

Project Manual

Washington County Courthouse

Phase 2: Exterior Restoration

Brenham, Texas

ARCHITEXAS Project No. 2443



July 11, 2025

Issued for Bid

Owner

Washington County

100 E Main Street, Suite 104

Brenham, Texas 77833

979.277.6221

Architect

ARCHITEXAS

Architecture, Planning and Historic Preservation, Inc.

1023 Springdale Road, Suite 11E

Austin, Texas 78721

512.444.4220

Structural Engineer

TYLin

3800 N Lamar Blvd., Suite 330

Austin, Texas 78756

512.472.2111

MEP Engineer

Brown Consulting Engineers, Inc.

3505 Olsen Blvd., Suite 110

Amarillo, Texas 79109

806.354.0141

Washington County Courthouse

Phase II – Exterior Restoration

Brenham, 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

July 11, 2025

Date

Seal



7/11/2025

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Washington County Courthouse
Phase II - Exterior Restoration

Brenham, Texas

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Prepared by:
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TEXAS REGISTERED ENGINEERING FIRM F-683

July 11, 2025

STRUCTURAL SPECIFICATIONS

Washington County Courthouse Phase II – Exterior Restoration

Brenham, Texas

Section 05100 – Structural Steel Framing



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FIRM REG. #:

F-6261

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REQUEST FOR COMPETITIVE SEALED PROPOSALS

Washington County requests competitive sealed proposals for construction of:

Project No. 2443 Washington County Courthouse: Phase 2: Exterior Restoration

100% Performance and Payment Bonds required.

5% Proposal Guaranty required.

PROPOSAL DEADLINE: 10:00 a.m. Brenham, Texas time, on Thursday, August 7, 2025, at Washington County Clerk's Office, 100 East Main Street, Suite 102, Brenham, Texas 77833, (979) 277-6216. 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:

<https://www.millerplanroom.com/projects/public>

Request and pick up printed documents at:

1007 East 7th

Austin, Texas 78702

(512) 381-5292

Email: 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.

PRE-PROPOSAL CONFERENCE: 2:00 p.m. Brenham, Texas time, on July 17, 2025 at: 100 East Main Street, Commissioner's Courtroom, Suite 103, Brenham, Texas 77833. Washington County may consider an Offeror's attendance of the pre-proposal conference in its determination of best value of each Proposal submitted.

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

REQUEST FOR COMPETITIVE SEALED PROPOSALS

INSTRUCTIONS TO OFFERORS

Washington County ("Owner") requests competitive sealed proposals for a Contractor to perform the construction of the Work described below in connection with Owner's Washington County Courthouse, Interior and Exterior Restoration (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"):

Phase 2: Exterior Restoration

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

Washington County Courthouse, 100 East Main Street, Brenham, Texas 77833

1.2 Estimated Project Budget: \$3,500,000

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 Washington County website below:

<https://www.co.washington.tx.us/page/washington.BidsandProposals>

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:

<https://www.millerplanroom.com/projects/public>

Request and pick up printed documents at:

1007 East 7th

Austin, Texas 78702

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

Email: 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 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 Washington County Courthouse, Drainage, Structural & Electrical Rehabilitation”

- Proposal Deadline: August 7, 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:

Washington County Clerk’s Office
Attn: Judge John Durrenberger
100 East Main Street, Suite 102
Brenham, Texas 77833

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 10:00 a.m., Brenham, Texas time, on August 7, 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 2:00 p.m., Brenham, Texas time, on July 17, 2025, at the Washington County Courthouse, Commissioner’s Courtroom, Suite 103, 100 East Main Street, Suite 104, Brenham, Texas 77833.

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 30th 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 John Durrenberger
Washington County Judge
979.277.6220
countyjudge@washingtoncountytexas.gov

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 Washington 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 Washington 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 WASHINGTON 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 Washington

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: Washington County
Brenham, Texas

Re: RFP for Washington County Courthouse: **Phase 2: Exterior Restoration**
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:

Washington County Courthouse: Phase 2: Exterior Restoration
Architexas Project No. 2443

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 Washington 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

Washington 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 – Masonry Repairs | \$ <u>50,000</u> | Lump Sum |
| B. Allowance No. 2 – Underlying Steel Replacement | \$ <u>25,000</u> | Lump Sum |
| C. Allowance No. 3 – Concrete Repairs | \$ <u>20,000</u> | Lump Sum |
| D. Allowance No. 4 – Exterior Window Repairs | \$ <u>15,000</u> | Lump Sum |
| E. Allowance No. 5 – Interior Plaster Finish Repairs | \$ <u>25,000</u> | Lump Sum |
| F. Allowance No. 6 – Interior Painting | \$ <u>20,000</u> | Lump Sum |

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

A. Unit Price No. 1 – Masonry Repairs

1. Stone Dutchman Repair, 12"x12"x4" deep max. \$ _____/per location
 2. Stone Patching Repair, 6"x6"x1" deep max. \$ _____/per location
 3. Stone Crack Repair, 18" long max. \$ _____/per location
 4. Stone Removal/Reinstallation
 - a. 1'- 3" x 4'- 0" \$ _____/per unit
 - b. 3'- 0" x 4'- 4" \$ _____/per unit
 - c. 4'- 2" x 4'- 4" \$ _____/per unit

d. 4'- 2" x 4'- 10"	\$ _____ /per unit
e. 4'- 2" x 5'- 8"	\$ _____ /per unit
5. Stone Removal/Replacement	
a. 1'- 3" x 4'- 0"	\$ _____ /per unit
b. 3'- 0" x 4'- 4"	\$ _____ /per unit
c. 4'- 2" x 4'- 4"	\$ _____ /per unit
d. 4'- 2" x 4'- 10"	\$ _____ /per unit
e. 4'- 2" x 5'- 8"	\$ _____ /per unit
B. Unit Price No. 2 – Steel Replacement	
1. Con't Shelf Angle/Lintel, Det. 1/S-5.10	\$ _____ /per L.F.
2. Con't Shelf Angle/Lintel, Det. 2/S-5.10	\$ _____ /per L.F.
3. Lintel at Recessed Panels, Det. 3/S-5.10	\$ _____ /per location
4. Con't Shelf Angle/Lintel, Det. 4/S-5.10	\$ _____ /per L.F.
C. Unit Price No. 3 – Plaster Finish Repair	\$ _____ /per S.F.
D. Unit Price No. 4 – Painting	\$ _____ /per S.F.

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

A. Alternate No. 1:

1A. Replace Exterior Windows	\$ _____ Lump Sum
1B. Repair/Paint Interior Finishes at Window Opngs.	\$ _____ Lump Sum
B. Alternate No. 2 – Glass Railing System	\$ _____ Lump Sum
C. Alternate No. 3 – Metal Blinds	\$ _____ 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 Washington 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 Washington 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 Washington 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 WASHINGTON 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 WASHINGTON COUNTY DURING THE SELECTION PROCESS. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, OFFEROR ACKNOWLEDGES THAT WASHINGTON 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 Washington 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 Washington 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 Washington 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 _____ 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 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 Non-County Projects Completed in the Past 5 Years: \$ _____										

Table D**Personnel**

<u>Key Individuals</u>	<u>Number of years with this Company</u>	<u>Commitment for duration of the Project</u> (Yes or No)
Project Manager: [Name]		
Construction Superintendent: [Name]		
Assistant Superintendent: [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 Washington County ("Owner") in the principal sum of

Dollars (\$_____
).

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

- A. Base work includes Selective exterior demolition to remove non-original or damaged elements, and assemblies; Limited site and interior construction as required where affected by exterior restoration work including but not limited to concrete mow strip, re-grading, turf restoration, yard irrigation, interior plaster repairs, etc...; Exterior restoration including stone masonry cleaning, repointing, stone removal & reinstallation/replacement for repair/replacement of steel lintels & shelf angles, stone restoration including retooling, patching, crack and stone Dutchman repairs, restoring aluminum door and window assemblies, restoring ornamental aluminum elements, restoring clock assemblies, and lightning protection system.

NOW, THEREFORE, if the principal shall, within ten (10) days following acceptance by Washington 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 Washington 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: TX20250213 05/16/2025

Superseded General Decision Number: TX20240213

State: Texas

Construction Type: Building

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

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	03/07/2025
2	03/14/2025
3	05/16/2025

ASBE0021-007 06/01/2023

LIMESTONE, SAN AUGUSTINE, AND SHELBY COUNTIES

	Rates	Fringes
Heat and Frost		
Insulator/Asbestos Worker.....	\$ 31.32	7.52

* ASBE0022-003 07/01/2024		

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST		
INSULATOR.....	\$ 30.20	12.38

ASBE0087-005 06/03/2024		

Lee County

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST		
INSULATOR.....	\$ 29.50	8.79

ASBE0112-001 03/15/2021		

Newton County

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST		
INSULATOR.....	\$ 29.75	9.23

BOIL0074-007 01/01/2025		

Lee, Limestone, and Washington Counties

	Rates	Fringes
Boilermaker.....	\$ 33.17	24.92

BOIL0587-005 01/01/2025		

Newton, San Augustine, and Shelby Counties

	Rates	Fringes
Boilermaker.....	\$ 33.17	24.92

CARP0551-007 04/01/2021		

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 25.86	9.08

IRON0084-004 06/01/2024		

Washington County

	Rates	Fringes
IRONWORKER, STRUCTURAL AND REINFORCING.....	\$ 28.26	8.13

IRON0135-003 09/01/2022		

Newton and San Augustine Counties

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 34.35	14.44

IRON0263-024 06/01/2024		

Shelby County

	Rates	Fringes
Ironworker, reinforcing and structural.....	\$ 28.64	7.93

IRON0482-010 06/01/2024		

Lee and Limestone Counties

	Rates	Fringes
IRONWORKER, STRUCTURAL AND REINFORCING.....	\$ 27.10	7.73

LABO0154-005 05/01/2024

Lee County

	Rates	Fringes
Laborers: (Mason Tender - Cement/Concrete)	\$ 25.27	9.57

LABO0154-019 06/01/2024

Newton, San Augustine, and Washington Counties

	Rates	Fringes
Laborers: (Mason Tender - Cement/Concrete)	\$ 25.27	9.57

LABO0154-025 05/01/2024

Limestone and Shelby Counties

	Rates	Fringes
Laborers: (Mason Tender - Cement/Concrete)	\$ 25.27	9.57

PLUM0068-005 10/01/2024

	Rates	Fringes
PLUMBER		
Lee & Washington Counties....	\$ 39.98	11.61
Newton, San Augustine, &		
Shelby Counties.....	\$ 39.98	11.61

PLUM0100-007 11/01/2024

SAN AUGUSTINE & SHELBY COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 39.76	14.04

PLUM0529-003 10/01/2024

Limestone County

	Rates	Fringes
Plumber.....	\$ 32.85	12.74

* SUTX2009-100 04/20/2009

BRICKLAYER.....	\$ 18.00	0.00
CARPENTER, Includes Acoustical Ceiling Installation, Batt Insulation, and Metal Stud Installation (Excludes Drywall Hanging, and Form Work).....	\$ 15.13 **	2.63
CEMENT MASON/CONCRETE FINISHER....	\$ 12.09 **	0.00
DRYWALL HANGER.....	\$ 13.89 **	1.00
ELECTRICIAN.....	\$ 18.06	4.87
LABORER: Common or General.....	\$ 9.24 **	0.00
LABORER: Landscape & Irrigation.....	\$ 8.50 **	0.22
LABORER: Mason Tender - Brick....	\$ 12.02 **	0.00
LABORER: Mortar Mixer.....	\$ 12.00 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 14.67 **	0.47
OPERATOR: Bulldozer.....	\$ 13.00 **	0.35
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.....	\$ 11.75 **	0.00
ROOFER.....	\$ 13.64 **	1.80
SHEET METAL WORKER.....	\$ 17.00 **	0.00
TILE SETTER.....	\$ 15.00 **	0.00
TRUCK DRIVER.....	\$ 10.68 **	0.34

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

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** 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.

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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 _____ Washington County
(Name of Recipient)

100 E. Main Street, Brenham, Texas 77833
(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:

Washington County Courthouse, Phase 2: Exterior Restoration

Includes:

- A. Work includes selective exterior demolition to remove non-original or damaged elements, and assemblies; Limited site and interior construction as required where affected by exterior restoration work including but not limited to concrete mow strip, re-grading, turf restoration, yard irrigation, interior plaster repairs, etc...; Exterior restoration including stone masonry cleaning, repointing, stone removal & reinstallation/replacement for repair/replacement of steel lintels & shelf angles, stone restoration including retooling, patching, crack and stone Dutchman repairs, restoring aluminum door and window assemblies, restoring ornamental aluminum elements, restoring clock assemblies, and lightning protection system.

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

wave 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)

By: _____

(Principal Secretary)

(SEAL)

(Witness as to Principal)

City	State	Zip Code
------	-------	----------

ATTEST:

(Surety)

(Witness as to Surety)

By: _____
(Attorney in Fact)

(Address)

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 _____ Washington County
(Name of Recipient)

100 East Main Street, Brenham, Texas 77833
(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:

Washington County Courthouse, Phase 2: Exterior Restoration

Includes:

- A. Base work includes selective exterior demolition to remove non-original or damaged elements, and assemblies; Limited site and interior construction as required where affected by exterior restoration work including but not limited to concrete mow strip, re-grading, turf restoration, yard irrigation, interior plaster repairs, etc...; Exterior restoration including stone masonry cleaning, repointing, stone removal & reinstallation/replacement for repair/replacement of steel lintels & shelf angles, stone restoration including retooling, patching, crack and stone Dutchman repairs, restoring aluminum door and window assemblies, restoring ornamental aluminum elements, restoring clock assemblies, and lightning protection system.

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

wave 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)

By:

(SEAL)

(Witness as to Principal)

(Address)

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 performed 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 Washington County Courthouse, Phase 2: Exterior Restoration.
- B. Work includes: Selective exterior demolition to remove non-original or damaged elements, and assemblies; Limited site and interior construction as required where affected by exterior restoration work including but not limited to concrete mow strip, re-grading, turf restoration, yard irrigation, interior plaster repairs, etc...; Exterior restoration including stone masonry cleaning, repointing, stone removal & reinstallation/replacement for repair/replacement of steel lintels & shelf angles, stone restoration including retooling, patching, crack and stone Dutchman repairs, restoring aluminum door and window assemblies, restoring ornamental aluminum elements, restoring clock assemblies, and lightning protection system.
- C. 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 – Masonry Repairs Beyond Base Scope of Work: Include a cash allowance of \$50,000.

1. Related Specification Sections:
 - a. Section 04069 – Restoration Mortar
 - b. Section 04905 – Masonry Restoration
 - c. Section 04931 - Chemical Cleaning of Masonry

B. Allowance No. 2 – Lintel and Relieving Angle Replacement Beyond Base Scope of Work: Include a cash allowance of \$25,000.

1. Related Specification Sections:
 - a. Section 04069 – Restoration Mortar
 - b. Section 04905 – Masonry Restoration
 - c. Section 04931 - Chemical Cleaning of Masonry
 - d. Section 05100 – Structural Steel Framing

C. Allowance No. 3 – Concrete Repairs Beyond Base Scope of Work: Include a cash allowance of \$20,000.

1. Related Specification Sections:
 - a. Concrete Repairs, refer to General Notes 1 on Sheet S-1.00 of the Drawings.

- D. Allowance No. 4 – Exterior Window Repairs Beyond Base Scope of Work: Include a cash allowance of \$15,000.
1. Related Specification Sections:
 - a. Section 08591 – Metal Window Restoration.
- E. Allowance No. 5 – Interior Wall and Ceiling Plaster Finish Repairs Beyond Base Scope of Work: Include a cash allowance of \$25,000.
1. Related Specification Sections:
 - a. Section 09281 – Gypsum Plaster Restoration.
- F. Allowance No. 6 – Interior Wall and Ceiling Painting Beyond Base Scope of Work: Include a cash allowance of \$20,000.
2. Related Specification Sections:
 - a. 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 Construction Manager'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 Construction Manager 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 – Masonry Repairs
1. Stone Dutchman Repair
- a. Unit of Measurement: Per location (not to exceed 12-inch x 12-inch by 4 inch deep).
2. Stone Patching Repair
- a. Unit of Measurement: Per location (not to exceed 6-inch x 6-inch by 1-inch deep).
3. Stone Crack Repair
- a. Unit of Measurement: Per location (not to exceed 18-inches long).
4. Stone Unit Replacement Removal and Reinstallation
- a. Unit of Measurement, size per unit:
- (1) 1'-3" x 4'-0"
(2) 3'-0" x 4'-4"
(3) 4'-2" x 4'-4"
(4) 4'-2" x 4'-10"
(5) 4'-2" x 5'-8"
5. Stone Unit Replacement
- a. Unit of Measurement, size per unit:
- (1) 1'-3" x 4'-0"
(2) 3'-0" x 4'-4"
(3) 4'-2" x 4'-4"

- (4) 4'-2" x 4'-10"
 - (5) 4'-2" x 5'-8"
 - 6. Related Specification Section(s):
 - a. Section 017320 – Selective Demolition.
 - b. Section 040690 – Restoration Mortar.
 - c. Section 049050 – Masonry Restoration.
 - B. Unit Price No. 2 – Steel Repairs
 - 1. Continuous Shelf Angle/Lintel Replacement, Ground Floor, per Det. 1/S-5.10
 - a. Unit of Measurement: Per Lineal Foot.
 - 2. Continuous Shelf Angle/Lintel Replacement, 1st, 2nd, 3rd, and 4th Floors, per Det. 2/S-5.10
 - a. Unit of Measurement: Per Lineal Foot.
 - 3. Lintel Replacement at Recessed Marble/Plywood Panel, 2nd and 3rd Floors, per Det. 3/S-5.10
 - a. Unit of Measurement: Per location, window opening width.
 - 4. Continuous Shelf Angle/Lintel Replacement, 3rd Floor, per Det. 4/S-5.10
 - a. Unit of Measurement: Per lineal foot.
 - 5. Related Specification Section(s):
 - a. Section 04905 – Masonry Restoration.
 - b. Section 05100 – Structural Steel Framing.
- C. Unit Price No. 3 – Plaster Finish Repair
 - 1. Repair damaged interior plaster walls and ceilings beyond base work.
 - a. Unit of Measurement: Per square foot.
 - 2. Related Specification Section(s):
 - a. Section 04905 – Masonry Restoration.
 - b. Section 09281 – Gypsum Plaster Restoration.
- D. Unit Price No. 4 – Painting
 - 1. Repaint walls and ceilings beyond base work.
 - a. Unit of Measurement: Per square foot.
 - 2. Related Specification Section(s):
 - a. Section 09910 – Painting and Finishing.

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: Replace Exterior Windows
 - 1. Base Bid: Restore exterior aluminum windows 100%. Replace glass with LowE laminated glass. Repair damaged interior finishes affected by the window restoration work.
 - 2. Alternate Bid 1A: In lieu of restoring exterior aluminum windows 100%, replace with manufactured window assemblies closely matching the appearance of the original windows with improved energy efficiency including thermal breaks and insulated LowE glazing, include removal, shop drawings, and installation (Turnkey). For double hung windows, Types A, A1, B, B1, B2, B3, and B4, provide Series 2000H Single Hung Side Load 3 1/4" Historic Beveled Frame with simulated divided lites, #990878 - 1" muntin, and #999955 - 4 1/2" Alcoa Sill, as manufactured by Graham Architectural Products. At recessed windows provide custom break metal sills matching finish of windows. For casement windows with transoms, Types C and C1, provide Series GT6700B 3" Outswing Twin Casement (provide wide mullion to accept interior partition) with simulated divided lites, #T67196 - 1" exterior muntin as manufactured by Graham Architectural Products. Provide custom break metal sills matching finish of windows. Provide exterior brick mold, #6 at jambs, and #11 at head, all double hung windows. Provide window assemblies in painted finish to closely match color of mill finish of original windows. Provide Low-E insulating units as follows:
 - a. Preassembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E774 for Class CBA units or ASTM E2190 and as follows:
 - (1) Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses as recommended by the float glass manufacturer.
 - (2) Sealing system: Dual seal, with primary and secondary sealants as follows:
 - (i) TPS – Butyl-based thermoplastic edge seal and structural silicone.

- (3) Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
 - (i) Spacer Material: TPS – Thermoplastic warm-edge spacer system.
 - (ii) Desiccant: Molecular sieve matrix
 - (iii) Corner Construction: Seamless bent corners with one straight-edge tapered joint.
 - (iv) Color: Stainless Steel.
 - (4) Description:
 - (i) Inner lite (Exposed to finished space): $\frac{1}{4}$ " thick, ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality Q3 glazing select with Low E coating on #2 surface complying with ASTM C 1376-03.
 - (ii) Outer lite: $\frac{1}{4}$ " thick, clear annealed float glass, ASTM C 1036 with Low E coating on #2 surface complying with ASTM C 1376-03
 - (iii) Thickness: Overall 1-inch.
 - (5) Product: LoE – 272 by Cardinal Glass Industries.
 - (6) Provide patterned glass, $\frac{1}{8}$ " Cross Reeded #GL 680 as distributed by ArchitecturalGlass.com, at inner lite, where indicated in the Window Schedule.
3. Alternate Bid 1B: If replacement windows are accepted, they will need to be installed from the interior. Assume interior plaster head and jambs will need to be repaired and metal clad stools will need to be removed and reinstalled. Include painting of repaired plaster to nearest break and painting of stools.
4. Related Specification Section(s):
 - a. Section 01730 – Selective Demolition
 - b. Section 08591 – Metal Window Restoration
 - c. Section 08800 – Glazing
 - d. Section 09281 – Gypsum Plaster Restoration
 - e. Section 09910 – Painting and Finishing

B. Alternate No. 2: Glass Railing System

- 1. Base Bid: No interior work in District Courtroom.
- 2. Alternate Bid 2: Provide glass railing system for fall protection in District Courtroom at window 324 as indicated and detailed in the Drawings.
- 3. Related Specification Section(s):
 - a. Section 01730 – Selective Demolition
 - b. Section 05100 – Structural Steel Framing
 - c. Section 05730 – Glass Railing System

C. Alternate No. 3: Metal Blinds at Exterior Windows

- 1. Base Bid: Remove and reinstall existing window treatments including associated fastening systems as required to restore exterior windows 100%.
- 2. Alternate Bid 3: Remove existing window treatments including associated fastening systems and return to owner U.O.N. Provide metal blinds at exterior windows 100% U.O.N.
- 3. Related Specification Section(s):
 - a. Section 12491 – Horizontal Louver Blinds

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 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. Coordinate completion and clean up of work of separate Sections in preparation for Substantial Completion.

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 Contractor 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 photographs during construction.
2. Provide 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 twelve (12) different views at each specified time; views as directed by Architect.
5. After restoration work has commenced, take five (5) additional photographs; views as directed by Architect.
6. At successive periods of photography, take photographs from same overall view as previously taken.
7. Provide factual presentation.
8. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

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 record 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: 12 exterior views, each elevation and elevation details. 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. Three copies of digital image data on a thumb drive.

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 all associated trades and 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 reproducible and one opaque copy of each sheet.
- F. Architect will return reproducible copies 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 two copies.
- E. Architect will return one 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 listed in the National Register of Historic Places and is a Recorded Texas Historic Landmark.
 - 2. Due to its unique historical significance, special procedures and precautions must be used in selective demolition.
 - 3. The building is to be restored to its original 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: Maria Angel
 - 3. Texas Historical Commission, Division of Architecture

108 W. 16th 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. Historic Artifacts: If unexpected 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. Salvaged Materials:
 - 1. Carefully remove items indicated to be salvaged for the owner.
 - 2. Label each element with a numbered tag.
 - 3. Use a waterproof marker on each label and secure the label in a manner that it can be attached and removed without damaging the material.
 - 4. Indicate the location and number of each salvaged item on as-built shop drawings.
 - 5. Store salvaged materials where directed by owner.

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. Minimize damage to existing materials and surfaces.
- B. Remove unsuitable materials not marked for salvage.
- C. Remove debris and abandoned items from areas of work and from concealed spaces, unless noted otherwise.

