15.3.2, 15.4.1

Notice of Testing and Inspections  
13.4.1, 13.4.2

Observations, Contractor's  
3.2, 3.7.4

Occupancy

2.3.1, 9.6.6, 9.8

Orders, Written

1.1.1, 2.4, 3.9.2, 7, 8.2.2, 11.5, 12.1, 12.2.2.1, 13.4.2,  
14.3.1

## **OWNER**

**2**

**Owner**, Definition of

### **2.1.1**

**Owner**, Evidence of Financial Arrangements  
**2.2**, 13.2.2, 14.1.1.4

**Owner**, Information and Services Required of the  
2.1.2, **2.2**, 2.3, 3.2.2, 3.12.10, 6.1.3, 6.1.4, 6.2.5,  
9.3.2, 9.6.1, 9.6.4, 9.9.2, 9.10.3, 10.3.3, 11.2, 13.4.1,  
13.4.2, 14.1.1.4, 14.1.4, 15.1.4

Owner's Authority

1.5, 2.1.1, 2.3.32.4, 2.5, 3.4.2, 3.8.1, 3.12.10, 3.14.2,  
4.1.2, 4.2.4, 4.2.9, 5.2.1, 5.2.4, 5.4.1, 6.1, 6.3, 7.2.1,  
7.3.1, 8.2.2, 8.3.1, 9.3.2, 9.5.1, 9.6.4, 9.9.1, 9.10.2,  
10.3.2, 11.4, 11.5, 12.2.2, 12.3, 13.2.2, 14.3, 14.4,  
15.2.7

**Owner's Insurance**

### **11.2**

Owner's Relationship with Subcontractors  
1.1.2, 5.2, 5.3, 5.4, 9.6.4, 9.10.2, 14.2.2

**Owner's Right to Carry Out the Work**  
**2.5**, 14.2.2

**Owner's Right to Clean Up**  
**6.3**

**Owner's Right to Perform Construction and to**  
**Award Separate Contracts**

### **6.1**

**Owner's Right to Stop the Work**  
**2.4**

Owner's Right to Suspend the Work  
14.3

Owner's Right to Terminate the Contract  
14.2, 14.4

## **Ownership and Use of Drawings, Specifications and Other Instruments of Service**

1.1.1, 1.1.6, 1.1.7, **1.5**, 2.3.6, 3.2.2, 3.11, 3.17, 4.2.12,  
5.3

## **Partial Occupancy or Use**

9.6.6, **9.9**

## **Patching, Cutting and**

**3.14**, 6.2.5

Patents

3.17

## **Payment, Applications for**

4.2.5, 7.3.9, 9.2, **9.3**, 9.4, 9.5, 9.6.3, 9.7, 9.8.5, 9.10.1,  
14.2.3, 14.2.4, 14.4.3

## **Payment, Certificates for**

4.2.5, 4.2.9, 9.3.3, **9.4**, 9.5, 9.6.1, 9.6.6, 9.7, 9.10.1,  
9.10.3, 14.1.1.3, 14.2.4