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.

3.5 TESTING OF NON-SHRINK GROUT

- A. Make one strength test for every 10 base plates grouted and for every 10 bags of grout used in joints between members.
- B. Each test shall consist of four cubes, two to be tested at seven days, and two at 28 days, made and tested in accordance with ASTM C109, with the exception that the grout shall be restrained from expansion by a top plate.

3.6 STRUCTURAL STEEL

- A. Inspect all structural steel during fabrication and during and after erection for conformance with Contract Documents and shop drawings.
- B. Shop Inspection:
 1. Examination of steel for straightness and alignment.
 2. Examination of all fabricated pieces for compliance with Contract Documents and shop drawings.
 3. Visual examination of all shop welding.
 4. Ultrasonic testing of all full penetration welds.

5. Examination of galvanizing.
 6. Examination of installation of shop welded shear studs.
 7. Examination of shop painting.
- C. Field Inspection:
1. Proper erection of all pieces.
 2. Proper installation of all bolts, including the checking of calibration of impact wrenches used with high strength bolts.
 3. Plumbness of structure and proper bracing.
 4. Field Painting.
 5. Visual examination of all field welding.
 6. Ultrasonic testing of all penetration welds.
 7. Installation of field welded shear studs.
 8. Measure and record camber of all beams upon arrival and before erection for compliance with the specified camber. Measure lying flat with web in horizontal position. Members outside specified camber tolerance shall be returned to the shop for remedial work.
- D. Qualification of Welders: Fabricator and erector shall provide the testing laboratory with names of welders to be employed in the work, together with certification that welders have passed qualification tests within the last year using procedures specified in the AWS D1.1. Testing laboratory shall verify all welder's qualifications.
- E. Inspection of shop and field welding shall be "verification inspection," in accordance with Section 6 of AWS D1.1 and as follows:
1. Visually inspect the welding of all shop fabricated members and note the location of all cover plates, connectors, bearing stiffeners, splices, and fillet welds for proper return around ends and check for seams, folds, and delaminations.
 2. Ultrasonically test all penetration welds in accordance with AWS D1.1.
 3. Inspect surfaces to be welded. Surface preparations, fit-up and cleanliness of surface shall be noted.
 4. The welding inspector shall be present during alignment and fit-up of members being welded, and shall check for correct surface preparation of root openings, sound weld metal, and proper penetration in the root pass. Where weld has not penetrated completely, the inspector shall order the joint to be chipped down to sound metal, or gouged out and rewelded. Root passes shall be thoroughly inspected for cracks. All cracks shall be gouged out and rewelded to two inches beyond each end of crack.
 5. The inspector shall check that all welds have been marked with the welders symbol. The inspector shall mark the welds requiring repairs and shall make a reinspection. The inspector shall maintain a written record of all welds. Work completed and inspected shall receive an identification mark by the inspector.
 6. The testing laboratory shall advise the Owner and the Architect of any shop and/or field conditions which, in his opinion, may require further tests and examination by means other than those specified. Such further tests and examinations shall be performed as authorized by the Owner and the Architect.
 7. The Owner reserves the right to use ultrasonic or radiographic inspection to verify the adequacy of all welds. Testing procedures and acceptance criteria shall be as specified in AWS D1.1.
- F. Inspection of bolted construction shall be in accordance with AISC "Specification for Structural Steel Buildings" and as follows:
1. All bolts shall be visually inspected to ensure that the plies have been brought into snug contact.
 2. High strength bolting shall be inspected in accordance with Section 9 of the AISC "Specifications for Structural Joints Using ASTM A325 or A490 Bolts."

3. For all high strength bolts, unless specifically noted on the Drawings to require only "snug-tight" installation, the inspector shall observe the required jobsite testing and calibration, and shall confirm that the procedure to be used provides the required tension.
 4. For slip critical connections, inspect the contact surfaces for compliance with specifications prior to bolting.
- G. Inspection of stud welding shall be in accordance with Section 7.8 of AWS D1.1 and as follows:
1. A minimum of two shear studs shall be welded at the start of each days production period in order to determine proper generator, control unit and stud welding setting. These studs shall be capable of being bent at 45 degrees from vertical without weld failure.
 2. When the temperature is below 32 degrees Fahrenheit, one stud in each 100 shall be tested after cooling. Studs shall not be welded below zero degrees Fahrenheit or when the surface is wet due to rain, snow, or ice. If a stud fails, two new studs shall pass the test before resumption of the welding.
 3. Visually inspect studs for compliance with the Contract Documents. Check number, spacing, and weld quality. If, after welding, visual inspection reveals that a sound weld or a full 360 degree fillet has not been obtained for a particular stud, such stud shall be struck with a hammer and bent 15 degrees off perpendicular. Studs failing this test shall be replaced.

3.7 EXPANSION BOLT INSTALLATION

- A. Inspect the drilling of each hole and installation of each expansion bolt for compliance with the Contract Documents.
- B. Verify the installation torque for each expansion bolt for compliance with manufacturer's installation instructions.

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 as needed.
- 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 as required. Coordinate location and obtain final approval for layout from Owner prior to installation.
 - 2. Locate to protect stored materials, equipment, and dumpsters.
- 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.

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.

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. Provide project sign with participant names and associated firm names as necessary to coincide with project.
 2. 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

CONSTRUCTION SIGN SPECIFICATIONS

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



SCALE: 1" = 1'

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
Arial Bold

SERIF FONTS:

- Adobe Garamond Pro Semibold
Adobe Garamond Pro Bold Italic
Garamond
Garamond Bold Italic

FOR MORE INFORMATION:

Please contact the Communications
Division of the Texas Historical
Commission at 512-463-6255.

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. Selective demolition includes, but is not necessarily limited to the following:
 - 1. Removal, relocation and protection of existing items marked salvage for reuse or salvage for Owner.
 - 2. Removal and disposal of existing items as indicated on the drawings.
 - 3. Removal and disposal of debris.
 - 4. Identification of utilities.

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 Revised Limited Asbestos Survey and the Lead-Based Paint XRF Sampling contained in the appendix of the project manual, notify the Owner and Architect, and await instructions.
- C. If any of the following conditions are encountered, cease work immediately, notify the Owner's Project Manager and 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. Salvaged Materials:
 - 1. Items not marked for reuse or salvage for Owner are to be removed from the site and properly disposed of per local code.
 - 2. Items marked "salvage for reuse" or "salvage to Owner" shall be stored on-site where directed by the 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 for 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. Project record documents.
- 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 re-inspection 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. Certificate of Occupancy.
 - 5. Project Record Documents (drawings and specifications).
 - 6. Operation and Maintenance Data.
 - 7. Warranties.
 - 8. Keys and keying schedule.
 - 9. Spare parts and maintenance materials.
 - 10. Evidence of payment to Subcontractors and suppliers.
 - 11. Final lien waiver.
 - 12. Certificate of insurance for products and completed operations.
 - 13. 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.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean debris from roofs and drainage systems
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. 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: One digital copy on thumb drive.
 - b. Specifications: One digital copy on thumb drive.
 2. Architect:
 - a. Drawings: One digital copy on thumb drive.
 - b. Specifications: One digital copy on thumb drive.
 3. Owner:
 - a. Drawings:
 - (1) One digital copy on thumb drive.
 - (2) One full size set of reproducible acid free prints and one half size set of blackline prints.
 - b. Specifications:
 - (1) One digital copy on thumb drive.
 - (2) One 8-1/2 x 11 inch set.

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 02075

PAINT REMOVAL

PART 1 GENERAL

1.1 SUMMARY

- A. All labor, materials, equipment and services necessary to complete the coating(s) removal work as shown on the drawings and specified herein, including but not necessarily limited to the following:
 - 1. Remove paint coating from stone at base of building, where indicated on the Drawings.
 - 2. Remove paint coating from steel lintels and relieving angles, where stone veneer at exterior facades is scheduled to be removed.
 - 3. Provide all necessary protection and take all necessary precautions to protect adjacent surfaces, building occupants, and pedestrians.

1.2 RELATED SECTIONS

- A. Section 04905 – Masonry Restoration
- B. Section 04931 – Chemical Cleaning of Masonry
- C. Section 05100 – Structural Steel Framing

1.3 SUBMITTALS

- A. Submit under provisions of Section 01330 - Administrative Requirements.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Field Test: For the project record, submit written report of field test performed for each application and results achieved.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- C. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
- D. Field Test: Use manufacturer's test kit prior to application of any materials. Obtain Architect's approval of test results prior to starting subsequent operations.
 - 1. If required, repeat field test until Architect's acceptance.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
 - 1. Shelf Life, All Products: 3 years.
- B. Protect from damage due to weather, excessive temperature, and construction operations.

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Dumond, Inc., 253 S. Bailey Rd.; Downingtown, PA 19335, 609-655-7700.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01631 – Substitution Request Form.

2.2 PAINT REMOVAL SYSTEM

- A. Paint Removal Test Kit as manufactured by Dumond Inc.
 - 1. Includes:
 - a. Peel Away 1 Heavy Duty Paint Remover.
 - b. Smart Strip Advanced Paint Remover.
 - c. Smart Strip PRO Professional Paint Remover.
 - d. Dumond Laminated Paper.
- B. Stone Masonry: Smart Strip Pro Professional Strength Paint Remover: Water-based. Manufactured by Dumond Inc.
 - 1. Performance and Design Requirements:
 - a. Weight per Gallon: 10 lbs (4.5 kg).
 - b. Flash Point: None.
 - c. pH Level: 2 to 3.
 - d. Freeze Point: 5 degrees F (Minus 15 degrees C).
 - e. Shelf Life: 3 years.
 - 2. Form: White Paste.
 - 3. Characteristics: Does not contain methylene chloride or caustic chemicals. Removes up to 20 coats in one application. Non-flammable. No harmful odors or fumes. Non-carcinogenic.
 - 4. Application Temperature: 50 to 90 degrees F (10 to 32 degrees C).
 - 5. Average Spread Rate: 40 to 45 sq ft (3.7 to 4.2 sq m) per gal.
 - 6. Dwell Time: 1 to 24 hours.
- C. Stone Masonry: Peel Away 1, Heavy Duty Paint Remover: Water-based. Manufactured by Dumond Inc.
 - 1. Performance and Design Requirements:
 - a. Viscosity: 26.5.
 - b. Specific Gravity: 1.44.
 - c. Weight per Gallon: 12 lbs (5.4 kg).
 - d. Flash Point: None.

- e. Solid Content: 58.0.
 - f. pH Level: 12.
 - g. Freeze Point: 32 degrees F (0 degrees C).
 - h. Shelf Life: 3 years.
 - 2. Form: White Thick Paste.
 - 3. Characteristics: Does not contain methylene chloride. Removes up to 30 coats in one application. Non-flammable. No harmful odors or fumes.
 - 4. Application Temperature: 50 to 90 degrees F (10 to 32 degrees C).
 - 5. Average Spread Rate: 20 to 22 sq ft per gallon (0.50 to 0.54 sq m per L).
 - 6. Dwell Time: 12 to 48 hours.
- D. Stone Masonry: Peel Away 7, Solvent-Based Paint Remover: Non-toxic. Manufactured by Dumond Inc.
- 1. Performance and Design Requirements:
 - a. pH Level: 6.
 - b. Freeze Point: 32 degrees F (0 degrees C).
 - c. Shelf Life: 3 years.
 - 2. Form: Paste.
 - 3. Characteristics: Does not contain methylene chloride or caustic chemicals.
 - 4. Application Temperature: 50 to 90 degrees F (10 to 32 degrees C).
 - 5. Average Spread Rate: 40 to 50 sq ft (3.7 to 4.6 sq m) per gal.
 - 6. Dwell Time: 12 to 48 hours.
- E. Peel Away pH Test Tape as manufactured by Dumond Inc.
- 1. Characteristics: Use for testing surface pH level.
- F. Peel Away After Strip Final Cleanup as manufactured by Dumond Inc.
- 1. Performance and Design Requirements:
 - a. Flash Point: 200 degrees F (93 degrees C).
 - b. pH Level: 6.
 - c. Freeze Point: 0 degrees F (minus 18 degrees C).
 - d. Shelf Life: 3 years.
 - 2. Form: Clear liquid.
 - 3. Characteristics: Prevents residue from clinging to substrates after stripping. Cleans and polishes marine surfaces.
- G. Citri-Lize Neutralizer and Mill Glaze Remover as manufactured by Chemicals Inc.
- 1. Performance and Design Requirements:
 - a. Flash Point: N/A.
 - b. pH Level: 1.
 - c. Freeze Point: 0 degrees F (-18 degrees C).
 - d. Shelf Life: 3 years.
 - 2. Form: White powder.
 - 3. Characteristics: Lowers the pH level of substrates that are highly alkaline. Removes mill glaze. Non-flammable. No harmful odors or fumes.
 - 4. Drying Time: 24 to 48 hours.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly constructed and prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- B. Protect adjacent surfaces as recommended by manufacturer.
- C. Clean surfaces and remove large particles as recommended by manufacturer.

3.3 APPLICATION

- A. Apply in accordance with manufacturer's instructions, approved submittals and approved mock-ups:
 - 1. Use tools and application methods recommended by manufacturer.
 - 2. Allow sufficient time for solution to remain on surface.
 - 3. Agitate as recommended by manufacturer.
 - 4. Rinse and remove product as recommended by manufacturer.

3.4 CLEANING AND PROTECTION

- A. When lead-based coatings are being removed, comply with regulations of US Environmental Protection Agency (EPA), and state and local agencies.
- B. Clean surfaces in accordance with the manufacturer's recommendations.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

This section includes the following:

- A. Preparing of Subgrades
- B. Excavation, Fill and Backfill
- C. Grading
- D. Topsoil Placement

1.3 DEFINITIONS

- A. Excavation: Excavation consists of removal of material encountered to subgrade elevations required and subsequent disposal or relocation of materials removed.
- B. Unauthorized Excavation: Unauthorized excavation consists of removal of materials beyond required subgrade elevations or dimensions. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification.
- C. Subgrade: The undisturbed earth or the compacted soil layer immediately below subbase material, base material, or topsoil materials.
- D. Degree of Compaction: Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 698 abbreviated as a percent of laboratory maximum density.
- E. Select Fill for Buildings: The fill material placed directly under the building slab or foundations.

1.4 SUBMITTALS

Submit copies of all laboratory and field test reports should be within 24-hours of the completion of the test.

- A. Field Density Tests
- B. Laboratory Testing of Fill and Backfill Materials
- C. One optimum moisture-maximum density curve for each type of material.

1.5 QUALITY ASSURANCE

- A. Perform excavation work in compliance with applicable requirements of authorities having jurisdiction.

- B. Contractor shall employ and pay for a qualified independent geotechnical consultant to perform soil testing and inspection services.
- C. To qualify for acceptance, the geotechnical consultant must demonstrate to Architect's satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM E 699, that it has the experience and capability to conduct required field and laboratory geotechnical testing without delaying the progress of the Work.

1.6 PROJECT CONDITIONS

- A. Existing Utilities: Locate existing underground utilities in areas of excavation work. If utilities are indicated to remain in place, provide adequate means of support and protection during earthwork operations.
 1. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult Owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services in operation. Repair damaged utilities to satisfaction of utility owner.
 2. Provide minimum of 48-hour notice to utility owner and receive written notice to proceed before interrupting any utility.
 3. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shutoff of services if lines are active.
 4. The Owner may wish to reinstall some existing utilities to a greater depth. This work shall be performed by the Contractor if requested by the Owner for additional compensation.
- B. Protection of Persons and Property:
 1. Barricade open excavations occurring as part of this work and post with warning lights.
 2. Operate warning lights as recommended by authorities having jurisdiction.
 3. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
 4. Contractor shall establish a trench safety excavation plan to be implemented during any trench excavation.

PART 2 - PRODUCTS

2.1 SOIL MATERIAL

- A. Satisfactory soil materials are defined as those complying with ASTM D 2487 soil classification groups GW, GP, GM, GC, SW, SP, SM, SC, CL and CH; and shall be free of trash, debris, roots, or other organic matter or stones larger than 3 inches in any direction.
- B. Fill and backfill materials within areas to be paved shall meet the definition of satisfactory soil materials and additionally meet the following specifications:
 1. Liquid Limit – not greater than 35.
 2. Plasticity Index – 4 to 20.

Materials that meet the satisfactory soil material criteria and the above requirements will be noted as non-expansive materials on drawings and specifications.

- C. Select Fill for Buildings shall be satisfactory materials with sufficient binders for proper compaction and the following properties:

Maximum Aggregate Size	2"
Plasticity Index	5 to 15
Retained on #4 Sieve	25-50%
Retained on #40 Sieve	50-75%

- D. Fill and backfill in other areas shall be satisfactory soil materials free of rock or gravel, debris, waste, frozen materials, vegetation and other deleterious matter.
- E. Unsatisfactory soil materials are defined as those complying with ASTM D 2487 soil classification groups ML, MH, OL, OH, and Pt or other material not defined as satisfactory.
- F. Topsoil is defined as the fine-grained weathered material on the surface in undisturbed natural soil areas and directly below surface vegetation. Topsoil is representative of productive soils in the vicinity. Topsoil shall be material suitable for grassing and seeding.

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

Remove trees, stumps, roots, brush and other vegetation, debris, existing foundations, pavements, utility lines, structures, fences, and other items that would interfere with construction operations. Stumps, logs, roots, and other organic matter shall be completely removed, and the resulting depressions shall be filled with satisfactory material. Materials removed shall be disposed outside the limits of the property at the Contractor's responsibility.

3.2 STRIPPING OF TOPSOIL

Topsoil shall be stripped to a depth of 4" to 6". Topsoil shall be transported and deposited in stockpiles convenient to areas that are to receive application of the topsoil later. Topsoil shall be kept separate from other excavated materials, brush, litter, objectionable weeds, roots, stones larger than 2 inches in diameter, and other materials that would interfere with planting and maintenance operations. Stockpile height should not exceed about five feet.

3.3 EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Grading shall be in conformity with the typical sections shown. Excavated materials shall be transported to and placed in fill or embankment within the limits of the work. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times. Material required for fill or embankment in excess of that produced by excavation within the grading limits shall be excavated from borrow areas or from other approved areas selected by the Contractor.

Excavation for paving shall be accomplished by cutting accurately to the cross sections, grades, and elevations shown. Over-excavation shall be backfilled with thoroughly compacted non-expansive material. The Contractor shall maintain excavations free from detrimental quantities of leaves, brush, sticks, trash, and other debris until final acceptance of the work.

3.4 DRAINAGE

Surface water shall be directed away from excavation and construction sites so as to prevent erosion. Diversion ditches, dikes, and grading shall be provided and maintained as necessary during construction. Excavation shall be performed so that the site and the area immediately surrounding the site will be continually and effectively drained.

3.5 SELECTION OF BORROW MATERIAL

Borrow material shall be selected to meet the requirements and conditions of the particular fill for which it is to be used. Borrow material shall be obtained from approved sources selected by the Contractor. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation.

3.6 BACKFILL

- A. Backfill and fill shall be placed and compacted to at least 95 percent laboratory maximum density. Backfill below areas to be paved shall be compacted to at least 98 percent laboratory maximum density. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment.
- B. Fill and backfill shall be constructed from materials free of organic or frozen material and rocks. The material shall be placed in successive horizontal layers of loose material not more than 8 inches in depth. Each layer shall be spread uniformly on a soil surface that has been moistened or aerated as necessary and scarified or otherwise broken up in such a manner that the fill will bond with the surface on which it is placed. After spreading, each layer shall be plowed, disked, or otherwise broken up; moistened or aerated as necessary and thoroughly mixed.

3.7 SUBGRADE PREPARATION

- A. After removal of any surface vegetation and topsoil, subgrade shall be shaped to line, grade, and cross section, and compacted as specified. This operation shall include plowing, disk, and any moistening or aerating required to obtain specified compaction. Soft or otherwise unsatisfactory material shall be removed and replaced with satisfactory excavated material or other approved material as directed. Moisture content shall be at or near optimum. After rolling, the surface of the subgrade for paved areas shall not show deviations greater than 1/2 inch when tested with a 12 foot straightedge applied both parallel and at right angles to the area to be paved on a 20 foot rectangular grid interval for both directions. The elevation of the finish subgrade shall not vary more than 0.05 foot from the established grade and cross section.
- B. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. The subgrade shall be compacted to at least 98 percent of laboratory maximum density for paved areas and 95 percent for all other areas.

3.8 FINISHING AND GRADING

The surface of excavations, fills, and subgrades shall be finished to a smooth and compact surface in accordance with the lines, grades, and cross sections or elevations shown. The degree of finish for graded areas shall be within 0.1 foot of the grades and elevations indicated except that the degree of finish for subgrades shall be as specified in paragraph SUBGRADE PREPARATION. All areas shall be finished in a manner that will result in effective drainage. The surface of areas to be turfed in the future shall be finished to smoothness suitable for the application of turfing materials.

3.9 SUBGRADE, FILL AND BACKFILL PROTECTION

During construction fill, backfill, and excavations shall be kept shaped and drained. Ditches and drains along subgrade shall be maintained to drain effectively at all times. The finished subgrade shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until subbase, base, or pavement is placed. The storage or stockpiling of materials on the finished subgrade will not be permitted. No subbase, base course or pavement shall be laid until the subgrade has been checked and approved, and in no case shall subbase, base, surfacing or pavement be placed on a muddy, spongy, or frozen subgrade.

3.10 PROTECTION

Settlement or washing that occurs in graded or backfilled areas prior to acceptance of the work shall be repaired and grades re-established to the required elevations and slopes.

3.11 EROSION CONTROL

Before starting earthwork operations in any particular area, install measures for the control, prevention, and abatement of erosion and siltation as required by any applicable federal, state or local codes or regulations.

3.12 EXCESS EXCAVATED MATERIALS

Satisfactory excavated materials shall be used to the extent possible for the permanent work required under this section. Excess material shall be disposed of offsite.

3.13 TESTING

- A. Testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Owner. Testing shall be performed by an approved geotechnical consultant. Field in-place density shall be determined in accordance with ASTM D 2922.
- B. When test results indicate that compaction is less than specified, the material shall be removed, replaced and/or recompacted to meet specification requirements at no additional expense to the Owner. Test on recompacted areas shall be performed to determine conformance with specification requirements.
- C. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.
 1. Fill and Backfill Material Gradation: One test per 400 cubic yards stockpiled or in-place source material.
 2. In-Place Densities:
 - a. One test per 5,000 square feet or fraction thereof for subgrades.
 - b. One test per 5,000 square feet or fraction thereof, of each lift of fill or backfill.
 - c. One test per 200 linear feet or fraction thereof of each lift of fill or backfill where the area is less than four feet in width.
 3. Moisture content shall be determined on materials obtained from each density sample or location.
 4. Optimum Moisture and Laboratory Maximum Density: Tests shall be made for each type material or source of material including borrow material to determine the optimum moisture and laboratory maximum density values. One representative test per 400 cubic yards of fill and backfill, or when any change in material occurs which may affect the optimum moisture content or laboratory maximum density.
- D. Tolerance Tests for Subgrades: Continuous checks on the degree of finish specified in paragraph SUBGRADE PREPARATION shall be made during construction of the subgrades.

END OF SECTION

SECTION 02750
PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Replace portland cement concrete paving affected by the work of this project including curbs, gutters, walkways, and pavement.
- B. Prepared subbase is specified in "Earthwork" section.

1.3 SUBMITTALS

Provide samples, manufacturer's product data, test reports, and materials' certifications as required in referenced sections for concrete and joint fillers and sealers.

1.4 QUALITY ASSURANCE

Codes and Standards: Comply with local governing regulations if more stringent than herein specified.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Forms: Steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.
 1. Use flexible spring steel forms or laminated boards to form radius bends as required.
 2. Coat forms with a non-staining form release agent that will not discolor or deface surface of concrete.
- B. Reinforcing Bars: Deformed steel bars, ASTM A 615, Grade 60.
- C. Expansion Joint Materials: ASTM D 1751, asphalt impregnated board.
- D. Joint Sealant: ASTM C920, Class 25, pourable and self-leveling.
- E. Liquid-Membrane Forming and Sealing Curing Compound: Comply with ASTM C 309, Type D, Class A unless other type acceptable to Engineer. Moisture loss no more than 0.055 gr./sq. cm. When applied at 200 sq. ft./gal.