## **Payment, Failure of**

9.5.1.3, **9.7**, 9.10.2, 13.5, 14.1.1.3, 14.2.1.2

Payment, Final

4.2.1, 4.2.9, **9.10**, 12.3, 14.2.4, 14.4.3

## **Payment Bond, Performance Bond and**

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

## **Payments, Progress**

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

## **PAYMENTS AND COMPLETION**

**9**

Payments to Subcontractors

5.4.2, 9.5.1.3, 9.6.2, 9.6.3, 9.6.4, 9.6.7, 14.2.1.2

PCB

10.3.1

## **Performance Bond and Payment Bond**

7.3.4.4, 9.6.7, 9.10.3, **11.1.2**

## **Permits, Fees, Notices and Compliance with Laws**

2.3.1, **3.7**, 3.13, 7.3.4.4, 10.2.2

## **PERSONS AND PROPERTY, PROTECTION OF**

**10**

Polychlorinated Biphenyl

10.3.1

**Product Data**, Definition of

### **3.12.2**

**Product Data and Samples, Shop Drawings**

3.11, **3.12**, 4.2.7

## **Progress and Completion**

4.2.2, **8.2**, 9.8, 9.9.1, 14.1.4, 15.1.4

## **Progress Payments**

9.3, **9.6**, 9.8.5, 9.10.3, 14.2.3, 15.1.4

**Project**, Definition of

### **1.1.4**

Project Representatives

4.2.10

## **Property Insurance**

10.2.5, **11.2**

## **Proposal Requirements**

1.1.1

## **PROTECTION OF PERSONS AND PROPERTY**

**10**



## Regulations and Laws

1.5, 2.3.2, 3.2.3, 3.6, 3.7, 3.12.10, 3.13, 9.6.4, 9.9.1, 10.2.2, 13.1, 13.3, 13.4.1, 13.4.2, 13.5, 14, 15.2.8, 15.4

## Rejection of Work

4.2.6, 12.2.1

## Releases and Waivers of Liens

9.3.1, 9.10.2

## Representations

3.2.1, 3.5, 3.12.6, 8.2.1, 9.3.3, 9.4.2, 9.5.1, 9.10.1

## Representatives

2.1.1, 3.1.1, 3.9, 4.1.1, 4.2.10, 13.2.1

## Responsibility for Those Performing the Work

3.3.2, 3.18, 4.2.2, 4.2.3, 5.3, 6.1.3, 6.2, 6.3, 9.5.1, 10

## Retainage

9.3.1, 9.6.2, 9.8.5, 9.9.1, 9.10.2, 9.10.3

## Review of Contract Documents and Field Conditions by Contractor

3.2, 3.12.7, 6.1.3

## Review of Contractor's Submittals by Owner and Architect

3.10.1, 3.10.2, 3.11, 3.12, 4.2, 5.2, 6.1.3, 9.2, 9.8.2

## Review of Shop Drawings, Product Data and Samples by Contractor

3.12

## Rights and Remedies

1.1.2, 2.4, 2.5, 3.5, 3.7.4, 3.15.2, 4.2.6, 5.3, 5.4, 6.1, 6.3, 7.3.1, 8.3, 9.5.1, 9.7, 10.2.5, 10.3, 12.2.1, 12.2.2, 12.2.4, 13.3, 14, 15.4

## Royalties, Patents and Copyrights

3.17

## Rules and Notices for Arbitration

15.4.1

## Safety of Persons and Property

10.2, 10.4

## Safety Precautions and Programs

3.3.1, 4.2.2, 4.2.7, 5.3, 10.1, 10.2, 10.4

## Samples, Definition of

3.12.3

## Samples, Shop Drawings, Product Data and

3.11, 3.12, 4.2.7

## Samples at the Site, Documents and

3.11

## Schedule of Values

9.2, 9.3.1

## Schedules, Construction

3.10, 3.12.1, 3.12.2, 6.1.3, 15.1.6.2

## Separate Contracts and Contractors

1.1.4, 3.12.5, 3.14.2, 4.2.4, 4.2.7, 6, 8.3.1, 12.1.2

## Separate Contractors, Definition of

6.1.1

## Shop Drawings, Definition of

3.12.1

## Shop Drawings, Product Data and Samples

3.11, 3.12, 4.2.7

## Site, Use of

3.13, 6.1.1, 6.2.1

## Site Inspections

3.2.2, 3.3.3, 3.7.1, 3.7.4, 4.2, 9.9.2, 9.4.2, 9.10.1, 13.4

## Site Visits, Architect's

3.7.4, 4.2.2, 4.2.9, 9.4.2, 9.5.1, 9.9.2, 9.10.1, 13.4

## Special Inspections and Testing

4.2.6, 12.2.1, 13.4

## Specifications, Definition of

1.1.6

## Specifications

1.1.1, 1.1.6, 1.2.2, 1.5, 3.12.10, 3.17, 4.2.14

## Statute of Limitations

15.1.2, 15.4.1.1

## Stopping the Work

2.2.2, 2.4, 9.7, 10.3, 14.1

## Stored Materials

6.2.1, 9.3.2, 10.2.1.2, 10.2.4

## Subcontractor, Definition of

5.1.1

## SUBCONTRACTORS

5

## Subcontractors, Work by

1.2.2, 3.3.2, 3.12.1, 3.18, 4.2.3, 5.2.3, 5.3, 5.4, 9.3.1.2, 9.6.7

## Subcontractual Relations

5.3, 5.4, 9.3.1.2, 9.6, 9.10, 10.2.1, 14.1, 14.2.1

## Submittals

3.10, 3.11, 3.12, 4.2.7, 5.2.1, 5.2.3, 7.3.4, 9.2, 9.3, 9.8, 9.9.1, 9.10.2, 9.10.3

## Submittal Schedule

3.10.2, 3.12.5, 4.2.7

## Subrogation, Waivers of

6.1.1, 11.3

## Substances, Hazardous

10.3

## Substantial Completion

4.2.9, 8.1.1, 8.1.3, 8.2.3, 9.4.2, 9.8, 9.9.1, 9.10.3, 12.2, 15.1.2

## Substantial Completion, Definition of

9.8.1

## Substitution of Subcontractors

5.2.3, 5.2.4

## Substitution of Architect

2.3.3

## Substitutions of Materials

3.4.2, 3.5, 7.3.8

## Sub-subcontractor, Definition of

5.1.2

## Subsurface Conditions

3.7.4

## Successors and Assigns

13.2

## Superintendent

3.9, 10.2.6

## Supervision and Construction Procedures

1.2.2, 3.3, 3.4, 3.12.10, 4.2.2, 4.2.7, 6.1.3, 6.2.4, 7.1.3, 7.3.4, 8.2, 8.3.1, 9.4.2, 10, 12, 14, 15.1.4

## Suppliers

1.5, 3.12.1, 4.2.4, 4.2.6, 5.2.1, 9.3, 9.4.2, 9.5.4, 9.6, 9.10.5, 14.2.1

## Surety

5.4.1.2, 9.6.8, 9.8.5, 9.10.2, 9.10.3, 11.1.2, 14.2.2, 15.2.7

## Surety, Consent of

9.8.5, 9.10.2, 9.10.3

## Surveys

1.1.7, 2.3.4

## Suspension by the Owner for Convenience

### 14.3

#### Suspension of the Work

3.7.5, 5.4.2, 14.3

#### Suspension or Termination of the Contract

5.4.1.1, 14

## Taxes

3.6, 3.8.2.1, 7.3.4.4

## Termination by the Contractor

14.1, 15.1.7

## Termination by the Owner for Cause

5.4.1.1, 14.2, 15.1.7

## Termination by the Owner for Convenience

### 14.4

#### Termination of the Architect

2.3.3

#### Termination of the Contractor Employment

14.2.2

## TERMINATION OR SUSPENSION OF THE CONTRACT

### 14

#### Tests and Inspections

3.1.3, 3.3.3, 3.7.1, 4.2.2, 4.2.6, 4.2.9, 9.4.2, 9.8.3, 9.9.2, 9.10.1, 10.3.2, 12.2.1, 13.4

## TIME

### 8

#### Time, Delays and Extensions of

3.2.4, 3.7.4, 5.2.3, 7.2.1, 7.3.1, 7.4, 8.3, 9.5.1, 9.7, 10.3.2, 10.4, 14.3.2, 15.1.6, 15.2.5

#### Time Limits

2.1.2, 2.2, 2.5, 3.2.2, 3.10, 3.11, 3.12.5, 3.15.1, 4.2, 5.2, 5.3, 5.4, 6.2.4, 7.3, 7.4, 8.2, 9.2, 9.3.1, 9.3.3, 9.4.1, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 12.2, 13.4, 14, 15.1.2, 15.1.3, 15.4