2.2 CONCRETE MIX DESIGN

- A. Design mix to produce normal-weight concrete consisting of portland cement, aggregate, water-reducing or high-range water-reducing admixture (superplasticizer), air-entraining admixture, and water to produce the following properties:
 - 1. Compressive Strength: 3,500 psi, minimum at 28 days.
 - 2. Slump Limits: 8 inches minimum for concrete containing high-range water-reducing admixture (superplasticizer); 3 inches for other concrete.
 - 3. Air Content: 5 to 8 percent.
 - 4. Cement Content: 5.5-sacks/cubic yard minimum.
 - 5. Water Cement Ratio: 0.50 maximum.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 FORM CONSTRUCTION

- A. Set forms to required grades and lines, braced and secured. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork for grade and alignment to following tolerances:
 - 1. Top of forms not more than 1/8 inch in 10 feet.
 - 2. Vertical face on longitudinal axis, not more than 1/4 inches in 10 feet.
- C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

3.3 REINFORCEMENT

Locate, place, and support reinforcement as shown on Drawings.

3.4 CONCRETE PLACEMENT

- A. Do not place concrete until subbase and forms have been checked for line and grade. Moisten subbase if required to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- B. Place concrete by methods that prevent segregation of mix. Consolidate concrete along face of forms and adjacent to transverse joints with internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels, and joint devices.

1. Deposit and spread concrete in a continuous operation between construction joints as far as possible. If interrupted for more than 1/2 hour, place a construction joint.
 2. When adjacent pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained sufficient strength to carry loads without injury.
- C. Curbs and Gutters: Automatic machine may be used for curb and gutter placement at Contractor's option. If machine placement is to be used, submit revised mix design and laboratory test results that meet or exceed minimums specified. Machine placement must produce curbs and gutters to required cross-section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete as specified.

3.5 JOINTS

- A. Sawed Joints: Form weakened-plane joints with powered saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into hardened concrete as soon as surface will not be torn, abraded, or otherwise damaged by cutting action.
- B. Expansion Joints: Provide pre-molded joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks, and other fixed objects.
 1. Extend joint fillers full width and depth of joint. Recess top to receive joint sealer.
 2. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
- C. Protect top edge of joint filler during concrete placement with a metal cap or other temporary material. Remove protection after concrete has been placed on both sides of joint.

3.6 CONCRETE FINISHING

- A. After striking-off and consolidating concrete, smooth surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust floating to compact surface and produce uniform texture.
- B. After floating, test surface for trueness with a 10-ft. straightedge. Distribute concrete as required to remove surface irregularities and re-float repaired areas to provide a continuous smooth finish.
- C. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round to 1/2-inch radius, unless otherwise indicated. Eliminate tool marks on concrete surface.
- D. After completion of floating and when excess moisture or surface sheen has disappeared, complete troweling and finish surface as follows:
 1. Broom finish by drawing a broom across concrete surface perpendicular to line of traffic. Repeat operation if required to provide a fine line texture acceptable to Engineer.
- E. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean ends of joints and point-up any minor honeycombed areas. Remove and replace areas or sections with major defects, as directed by Engineer.

3.7 CURING

Use membrane-forming curing and sealing compound or approved moist-curing methods.

3.8 PROTECTION

- A. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- B. Sweep concrete pavement and wash free of stains, discoloration, dirt, and other foreign material just before final inspection.

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 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.

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.

2.4 CUSTOM BLENDED PREPACKAGE MORTAR

- A. Acceptable manufacturer's

1. Cathedral Stone Products, Inc. (Must provide separate ASTM C-1324 mortar analysis indicating recommended mortar type and sample of historic mortar for custom color matching).
 - a. Product: Jahn M110 – Historic Pointing Mortar (Types S, N, and O), type shall be based on mortar analysis.
2. Edison Coatings, Inc. (Must provide separate ASTM C-1324 mortar analysis indicating recommended mortar type and sample of historic mortar for custom color matching).
 - a. Product: Spec-Joint 46 Custom Specification-Grade Masonry Mortars.
3. US Heritage Group (Must include Package A – Mortar Analysis and Matching Service ASTM C-1324 of historic mortar).
 - a. Heritage High Lime Hydrate Mortar, type shall be based on mortar analysis.

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. Re-pointing exterior stone masonry joints 100%.
2. Removing and reinstalling and or replacing stone veneer as required to expose condition of window lintels throughout.
3. Removing and reinstalling and or replacing stone veneer as required to expose condition of continuous relieving angle above basement window openings 100%.
4. Removing temporary plywood panels and replacing lintels and installing salvaged marble spandrel panels removed in the prior Phase 1 Life Safety Repair work.
5. Removing and reinstalling remaining marble spandrel panels as required to replace lintels.
6. Replacement of damaged stone.
7. Resetting of displaced stone.
8. Stone repairs including stone Dutchman, injection grouting cracks, and patching.
9. Removal of surface spalling, tooling of stone surface to match adjacent undamaged surface, and application of consolidation and water repellent treatment, where surfaces have been toolled.
10. Stone anchors, fasteners, shims, weeps, etc..., as required to complete work of this Section.
11. Providing OSHA – compliant access for work of this Section.
12. Providing temporary shoring and bracing required to complete work of this Section.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 01210 – Allowances.
3. Section 01226 – Unit Prices.
4. Section 04069 - Restoration Mortar.
5. Section 04931 - Masonry Cleaning.
6. Section 05100 – Structural Steel Framing.
7. Section 07620 – Sheet Metal Flashing for flashing steel lintels.
8. Section 07920 – Joint Sealers for lintel flashing and sealing joints between masonry and non-masonry materials.
9. Section 09910 – Painting and Finishing for painting steel lintels.
10. Refer to Structural Drawings, Sheet S100 and S1.01 for Cast-in Place Concrete, Concrete Reinforcing, Concrete Repair, Structural Masonry, Adhesive Anchors, Adhesive Dowels, Structural Steel, and Structural Steel Connections.

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 (limestone, each type, granite, and marble) patching required. Document each sample with manufacturer and stock number or other information necessary to order additional material.
 - 2. Stone samples of limestone, marble, and granite in sufficient quantity to show full color and texture range, minimum four 6-inch x 6-inch samples.
 - 3. Each type of anchor.
 - 4. 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 stone 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.
 - 3. When stone units are being patched, assign at least one worker per crew who is trained and certified by manufacturer of patching compound to apply its products.
- B. Source of Materials: Obtain each type of material for masonry restoration (Stone, 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. Removal and reinstallation of stone veneer at one continuous window lintel and one noncontinuous window lintel including paint removal at exposed steel, painting with specified high performance coating, application of lintel flashing, and weeps.
 - 2. Dutchman repair for each type of stone demonstrating removal of deteriorated stone and installation of stone dutchman.
 - 3. Stone patching for each type of stone (limestone, each type, granite, and marble) demonstrating removal of damaged stone and/or incompatible prior patch material and installation and curing of specified patching mortar.
 - 4. Injection grouting/crack repair for each type of stone demonstrating preparation of typical crack and installation of grouting.
 - 5. Re-pointing, each type of stone: Prepare two separate samples in-situ of approximately 3 feet high by 6 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.
- D. Field and Laboratory Testing of Consolidation Treatment
 - 1. Prior to the start of masonry restoration work, provide field and laboratory testing by consolidation treatment manufacturer to determine the appropriate field application procedures.
 - 2. Complete testing on minimum two existing stone units scheduled for removal at the base of the building that exhibit surface spalling.
 - 3. Provide written report prepared by the manufacturer with recommendations for application procedures.
 - 4. Expenses incurred for field and laboratory testing shall be paid for by the contractor.

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, specified under Section 04905.
 2. Re-pointing.
 3. Window lintel repair and or replacement.
 4. Relieving angle repair and or replacement.
 5. Removal of deteriorated portions of existing stone masonry for the following repairs: stone dutchman, cementitious patching, and injection grouting.
 6. Resealing open and or deteriorated sealant joints, specified under Section 07920.

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 – Stone Patching Mortar and Injection Grout:
 1. Cathedral Stone Products, Inc., 410.782.9150.
 2. Edison Coatings, Inc., 800.341.6621
 3. U.S. Heritage Group, www.usheritage.com
- B. Substitutions: Under provisions of Division 1.

2.2 STONE FOR DUTCHMAN REPAIR

- A. Salvaged stone, where scheduled to be replaced at the building. Select pieces closest in color, graining, and face patterning to match stone where dutchman is to be installed.
- B. Grout for Dutchman Seams: Jahn M-40 Crack and Void Injection Grout, as manufactured by Cathedral Stone Products, Inc., Hanover MD, (800) 684-0901.

2.3 REPLACEMENT STONE

- A. General: Stone matching existing natural building stone of variety, color, texture, grain, veining, finish, size, and shape that match existing stone.
 1. Limestone Building Stone Standard: ASTM C568, free of defects detrimental to durability.
 2. Marble Building Stone Standard: ASTM C503, free of defects detrimental to durability.
 3. Granite Building Stone Standard: ASTM C615, free of defects detrimental to durability.

- B. Limestone at Building Base, Entry Steps and Side Walls: Carthage Limestone to match original in color and surface texture, as distributed Tennessee Marble Company, Friendsville, TN, 865-995-9500.
- C. Limestone Above 1st Floor Level: Texas Cordova Cream Limestone to match original in color and surface texture, as distributed by Continental Cut Stone, Florence, TX, 254.793.2329.
- D. Black Granite at Entry Base: Mesabi Black Granite to match original in color and surface texture, polished, as distributed by Coldspring, Cold Spring, MN, 800.328.5040.
- E. Black Marble at Entries and Recessed Spandrel Panels:
 - 1. Champlain Black Marble to match original in color and surface texture, satin finish (Less glossy) as distributed by Tennessee Marble Company, Friendsville, TN, 423.995.9500.
- F. 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.
- G. Fabrication
 - 1. Stone shall be cut accurately to shapes and dimensions as required to match existing stone.
 - 2. Cut and drill stones as required in the shop or field for supports and anchors.
 - 3. Cutting for anchorage devices shall allow for expansion and contraction within the limits of the joint material. Comply with manufacturers recommendations.
 - 4. Provide stone of thickness greater than that indicated, as required where stone thicknesses indicated on the drawings are insufficient for the sizes indicated or where extent of cutouts shown decreases effective strength of the remaining material, or for proper and sufficient anchorage.

2.4 STONE PATCHING MATERIALS

- A. Stone Patching Compound: 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. Limestone: Jahn M70 – Limestone Repair Mortar, as manufactured by Cathedral Stone Products, Inc., Jessup, Maryland, or approved substitute.
 - 2. Marble and Granite:
 - a. Marble and Granite: BONSTONE Last Patch Dymond, as manufactured by BONSTONE Materials Corporation or approved substitute.
- B. Provide variety of custom colors as required to match the color range found in the existing stone type.
- C. Stain for patching mortar (if necessary):
 - 1. General: Inorganic, breathable, color fast, mineral stain compatible with cementitious patching material specified.
 - a. Silin Lasur Mineral Stain for Masonry, as manufactured by Cathedral Stone Products, Inc., Hanover, MD, (800) 684-0901.
 - b. Epochrome S water-borne chemical toners for tinting unmatched mortar repairs, as manufactured by Cathedral Stone Products, Inc., Hanover, MD, (800) 684-0901.

2.5 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.

2.6 MASONRY ACCESSORIES

- A. Anchors:
1. Stainless steel threaded rods, ASTM A 580, Type 304, sizes as indicated on the Drawings, #177 Continuous Threaded Rod as manufactured by Heckmann Building Products or approved equal.
 2. Stainless steel spring loaded dowel, ASTM A 167, A 666, A240/A240M, Type 304; Wire ties and anchors, ASTM A 580, Type 304. #355 Spring-Loaded Dowel as manufactured by Heckmann Building Products.
 3. Various Stone Anchors, #143, 274, 275-U, 275Z, 276, Type 304 Stainless Steel, ASTM A666, as manufactured by Heckmann Building Products. Provide type and sizes as required by approved shop drawings.
 4. Helical Wall Ties: Spira-Lok Wall Tie System, stainless steel, Type 304.
 5. Anchors for thin marble and granite panels:
 - a. Halfen Body Anchors, type HRM/HRC, BA, and DH, Stainless Steel A2 (AISI 304), or approved equal.
 - b. Halfen Grout-In Anchor, type UMA support and UHA restraint Anchors, Stainless Steel A2 (AISI 304) or approved equal.
 - c. Hafen Corner Reveal and Soffit Connections, Type SOF, LW-T, and LW-H, Stainless Steel A2 (AISI 304), or approved equal.
- B. Fasteners, provide type and size as required for application
- C. 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.
- D. Plastic Weeps, 3/8" diameter plastic tube #330STD or plain rectangle #330RSTD as manufactured by Heckmann Building Products or approved equal.
- E. Plastic Shims at horizontal joints, where required to maintain uniform joint thickness, high impact multi-polymer plastic shims with up to 4500 PSI compressive strength, in sizes/thickness as required for application, as manufactured by Heckmann Building Products or approved equal.
- F. Compressible filler: Closed cell neoprene sponge NS, placed horizontally beneath relieving angle, as manufactured by Hohmann & Barnard, Inc., in thickness and width indicated, or approved equal
- G. Anchor Setting Mortar: Single component, cementitious, non-shrink mortar for securing anchors in new or existing masonry structures.
1. Product: Jahn M80 Anchor Setting Mortar, as manufactures by Cathedral Stone Products, Inc., Jessup, Maryland.

- H. Bonding Agent (Epoxy for repairing full stone breaks): Two component modified epoxy resin.
 - 1. Product: Flexi-weld 520, 520T Moisture-Insensitive 100% solids Ni-mod Epoxy Adhesive as manufactured by Edison Coatings, Inc.

2.7 CONSOLIDATION TREATMENT

- A. Description: Two-step, waterborne treatment that protects and strengthens deteriorating carbonate building stones such as marble, limestone, and travertine. HCT reduces the vulnerability of treated stones to the ravages of air pollution, acid rain and normal weathering.
 - 1. Product: CONSERVARE HCT and CONSERVARE HCT Finishing Rinse as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255; Fax: (785) 830-9797. E-mail: CustomerCare@prosoco.com

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 CONSOLIDATION

- A. Application procedures: Follow manufacturer's written instruction based on results of field and laboratory testing under item 1.5.D.

3.3 STONE REMOVAL AND REPLACEMENT

- A. At locations indicated, remove stone to expose condition of underlying steel elements, stone that has deteriorated or is damaged beyond repair. Carefully remove entire unit from joint to joint, without damaging removed or surrounding stone, in a manner that permits reinstallation of removed stone. Where unit is damaged beyond repair, replace 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.

3.4 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 dutchmen. 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. Where anchors are encountered at cutouts for Dutchman, provide new anchor in same side of existing stone. 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.

3.5 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 $\frac{1}{4}$ ". 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:
 - d. Granite: Jahn M160; Approximately 5 parts dry material to 1 part water.
 - e. 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.
- C. 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.

D. 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.

E. 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.

3.6 STONE 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 in accordance with Section 04 01 41 - Masonry Patching.

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.

3.7 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 $\frac{1}{4}$ -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. Allow for three mortar colors. One mortar color will be used at terra cotta materials, the second color on brick masonry, and the third color on granite material.
- 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. Original stone mortar joints: Cove profile tooled to match original.
 - 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 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. Chemical cleaning of existing exterior stone masonry to extents shown on the Drawings, including limestone, granite, and marble.
 - 2. Removal of silicone-based sealants and adhesive staining.
- B. Related Sections:
 - 1. Division 1: Administrative, procedural, and temporary work requirements.
 - 2. Section 02075 – Paint Removal for removal of paint coating from building base.
 - 3. Section 04069 – Restoration Mortar.
 - 4. Section 04905 - Masonry Restoration.
 - 5. Section 07920 – Joint Sealers.

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 (Wall and floor) and for each type of cleaning product or water mist method 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. For interior cleaning, methods proposed for minimizing water use and protection of interior finishes.
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 stone 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.
 - a. 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.
- D. 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 SYSTEMS FOR EXTERIOR STONE

- A. Description: Manufacturer's standard mildly acidic cleaner containing no hydrochloric, or sulfuric acid or chlorine bleaches.
 - 1. Cleaning Systems for Unpolished Limestone (Not for use on polished surfaces):
 - a. Products:
 - (1) EnviroKlean Reclaim Cleaner and Reclaim Activator, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255.
 - Neutralizer: SureKlean Limestone and Masonry Afterwash, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255.
 - (2) D/2 Biological Solution, as manufactured by D/2 Biological Solutions, Inc., Westport, MA, 917.693.7441. *Note, is safe for use on marble and granite, test first.*
 - 2. Cleaning System for Polished Marble and Granite:
 - a. Products:
 - (1) Enviro Klean 2010 All Surface Cleaner, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255.
 - (2) Sure Klean Liquid Marble Cleaner, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255.
 - 3. Silicone Based Sealant and Adhesive Remover:
 - a. Products:

- (1) Sure Klean Dicone NC9, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255.
- (2) Dicone NC15 Gel, as manufactured by PROSOCO, Inc., 3741 Greenway Circle, Lawrence, KS 66046. Phone: (800) 255-4255.

2.3 CHEMICAL CLEANING SOLUTIONS FOR EXTERIOR MASONRY

- 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.

2.4 CLEANING 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: SureKlean 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 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 05100
STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 1. Steel shelf angles and lintels.
 2. Shrinkage-resistant grout.
- B. Related Requirements:
 1. Section 09910 "Painting and Finishing" for painting requirements.

1.3 DEFINITIONS

- A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.
- B. Protected Zone: Structural members or portions of structural members indicated as "protected zone" on Drawings. Connections of structural and nonstructural elements to protected zones are limited.

1.4 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorage items to be attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

- A. Product Data:
 1. Structural-steel materials.
 2. High-strength, bolt-nut-washer assemblies.
 3. Anchor rods.
 4. Shop primer.

5. Galvanized-steel primer.
 6. Etching cleaner.
 7. Galvanized repair paint.
 8. Shrinkage-resistant grout.
- B. Shop Drawings: Show fabrication of structural-steel components.
1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
 2. Include embedment Drawings.
 3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
 4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.
 5. Identify members not to be shop primed.
 6. Indicate locations and dimensions of protected zones.
- C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide in accordance with AWS D1.1/D1.1M for each welded joint whether prequalified or qualified by testing, including the following:
1. Power source (constant current or constant voltage).
 2. Electrode manufacturer and trade name, for demand-critical welds.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Welding certificates.
- C. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- D. Mill test reports for structural-steel materials, including chemical and physical properties.
- E. Product Test Reports: For the following:
 1. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
 2. Shop primers.
 3. Nonshrink grout.
- F. Survey of existing conditions.
- G. Source quality-control reports.
- H. Field quality-control reports.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU or is accredited by the IAS Fabricator Inspection Program for Structural Steel (Acceptance Criteria 172).

- B. Installer Qualifications: A qualified Installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.
- C. Shop-Painting Applicators: Qualified in accordance with AISC's Sophisticated Paint or to SSPC-QP 3.
- D. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.
 - 1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8/D1.8M. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
 - 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
 - 1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
 - 2. Clean and relubricate bolts and nuts that become dry or rusty before use.
 - 3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125/F3125M, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

- A. Angles: ASTM A36/A36M or ASTM A572/A572M.
- B. Plate and Bar: ASTM A36/A36M or ASTM A572/A572M.
- C. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS AND CONNECTORS

- A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish.
 - 1. Direct-Tension Indicators: ASTM F959/F959M, Type 325-1, compressible-washer type with plain finish.

2.3 PRIMER

A. Steel Primer:

1. Comply with Section 09910 "Painting and Finishing"
2. SSPC-Paint 23, latex primer.
3. Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

B. Galvanized-Steel Primer: MPI#26, MPI#80, MPI#134.

1. Etching Cleaner: MPI#25, for galvanized steel.
2. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20.

2.4 SHRINKAGE-RESISTANT GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107/C1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel in accordance with ASTM A6/A6M and maintain markings until structural-steel framing has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 1.

F. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to steel surfaces.
2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
 - 1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

2.7 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123/A123M.
 - 1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
 - 2. Galvanize lintels, shelf angles, and welded door frames attached to structural-steel frame and located in exterior walls.

2.8 SHOP PRIMING

- A. Shop prime steel surfaces, except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 - 2. Surfaces to be field welded.
 - 3. Galvanized surfaces.
 - 4. Corrosion-resisting (weathering) steel surfaces.
 - 5. Surfaces enclosed in interior construction.
- B. Surface Preparation of Steel: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces in accordance with the following specifications and standards:
 - 1. SSPC-SP 2.
 - 2. SSPC-SP 3.
 - 3. SSPC-SP 7 (WAB)/NACE WAB-4.
 - 4. SSPC-SP 14 (WAB)/NACE WAB-8.
 - 5. SSPC-SP 11.
 - 6. SSPC-SP 6 (WAB)/NACE WAB-3.
 - 7. SSPC-SP 10 (WAB)/NACE WAB-2.
 - 8. SSPC-SP 5 (WAB)/NACE WAB-1.
 - 9. SSPC-SP 8.
- C. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner or in accordance with SSPC-SP 16.

- D. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
 2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.
1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
 2. Bolted Connections: Inspect shop-bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
 3. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
 - a. Liquid Penetrant Inspection: ASTM E165/E165M.
 - b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
 - c. Ultrasonic Inspection: ASTM E164.
 - d. Radiographic Inspection: ASTM E94/E94M.
 4. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

1. Do not remove temporary shoring supporting composite deck construction and structural-steel framing until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.
- B. Baseplates, Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
 1. Set plates for structural members on wedges, shims, or setting nuts as required.
 2. Weld plate washers to top of baseplate.
 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
 4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.
- C. Maintain erection tolerances of structural steel within ANSI/AISC 303.
- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.
 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection unless approved by Architect. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.
 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.

3.5 REPAIR

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780/A780M.
- B. Touchup Painting:
 1. Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - a. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
 2. Cleaning and touchup painting are specified in Section 099113 "Exterior Painting," Section 099123 "Interior Painting," Section 099600 "High-Performance Coatings."
- C. Touchup Priming: Cleaning and touchup priming are specified in Section 099600 "High-Performance Coatings."

3.6 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:
 1. Verify structural-steel materials and inspect steel frame joint details.
 2. Verify weld materials and inspect welds.
 3. Verify connection materials and inspect high-strength bolted connections.
- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
 1. Bolted Connections: Inspect bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
 2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M.
 - a. In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
 - 1) Liquid Penetrant Inspection: ASTM E165/E165M.
 - 2) Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
 - 3) Ultrasonic Inspection: ASTM E164.
 - 4) Radiographic Inspection: ASTM E94/E94M.

END OF SECTION 05100

SECTION 05730

GLASS RAILING SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Monolithic Laminated/Tempered Glass Dry Glazed Railing Assembly in the District Courtroom in front of Window No. 324.

1.2 REFERENCES

- A. ESR-3269 ICC-ES Evaluation Report, International Code Council Standards for Glass Balustrade Guard Rail Applications
- B. ASTM C 1048 – Standard Specification for Heat Treated Flat Glass – Kind HS, Kind FT Coated and Uncoated Glass
- C. NAAMM Metal Finishes Manual; national Association of Architectural Metal Manufacturers

1.3 SYSTEM DESCRIPTION

- A. Performance Requirements for Handrail Assembly:
 - 1. Support distributed load of 50 pounds per linear foot (0.73kN/M), applied horizontally at right angles in any direction to the handrail.
 - 2. Support concentrated horizontal load of 200 pounds (0.89kN), applied in any direction at any point along handrail system.
 - 3. 50 lbs (0.22kN) on 1 sf (0.093m²) perpendicular to guard at any location
 - 4. Wind loads 25 psf or as otherwise specified.
 - 5. Distributed loads and concentrated loads not to be applied simultaneously.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Product Data: Submit Manufacturer's technical product data for railing components and accessories.
- C. Shop Drawings: Dimensioned drawings of railing assemblies indicating the following:
 - 1. Elevations; include joint locations, transitions, and terminations.
 - 2. Manufacturer's installation and maintenance instructions.
- D. Samples of manufacturer's finishes.

1.5 QUALITY ASSURANCE

- A. Components and installation are to be in accordance with state and local building codes.
- B. All components and fittings are furnished by the same manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials properly protected against damage to finished surfaces during transit.

- B. Inspect materials upon delivery for damage. Unless minor defects can be made to meet the Architect's specifications and satisfaction, damaged parts should be removed and replaced.
- C. Store materials at building site under cover in dry location.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: **C.R. Laurence Co., Inc. (CRL)**
Tel: (800) 421-6144 Fax: (800) 587-7501
Email: railings@crlaurence.com
www.crlaurence.com
- B. Manufacturers of equivalent products will be considered for substitution in accordance with provisions of Section 01600 - Product Requirements.

2.2 MATERIALS

- A. Aluminum Components: Conforming to ASTM B 221/ASTM B221M, Alloy 6063- T52
- B. Stainless Steel Components: Conforming to ASTM A 666, Type 304
- C. Brass Components: Conforming to ASTM B 248, No. 260, Yellow Brass

2.3 COMPONENTS

- A. Glazing: Fully tempered ASTM C 1048 Kind FT, Quality q3. As specified in Section 08800.
 - 1. Monolithic Laminated tempered Thickness: 1/2 inch (12 mm).
 - 2. Color: Clear.
 - 3. Edge type on exposed glass edges: Polished.
- B. TAPER-LOC® Dry Glazing System: Each TAPER-LOC® Set consists of two Tapers, and one L-Setting Block. Designed for B5A, B5S, B5T, B6S, and B7S Shoe Bases. Patent Pending.
- C. Shoe Base:
 - 1. Profile: **CRL Part # B5S**; 2-1/2 inches (63.5 mm) wide by 4-1/8 inches (104.8 mm) high rectangular cross-section. Designed to work with CRL's TAPER-LOC® Dry Glazed System with 1/2" to 5/8" (12 to 16 mm) monolithic tempered glass.
 - 2. Material: Aluminum 6063-T52.
 - 3. Finish:
 - a. Base Cladding: Plaster as indicated on the drawings.
 - b. 5052 Dark Bronze Anodized.
- D. Fasteners: Types and sizes indicated in shop drawings.
 - A. For concrete attachment, hole size in base shoe is to be 9/16" (14.3 mm), counter bore 7/8" (22.2 mm) x depth 1/2" (12.7 mm), center-to-center spacing of holes is 12" (304.8mm). Use Hilti HSL3 Expansion Anchors 3-3/4" (95 mm) long **CRL Part # EBA334**, Washer is included.
 - B. For steel attachment, hole size in base shoe is to be 9/16" (14.3 mm), counter bore 7/8" (22.2 mm) x depth 1/2" (12.7 mm), center-to-center spacing of holes is 12" (304.8mm). Use 1/2" – 13 x 1 stainless steel socket head cap screw **CRL Part # SHCS12X1**.

2.4 FABRICATION

- A. Fabricate handrail assembly components to lengths and configurations complying with shop drawings.

- B. Machine joint edges smooth and plane to produce hairline seams when site assembled; supply concealed sleeve connectors for joints.
- C. Isolate dissimilar metals to prevent electrolytic action by applying primer to concealed surfaces of metal components.

PART 3 - INSTALLATION

- 3.1 Install handrails in accordance with manufacturer's recommended installation instructions and approved shop drawings.
- 3.2 CLEANING
 - A. Clean glazing surfaces after installation, complying with requirements contained in the manufacturer's instructions. Remove excess glazing sealant compounds, dirt or other substances.
 - B. Remove protective films from metal surfaces.
 - C. Clean railing surfaces with clean water and mild detergent. Do not use abrasive chemicals, detergents, or other implements that may mar or gouge the material.
- 3.3 PROTECTION
 - A. Institute protective measures required throughout the remainder of the construction period to ensure that all the materials do not incur any damage or deterioration.
 - B. Repair components damaged by subsequent construction activities in accordance with manufacturer's recommendations; replace damaged components that cannot be repaired to Architect's acceptance.

END OF SECTION

SECTION 07211

BATT INSULATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Thermal insulation for exterior walls at marble spandrel panels, where indicated on the Drawings.
- B. Related Sections:
 - 1. Division 1: Administrative, procedural, and temporary work requirements.
 - 2. Section 09281 – Gypsum Plaster Restoration for metal framing.

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. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Extruded-Polystyrene Board Insulation:
 - a. DiversiFoam Products.
 - b. Dow Chemical Company.
 - c. Owens Corning.
 - d. Tenneco Building Products
 2. Glass-Fiber (Acoustic Batt) Insulation:
 - a. CertainTeed Corporation.
 - b. Johns Manville Corporation.
 - c. Knauf Fiber Glass.
 - d. Owens Corning.

2.2 INSULATING MATERIALS

- A. General: Provide insulating materials that comply with requirements and with referenced standards.
1. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths.
- B. Exterior Stud Wall Insulation
1. Provide flexible glass fiber blankets/batts equal to "Fiberglas Insulation as manufactured by Owens Corning or approved equal complying with ASTM C665, Type I and ASTM E 136.
 2. Insulation shall have an R value of not less than 3.04 per inch and shall be 4 inches thick unless otherwise noted on the drawings.

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 07550
PVC MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. The existing roofing system was installed in the summer of 2019 and shall remain. Per the Roof Proposal/Contract prepared for the County in March 2019 for work completed, a copy of which is in the appendix of the project manual, it is comprised of the following:
 1. PVC membrane on protection board on tapered insulation on concrete deck, all layers fully adhered.
 2. Prefabricated flashings, corners, parapets, stacks, vents, and related details.
 3. Sheet metal coping flashing.
 4. Fasteners, adhesives, and other accessories required for a complete roofing installation.
- B. Work under this contract will include:
 1. Replace roof access hatch, refer to Section 08110.
 2. Protection of the existing roofing system from damage for the duration of the project.
 3. Modifications to the existing roofing system as required to complete work of this contract. All work completed under this contract shall comply with membrane roofing manufacturer's written instructions and details.
 4. At the end of the project, a representative of the membrane roofing manufacturer shall visit the site and provide a written report indicating all deficiencies. The contractor shall repair all deficiencies as required to maintain Owner's warranty.
- C. The following specification was prepared based on information provided in the

1.2 REFERENCES

- A. NRCA - The NRCA Roofing and Waterproofing Manual.
- B. ASCE 7 - Minimum Design Loads For Buildings And Other Structures.
- C. UL - Roofing Materials and Systems Directory, Roofing Systems (TGFU.R10128).
- D. ASTM C 1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- E. ASTM D 751 - Standard Test Methods for Coated Fabrics.
- F. ASTM D 4434 - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing.
- G. ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- H. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.3 SYSTEM DESCRIPTION

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane

manufacturer based on testing and field experience.

C. Physical Properties:

1. Roof product must meet the requirements of Type III PVC sheet roofing as defined by ASTM D 4434 and must meet or exceed the following physical properties.
2. Thickness: 50 mil (80 mil including fleece), nominal, in accordance with ASTM D 751.
3. Thickness Over Scrim: \geq 26 mil in accordance with ASTM D 751.
4. Breaking Strengths: \geq 541 lbf. (MD) and \geq 494 lbf. (XMD) in accordance with ASTM D 751, Grab Method.
5. Elongation at Break: \geq 20% (MD) and \geq 22% (XMD) in accordance with ASTM D 751, Grab Method.
6. Heat Aging in accordance with ASTM D 3045: 176 °F for 56 days. No sign of cracking, chipping or crazing. (In accordance with ASTM D 4434).
7. Factory Seam Strength: \geq 485 lbf. in accordance with ASTM D 751, Grab Method.
8. Tearing Strength: \geq 182 lbf. (MD) and \geq 195 lbf. (XMD) in accordance with ASTM D 751, Procedure B.
9. Low Temperature Bend (Flexibility): Pass at -40 °F in accordance with ASTM D 2136.
10. Accelerated Weathering: No cracking, checking, crazing, erosion or chalking after 5,000 hours in accordance with ASTM G 154.
11. Linear Dimensional Change: \leq 0.16% (MD) and 0.27% (XMD) in accordance with ASTM D 1204 at 176 \pm 2 °F for 6 hours.
12. Water Absorption: \leq 1.3% in accordance with ASTM D 570 at 158 °F for 166 hours.
13. Static Puncture Resistance: \geq 33 lbs. in accordance with ASTM D 5602.
14. Dynamic Puncture Resistance: \geq 14.7 ft-lbf. in accordance with ASTM D 5635.

D. Cool Roof Rating Council (CRRC):

1. Membrane must be listed on CRRC website.
 - a. Initial Solar Reflectance: \geq 87%
 - b. Initial Solar Reflective Index (SRI): \geq 110

E. Insulation

1. Provide overall thermal resistance for roofing system as follows:
 - a. Average R-value: 26.
2. Tapered Insulation Slope: 1/4 inch per foot.
3. Configuration as indicated on the Drawings.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Duro-Last data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.

4. Maintenance requirements.
- C. Shop Drawings: Indicate insulation pattern, overall membrane layout, field seam locations, joint or termination detail conditions, and location of fasteners.
- D. Verification Samples: For each product specified, two samples, representing actual product, color, and finish.
 1. 4 inch by 6 inch sample of roofing membrane, of color specified.
 2. 4 inch by 6 inch sample of walkway pad.
 3. Termination bar, fascia bar with cover, drip edge and gravel stop if to be used.
 4. Each fastener type to be used for installing membrane, insulation/recover board, termination bar and edge details.
- E. Installer Certification: Certification from the roofing system manufacturer that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
- F. Manufacturer's warranties.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with manufacturer's installation instructions.
- B. Manufacturer Qualifications: A manufacturer specializing in the production of PVC membranes systems and utilizing a Quality Control Manual during the production of the membrane roofing system that has been approved by and is inspected by Underwriters Laboratories.
- C. Installer Qualifications: Company specializing in installation of roofing systems similar to those specified in this project and approved by the roofing system manufacturer.
- D. Source Limitations: Obtain components for membrane roofing system from roofing membrane manufacturer.
- E. There shall be no deviations from the roof membrane manufacturer's specifications or the approved shop drawings without the prior written approval of the manufacturer.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for roof assembly wind uplift and fire hazard requirements.
- B. Fire Exposure: Provide membrane roofing materials with the following fire-test-response characteristics. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 1. Exterior Fire-Test Exposure:
 - a. Class A; ASTM E 108, for application and roof slopes indicated.
 2. Fire-Resistance Ratings: Comply with ASTM E 119 for fire-resistance-rated roof assemblies of which roofing system is a part.
 3. Conform to applicable code for roof assembly fire hazard requirements.
- C. Wind Uplift:

1. Roofing System Design: Provide a roofing system designed to resist uplift pressures calculated according to the current edition of the ASCE-7 Specification *Minimum Design Loads for Buildings And Other Structures*.

1.7 PRE-INSTALLATION MEETING

- A. Convene meeting not less than one week before starting work of this section.
- B. Review methods and procedures related to roof deck construction and roofing system including, but not limited to, the following.
 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing installer, roofing system manufacturer's representative, deck installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 3. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 4. Review structural loading limitations of roof deck during and after roofing.
 5. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 6. Review governing regulations and requirements for insurance and certificates if applicable.
 7. Review temporary protection requirements for roofing system during and after installation.
 8. Review roof observation and repair procedures after roofing installation.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Store roof materials and place equipment in a manner to avoid permanent deflection of deck.
- E. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.9 WARRANTY

- A. Contractor's Warranty: The contractor shall warrant the roof application with respect to workmanship and proper application for two (2) years from the effective date of the warranty issued by the manufacturer.
- B. Manufacturer's Warranty: Must be no-dollar limit type and provide for completion of repairs, replacement of membrane or total replacement of the roofing system at the then-current material and labor prices throughout the life of the warranty. In addition the warranty must meet the following criteria:

1. Warranty Period: 20 years from date issued by the manufacturer.
2. Must provide positive drainage.
3. No exclusion for damage caused by biological growth.
4. Issued direct from and serviced by the roof membrane manufacturer.
5. Transferable for the full term of the warranty.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: Duro-Last Roofing, Inc., which is located at: 525 Morley Drive, Saginaw, MI 48601. Telephone: 800-248-0280.
- B. All roofing system components to be provided or approved by Duro-Last Roofing, Inc.
- C. Substitutions: Not permitted.

2.2 ROOFING SYSTEM COMPONENTS

- A. Roofing Membrane: Duro-Last® Duro-Fleece Plus™ membrane conforming to ASTM D 4434, type III, fabric-reinforced, PVC, NSF/ANSI 347 Gold or Platinum Certification, and a product-specific third-party verified Environmental Product Declaration. Membrane properties as follows:
 1. Thickness:
 - a. 50 mil nominal (80 mil including fleece).
 2. Exposed Face Color:
 - a. White.
 3. Minimum recycle content 7% post-industrial and 0% post-consumer.
 4. Recycled at end of life into resilient flooring or concrete expansion joints.
- B. Accessory Materials: Provide accessory materials supplied by or approved for use by Duro-Last Roofing, Inc.
 1. Sheet Flashing: Manufacturer's standard reinforced PVC sheet flashing.
 2. Duro-Last Factory Prefabricated Flashings: manufactured using Manufacturer's standard reinforced PVC membrane.
 - a. Stack Flashings.
 - b. Curb Flashings.
 - c. Inside and Outside Corners.
 - d. Drain Boots, Composite Drain Rings (CDR) and Dome Strainers.
 - e. Membrane Scupper Liners.
 3. Sealants and Adhesives: Compatible with roofing system and supplied by Duro-Last Roofing, Inc.
 - a. Duro-Fleece®Millenium Membrane Adhesive.
 - b. Duro-Grip® Insta-Stik™ Insulation Adhesive.
 - c. Duro-Caulk® Plus.
 - d. Strip Mastic.
 4. Slip Sheet: Compatible with roofing system and supplied by Duro-Last Roofing, Inc.

5. Fasteners and Plates: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane and insulation to substrate. Supplied by Duro-Last Roofing, Inc.
 6. PV Anchors
 7. Termination and Edge Details: Supplied by Duro-Last Roofing, Inc.
 - a. Termination Bar.
 - b. Fascia Base with Kynar Steel Cover.
 8. Vinyl Coated Metal: Supplied by Duro-Last Roofing, Inc. 24 gauge, hot-dipped galvanized, grade 90 metal with a minimum of 17 mil of Duro-Last membrane laminated to one side.
- C. Walkways:
1. Provide non-skid, maintenance-free walkway pads in areas of heavy foot traffic and around mechanical equipment.
 - a. Duro-Last Roof Trak® III Walkway Pad.

2.3 ROOF INSULATION

- A. General:
1. Provide preformed roof insulation boards that comply with requirements and referenced standards, as selected from manufacturer's standard sizes.
 2. Provide preformed saddles, crickets, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
- B. Polyisocyanurate Board Insulation: Complying with ASTM C 1289, Type II, felt or glass-fiber mat facer on both major surfaces. Material as supplied by Duro-Last.
1. Duro-Guard® ISO II (flat).
 2. Duro-Guard® ISO II (tapered).

2.4 ROOF INSULATION ACCESSORIES

- A. General: Provide roof insulation accessories approved by the roof membrane manufacturer and as recommended by insulation manufacturer for the intended use.
- B. Insulation Adhesive: Provide Duro-Grip insulation adhesive for attaching insulation and/or insulation cover boards in conformance to specified design requirements.
1. Duro-Grip® Insta-Stik™ insulation adhesive.
- C. Insulation Cover Board:
1. Glass-mat-faced, water-resistant gypsum substrate conforming to ASTM C 1177/C 1177M, DensDeck® Prime Roof Board as manufactured by Georgia-Pacific Corporation.
 - a. $\frac{1}{4}$ inch thick.
- 1.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that the surfaces and site conditions are ready to receive work.
- B. Verify that the deck is supported and secured.

- C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.
- D. Verify that the deck surfaces are dry and free of standing water, ice or snow.
- E. Verify that all roof openings or penetrations through the roof are solidly set.
- F. If substrate preparation is the responsibility of another contractor, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Surfaces shall be clean, smooth, free of fins, sharp edges, loose and foreign material, oil, grease, and bitumen.

3.3 INSTALLATION

- A. Install insulation in accordance with the roof manufacturer's requirements.
- B. Insulation: Duro-Guard® ISO II (flat) and Duro-Guard® ISO II (tapered).
 - 1. Install insulation in accordance with the roof manufacturer's requirements.
 - 2. Insulation shall be adequately supported to sustain normal foot traffic without damage.
 - 3. Where field trimmed, insulation shall be fitted tightly around roof protrusions with no gaps greater than $\frac{1}{4}$ inch.
 - 4. Tapered insulation boards shall be installed in accordance with the insulation manufacturer's shop drawings.
 - 5. No more insulation shall be applied than can be covered with the roof membrane by the end of the day or the onset of inclement weather.
 - 6. If more than one layer of insulation is used, all joints between subsequent layers shall be offset by at least 6 inches.
- C. Insulation Cover Board: DensDeck® Prime Roof Board.
- D. Roof Membrane: 50 mil, Duro-Last® Duro-Fleece Plus™ membrane.
- E. Seaming:
 - 1. Weld overlapping sheets together using hot air. Minimum weld width is 1-1/2 inches.
 - 2. Check field welded seams for continuity and integrity and repair all imperfections by the end of each work day.
- F. Membrane Termination/Securement: All membrane terminations shall be completed in accordance with the membrane manufacturer's requirements.
 - 1. Provide securement at all membrane terminations at the perimeter of each roof level, roof section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.
 - 2. Provide securement at any angle change where the slope or combined slopes exceeds two inches in one horizontal foot.
- G. Flashings: Complete all flashings and terminations as indicated on the drawings and in accordance with the membrane manufacturer's requirements.
 - 1. Provide securement at all membrane terminations at the perimeter of each roof level, roof

section, curb flashing, skylight, expansion joint, interior wall, penthouse, and other similar condition.

- a. Do not apply flashing over existing thru-wall flashings or weep holes.
 - b. Secure flashing on a vertical surface before the seam between the flashing and the main roof sheet is completed.
 - c. Extend flashing membrane a minimum of 6 inches (152 mm) onto the main roof sheet beyond the mechanical securement.
 - d. Use care to ensure that the flashing does not bridge locations where there is a change in direction (e.g. where the parapet meets the roof deck).
2. Penetrations:
 - a. Flash all pipes, supports, soil stacks, cold vents, and other penetrations passing through the roofing membrane as indicated on the Drawings and in accordance with the membrane manufacturer's requirements.
 - b. Utilize custom prefabricated flashings supplied by the membrane manufacturer.
 - c. Existing Flashings: Remove when necessary to allow new flashing to terminate directly to the penetration.
 3. Pipe Clusters and Unusual Shapes:
 - a. Clusters of pipes or other penetrations which cannot be sealed with prefabricated membrane flashings shall be sealed by surrounding them with a prefabricated vinyl-coated metal pitch pan and sealant supplied by the membrane manufacturer.
 - b. Vinyl-coated metal pitch pans shall be installed, flashed and filled with sealant in accordance with the membrane manufacturer's requirements.
 - c. Pitch pans shall not be used where prefabricated or field fabricated flashings are possible.

H. Roof Drains:

1. Coordinate installation of roof drains and vents specified in Section 15146 - Plumbing Specialties.
2. Remove existing flashing and asphalt at existing drains in preparation for sealant and membrane.
3. Provide a smooth clean surface on the mating surface between the clamping ring and the drain base.

I. Edge Details:

1. Provide edge details as indicated on the Drawings. Install in accordance with the membrane manufacturer's requirements.
2. Join individual sections in accordance with the membrane manufacturer's requirements.
3. Coordinate installation of metal flashing and counter flashing specified in Section 07620.
4. Manufactured Roof Specialties: Coordinate installation of copings, counter flashing systems, gutters, downspouts, and roof expansion assemblies specified in Section 07710.

J. Walkways:

1. Install walkways in accordance with the membrane manufacturer's requirements.
2. Provide walkways where indicated on the Drawings.
3. Install walkway pads at roof hatches, access doors, rooftop ladders and all other traffic concentration points regardless of traffic frequency. Provided in areas receiving regular traffic to service rooftop units or where a passageway over the surface is required.

4. Do not install walkways over flashings or field seams until manufacturer's warranty inspection has been completed.

K. Water cut-offs:

1. Provide water cut-offs on a daily basis at the completion of work and at the onset of inclement weather.
2. Provide water cut-offs to ensure that water does not flow beneath the completed sections of the new roofing system.
3. Remove water cut-offs prior to the resumption of work.
4. The integrity of the water cut-off is the sole responsibility of the roofing contractor.
5. Any membrane contaminated by the cut-off material shall be cleaned or removed.

3.4 FIELD QUALITY CONTROL

- A. The membrane manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors shall be addressed and final punch list completed.

3.5 PROTECTION

- A. Protect installed roofing products from construction operations until completion of project.
- B. Where traffic is anticipated over completed roofing membrane, protect from damage using durable materials that are compatible with membrane.
- C. Repair or replace damaged products after work is completed.

END OF SECTION

SECTION 07620

SHEET METAL FLASHING, AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Replace sheet metal roofing at entry roofs, four locations.
2. Concealed fabric flashing system for lintels and relieving angles.

B. Related Sections:

1. Division 1: Administrative, procedural, and temporary work requirements.
2. Section 04905 – Masonry Restoration for cutting reglets in masonry joints.
3. Section 07920 - Joint Sealers.

1.2 REFERENCES

A. ASTM International (ASTM):

1. B 32 - Solder Metal.
2. B 370 - Copper Sheet and Strip for Building Construction.
3. D 412 - Vulcanized Rubber and Thermoplastic rubbers and Thermoplastic Elastomers - Tension.
4. D 1970 - Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

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. Waterproofing sheet membrane underlayment.
3. Solder and flux.

B. Shop Drawings showing layout, profiles, method of joining, and anchorage details, include major counter-flashings. Indicate types and thicknesses of metal and dimensions. Provide layouts at $\frac{1}{4}$ -inch scale and details at 3-inch scale.

C. Samples: Each material and profile proposed for use; minimum 12 inches long.

1.4 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.

PART 2- PRODUCTS

2.1 SHEET METAL MATERIALS

- A. Metallic-Coated Steel Sheet for Coping Cap, Sheet Metal Associated with Standing Seam Roofing, Gutter, Downspouts, and Formed Fascia/Soffit at the Addition: Zinc-coated (Galvanized) sheet sheet in accordance with ASTM A653/A653M, G90.
 - 1. Gauge: 24.
 - 2. Surface: Smooth, flat.
 - 3. Exposed Coil-Coated Finish:
 - a. Siliconized Polyester: Epoxy primer and silicone-modified, polyester-enamel topcoat; with dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
 - b. Color: As selected by Architect from Manufacturer's full range.
 - c. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil (0.013 mm).

2.2 UNDERLayment MATERIALS

- A. Self-Adhering, High-Temperature Underlayment: Provide self-adhering, cold-applied, sheet underlayment, a minimum of 40 mils (1.02 mm) thick, consisting of slip-resistant, polyethylene-film top surface laminated to a layer of butyl or SBS-modified asphalt adhesive, with release-paper backing. Provide primer when recommended by underlayment manufacturer.
 - 1. Product: Grace Ultra self-adhering roofing underlayment for high temperature applications as manufactured by W.R. Grace & Co., Cambridge, MA or approved equal.
 - a. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F or higher.
 - b. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F or lower.