## Time Limits on Claims

3.7.4, 10.2.8, 15.1.2, 15.1.3

## Title to Work

9.3.2, 9.3.3

## UNCOVERING AND CORRECTION OF WORK

### 12

#### Uncovering of Work

##### 12.1

#### Unforeseen Conditions, Concealed or Unknown

3.7.4, 8.3.1, 10.3

#### Unit Prices

7.3.3.2, 9.1.2

#### Use of Documents

1.1.1, 1.5, 2.3.6, 3.12.6, 5.3

## Use of Site

3.13, 6.1.1, 6.2.1

## Values, Schedule of

9.2, 9.3.1

#### Waiver of Claims by the Architect

13.3.2

#### Waiver of Claims by the Contractor

9.10.5, 13.3.2, 15.1.7

#### Waiver of Claims by the Owner

9.9.3, 9.10.3, 9.10.4, 12.2.2.1, 13.3.2, 14.2.4, 15.1.7

#### Waiver of Consequential Damages

14.2.4, 15.1.7

#### Waiver of Liens

9.3, 9.10.2, 9.10.4

## Waivers of Subrogation

6.1.1, 11.3

## Warranty

3.5, 4.2.9, 9.3.3, 9.8.4, 9.9.1, 9.10.2, 9.10.4, 12.2.2, 15.1.2

#### Weather Delays

8.3, 15.1.6.2

#### Work, Definition of

##### 1.1.3

#### Written Consent

1.5.2, 3.4.2, 3.7.4, 3.12.8, 3.14.2, 4.1.2, 9.3.2, 9.10.3, 13.2, 13.3.2, 15.4.4.2

#### Written Interpretations

4.2.11, 4.2.12

#### Written Orders

1.1.1, 2.4, 3.9, 7, 8.2.2, 12.1, 12.2, 13.4.2, 14.3.1

## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 Basic Definitions**

#### **§ 1.1.1 The Contract Documents**

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

#### **§ 1.1.2 The Contract**

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 1.1.3 The Work**

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

#### **§ 1.1.4 The Project**

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

#### **§ 1.1.5 The Drawings**

The Drawings are 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.

#### **§ 1.1.6 The Specifications**

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

#### **§ 1.1.7 Instruments of Service**

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

#### **§ 1.1.8 Initial Decision Maker**

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

### **§ 1.2 Correlation and Intent of the Contract Documents**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

**§ 1.2.1.1** The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

**§ 1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**§ 1.2.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

### **§ 1.3 Capitalization**

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

### **§ 1.4 Interpretation**

In the interest of brevity the Contract Documents frequently 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.

### **§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service**

**§ 1.5.1** The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

### **§ 1.6 Notice**

**§ 1.6.1** Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

**§ 1.6.2** Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

### **§ 1.7 Digital Data Use and Transmission**

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

### **§ 1.8 Building Information Models Use and Reliance**

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or

relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## **ARTICLE 2 OWNER**

### **§ 2.1 General**

**§ 2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

### **§ 2.2 Evidence of the Owner's Financial Arrangements**

**§ 2.2.1** Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

**§ 2.2.2** Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

**§ 2.2.3** After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

**§ 2.2.4** Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

### **§ 2.3 Information and Services Required of the Owner**

**§ 2.3.1** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

**§ 2.3.2** The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.



§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

#### § 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

#### § 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

### ARTICLE 3 CONTRACTOR

#### § 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

#### § 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as

the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

### **§ 3.3 Supervision and Construction Procedures**

**§ 3.3.1** The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### **§ 3.4 Labor and Materials**

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

**§ 3.4.2** Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

### **§ 3.5 Warranty**

**§ 3.5.1** The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§ 3.5.2** All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

### **§ 3.6 Taxes**

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

### **§ 3.7.4 Concealed or Unknown Conditions**

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.



### § 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

### § 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### § 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and

similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

### **§ 3.12 Shop Drawings, Product Data and Samples**

**§ 3.12.1** Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

**§ 3.12.2** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

**§ 3.12.3** Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

**§ 3.12.4** Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

**§ 3.12.6** By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

**§ 3.12.7** The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

**§ 3.12.8** The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

**§ 3.12.9** The 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 the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

**§ 3.12.10** The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

**§ 3.12.10.1** If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

**§ 3.12.10.2** If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

### **§ 3.13 Use of Site**

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

### **§ 3.14 Cutting and Patching**

**§ 3.14.1** The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

**§ 3.14.2** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

### **§ 3.15 Cleaning Up**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

### **§ 3.16 Access to Work**

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

### **§ 3.17 Royalties, Patents and Copyrights**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

### **§ 3.18 Indemnification**

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

**§ 3.18.2** In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

## **ARTICLE 4 ARCHITECT**

### **§ 4.1 General**

**§ 4.1.1** The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

**§ 4.1.2** Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

### **§ 4.2.4 Communications**

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. 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 the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## ARTICLE 5 SUBCONTRACTORS