2.3 FLASHING FOR STRUCTURAL STEEL LINTELS AND RELIEVING ANGLES

- A. Copper Fabric Flashing: Multi-Flashing 500, 5 ounce flexible copper sheet laminated on both sides with a polymer fabric, as manufactured by York Manufacturing Inc., 800.551.2828 or approved equal.
- B. Mastic/Sealant for Copper Fabric Flashing: UniverSeal US100, one part 100% solids, solvent-free formulated silyl-terminated polyether (STPE), ASTM C920-11, Type S, Grade NS, Class 50, as manufactured by York Manufacturing, Inc., 800.551.2828 or approved equal.
- C. Termination Bar: York T-96 termination bar. Manufacturer's standard 1" composite material bar or a 1" 26-gauge stainless steel termination bar with sealant lip.

2.4 ACCESSORIES

- A. Solder: Solder: ASTM B 32, 50-50 tin/lead or 60-40 tin/lead (antimony free), as recommended by manufacturer.
- B. Flux: Hydrochloric acid flux.

1. Note, flux can dissolve zinc. Excess flux must be rinsed immediately after soldering.
- C. Rivets: 1/8"-3/16" diameter high strength stainless-steel rivets.
- D. 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.
- E. Joint Sealers: Specified in Section 07920.

2.5 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 UNDERLayment INSTALLATION

- A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply at locations indicated on the Drawings in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3 1/2 inches. Roll laps and edges with roller. Cover underlayment within 14 days.
 1. Apply over the entire roof surface.

3.3 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.

3.4 CLEANING

- A. Clean sheet metal; remove slag, flux, stains, spots, and minor abrasions without etching surfaces.

END OF SECTION

SECTION 07920

JOINT SEALERS

GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Joint backup materials.
 - 2. Sealers.
- B. Related Sections:
 - 1. Division 1: Administrative, procedural, and temporary work requirements.
 - 2. Section 04905 – Masonry Restoration for sealing joints between masonry and dissimilar materials.
 - 3. Section 07620 – Sheet Metal Flashing and Trim for sealing reglets.
 - 4. Section 08591 – Metal Window Restoration for perimeter sealant at windows and doors.

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, and bond breakers.
- 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.
- 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 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. BASF Corporation Building Systems (www.BuildingSystems.BASF.com)
 - 2. Degussa Building Systems. (www.degussabuildingsystems.com)
 - 3. Dow Corning Corp. (www.dowcorning.com)
 - 4. GE Silicones. (www.gesilicones.com)
 - 5. Pecora Corp. (www.pecora.com)
 - 6. Sika Corp. (www.sikausa.com)
 - 7. Tremco, Inc. (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.

2.3 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.

2.4 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 CLEANING

- A. Remove masking tape and protective coverings after sealer has cured.
- B. Spillage: 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.

3.4 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.

3.5 SEALER SCHEDULE

JOINT LOCATION OR TYPE	SEALER TYPE
Exterior Joints:	
Horizontal joints subject to pedestrian or vehicular traffic:	
Slopes less than $\frac{1}{4}$ inch per foot	1
Slopes of $\frac{1}{4}$ inch per foot or more	2
Vertical joints and horizontal non-traffic bearing joints	3

END OF SECTION

SECTION 08110

ROOF HATCHES

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: Provide factory-fabricated roof hatch for ladder access, replace roof hatch at existing location.
- B. Related Sections:
 - 1. Section 07620 – Sheet metal Flashing and Trim
 - 2. Section 07550 – PVC Roofing Membrane

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data.
- B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.
- C. Warranty: Submit executed copy of manufacturer's standard warranty.

1.3 QUALITY ASSURANCE

- A. Manufacturer: A minimum of 5 years experience manufacturing similar products.
- B. Installer: A minimum of 2 years experience installing similar products.
- C. Manufacturer's Quality System: Registered to ISO 9001 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original packaging. Store materials in a dry, protected, well-ventilated area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

1.5 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design Manufacturer: Type S Roof Hatch by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-535-1582, Web: www.BILCO.com.

2.2 ROOF HATCH

- A. Furnish and install where indicated on plans metal roof hatch Type S, size to match existing opening. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.

B. Performance characteristics:

1. Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m²) with a maximum deflection of 1/150th of the span and a maximum design pressure of +/- 100 PSF (488 kg/m²) with a design factor of 2 for aluminum (Type S-50) roof hatches.
2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
3. Operation of the cover shall not be affected by temperature.
4. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.
5. Aluminum (Type S-50) roof hatches shall have a valid Notice of Acceptance (NOA) by Miami-Dade County Product Control Section. The hatches shall have product approval (FL) by Florida Building Council regarding compliance to Florida Building Code.

- C. Cover: Shall be 11 gauge (2.3mm) aluminum] with a 3" (76mm) beaded flange with formed reinforcing members. Cover shall have a heavy extruded EPDM rubber gasket that is bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.

- D. Cover insulation: Shall be fiberglass of 1" (25mm) thickness, fully covered and protected by a metal liner 18 gauge (1mm) aluminum.

- E. Curb: Shall be 12" (305mm) in height and of 11 gauge (2.3mm) aluminum. The curb shall be formed with a 3-1/2" (89mm) flange with 7/16" (11.1mm) holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6" (153mm) on center, to be bent inward to hold single ply roofing membrane securely in place.

- F. Curb insulation: Shall be rigid, high-density fiberboard of 1" (25mm) thickness on outside of curb.

- G. Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe for aluminum construction: welded to the curb assembly.

H. Hardware

1. Heavy pintle hinges shall be provided
2. Cover shall be equipped with a spring latch with interior and exterior turn handles
3. Roof hatch shall be equipped with interior and exterior padlock hasps.
4. The latch strike shall be a stamped component bolted to the curb assembly.

5. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1" (25mm) diameter red vinyl grip handle to permit easy release for closing.
 6. All hardware shall be zinc plated and chromate sealed.
 7. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.
- I. Finishes: Factory finish shall be mill finish aluminum.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install products in strict accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.
 1. Test units for proper function and adjust until proper operation is achieved.
 2. Repair finishes damaged during installation.
 3. Restore finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

- A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION

SECTION 08591
METAL WINDOW RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes historic treatment of aluminum windows as follows:
 - 1. Replace aluminum sash unit, where removed or modified for mechanical grilles, vents, etc...
 - 2. Repair deteriorated frame at exterior surface behind perimeter sealant, for bidding purposes assume 15% of total frame area requires repair.
 - 3. Replace window trim at perimeter of window on exterior surface where damaged or missing.
 - 4. Replace glass 100%, remove glazing compounds, sealants, etc... 100% from glazing channels.
 - 5. Replace tape balance system 100%, size for heavier glass.
 - 6. Provide new extruded aluminum glazing bead on interior side of window 100% at double hung windows.
 - 7. Clean and polish exposed aluminum elements and components to remove harmful deposits and improve appearance.
 - 8. Application of clear protective finish.
 - 9. Inspect and resecure frame anchorage to building structure as needed.
 - 10. Resecure loose and replace missing fasteners.
 - 11. Repair, refinish, and replace hardware where damaged or missing. For bidding purposes replacement of approximately 3% of each type of hardware component, include hinges and handle locks at casement windows and sash locks at double hung windows.
 - 12. Replace weatherstripping at operable units 100%.
- B. Related Requirements:
 - 1. Section 01210 – Allowances.
 - 2. Section 01226 – Unit Prices for sash replacement.
 - 3. Section 01230 – Alternates for replacement windows.
 - 4. Section 05100 – Structural Steel Framing for replacement of steel lintel/relieving angle.
 - 5. Section 07620 – Sheet Metal Flashing and Trim for concealed flashings at lintel/relieving angle.
 - 6. Section 07920 – Joint Sealers for replacement of perimeter sealant.
 - 7. Section 08800 – Glazing
 - 8. Section 09910 – Painting and Finishing for painting steel lintel.

1.2 DEFINITIONS

- A. Window: Includes window frame, sash, hardware, and insect screens unless otherwise indicated by context.
- B. Subframe: Steel or aluminum anchorage, usually built into wall construction.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.5 QUALITY ASSURANCE

- A. Historic Treatment Specialist Qualifications:
 1. Repair Specialist: A qualified historic aluminum window specialist, experienced in repairing, refinishing, and replacing metal windows in whole and in part. Experience only in fabricating and installing new metal windows is insufficient experience for aluminum window historic treatment work.
 2. Refinishing Specialist: A qualified historic aluminum window specialist, experienced in refinishing aluminum windows in whole and in part. Refinishing specialist shall coordinate with the work of the repair specialist.
- B. Aluminum-Patching-Compound Manufacturer Qualifications: A firm regularly engaged in producing aluminum-patching compound that has been used for similar historic-metal-repair applications with successful results.
- C. Mockups: Prepare mockups of historic treatment repair processes to demonstrate aesthetic effects, to set quality standards for materials and execution, and to set quality standards for fabrication and installation. Prepare mockups so they are as inconspicuous as practicable.
 1. Locate mockups on existing windows, where directed by Architect in locations that enable viewing under same conditions as the completed Work.
 2. Aluminum Window Restoration: Prepare one entire window unit to serve as mockup to demonstrate samples of each type of repair and or replacement of aluminum window members/components, including frame, sash, glazing, hardware, weatherstripping, cleaning and polishing, and application of protective finish.

PART 2 - PRODUCTS

2.1 REPLICATED ALUMINUM WINDOW UNITS

- A. Replicated Aluminum Window Frames and Sash: Replacement aluminum units matching existing units; custom fabricated from salvaged windows, new aluminum extrusions and shapes,

or a combination thereof; and with operating and latching hardware; finished to match existing windows.

1. Exposed Hardware: Match existing exposed window hardware.
2. Weather Stripping: Full-perimeter weather stripping for each operable sash.

2.2 ALUMINUM-REPAIR MATERIALS

- A. Aluminum: Aluminum extrusions or shapes from salvage sources or new extrusions, forgings, and castings. Use alloy and temper recommended in writing by aluminum producer and finisher for type of use and finish indicated.
- B. Aluminum-Patching Compound: Two-part, metal-filled epoxy resin, aluminum-patching compound; knife-grade formulation as recommended in writing by manufacturer for types of repair indicated, tooling time required for the detail of work, and site conditions. Compound shall be produced for filling metal that has deteriorated from corrosion or abuse. Filler shall be capable of filling deep holes and spreading to featheredge.
 1. Source Limitations: Obtain aluminum-patching compound from single source from single manufacturer.

2.3 GLAZING MATERIALS

- A. Glass: See Section 08800 "Glazing."
- B. Glazing-Stop System: Provide new extruded aluminum window stops, finished to match window sash, and mechanically attached at equal intervals maximum **12 inches (300 mm)** o.c.; with **mitered** corners and butyl glazing tape complying with ASTM C1281 and AAMA 800 on both sides of glass.

2.4 HARDWARE

- A. Window Hardware: Provide complete sets of window hardware consisting of hinges, pulls, latches, and accessories indicated for each window or required for proper operation. Sets shall include replacement hardware to complement repaired and refinished existing hardware. Window hardware shall smoothly operate, tightly close, and securely lock aluminum windows and be sized to accommodate sash weight and dimensions.
- B. Replacement Hardware: Replace existing damaged or missing hardware with hardware from salvage sources or newly manufactured hardware.
- C. Material and Design:
 1. Material: Cast or wrought aluminum.
 2. Design: Match type and appearance of existing hardware.
- D. Balances: Standard tape balance, side type, 2 per sash, as manufactured by Pullman Mfg. Corporation, Rochester, NY 14623. Size for weight of sash with specified glass.
- E. Hardware Finishes: Comply with BHMA A156.18 for base material and finish requirements indicated.

2.5 MISCELLANEOUS MATERIALS

- A. Detergent Solution: Prepared by mixing **2 cups (0.5 L)** of tetrasodium pyrophosphate (TSPP), **1/2 cup (125 mL)** of laundry detergent that contains no ammonia, **5 quarts (5 L)** of 5 percent sodium hypochlorite bleach, and **15 quarts (15 L)** of warm water for each **5 gal. (20 L)** of solution required.
- B. Antirust Coating: Fast-curing, lead- and chromate-free, self-curing, universal modified-alkyd primer according to **MPI #23 surface-tolerant, anticorrosive metal primer or SSPC-Paint 20 or SSPC-Paint 29**.
 - 1. Surface Preparation: Use coating requiring no better than **[SSPC-SP 2, "Hand Tool Cleaning"] [SSPC-SP 3, "Power Tool Cleaning"] [or] [SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning"] <Insert standard>** surface preparation according to manufacturer's literature or certified statement.
- C. Fasteners: Use fastener metals that are noncorrosive and compatible with each material joined.
 - 1. Match existing fasteners in material and type unless otherwise indicated.
 - 2. Use concealed fasteners to attach items to other work unless exposed fasteners are **unavoidable**.
 - 3. For exposed fasteners, use Phillips-type machine screws of head profile flush with metal surface unless otherwise indicated.
 - 4. Finish exposed fasteners to match finish of metal fastened unless otherwise indicated.
- D. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of nonmagnetic stainless steel or hot-dip zinc-coated steel complying with requirements in ASTM B633 for SC 3 (Severe) service condition.

PART 3 - EXECUTION

3.1 HISTORIC TREATMENT OF ALUMINUM WINDOWS, GENERAL

- A. Execution of the Work: In treating historic items, disturb them as minimally as possible and as follows:
 - 1. Clean aluminum windows of mildew, algae, moss, plant material, loose paint, grease, dirt, and other debris by scrubbing with a natural bristle brush or sponge and detergent solution. After cleaning, rinse thoroughly with fresh water. Allow to dry before repairing or painting.
 - 2. Stabilize and repair aluminum windows to maintain and reestablish structural integrity and weather resistance while maintaining the existing form of each item.
 - 3. Repair items in place where possible unless otherwise indicated.
- B. Mechanical Abrasion: Do not use abrasive methods, such as sanding, wire brushing, or power tools, except as indicated as part of historic treatment program and as approved by Architect.
- C. Repair and Refinish Existing Hardware: Dismantle window hardware; strip paint, repair, and refinish it to match finish samples; lubricate moving parts just enough to function smoothly.
- D. Repair Aluminum Windows: Match existing materials and features, retaining as much original material as possible to perform repairs.

1. Unless otherwise indicated, repair aluminum windows by patching, splicing, or otherwise reinforcing aluminum with new or salvaged aluminum members.
 2. Where indicated, repair aluminum windows by limited replacement matching existing material.
- E. Replace Aluminum Units: Where indicated, duplicate and replace units with units made from salvaged, sound, aluminum windows and their components or with new aluminum extrusions and shapes matching size and form of existing extrusions and shapes.
- F. Protection of Openings: Where sash or windows are indicated for removal, cover resultant openings with temporary enclosures so that openings are weathertight during repair period.
- G. Identify removed windows, frames, sash, and components with numbering system corresponding to window locations to ensure reinstallation in same location.

3.2 REMOVING CHALKING APPEARANCE ON ANODIZED ALUMINUM

- A. Perform cleaning as required in "Historic Treatment of Aluminum Windows, General" Article.
- B. Perform additional cleaning at places where chalking remains. Perform this work as determined by preconstruction testing and demonstrated in mockup.

3.3 ALUMINUM WINDOW STRAIGHTENING

- A. Remove glass, detachable weather stripping, and interfering hardware from sash. Remove dirt and paint buildup from between sash and frame.
- B. Using shims and gentle pressure, align and straighten sash and frame to close completely and uniformly against each other, allowing for uniform thickness of detachable weather stripping, if any, around entire perimeter of sash.
- C. Straighten and adjust hinges, latches, and other hardware so that sash and frame in closed and latched position will remain completely and uniformly against each other allowing for uniform thickness of detachable weather stripping, if any, around entire perimeter of sash.
- D. Reinstall detachable weather stripping, and verify complete and continuous seal around entire perimeter of sash in closed and latched position.

3.4 ALUMINUM WINDOW PATCH-TYPE REPAIR

- A. Description: Patch aluminum members that exhibit depressions, nonstructural holes, pitting, and deep corrosion.
- B. Remove corrosion down to sound material.
- C. Apply aluminum-patching compound to fill depressions, nicks, cuts, and other voids created by corroded, removed, or missing aluminum.
 1. Apply patching compound in layers, as recommended in writing by manufacturer, until the void is completely filled.
 2. Finish patch surface smooth and flush with adjacent aluminum, without voids in patch material, and matching contour of aluminum member.

- D. Verify that patch repairs do not interfere with snug fit of sash and frame against each other along entire perimeter of sash in closed and latched position. If not, modify the patch repair or restraighten window as required.

3.5 ALUMINUM WINDOW MEMBER-REPLACEMENT REPAIR

- A. Description: Replace parts of or entire aluminum window members at locations where damage is too extensive to patch.
 1. Straighten window as specified in "Aluminum Window Straightening" Article.
 2. Remove deep corrosion and broken members down to sound, corrosion-free material.
 3. Cut out structurally weakened sections.
 4. Custom fabricate new aluminum of same size, thickness, and shape as removed and cut-out material to replace missing aluminum; either replace entire aluminum member or splice new aluminum part into existing member.
 5. Weld, braze, or mechanically fasten replacement material in place, and grind the repair smooth and flush with adjoining metal or filled metal as applicable. Use welding, brazing, or mechanical attachment that matches method of connecting original members.
 6. If replacement metal sections of original cross section cannot be found from salvage sources, use custom extrusions or aluminum members welded together into a built-up section.
- B. Repair remaining depressions, holes, or similar voids with patch-type repairs.
- C. Glazing: Provide replacement glazing stops coordinated with glazing system indicated.
- D. Reinstall units removed for repair into original openings.
- E. Verify that member-replacement repairs do not interfere with snug fit of sash and frame against each other along entire perimeter of sash in closed and latched position. If not, modify the member-replacement repair or restraighten window as required.

3.6 GLAZING

- A. Comply with combined written instructions of manufacturers of glass, glazing system, and glazing materials unless more stringent requirements are indicated.
- B. Remove glass and glazing from openings and prepare surfaces for reglazing.
- C. Prime aluminum, including glazing rabbets, with finish-paint primer before installing glass.
- D. Size glass as required by Project conditions to provide necessary bite on glass and minimum edge and face clearances with reasonable tolerances.
- E. Apply primers to joint surfaces where required for adhesion of glazing system, as determined by preconstruction testing.
- F. Install setting bead, side beads, and back bead against stop in glazing rabbets before setting glass.
- G. Install glass with proper orientation so that coatings, if any, face exterior or interior as required.

- H. Disposal of Removed Glass: Remove from Owner's property and legally dispose of it unless otherwise indicated.

3.7 ALUMINUM WINDOW UNIT REPLACEMENT

- A. Description: Replace existing window frame and sash units with replicated aluminum units to match existing at locations where damage is too extensive to repair.
- B. Install units level, plumb, square, true to line, without distortion or impeding movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Metal Protection: Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- D. Anchor Concealment: Fill screw head depressions flush and smooth with paintable putty after window installation, spot prime, and paint.
- E. Disposal of Removed Units: Remove from Owner's property and legally dispose of them unless otherwise indicated.

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 01230 – Alternates.
 - 3. Section 08591 – Metal 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.

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.
- 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.

1.9 WARRANTY

- A. Manufacturer's Special Warranty on Laminated Glass: Written warranty, made out to Owner and signed by laminated-glass manufacturer agreeing to furnish replacements for laminated-glass units that deteriorate as defined in "Definitions" under item 1.3.
 - 1. Warranty period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Low-E Laminated Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.
 - 1. Provide $\frac{1}{4}$ " thick Low-E laminated glass, Cardinal 272, at exterior metal window sashes throughout except where noted.
 - a. Inner lite: $\frac{1}{8}$ " thick clear glass, ASTM C 1036.
 - b. Plastic interlayer: .03" clear interlayer
 - c. Outer lite: $\frac{1}{8}$ " thick, clear glass, ASTM C 1036, with Low-E coating on #2 side
 - d. Visible light transmittance: 72%
 - e. Visible light reflectance: 11%
- B. Low-E Laminated Glass with Patterned Glass: ASTM C1172. Use materials that have a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after fabrication and installation.
 - 1. Provide $\frac{1}{4}$ " thick Low-E laminated glass, Cardinal 272, at exterior metal window sashes at restrooms and mechanical rooms, where noted in the window schedule.
 - a. Inner lite: $\frac{1}{8}$ " thick clear patterned glass, ASTM C 1036, Type II, $\frac{1}{8}$ " Cross Reeded Pattern, #GL 680, as distributed by ArchitecturalGlass.com, provide where indicated in the Window Schedule. Texture shall be on room facing side.
 - b. Plastic interlayer: .03" clear interlayer
 - c. Outer lite: $\frac{1}{8}$ " thick, clear glass, ASTM C 1036, with Low-E coating on #2 side.
 - d. Visible light transmittance: 72%
 - e. Visible light reflectance: 11%

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.

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 (Not for insulated and laminated glass)

- 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 09281
GYPSUM PLASTER RESTORATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Gypsum plastering below exterior windows coinciding with exterior marble spandrel panels, where metal lath is found to be in poor condition, for bidding purposes assume 25% of areas shown on the Drawings.
 - 2. Gypsum plastering repairs at the perimeter of window openings resulting from window restoration work.
 - 3. Metal framing, metal lath, trim, and accessories.
- B. Related Sections:
 - 1. Division 1: Administrative, procedural, and temporary work requirements.
 - 2. Section 01210 – Allowances.
 - 3. Section 01226 – Unit Prices.
 - 4. Section 01230 – Alternates.
 - 5. Section 01730 – Selective Demolition.
 - 6. Section 04905 – Masonry Restoration for re-pointing of masonry walls.
 - 7. Section 08591 – Metal Window Restoration.
 - 8. 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. Erect sample panel straight plastering, minimum 5 square feet each by full thickness using materials proposed for final work, including metal framing and lath. Mock-Ups shall be located adjacent to plaster finish scheduled to remain to verify seamless transition between existing and new plaster work.
 2. Plaster patch, 24 inch by 24 inch, demonstrating preparation, patching, and finishing technique.
 3. Crack repair, 4 lineal feet, demonstrating preparation, patching, and finishing technique.
 4. Repair/replacement of delaminating skim coat.
 5. Locate where directed by Architect.
 6. Obtain Architect's approval of mockups before start of plaster Work.
 7. 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 in proposed texture.
 4. 12 x 12 inch plaster samples with embedded marble chips.
- 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.

2.5 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.
- 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.
- D. Fasteners:
 - 1. For attaching framing to masonry and metal framing: Type best suited to application.
 - 2. For fastening framing members together: 3/8 inch long pan head screws.

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 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. Metal lath.
 - 2. Two Coats: Over the following bases:
 - b. Unit masonry.
 - c. Concrete, cast-in-place or precast when surface condition complies with ASTM C 842 for plaster bonded to solid base.
 - 3. 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 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 01210 – Allowances.
 - 3. Section 01226 – Unit Prices.
 - 4. Section 01230 – Alternates.
 - 5. Section 02075 – Coating removal.
 - 6. Section 05100 – Structural Steel Framing.
 - 7. Section 09281 – Gypsum Plaster Restoration.

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. and Tnemec Company Inc.
- B. Equivalent products by the following manufacturers are acceptable:
 1. Benjamin Moore and Co. (www.benjaminmoore.com)
 2. Devoe Paint Co. (www.devoepaint.com)
 3. Fuller O'Brien Paints. (www.fullerpaint.com)
 4. I.C.I. Paints. (www.icipaintstores.com)
 5. Kelly-Moore Paints. (www.kellymoore.com)
 6. PPG Architectural Finishes, Inc. (www.pittsburghpaints.com)
 7. Pratt and Lambert Paints. (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.

3.2 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. 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:		
Metal, Opaque Finish Ferrous and galvanized metals (Exposed lintels & shelf angles, grilles)	One coat Hi-Build Epoxoline Series 66	One coat (Intermediate) Endura-Shield Series 73 One coat Fluoronar Series 1071
Concrete	Loxon Concrete & Masonry Primer/Sealer Interior/Exterior Latex	Conflex XL Elastomeric Textured High Build Coating

SUBSTRATE	PRIMER	TOP COATS
Interior Surfaces:		
Gypsum plaster, match existing sheen (Walls)	One coat PrepRite ProBlock Interior/Exterior Latex Primer/Sealer	Two coats ProMar 200 Interior Latex

END OF SECTION

SECTION 12491

HORIZONTAL LOUVER BLINDS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Horizontal slat metal louver blinds at exterior windows throughout [Alternate No. 3].
 - 2. Operating hardware.
- B. Related Sections:
 - 1. Division 1: Administrative, procedural, and temporary work requirements.
 - 2. Section 01230 – Alternates.

1.2 SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: 6 inch long slat, headrail, and ladder samples showing profile and finish.

1.3 PROJECT CONDITIONS

- A. Verify actual dimensions at site prior to fabrication of blinds.
- B. Do not install blinds until painting and finishing work is complete.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Levolor Corp.
 - 2. SWF Contract.
- B. Substitutions: Under provisions of Division 1.

2.2 COMPONENTS

- A. Louver Slats: 2 inches wide .008" thick, prefinished cold-rolled aluminum horizontal slats with radiused corners.
- B. Ladders: Braided ladder made of 100% polyester yarn, 1 ½-inch wide.
- C. Head Rail:
 - 1. Prefinished, formed aluminum or steel box, internally fitted for hardware, pulleys, and bearings for blind operation.
- D. Cord: Braided nylon or polypropylene with hardwood tassels to match slats.

- E. Control Wand: clear polycarbonate, 1/4 inch diameter, hexagonal cross section, height of window opening less 12 inches, except provide additional length on blinds at high windows to locate bottom of wand within 72" of floor.
- F. Support Brackets: Suitable for wall or soffit mounting, formed metal to match head rail, allowing removal of head rail for maintenance without removing bracket.
- G. Operation: Provide full range lift locking.
- H. Basis of Design:
 - 1. 2" Heritage Aluminum Blinds as manufactured by SWF Contract, Middleton, WI, 800.327.9798.

2.3 FABRICATION

- A. Fabricate blinds to fit openings with uniform edge clearance of 1/2 inch.
- B. At openings requiring multiple blind units, provide separate blind assemblies with space of 1/4 inch between assemblies, occurring at window mullion centers.
- C. Finishes:
 - 1. Slats, head rails, and brackets: Polyester-baked enamel, color to be selected from manufacturer's standard colors.
 - 2. Ladders and cords: Color to be selected from Manufacturer's standard colors.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Secure in place with concealed fasteners.
- C. Place intermediate head supports at 48 inches on center.
- D. Installation Tolerances:
 - 1. Maximum gap at window opening perimeter: 1/4 inch.
 - 2. Maximum offset from level: 1/8 inch.

3.2 ADJUSTING

- A. Test and adjust blinds for proper operation.

END OF SECTION

SECTION 16050
BASIC ELECTRICAL MATERIALS AND METHODS

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 16 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 Brenham Electrical Codes and Ordinances.
 - d. The terms and conditions of services provided by the following utilities:
 - 1) AEP Texas.
 - 2) AT&T.
 - 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. Expediently 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 includes 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 16 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 16 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.

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 are 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 catalog 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 16130 (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 15 and 16 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 15 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 15 (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 3/8" flex.
 - 3) Install all HVAC control wiring in accordance with Section 16123 and 16130.
 - 4) Coordinate with Division 15 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 15 and 16 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 or 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 16075.

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 16060
GROUNDING AND BONDING

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 03300 – 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 01300 - Submittals: Requirements for submittals.
- B. Product Data: Submit data on grounding electrodes and connections.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01700 – 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 01600 – 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 01600 – 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 01600 – 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 01600 – 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 01500 – 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 16950.
- 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 16670
LIGHTNING PROTECTION SYSTEM

PART 1 - GENERAL

1.1 WORK REQUIRED

- A. This section includes the furnishing and installation of a complete master labeled lightning protection system, complying with UL 96, UL 96A and NFPA 780, for coverage of the new building.
- B. Furnish all labor, materials, and items of service required to complete a functional and unobtrusive lightning protection system approved by the engineer in strict accordance with the specifications and contract drawings. If any departure from the contract or submittal drawings covered below are deemed necessary by the contractor, details of such departures and reasons therefore shall be submitted to the engineer for approval. No such departures shall be made without the prior written approval of the architect. The following standards of the latest issue form a part of this specification: (A) Lightning Protection Institute Standard LPI-175; (B) National Fire Protection Association Code NFPA 780 (2011 ed.); (C) Underwriters' Laboratories Standards UL96A and UL96.

1.2 RELATED WORK

- A. Section 16050 - General Requirements.
- B. Section 16060 – Grounding and Bonding.

1.3 SUBMITTALS

The system shall conform to the above cited standards. The system furnished shall be the standard product of a single, UL listed manufacturer regularly engaged in the production of lightning protection systems and shall be the manufacturer's latest approved design. All material specified is manufactured by Thompson Lightning Protection, Inc., 901 Sibley Highway, St. Paul, Minnesota 55118, or approved equal. For approval of a manufacturer other than specified, proposed material data and installation drawings must be submitted for review not less than ten days prior to bid.

- A. Submit in accordance with Section 16050.
- B. Complete shop drawings shall be prepared by the manufacturer and submitted to the engineer for approval prior to start of work. System installer shall submit to the architect an original, project specific, notarized certification from the equipment manufacturer verifying their qualifications as a lightning protection installer. Samples and catalog data shall be submitted to the engineer for approval upon request.
- C. Provide the following information with the submittal:
 1. Elevation and plan views showing layout and connections to the required metal surfaces.
 2. Proposed routing of conductors.
 3. Isometric views of proposed components systems, including air terminals, connectors, and related items.
 4. Show the methods of mounting the system to the adjacent construction.
- D. Submit proof that the material supplier and installer of the lightning protection system have had suitable and adequate experience installing other lightning protection systems, and is capable of installing the system as recommended by the manufacturer of the equipment.
- E. Prior to final inspection, deliver to the Engineer copies of the certification that the installed lightning protection system has been inspected by a UL representative and has been approved by UL without variation.

1.4 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced.

- B. National Fire Protection Association (NFPA):
 - 1. 70 National Electrical Code (NEC).
 - 2. 780 Standard for the Installation of Lightning Protection Systems.
- C. Underwriters Laboratories, Inc. (UL):
 - 1. 96 Standard for Lightning Protection Components.
 - 2. 96A Installation Requirements for Lightning Protection Systems.

PART 2 - PRODUCTS

- A. Acceptable lightning system equipment manufacturers:
 - 1. Heary Brothers.
 - 2. Thompson Lightning Protection.
 - 3. East Coast Lightning Equipment.
 - 4. Others as approved by the Engineer.
- B. All materials shall conform to UL standards for lightning protection materials.
- C. All equipment shall be factory inspected, approved, and properly labeled in accordance with LPI and UL requirements. All equipment shall be new, the product of a single manufacturer, and of a design and construction to suit the application where used.
- D. All materials shall be copper or copper alloy and of the size, weight, and construction for use on steel framed buildings in accordance with LPI, UL, and NFPA requirements for Class I structures per manufacturer recommendations. Downlead conductors from the base of steel columns to ground shall be copper, 29 strands 17 gauge, Cat. No. 29X. All main roof conductors shall be aluminum, 24 strands 14 gauge, Cat. No. A24. Air terminals shall be solid aluminum 1/2" diameter, Cat. No. A55, A56, etc., and shall project 10" minimum above the object to be protected. Locate and space according to LPI, UL, and NFPA requirements. Air terminal bases shall be of cast aluminum with bolt pressure cable connections and shall be securely mounted with stainless steel screws or bolts, Cat. No. A690X, A678, A611 .etc., as required. Bases on built-up tar and gravel or single membrane roofs shall be secured with a proper adhesive and shall have a minimum surface contract area of 18.5 square inches, Cat. No. A688, etc. Coordinate with the roofing contractor to insure compatibility of any adhesive with the roofing system in use. Crimp type connectors at bases are not acceptable. Ground rods shall be a minimum of 5/8" in diameter and 10' long, Cat. No. TL5810. They shall be connected to the system with a two-bolt cast bronze clamp, Cat. No. 231, having a minimum length of 1-1/2" and employing stainless steel cap screws. Cable fasteners shall be substantial in construction, electrolytically compatible with the conductor and mounting surface and shall be spaced according to LPI, UL, and NFPA code requirements, Cat. NO, A730, A166, etc. Bonding devices, cable splicers, and miscellaneous connectors on the roof shall be of cast aluminum with bolt pressure connections to cable. Cast or amped crimp fittings are not acceptable. Splicers similar to Cat. No. A423, A705, A706, etc., bonding devices similar to Cat. No. A702, A704, A551, A142, A561, A142X, etc. All miscellaneous bolts, nuts, and screws shall be stainless steel. Connections to structural steel shall be made with bonding plates of cast bronze or aluminum with bolt tension cable clamps, Cat. No. 639, A639, 701X, A701X, 702, A702,etc.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. The installation shall be accomplished by an experienced installer who is a Certified Master Installer of the LPI or working under the direct supervision of the manufacturer as

listed above or their authorized LPI Certified Master Installer representative. All equipment shall be installed in a neat workmanlike manner in the most inconspicuous manner possible, the electrically continuous steel frame of the building shall serve as the down conductors for the lightning protection system. The number, size, type, and location of grounds and connections to steel at roof and grade level shall be as required by NFPA, UL, and LPI code requirements. A complete cable system with related air terminals, splicers, and bonds, etc., shall be used on the roof. Aluminum downlead cables to steel frame from the cable roof system shall not be brought directly through the roof. Through-roof connectors with solid rods or conduit through approved flashings shall be utilized for this purpose. The limitations on areas of usage for aluminum cables and for copper and aluminum materials together as outlined in NFPA 780, UL96A, and LPI175 shall be observed.

- B. The installer will work with other trades to insure a correct, neat, and unobtrusive installation. The lightning protection installer shall assure a sound bond to the main water service and interconnection with other building ground systems, including both telephone and electrical. Arresters shall be installed on the power and telephone service by either the utility or the electrical contractor as applicable. All final flashing and sealing of lightning protection system roof penetrations and any special provisions required by the roofing manufacturer i.e. additional buffer strips, pads, membrane strips, etc. associated with mounting lightning protection equipment shall be furnished and installed by the roofing contractor in compliance with the roofing system in use. A copy of the lightning protection system shop drawings shall be forwarded by the architect to the roof contractor for coordination purposes.
- C. Install the down conductors as inconspicuously as practical and with the proper bends.
- D. Install the vertical conductors surface mounted on the exterior walls. Run the conductors to the exterior at elevations below the finished grade and make the ground connections to the earth outside of the building perimeter.
- E. Make connections of dissimilar metal with bimetallic type fittings to prevent electrolytic action.
- F. Use the exothermic welding type connections which form solid metal joints in the main vertical and horizontal conductors, and for connections that are not exposed in the finish work.
- G. For the earth connections, install ground rods and ground plates, and the conductor connections to them and the main water pipes in the presence of the Engineer. For the conductors located outside of the building or stack, install the conductors not less than 2 ft. below the finished grade.
- H. For structural steel buildings, connect the steel framework of the buildings to the main water pipe near the water system entrance to the building.
- I. Connect exterior metal surfaces, located within 3 ft. of the lightning protection system conductors, to the lightning protection system conductors to prevent flashovers.
- J. Weld or bond the non-electrically-continuous sections together and make them electrically-continuous.
- K. Connect the lightning protection system to the main panelboard ground bar.
- L. The lightning protection installer shall secure and deliver the LPI System Certification to the architect for the owner upon completion of the installation. The contractor shall also submit copies of as-built shop drawing with the LPI Certified System Application.
- M. After the lightning protection systems have been installed, have the system inspected by a UL representative. Obtain a UL "Master Label Certificate."

END OF SECTION

Revised Limited Asbestos Survey

**Washington County Courthouse
100 E Main St., Brenham, Texas**

ESI Project No. M21.135 Rev.

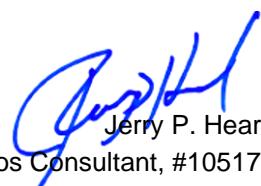
Prepared for:

Washington County
100 E Main St.
Brenham, Texas 77833

Prepared by:



Chris M. Cox
Asbestos Inspector #600005



Jerry P. Heard
Asbestos Consultant, #105174

Environmental Solutions, Inc.
13831 Northwest Freeway, Suite 440
Houston, Texas 77040

August 31, 2021

August 31, 2021

Sent via e-mail: bbranham@wacounty.com

Mr. Bobby Branham
Washington County
100 E Main St.
Brenham, Texas 77833

**Re: Revised Limited Asbestos Survey
Washington County Courthouse
100 E Main St., Brenham, Texas
ESI Project No. M21.135 Rev.**

Dear Mr. Branham:

Environmental Solutions, Inc. (ESI) is pleased to present the results of the asbestos survey of the Washington County Courthouse located at 100 E Main St. in Brenham, Texas. This survey was performed in general accordance with ESI's Proposal No. 01082402. The purpose of this survey was to identify suspect Asbestos-Containing Materials (ACMs), and report locations and conditions of confirmed ACMs.

Sampling

The asbestos survey included the collection of 66 bulk samples of suspect ACMs. Mr. Christopher Cox (Texas Department of State Health Services license #600005) performed the field survey and collection of bulk samples of suspect ACMs on July 28, 2021 and August 20, 2021.

Suspect materials: Suspect materials, which are alike in appearance and application, were sampled as a homogeneous area. Suspect materials sampled and analyzed were considered homogeneous when they exhibited similar physical characteristics, and the time of application can be correlated to various areas of suspect material. Representative sampling of the suspect materials were based on the distribution of each homogeneous area.

Analytical Procedures

Bulk samples were analyzed by Environmental Analytical Services, LLC (EAS) in Houston, Texas, utilizing the Environmental Protection Agency's Polarized Light Microscopy (PLM) *Method for the Detection of Asbestos in Bulk Insulation Samples*, (EPA 600/R-93/116), and the McCrone Research Institute's *The Asbestos Particle Atlas* as method references. EAS's laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), participates in the NVLAP Bulk Asbestos Sample Quality Assurance Programs, and is licensed to analyze bulk asbestos samples collected in the State of Texas (TDSHS #30-0373).

©

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Analytical results: Of the materials collected and analyzed from the Washington County Courthouse located at 100 E Main St. in Brenham, Texas, the following materials were found to contain asbestos (1% or more):

Thermal Systems Insulation ACM:

- **White block pipe insulation** in the Floor 4 mechanical room on floor by A/C pipe contained 2% Chrysotile asbestos, and
- **Muddled fittings on cardboard covered pipe** in the Tax records room contained 40% Chrysotile asbestos.

Miscellaneous ACM:

- **9" Floor tile with black, tan and maroon flecks, and black mastic** in the Floor 4 hall; Floor 3 restrooms, hall and foyer, district clerk office beneath carpet; Floor 2 County Court with areas beneath carpet, County Judge and Admin Assistant, Attorney General offices beneath carpet, District Clerk Records, County Attorney meeting room beneath carpet, Commissioners Offices 1 and 2 beneath carpet, IT Dir. beneath carpet, Cell, JP Court beneath carpet, JP Offices beneath carpet; Floor 1 County Judge, Court Chambers room 103, Commissioners Court beneath carpet, IT Office, Election Storage and IT Server room, Tax Collections and office beneath carpet and stairs, County Clerk and office beneath carpet and stairs, and County Judge and Administration offices beneath carpet contained 20% Chrysotile asbestos in the tile and 5% Chrysotile asbestos in the mastic,
- **Black tar on fiberglass pipe insulation** in the Floor 4 penthouse west wall contained 10% Chrysotile asbestos,
- **Mix of 12" floor tiles, white with gold flecks, and black with white flecks, and yellow mastic over 9" floor tile and mastic** in the Floor 3 clerk's office; Floor 2 city judge clerk's foyer; and elevator, no asbestos detected in the 12" floor tile and yellow mastic, and 10% Chrysotile in the bottom layer floor tile and 5% Chrysotile in the black mastic,
- **12" Floor tile, off white with beige and tan flecks, and yellow mastic over 9" floor tile and black mastic** in the Floor 2 JP entrance foyer, no asbestos detected in the 12" floor tile and yellow mastic, and 5% Chrysotile in the bottom layer floor tile and 5% Chrysotile in the black mastic,
- **12" Floor tile with light to dark brown streaks, and black mastic** located in the Tax records contained 5% Chrysotile asbestos in the mastic and no asbestos detected in the floor tile,
- **12" Floor tile, off-white with light to dark beige flecks, and black mastic** in the Tax records contained 2% Chrysotile asbestos in the tile and 5% Chrysotile asbestos in the mastic,
- **3" Thick ceiling tile and adhesive** in the Floor 3 district court; and Floor 2 county court was assumed to contain asbestos,
- **12" Floor tile with gray, white and beige flecks, and black mastic** in the ground floor hallway contained 2% Chrysotile asbestos in the tile and 5% Chrysotile asbestos in the mastic, and
- **Ceiling panel adhesive** in the Floor 3 district court room was assumed to contain asbestos.

Condition Assessment

Asbestos is an airborne hazard. A condition assessment refers to the process where a material's potential to release fibers into the air is evaluated. Fibers may be released inadvertently by localized disturbance, as part of a material aging process, or when acted upon by other factors such as air movement, impact, vibration. Assessing a material's potential for fiber release (therefore, its associated hazard risk) is accomplished by evaluating associated factors.

Friable / Non-Friable Materials: A Friable Asbestos-Containing Material (ACM) is a material that when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes non-friable material after such material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure (40 CFR 763.83).

ACM Condition Assessment: ACMs are assessed by field personnel to be in good, fair, or poor condition. These subjective categories are described below:

- **Good:** Asbestos-containing material in good condition is whole and complete, and typical of new installation. As such, this material is not expected to release airborne asbestos unless damaged or disturbed during renovation/repairs. In these cases, there is no immediate hazard of airborne asbestos and corrective action is usually not recommended.
- **Fair:** Asbestos-containing material in fair condition is generally complete but shows some limited signs of damage or deterioration (i.e., <10% equally distributed or <25% locally damaged). As such, these materials would be expected to release airborne asbestos when disturbed. In these cases, there is the potential hazard of airborne asbestos and the damaged material should be repaired or removed as soon as possible.
- **Poor:** Asbestos-containing material in poor condition is generally severely damaged or deteriorated, usually with pieces missing (i.e., >10% equally distributed or >25% locally damaged). As such, these materials would be expected to release airborne asbestos due to simple building motion or air currents. Since these materials are generally beyond repair and there exists an immediate hazard of airborne asbestos, these materials should be removed as soon as possible.

The hazard assessments given are general, based on the typical conditions observed at the time of our survey. These assessments do not attempt to rate every hazardous situation. The hazard associated with any ACM may become more extensive over time.

Analytical Result Data

The table below describes materials sampled, location(s), analytical results, friability and representative condition of materials sampled at the Washington County Courthouse located at 100 E Main St. in Brenham, Texas. A material found to contain 1% or more asbestos (1%) is considered asbestos-containing.

Sample Number	Sample Description / Location(s)	Laboratory Results	Friability / Condition	Estimated Quantity
01, 02, 03	9" black, tan and maroon floor tile, and black mastic Floor 4 hall; Floor 3 restrooms, hall and foyer, district clerk office beneath carpet; Floor 2 County Court with areas beneath carpet, County Judge and Admin Assistant, Attorney General offices beneath carpet, District Clerk Records, County Attorney meeting room beneath carpet, Commissioners Offices 1 and 2 beneath carpet, IT Dir. beneath carpet, Cell, JP Court beneath carpet, JP Offices beneath carpet; Floor 1 County Judge, Court Chambers room 103, Commissioners Court beneath carpet, IT Office, Election Storage and IT Server room, Tax Collections and office beneath carpet and stairs, County Clerk and office beneath carpet and stairs, and County Judge and Administration offices beneath carpet	Tile: 20% Chrysotile Mastic: 5% Chrysotile	Non-Friable / Good	11,770 sq. ft.
04, 05, 06	Black tar on fiberglass wall insulation Floor 4, penthouse	10% Chrysotile	Non-Friable / Good	8 lin. ft.
07, 08, 09	White plaster on concrete Floor 4	None Detected	Non-Friable / Good	N/A
10, 11, 12	Yellow carpet adhesive Floor 4 storage room and hallway	None Detected	Non-Friable / Good	N/A
13, 14, 15	White valve and union insulation mastic Floor 4 mechanical room	None Detected	Non-Friable / Good	N/A
16, 17, 18	White block pipe insulation Floor 4 mechanical room on floor by A/C pipe	2% Chrysotile	Friable / Good	1.5 lin. ft.
19, 20, 21	Black tar on heater duct insulation Floor 4 mechanical room	None Detected	Non-Friable / Good	N/A
22, 23, 24	Gray windowpane caulk Floor 4	None Detected	Non-Friable / Good	N/A
25, 26, 27	2'x2' ceiling panels with recessed edges and irregular pinholes Floor 3 restroom and hallway, west restroom foyer; Floor 2 county court Juror room and restroom; and areas throughout	None Detected	Friable / Good	N/A
28, 29, 30	Sheetrock and joint compound HVAC/Elect/IT chases throughout	None Detected	Non-Friable / Good	N/A

Sample Number	Sample Description / Location(s)	Laboratory Results	Friability / Condition	Estimated Quantity
31, 32, 33	Green carpet adhesive and residual black mastic Floor 3 law library and associated offices	None Detected	Non-Friable / Good	N/A
34, 35, 36, 34B, 35B, 36B	Mix of 12" white with gold flecks and black with white flecks floor tile and yellow mastic over 9" floor tile and mastic Floor 3 clerk's office; Floor 2 city judge clerk's foyer; and elevator	Top tile: None Detected Bot. tile: 10% Chrysotile Mastic: 5% Chrysotile	Non-Friable / Good	390 sq. ft.
37, 38, 39	Gray HCAC duct sealant Areas throughout	None Detected	Non-Friable / Good	N/A
40, 41, 42	12" off white with beige and tan flecks floor tile and yellow mastic over 9" floor tile and black mastic Floor 2 JP entrance foyer	Top tile: None Detected Bot. tile: 5% Chrysotile Mastic: 5% Chrysotile	Non-Friable / Good	50 sq. ft.
43, 44, 45	12" light to dark brown streaks floor tile and black mastic Elections office	Tile: None Detected Mastic: 5% Chrysotile	Non-Friable / Good	440 sq. ft.
46, 47, 48	Brown paper pipe insulation Tax records room	None Detected	Non-Friable / Good	N/A
49, 50, 51	Muddled fittings on cardboard covered pipe Tax records room	40% Chrysotile	Friable / Good	10 ea.
52, 53, 54	12" off-white with light to dark beige flecks floor tile and black mastic Records Storage (Liens)	Tile: 2% Chrysotile Mastic: 5% Chrysotile	Non-Friable / Good	240 sq. ft.
55, 56, 57	16" cream faux patterned floor tile and yellow mastic Dining area	None Detected	Non-Friable / Good	N/A
58, 59, 60	12" light to dark beige dense flecks floor tile and black mastic Ground floor breakroom	None Detected Mastic: 5% Chrysotile	Non-Friable / Good	180 sq. ft.
61, 62, 63	White domestic valves, flanges, unions and ends pipe insulation mastic Ground floor mechanical room	None Detected	Non-Friable / Good	N/A
	3" Thick ceiling tile and adhesive Floor 3 district court	Assumed	Non-Friable / Good	1,600 sq. ft.
64, 65, 66	12" gray, white and beige flecks floor tile and black mastic Ground floor hallway	Tile: 2% Chrysotile Mastic: 5% Chrysotile	Non-Friable / Good	1,050 sq. ft.
	Ceiling panel adhesive Floor 2 county court	Assumed	Non-Friable / Good	1,008 sq. ft.
67	Exterior window frame caulk Exterior windows	None Detected	Non-Friable / Good	N/A

Sample Number	Sample Description / Location(s)	Laboratory Results	Friability / Condition	Estimated Quantity
68	Caulk Exterior window sill stone in-lay	None Detected	Non-Friable / Good	N/A
69	Exterior door frame caulk Exterior doors	None Detected	Non-Friable / Good	N/A
70	Black stone thin-set/grout Black exterior stone	None Detected	Non-Friable / Good	N/A
71	White stone thin-set/grout White exterior stone	None Detected	Non-Friable / Good	N/A

Conclusions and Recommendations

Block pipe insulation, mudded fittings, floor tile and/or mastic, and black tar on fiberglass pipe insulation at the Washington County Courthouse located at 100 E Main St. in Brenham, Texas were determined to contain asbestos by laboratory analysis. Ceiling tile and adhesive and two areas of the bottom layers of floor tile and mastic were assumed to contain asbestos. These materials should be assumed to contain asbestos until destructive sampling can be performed. These thermal and miscellaneous ACMs were observed in good condition and present a low potential for damage. Avoid disturbing any ACM or un-sampled material, such as cutting, sanding, grinding, striking, nailing, or drilling through the surfaces.