### § 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in



number and means a Subcontractor or an authorized representative of the Subcontractor. The term “Subcontractor” does not include a Separate Contractor or the subcontractors of a Separate Contractor.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term “Sub-subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

## **§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work**

**§ 5.2.1** Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 5.2.3** If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor’s Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

## **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor’s Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

## **§ 5.4 Contingent Assignment of Subcontracts**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

## **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

### **§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts**

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

### **§ 6.2 Mutual Responsibility**

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### § 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

### § 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

### § 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;



- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

#### § 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

### ARTICLE 8 TIME

#### § 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

## **§ 8.2 Progress and Completion**

**§ 8.2.1** Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 8.2.2** The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

## **§ 8.3 Delays and Extensions of Time**

**§ 8.3.1** If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

**§ 8.3.2** Claims relating to time shall be made in accordance with applicable provisions of Article 15.

**§ 8.3.3** This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

**§ 9.1.1** The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

**§ 9.1.2** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

#### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### **§ 9.5 Decisions to Withhold Certification**

**§ 9.5.1** The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
  - .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
  - .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
  - .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
  - .5 damage to the Owner or a Separate Contractor;
  - .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

## § 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

## § 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

## § 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

## § 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.



## **§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

**§ 9.10.3** If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

**§ 9.10.4** The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

**§ 9.10.5** Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

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

### **§ 10.1 Safety Precautions and Programs**

The Contractor shall be 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** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;

- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

#### § 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

#### § 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed

by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

**§ 10.3.4** The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

**§ 10.3.5** The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

**§ 10.3.6** If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

#### **§ 10.4 Emergencies**

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

### **ARTICLE 11 INSURANCE AND BONDS**

#### **§ 11.1 Contractor's Insurance and Bonds**

**§ 11.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

**§ 11.1.2** The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

**§ 11.1.3** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

**§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the



procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

## **§ 11.2 Owner's Insurance**

**§ 11.2.1** The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

## **§ 11.3 Waivers of Subrogation**

**§ 11.3.1** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

**§ 11.3.2** If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

## **§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance**

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

#### **§11.5 Adjustment and Settlement of Insured Loss**

**§ 11.5.1** A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

**§ 11.5.2** Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

### **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 the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

**§ 12.1.2** If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

#### **§ 12.2 Correction of Work**

##### **§ 12.2.1 Before Substantial Completion**

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

##### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

### § 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

## ARTICLE 13 MISCELLANEOUS PROVISIONS

### § 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

### § 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

### § 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

### § 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect

timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

### § 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract

Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

## **§ 14.2 Termination by the Owner for Cause**

**§ 14.2.1** The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

**§ 14.2.2** When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

**§ 14.2.3** When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

**§ 14.2.4** If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

## **§ 14.3 Suspension by the Owner for Convenience**

**§ 14.3.1** The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

**§ 14.3.2** The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

## **§ 14.4 Termination by the Owner for Convenience**

**§ 14.4.1** The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

**§ 14.4.2** Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

**§ 14.4.3** In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work



properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

## **ARTICLE 15 CLAIMS AND DISPUTES**

### **§ 15.1 Claims**

#### **§ 15.1.1 Definition**

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term “Claim” also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

#### **§ 15.1.2 Time Limits on Claims**

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

#### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

**§ 15.1.3.2** Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

#### **§ 15.1.4 Continuing Contract Performance**

**§ 15.1.4.1** Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

**§ 15.1.4.2** The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker’s decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

#### **§ 15.1.5 Claims for Additional Cost**

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### **§ 15.1.6 Claims for Additional Time**

**§ 15.1.6.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor’s Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

**§ 15.1.6.2** If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

#### **§ 15.1.7 Waiver of Claims for Consequential Damages**

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

## **§ 15.2 Initial Decision**

**§ 15.2.1** Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 15.2.2** The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

**§ 15.2.3** In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

**§ 15.2.5** The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

**§ 15.2.6.1** Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### § 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### § 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

### § 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party



provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.