Based on the ACMs identified and our understanding that the interior is scheduled for renovation activities, ESI makes the following recommendations:

- Under Occupational Safety and Health Administration (OSHA) and the Texas Department of State Health Services (TDSHS), Asbestos Health Protection Rules (TAHPR) regulations, building owners are required to notify tenants; and any contractors or employees performing repair, maintenance, or other work within the building of the presence, location, and quantity of materials that contain or are assumed to contain asbestos.
- Removal of ACMs that could possibly be impacted by renovation activities, by a qualified and licensed asbestos Contractor, prior to renovation activities. If removal is postponed for a period of time, or identified ACMs are to remain, an Asbestos O&M Program should be established. The Asbestos O&M program should include interim control measures prior to the removal. An Asbestos O&M Program may include appropriate disturbance reduction measures, as well as emergency response actions for minor and major disturbance to increase the effectiveness of the program. Periodic visual surveillance of all ACMs should be conducted at least twice per year, by employees trained in asbestos control. This will enable the owner to continually monitor and assess the condition and assign proper response actions when necessary.

Please note that removal or disturbance of any ACM is regulated under OSHA; Environmental Protection Agency (EPA), National Emission Standards for Hazardous Air Pollutants (NESHAP); and TDSHS, TAHPR regulations, and must be performed with the proper engineering and regulatory controls by a licensed asbestos abatement contractor and consultant. In most cases, a licensed asbestos consultant is required to prepare project specific work procedures and perform on-site project monitoring (inclusive of final work area visual and air clearance). This provides critical documentation for the building owner.

You should also be aware that the EPA has not prohibited the manufacture of non-friable asbestos-containing materials, such as vinyl floorings, mastics, and roofing materials, joint compound as well as materials arriving from other countries.

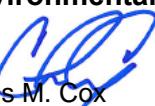
In addition, House Bill 1927 and the TDSHS TAHPR, prohibits the installation of asbestos-containing materials in public and commercial building, unless there is not an alternative material or part. Material Safety Data Sheets (MSDS) must be obtained for building materials or replacement parts. As a result, any future replacement materials should be checked for the presence of asbestos, or a certification from a licensed engineer or architect stating that the MSDS have been reviewed and in their professional opinion all parts of the building affected by the planned renovation or demolition do not contain asbestos.

Limitations

This report has been prepared to assist Washington County in evaluating suspect ACMs at the Washington County Courthouse located at 100 E Main St. in Brenham, Texas. This report must not be used by anyone other than our Client, Washington County, without express written consent from Environmental Solutions, Inc. Our objective was to perform our work with care, exercising the customary skill and competence of consulting professionals in the relevant disciplines in this region. The conclusions presented in this report are professional opinions based solely upon visual observations of the site, at the time of our investigation, and the results of laboratory analysis. The opinions presented herein apply to site conditions existing at the time of our investigation and those reasonably foreseeable. ESI cannot act as insurers, and no expressed or implied representation or warrant is included or intended in our report except that our work was performed, within the limits prescribed by our client, with the customary thoroughness and competence of our profession. Unsampled asbestos-containing construction materials may be located in exterior materials, fire-rated doors, behind mirrors, below or behind floors or walls, especially under ceramic or laminate floors, within walls, ceiling cavities, below flooring or grade, and other non-accessible areas or un-sampled areas. Precaution should be used in relation to these un-sampled materials until proper sampling and analysis have determined their asbestos content. The condition of the ACMs may change gradually or suddenly, depending upon use, maintenance or accident.

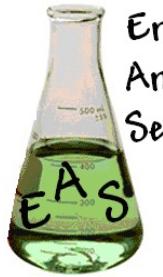
We appreciate the opportunity to provide environmental consulting services to Washington County and look forward to assisting you with any abatement. If you have any questions or need additional assistance, please call 713-934-9944.

Sincerely,
Environmental Solutions, Inc.


Chris M. Cox
Asbestos Inspector #600005
CMC (M21.135 svyR)


Jerry P. Heard
Asbestos Consultant, #105174

Enclosure: Laboratory Analysis Report



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**Test: EPA 600/R-93/116
Polarized Light Microscopy**

Client Information:

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13831 Northwest Freeway
Ste. 440
Houston, TX 77040
Phone: 713-934-9944
E-Mail: jheard@esi-texas.com

Project:

100 E Main St
M21.135

Date Analyzed: 08/04/2021 03:46 PM

Date Received: 07/30/2021 11:30 AM

EAS Job: 21073005
Attn: Jerry Heard

TAT Requested: 3 Days

Microscope: PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
01 21073005.01	A	Maroon Floor Tile Homogeneous	YES	Chrysotile 20%		Other Non-Fibrous 80%
01 21073005.01	B	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Bitumen 95%
02 21073005.02		Not Analyzed Positive Stop				
03 21073005.03		Not Analyzed Positive Stop				
04 21073005.04	A	Black Tar Homogeneous	YES	Chrysotile 10%		Bitumen 90%
04 21073005.04	B	Black Fibrous Paper Wrapping w/ Foil Non-Homogeneous	NO	None Detected	Cellulose 55% Fiberglass 5%	Other Non-Fibrous 40%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

Notes:

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Terry Brindley

Approved Signatory: *Terry Brindley*
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PLM Olympus BH-2,
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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
04 21073005.04	C	Yellow Fibrous Insulation	NO	None Detected	Fiberglass 100%	
05 21073005.05		Not Analyzed Positive Stop				
06 21073005.06		Not Analyzed Positive Stop				
07 21073005.07	A	White Plaster Homogeneous	NO	None Detected	Cellulose 2%	Binders 98%
07 21073005.07	B	Gray Cementitious Material Homogeneous	NO	None Detected		Other Non-Fibrous 100%
08 21073005.08	A	White Plaster Homogeneous	NO	None Detected	Cellulose 2%	Binders 98%

NVLAP Lab Code: 200784-0

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PLM Olympus BH-2,
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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
08 21073005.08	B	Gray Cementitious Material Homogeneous	NO	None Detected		Other Non-Fibrous 100%
09 21073005.09	A	White Plaster Homogeneous	NO	None Detected	Cellulose 2%	Binders 98%
09 21073005.09	B	Gray Cementitious Material Homogeneous	NO	None Detected		Other Non-Fibrous 100%
10 21073005.10	A	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
11 21073005.11	A	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
12 21073005.12	A	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%

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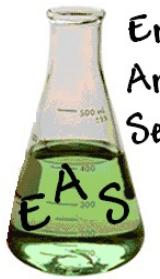
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Microscope: PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
13 21073005.13	A	Silver/White Fibrous Mastic Wrapping w/ Foil Non-Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 10%	Other Non-Fibrous 50%
13 21073005.13	B	Yellow Fibrous Insulation Homogeneous	NO	None Detected	Fiberglass 100%	
14 21073005.14	A	Silver/White Fibrous Mastic Wrapping w/ Foil Non-Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 10%	Other Non-Fibrous 50%
14 21073005.14	B	Yellow Fibrous Insulation Homogeneous	NO	None Detected	Fiberglass 100%	
15 21073005.15	A	Silver/White Fibrous Mastic Wrapping w/ Foil Non-Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 10%	Other Non-Fibrous 50%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

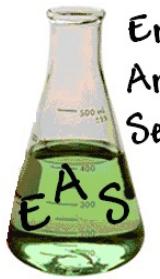
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Test: EPA 600/R-93/116 Polarized Light Microscopy

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EAS Job: 21073005

Attn: Jerry Heard

TAT Requested: 3 Days

PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
15 21073005.15	B	Brown Fibrous Insulation Homogeneous	NO	None Detected	Fiberglass 100%	
16 21073005.16	A	White Insulation Homogeneous	YES	Chrysotile 2%	Fiberglass 3%	Perlite 95%
17 21073005.17		Not Analyzed Positive Stop				
18 21073005.18		Not Analyzed Positive Stop				
19 21073005.19	A	Black Tar Homogeneous	NO	None Detected	Cellulose 2%	Bitumen 98%
19 21073005.19	B	Black Fibrous/Tar Material Homogeneous	NO	None Detected	Fiberglass 30%	Bitumen 70%

NVLAP Lab Code: 200784-0

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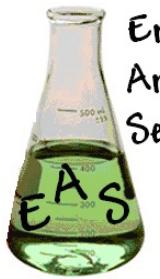
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Microscope: PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
20 21073005.20	A	Black Tar Homogeneous	NO	None Detected	Cellulose 2%	Bitumen 98%
20 21073005.20	B	Black Fibrous/Tar Material Homogeneous	NO	None Detected	Fiberglass 30%	Bitumen 70%
21 21073005.21	A	Black Tar Homogeneous	NO	None Detected	Cellulose 2%	Bitumen 98%
21 21073005.21	B	Black Fibrous/Tar Material Homogeneous	NO	None Detected	Fiberglass 30%	Bitumen 70%
22 21073005.22	A	Gray Caulk Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

Notes:

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400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
23 21073005.23	A	Gray Caulk Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
24 21073005.24	A	Gray Caulk Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
25 21073005.25	A	Tan/White Fibrous Ceiling Tile Non-Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 40%	Binders / Paint 20%
26 21073005.26	A	Tan/White Fibrous Ceiling Tile Non-Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 40%	Binders / Paint 20%
27 21073005.27	A	Tan/White Fibrous Ceiling Tile Non-Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 40%	Binders / Paint 20%

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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
28 21073005.28	A	White Joint Compound Homogeneous	NO	None Detected	Cellulose 2%	Binders 98%
28 21073005.28	B	Brown/White Fibrous Drywall Non-Homogeneous	NO	None Detected	Cellulose 20%	Binders 80%
29 21073005.29	A	White Joint Compound Homogeneous	NO	None Detected	Cellulose 2%	Binders 98%
29 21073005.29	B	Brown/White Fibrous Drywall Non-Homogeneous	NO	None Detected	Cellulose 20%	Binders 80%
30 21073005.30	A	White Joint Compound Homogeneous	NO	None Detected	Cellulose 2%	Binders 98%

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30 21073005.30	B	Brown/White Fibrous Drywall Non-Homogeneous	NO	None Detected	Cellulose 20%	Binders 80%
31 21073005.31	A	Black Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
31 21073005.31	B	Green Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
31 21073005.31	C	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
32 21073005.32	A	Black Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
32 21073005.32	B	Green Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%

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13201 Northwest Freeway, Suite 520
Houston, Texas 77040
phone 713-343-4017 | fax 713-934-9942
www.easlabs.com | facebook.com/easlabs | info@easlabs.com

Test: EPA 600/R-93/116 Polarized Light Microscopy

Client Information:

Environmental Solutions, Inc.
13831 Northwest Freeway
Ste. 440
Houston, TX 77040
Phone: 713-934-9944
E-Mail: jheard@esi-texas.com

Project:

100 E Main St
M21.135

Date Analyzed: 08/04/2021 03:46 PM**Date Received:** 07/30/2021 11:30 AM

EAS Job: 21073005
Attn: Jerry Heard

TAT Requested: 3 Days

Microscope: PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
32 21073005.32	C	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
33 21073005.33	A	Black Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
33 21073005.33	B	Green Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
33 21073005.33	C	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
34 21073005.34	A	Black Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
34 21073005.34	B	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

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. This test report relates only to the items tested. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This report may not be reproduced except in full without permission from Environmental Analytical Services.

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Analyzed By: *Terry Brindley*
Terry Brindley

Approved Signatory: *Terry Brindley*
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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
35 21073005.35	A	White Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
35 21073005.35	B	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
36 21073005.36	A	White Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
36 21073005.36	B	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
37 21073005.37	A	Gray Sealant Homogeneous	NO	None Detected	Cellulose 2%	Other Non-Fibrous 98%
38 21073005.38	A	Gray Sealant Homogeneous	NO	None Detected	Cellulose 2%	Other Non-Fibrous 98%

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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
39 21073005.39	A	Gray Sealant Homogeneous	NO	None Detected	Cellulose 2%	Other Non-Fibrous 98%
40 21073005.40	A	White Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
40 21073005.40	B	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
41 21073005.41	A	White Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
41 21073005.41	B	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
42 21073005.42	A	White Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%

NVLAP Lab Code: 200784-0

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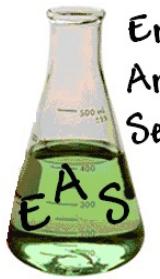
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PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
42 21073005.42	B	Yellow Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
43 21073005.43	A	Granular Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
43 21073005.43	B	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Adhesive 95%
44 21073005.44		Not Analyzed Positive Stop				
45 21073005.45		Not Analyzed Positive Stop				
46 21073005.46	A	Brown Fibrous Insulation Homogeneous	NO	None Detected	Cellulose 90%	Binders / Paint 10%

NVLAP Lab Code: 200784-0

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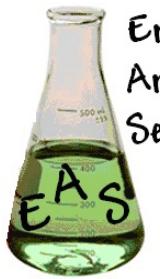
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Microscope: PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
47 21073005.47	A	Brown Fibrous Insulation Homogeneous	NO	None Detected	Cellulose 90%	Binders / Paint 10%
48 21073005.48	A	Brown Fibrous Insulation Homogeneous	NO	None Detected	Cellulose 90%	Binders / Paint 10%
49 21073005.49	A	White Fibrous Insulation Homogeneous	YES	Chrysotile 40%		Binders / CaCO 60%
50 21073005.50		Not Analyzed Positive Stop				
51 21073005.51		Not Analyzed Positive Stop				

NVLAP Lab Code: 200784-0

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PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
52 21073005.52	A	off-white Granular Floor Tile Homogeneous	YES	Chrysotile 2%		Other Non-Fibrous 98%
52 21073005.52	B	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Adhesive 95%
53 21073005.53		Not Analyzed Positive Stop				
54 21073005.54		Not Analyzed Positive Stop				
55 21073005.55	A	White Granular Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%

NVLAP Lab Code: 200784-0

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PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
55 21073005.55	B	Yellow Tar Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
56 21073005.56	A	White Granular Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
56 21073005.56	B	Yellow Tar Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
57 21073005.57	A	White Granular Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
57 21073005.57	B	Yellow Tar Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%

NVLAP Lab Code: 200784-0

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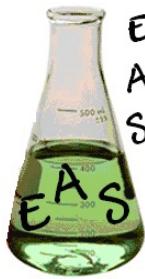
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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
58 21073005.58	A	White Granular Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
58 21073005.58	B	Yellow Tar Mastic Homogeneous	NO	None Detected	Cellulose 2%	Adhesive 98%
58 21073005.58	C	Tan Granular Floor Tile Homogeneous	NO	None Detected		Other Non-Fibrous 100%
58 21073005.58	D	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Adhesive 95%
59 21073005.59		Not Analyzed Positive Stop				

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Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
60 21073005.60		Not Analyzed Positive Stop				
61 21073005.61	A	Red/White Fibrous Duct canvas wrapping Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 10%	Binders 50%
61 21073005.61	B	Yellow Fibrous Insulation Homogeneous	NO	None Detected	Fiberglass 100%	
62 21073005.62	A	Red/White Fibrous Duct canvas wrapping Homogeneous	NO	None Detected	Cellulose 40% Fiberglass 10%	Binders 50%
62 21073005.62	B	Yellow Fibrous Insulation Homogeneous	NO	None Detected	Fiberglass 100%	

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63 21073005.63	B	Yellow Fibrous Insulation Homogeneous	NO	None Detected	Fiberglass 100%	
64 21073005.64	A	Gray/White Granular Floor Tile Homogeneous	YES	Chrysotile 2%		Other Non-Fibrous 98%
64 21073005.64	B	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Adhesive 95%
65 21073005.65		Not Analyzed Positive Stop				

NVLAP Lab Code: 200784-0

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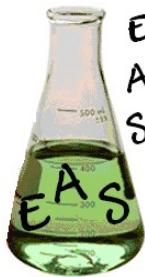
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Houston, TX 77040
Phone: 713-934-9944
E-Mail: jheard@esi-texas.com

Project:

100 E Main St
M21.135

Date Analyzed: 08/04/2021 03:55 PM

Date Received: 07/30/2021 11:30 AM

EAS Job: 21073005

Attn: Jerry Heard

TAT Requested: 3 Days

PLM Olympus BH-2,
PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
66 21073005.66		Not Analyzed Positive Stop				

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

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. This test report relates only to the items tested. This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This report may not be reproduced except in full without permission from Environmental Analytical Services.

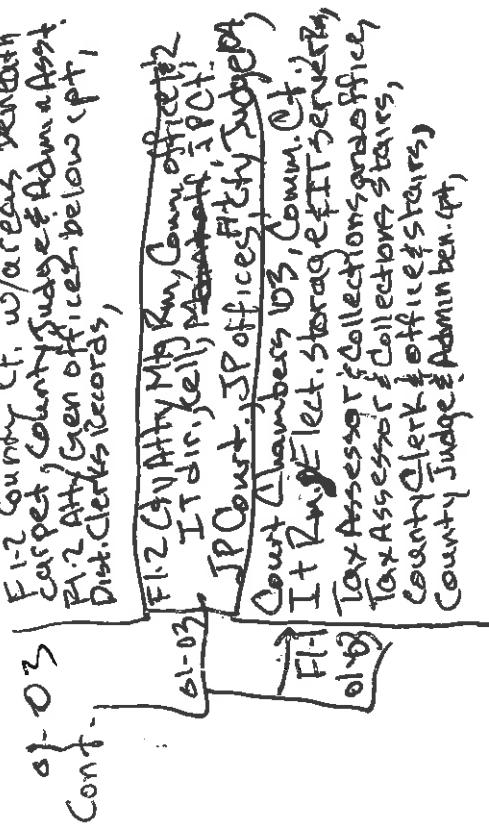
These results are submitted pursuant to EAS' current terms of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted. Unless notified in writing to return the samples covered by this report, EAS will store the samples for a period of ninety (90) days before discarding. Percent ranges reported are estimates and not absolute percent range values.

Analyzed By:

Arthur Hernandez

Approved Signatory:

Terry Brindley





Environmental
Solutions,
Inc.

ESI Project No.
M21.135

13201 Northwest Freeway, Suite 503
Houston, Texas 77040
Phone: 713-934-9944 Fax: 713-934-9942

Project I.D.
Date Collected

Date Requested

Page 3 of 4

Sample No.	Material Sampled	Sample Location	Material Location(s) and any Damage	Friable (F) Non-Friable (NF)	Condition	Estimated Quantity
43 44 45	12" F/T w/ Lt to dark brown streaks, and <u>black</u> mastic	Electron Office		F / NF	Good / Fair / Poor Sig. Damaged	440
46 47 48	Brown Paper Pipe insul.	Tax Records Room		F / NF	Good / Fair / Poor Sig. Damaged	10
49 50 51	Mudded fitting's on cardboard covered Piping	Tax Records Room		F / NF	Good / Fair / Poor Sig. Damaged	240
52 53 54	12" off white F w/ Lt to dark beige flecks & <u>black</u> mastic	Records Storage (lens)		F / NF	Good / Fair / Poor Sig. Damaged	
55 56 57	16" F/T w/ cream fleckx ptn	End of Co. Clerks Storage		F / NF	Good / Fair / Poor Sig. Damaged	
58 59 60	12" E/T w/ Lt to dark beige dense flecks, <u>black</u> mastic	Ground Fl (GF) Break Room		F / NF	Good / Fair / Poor Sig. Damaged	180
61 62 63	white Pipe insul mastic	Valves, flanges, unions & ends on down. H2O in ground floor mech rm.		F / NF	Good / Fair / Poor Sig. Damaged	

SAMPLES REINQUISITIONED BY:

Name: John

REINQUISITION TO:

Name: JHeard

LAB - Analyze to FIRST POSITIVE



Email results to JHeard@esi-texas.com

Date: 7/30/21 11:36



13201 Northwest Freeway, Suite 503
Houston, Texas 77040
Phone: 713-934-9944 Fax: 713-934-9942

ESI Project No. M21.135

Project I.D.

Date Collected

Date Requested

Page 4 of 4

Sample No.	Material Sampled	Sample Location	Material Location(s) and any Damage	Date Requested	Friable (F) / Non-Friable (NF)	Condition	Estimated Quantity
<u>A₉</u>	<u>Ceiling tiles, (3" thick) glue</u>	<u>F1-3 District Court, County Ct.</u>	<u>F1-3 District Court, County Ct.</u>		<u>F / NF</u>	<u>Good / Fair / Poor Sig. Damaged</u>	
<u>65 65 66</u>	<u>17" x 17" w/ (gray) white GF @ Mech Bld beige flecks, 2 mastic</u>		<u>Ground floor hallway</u>		<u>F / NS</u>	<u>Good / Fair / Poor Sig. Damaged</u>	
<u>Assumed</u>	<u>Ceiling panel adhesive</u>	<u>F1-3 District Ct. County Ct.</u>	<u>F1-2 County Ct.</u>		<u>F / NS</u>	<u>Good / Fair / Poor Sig. Damaged</u>	
					<u>F / NF</u>	<u>Good / Fair / Poor Sig. Damaged</u>	
					<u>F / NF</u>	<u>Good / Fair / Poor Sig. Damaged</u>	
					<u>F / NF</u>	<u>Good / Fair / Poor Sig. Damaged</u>	
					<u>F / NF</u>	<u>Good / Fair / Poor Sig. Damaged</u>	

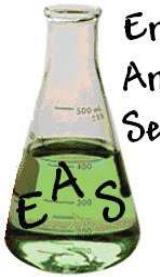
SAMPLES RELINQUISHED BY:

Name: J. Hearn

Date: 7/30/21

* LAB - Analyze to FIRST POSITIVE

Email results to JHeard@esi-texas.com



Environmental
Analytical
Services, LLC

13201 Northwest Freeway, Suite 520
Houston, Texas 77040
phone 713-343-4017 | fax 713-934-9942
www.easlabs.com | facebook.com/easlabs | info@easlabs.com

**Test: EPA 600/R-93/116
Polarized Light Microscopy**

Client Information:

Environmental Solutions, Inc.
13831 Northwest Freeway
Ste. 440
Houston, TX 77040
Phone: 713-934-9944
E-Mail: jheard@esi-texas.com

Project:

100 E Main St
M21.135

Date Analyzed: 08/30/2021 05:40 PM

Date Received: 08/26/2021 09:00 AM

EAS Job: 21082601
Attn: Jerry Heard

TAT Requested: 2 Days

Microscope: PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
34B 21082601.01	A	Brown Granular Floor Tile Homogeneous	YES	Chrysotile 10%		Other Non-Fibrous 90%
34B 21082601.01	B	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Adhesive 95%
35B 21082601.02		Not Analyzed Positive Stop				
36B 21082601.03		Not Analyzed Positive Stop				
40B 21082601.04	A	Brown Fibrous Floor Tile Homogeneous	YES	Chrysotile 5%		Other Non-Fibrous 95%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

Notes:

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Analyzed By:

Arthur Hernandez

Approved Signatory:

Arthur Hernandez



Environmental
Analytical
Services, LLC

13201 Northwest Freeway, Suite 520
Houston, Texas 77040
phone 713-343-4017 | fax 713-934-9942
www.easlabs.com | facebook.com/easlabs | info@easlabs.com

Test: EPA 600/R-93/116
Polarized Light Microscopy

Client Information:

Environmental Solutions, Inc.
13831 Northwest Freeway
Ste. 440
Houston, TX 77040
Phone: 713-934-9944
E-Mail: jheard@esi-texas.com

Project:

100 E Main St
M21.135

Date Analyzed: 08/30/2021 05:40 PM

Date Received: 08/26/2021 09:00 AM

EAS Job: 21082601
Attn: Jerry Heard

TAT Requested: 2 Days

Microscope: PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
40B 21082601.04	B	Black Tar Mastic Homogeneous	YES	Chrysotile 5%		Adhesive 95%
41B 21082601.05		Not Analyzed Positive Stop				
42B 21082601.06		Not Analyzed Positive Stop				
67 21082601.07	A	White Fibrous Window Caulk Homogeneous	NO	None Detected	Cellulose 2%	Binders / CaCO 98%
68 21082601.08	A	White Fibrous Window Caulk Homogeneous	NO	None Detected	Cellulose 2%	Binders / CaCO 98%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

Notes:

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Analyzed By:

Arthur Hernandez

Approved Signatory:

Arthur Hernandez



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Houston, Texas 77040
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www.easlabs.com | facebook.com/easlabs | info@easlabs.com

Test: EPA 600/R-93/116
Polarized Light Microscopy

Client Information:

Environmental Solutions, Inc.
13831 Northwest Freeway
Ste. 440
Houston, TX 77040
Phone: 713-934-9944
E-Mail: jheard@esi-texas.com

Project:

100 E Main St
M21.135

Date Analyzed: 08/30/2021 05:40 PM

Date Received: 08/26/2021 09:00 AM

EAS Job: 21082601
Attn: Jerry Heard

TAT Requested: 2 Days

Microscope: PLM Labomed LX
400P

Sample # Lab ID #	Layer	Sample Description	Asbestos Detected (Yes/No)	Asbestos Mineral Percent	Non-Asbestos Fibers	Non-Fibrous Material
69 21082601.09	A	White Fibrous Window Caulk Homogeneous	NO	None Detected	Cellulose 2%	Binders / CaCO 98%
70 21082601.10	A	Black Granular Thin Set Homogeneous	NO	None Detected		Other Non-Fibrous 100%
71 21082601.11	A	Tan Granular Thin Set Homogeneous	NO	None Detected		Quartz 10% Other Non-Fibrous 90%

NVLAP Lab Code: 200784-0

TDSHS License No. 300373

LDEQ LELAP Certificate No: 04161, Agency Interest No. 149571

Notes:

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Analyzed By:

Arthur Hernandez

Approved Signatory:

Arthur Hernandez



Environmental
Solutions,
Inc.

Environmental Solutions, Inc.

13201 Northwest Freeway, Suite 503
Houston, Texas 77040
Phone: 713-934-9944 Fax: 713-934-9942

ESI Project No. 121.135
100 E Main St.

Project I.D. 08/20/21
Date Requested 08/20/21

Sample No.	Material Sampled	Sample Location	Material Location(s) and any Damage	Friable (F)/ Non-Friable (NF) Condition		Page _____ of _____
				Friable (F) Condition	Non-Friable (NF) Condition	
34B 35B 36B	Bottom layer 9" Floor tile & Black Mastic			F / NF		
40B 41B 42B	Bottom layer 9" Floor tile & Black Mastic			Good / Fair / Poor Sig. Damaged		
67	Exterior window frame caulk	SW corner	At exterior window cill stone in-lay	F / NF	Good / Fair / Poor Sig. Damaged	2000 ^{1/2}
68	Caulk	E. dr.		F / NF	Good / Fair / Poor Sig. Damaged	600 ^{1/2}
69	Exterior door frame caulk		Exterior	F / NF	Good / Fair / Poor Sig. Damaged	150 ^{1/2}
70	Black stone thinset/grout	N. side dr	Exterior	F / NF	Good / Fair / Poor Sig. Damaged	1800 ^{1/2}
71	White stone thinset/grout	W. side	Exterior	F / NF	Good / Fair / Poor Sig. Damaged	2150 ^{1/2}

SAMPLES RELINQUISHED BY:

Name: J. Heard

Date: 08/25/21

Date: 14/30/21

Date: Spotted 10/21

LAB – Analyze to FIRST POSITIVE

Email results to JHeard@esi-texas.com

21082601

August 17, 2021

Sent via e-mail: bbranham@wacounty.com

Mr. Bobby Branham
Washington County
100 E Main St.
Brenham, Texas 77833

**Re: Lead Based Paint XRF Sampling
Washington County Courthouse
100 E Main St., Brenham, Texas**
ESI Project No.: M21.135

Dear Mr. Branham:

Environmental Solutions, Inc. (ESI) is pleased to present the attached XRF lead-based paint testing and analysis report dated August 2, 2021, by Lead Paint Inspection Services, Inc. for the Washington County Courthouse at 100 E Main St. in Brenham, Texas. Based on the results of this lead survey, lead was discovered on the following painted components:

- Fourth Floor Machine Door Wood, Blue,
- Fourth Floor Machine Door Metal, Blue,
- Fourth Floor Hall Roof Ladder Metal, Red,
- Fourth Floor Hall Roof Ladder Metal, Red,
- Fourth Floor Penthouse Door Metal, Blue,
- Fourth Floor Stair Railing Concrete, Red,
- Fourth Floor Stair Wall Concrete, White,
- Ground Floor Stair Riser Metal, Brown,
- Ground Floor Stair Riser Metal, Brown,
- Ground Floor Stair Handrail Metal, Brown,
- Ground Floor Stair Handrail Metal, Brown,
- Ground Floor Stair Column Metal, Brown,
- Ground Floor Stair Handrail Metal, Brown,
- Ground Floor Stair Handrail Metal, Brown,
- Ground Floor Stair Riser Metal, Brown,
- Ground Floor Stair Riser Metal, Brown, and
- Ground Floor Stair Column Metal, Brown.

©

According to Environmental Protection Agency (EPA) regulations, a lead-based paint greater than 1.0 milligram per centimeter square (mg/cm²), 5,000 parts per million (ppm), or 0.5% by weight is lead containing. In Addition, according to Occupational Safety and Health Administration (OSHA) regulations a result greater than 0.06 percent by weight or 600 ppm is considered lead containing.

We appreciate the opportunity to provide environmental consulting services to you. If you have any questions or need additional assistance, please do not hesitate to call 713-934-9944.

Sincerely,
Environmental Solutions, Inc.



Jerry P. Heard
Manager of Environmental Services

JPH (M21.135 Pbltr)

Attached: XRF lead-based paint testing and analysis, Dated August 2, 2021

LEAD-BASED PAINT INSPECTION REPORT

Lead Paint Inspection Services, Inc.

6919 Pine Vista Lane • Houston, TX 77092

Tel 832-840-7887 Email: Phil_Valdez@att.net

Project # L1763



Project Address:

100 East Main Street

Brenham, TX 77833

Presented To:

Environmental Solutions Inc

13201 NW Freeway Suite 503

713-934-9944 / Jheard@esi-texas.com

Inspection Date: July 28, 2021

Report Date: August 02, 2021

INTRODUCTION

On July 28, 2021, Lead-Based Inspection Services, Inc. lead-based paint risk assessor, Mr. Philip R. Valdez, (Texas Cert. # 2071094, exp. 04/2023) performed The Lead-Based Paint Inspection at 100 East Main Street, Brenham, TX 77833 following federally documented methodologies for conducting lead-based paint activities, as set forth below:

(1) "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, HUD, June 1995, and Revised Chapter 7, 1997, issued pursuant to Section 1017 of the Residential Lead-Based Paint Hazard Reduction Act of 1992;"

(2) "Standard specification for Wipe Sampling Materials for lead in surface dust, E 1792;"

(3) "Standard practice for field collection of Settled Dust Samples using wipe sampling methods for lead determination by Atomic Spectrometry Techniques, E 1728;" and

(4) "Standard Practice for Field Collection of soil samples for lead determination by Atomic Spectrometry Techniques, E 1727."

METHODOLOGY

Selected sites and components were tested using the Heuresis instrument, Model PB200i, Serial #1149. As required by final guidelines, XRF calibration verifications were performed on said instrument. The Heuresis Model PB200i is a hand-held, portable lead detector, designed to make fast, accurate nondestructive measurements of lead concentration in lead-based paint. The unit is complete with internal battery pack and instant display analysis. It has a powerful micro-processor-controlled multichannel spectrum analyzer of x-ray fluorescence with a liquid crystal display of readings and spectra. The XL Screen displays lead levels and averages of levels, indicates precision of measurement, stores all readings and spectra, and outputs data directly into a computer.

TEST SUMMARY

ONE (1) Public Courthouse was inspected by XRF analysis for lead based based paint. There were **EIGHTEEN (18)** painted components that exceeded federal, state and local lead action levels, verified by the XRF On-Site Evaluation Report **EIGHTEEN (18)** painted components were found to have lead content in excess of 1.0 mg/cm². At time of inspection these components were intact and not found to be in a hazardous state. We recommend that an ongoing maintenance and prevention program be put in place so that these areas do not become chipping, flaking or otherwise dilapidated. Prior to any activities that would disturb these surfaces a certified lead contractor should be consulted.

Attached at the end of this document, please find the detailed report that contains location, substrate, color and result of each tested site.

Thank you for choosing Lead-Based Paint Inspection Services, Inc. to provide professional consulting services. We truly appreciate your business! If you should have any questions regarding this report, please do not hesitate to contact us.

Thank you,

Lead-Based Paint Inspection Services, Inc.

Written by:

Philip R. Valdez

Texas Cert. # 2071094

Exp. 04/2023

Lead Paint Inspection Services

6919 Pine Vista

Houston, TX 77092

Phil_valdez@att.net

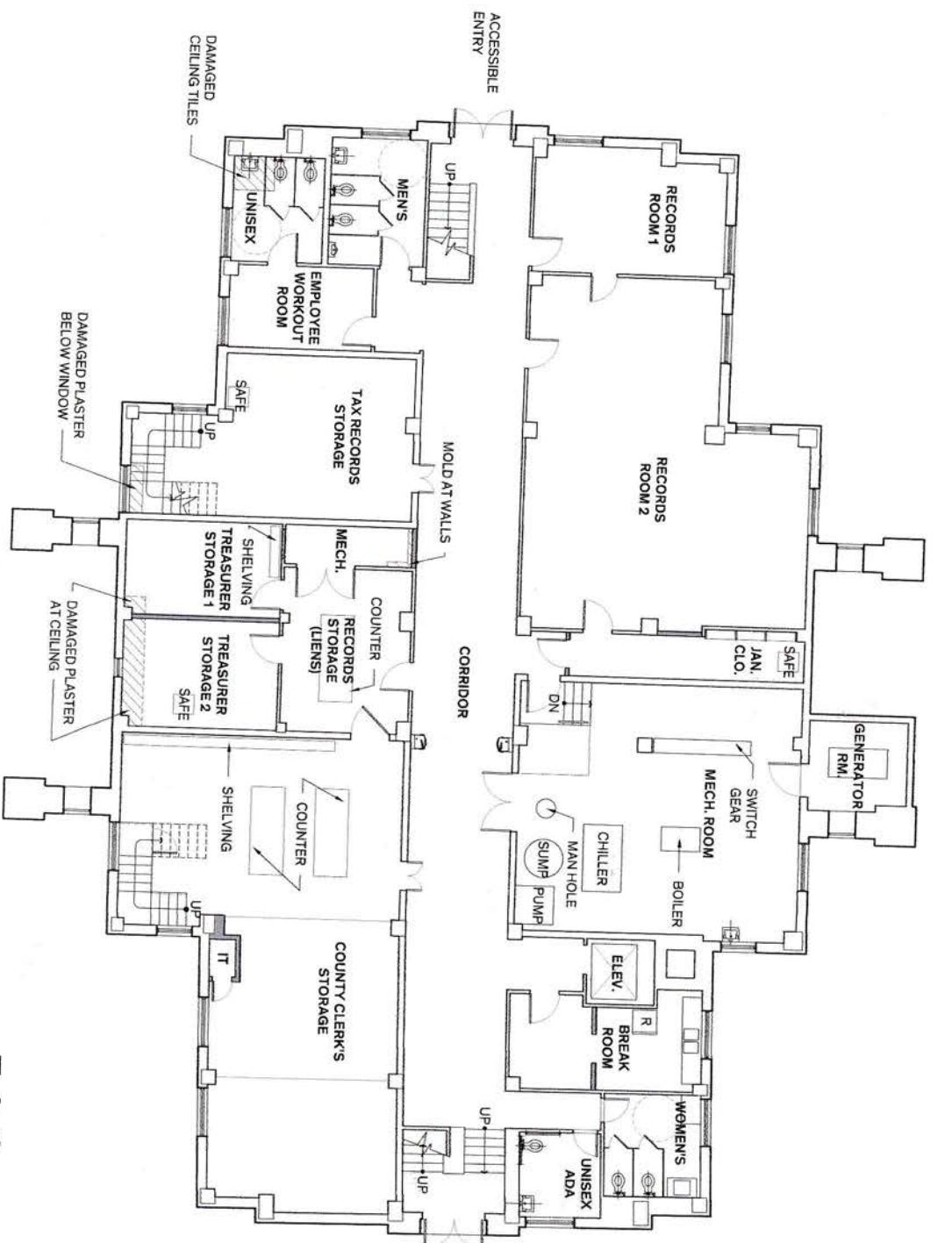
Company Heuresis Corp.
 Model Pb200i
 Type XRF Lead Paint Analyzer
 Serial Num 1149
 App Versio Pb200i-4.1-11

Job Id	Reading #	Concentrat	Units	3 SD	Result	Action Lev	Lev Nom	Secs	Date	Time	User	Mode	Analytic M	Level	-->Room	Choice	Structure	-->Membe	Substrate	Wall	Color	Condition	-->Cause
1	1	mg/cm ²	0.6	Positive	1	0	7/28/2021	14:16:31	Lead Paint	Calibrate								Wood	A	Blue	Intact		
2	1	mg/cm ²	0.6	Positive	1	0	7/28/2021	14:16:38	Lead Paint	Calibrate							Wood	A	Blue	Intact			
3	1	mg/cm ²	0.5	Positive	1	0	7/28/2021	14:16:44	Lead Paint	Calibrate							Wood	A	Blue	Intact			
4	1.3	mg/cm ²	0.2	Positive	1	2	7/28/2021	14:37:35	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine	Door		Wood	A	Blue	Intact			
5	2.1	mg/cm ²	0.3	Positive	1	1	7/28/2021	14:38:00	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine	Door	Frame	Metal	A	Blue	Intact			
6	-0.2	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:38:25	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine	Wall	Concrete	A	White	Intact				
7	0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:38:35	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine	Wall	Concrete	B	White	Intact				
8	0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:38:50	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine	Wall	Concrete	C	White	Intact				
9	0.4	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:39:06	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine	Wall	Concrete	D	White	Intact				
10	-0.2	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:39:15	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Machine		Cabinets	Wood	A	White	Intact			
11	-0.1	mg/cm ²	0.3	Negative	1	2	7/28/2021	14:40:02	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Door		Wood	A	White	Intact			
12	0.1	mg/cm ²	0.2	Negative	1	2	7/28/2021	14:40:20	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Door	Frame	Wood	A	White	Intact			
13	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:41:06	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	A	White	Intact		
14	0.5	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:41:13	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	B	White	Intact		
15	0.1	mg/cm ²	0.3	Negative	1	2	7/28/2021	14:41:22	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	C	White	Intact		
16	0	mg/cm ²	0.3	Negative	1	2	7/28/2021	14:41:33	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	D	White	Intact		
17	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:42:01	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Door		Metal	B	Brown	Intact			
18	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:42:08	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Door	Frame	Metal	B	Brown	Intact			
19	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:42:23	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Door		Metal	C	White	Intact			
20	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:42:31	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Door	Frame	Metal	C	White	Intact			
21	0.1	mg/cm ²	0.3	Negative	1	2	7/28/2021	14:42:56	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Drywall	A	White	Intact		
22	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:43:06	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Drywall	B	White	Intact		
23	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:43:17	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Drywall	C	White	Intact		
24	-0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:43:28	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Drywall	D	White	Intact		
25	0.2	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:43:39	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Cabinets		Wood	A	Brown	Intact			
26	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:44:39	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	A	White	Intact		
27	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:44:48	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	C	White	Intact		
28	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:45:18	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Hall	Cabinets	Wood	A	White	Intact			
29	2.3	mg/cm ²	0.3	Positive	1	1	7/28/2021	14:46:33	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Hall	Roof Ladder	Metal	A	Red	Intact			
30	4	mg/cm ²	0.3	Positive	1	1	7/28/2021	14:46:42	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Hall	Roof Ladder	Metal	A	Red	Intact			
31	0.5	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:47:18	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse	Door	Wood	A	Blue	Intact			
32	3.1	mg/cm ²	0.3	Positive	1	1	7/28/2021	14:47:40	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse	Door	Metal	A	Blue	Intact			
33	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:48:19	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse	Railing	Metal	A	White	Intact			
34	0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:48:39	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse		Concrete	A	White	Intact			
35	-0.2	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:48:45	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse		Concrete	B	White	Intact			
36	0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:49:04	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse		Concrete	C	White	Intact			
37	-0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:49:10	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse		Concrete	D	White	Intact			
38	0.4	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:49:17	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse		Concrete	A	White	Intact			
39	-0.2	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:49:28	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse		Concrete	B	White	Intact			
40	-0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:49:34	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage	Penthouse	Ceiling	Concrete	C	White	Intact			
41	2.6	mg/cm ²	0.3	Positive	1	1	7/28/2021	14:50:45	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage		Railing	Concrete	A	Red	Intact			
42	-0.2	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:51:27	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	A	White	Intact		
43	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	14:51:35	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	B	White	Intact		
44	1.4	mg/cm ²	0.2	Positive	1	3	7/28/2021	14:51:46	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	C	White	Intact		
45	1.1	mg/cm ²	0.1	Positive	1	5	7/28/2021	14:51:56	Lead Paint	Action Lev	Lead Paint	Fouth	Floor	Storage			Wall	Concrete	D	White	Intact		
46	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:02:34	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room	Door		Wood	A	Brown	Intact			
47	0	mg/cm ²	0.2	Negative	1	2	7/28/2021	15:02:42	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room	Door	Frame	Wood	A	Brown	Intact			
48	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:03:10	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	A	White	Intact		
49	0.3	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:03:18	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	B	White	Intact		
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51	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:03:35	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	D	White	Intact		
52	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:03:45	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	A	White	Intact		
53	0	mg/cm ²	0.3	Negative	1	2	7/28/2021	15:04:14	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	B	White	Intact		
54	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:04:26	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	C	White	Intact		
55	-0.4	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:04:34	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	D	White	Intact		
56	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:05:13	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Window	Metal	A	Brown	Intact		
57	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:06:08	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	A	White	Intact		
58	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:06:16	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	B	White	Intact		
59	-0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:06:26	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	C	White	Intact		
60	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:06:34	Lead Paint	Action Lev	Lead Paint	Third	Floor	Mens Room			Wall	Concrete	D	White	Intact		
61	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:07:25	Lead Paint	Action Lev	Lead Paint	Third	Floor	Womens	Door		Wall	Wood	A	Brown	Intact		
62	0.1	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:07:33	Lead Paint	Action Lev	Lead Paint	Third	Floor	Womens	Door		Wall	Wood	A	Brown	Intact		
63	0.2	mg/cm ²	0.2	Negative	1	2	7/28/2021	15:08:21	Lead Paint	Action Lev	Lead Paint	Third	Floor	Womens	Wainscoting		Wood	B	White	Intact			
64	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:08:52	Lead Paint	Action Lev	Lead Paint	Third	Floor	Womens			Wall	Concrete	A	White	Intact		
65	0.1	mg/cm ²	0.3	Negative	1	2	7/28/2021	15:08:59	Lead Paint	Action Lev	Lead Paint	Third	Floor	Womens			Wall	Concrete	B	White	Intact		
66	0	mg/cm ²	0.3	Negative	1	1	7/28/2021	15:09:11	Lead Paint	Action Lev	Lead Paint	Third	Floor	Womens			Wall	Concrete	C	White	Intact</td		

1

Existing Ground Floor Plan

Scale: 3/32" = 1"



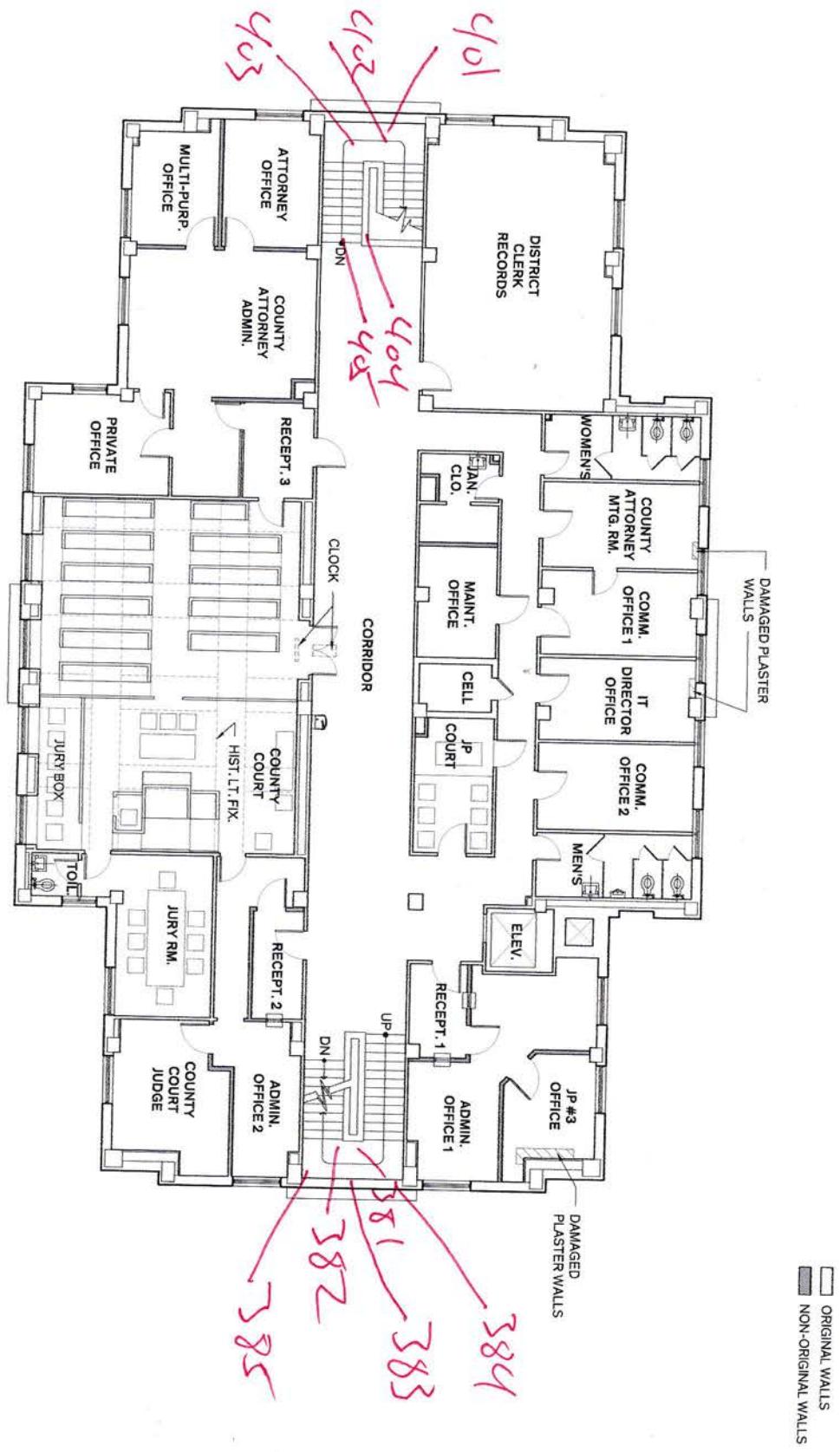
□ ORIGINAL WALLS
■ NON-ORIGINAL WALLS

PLAN NORTH

1

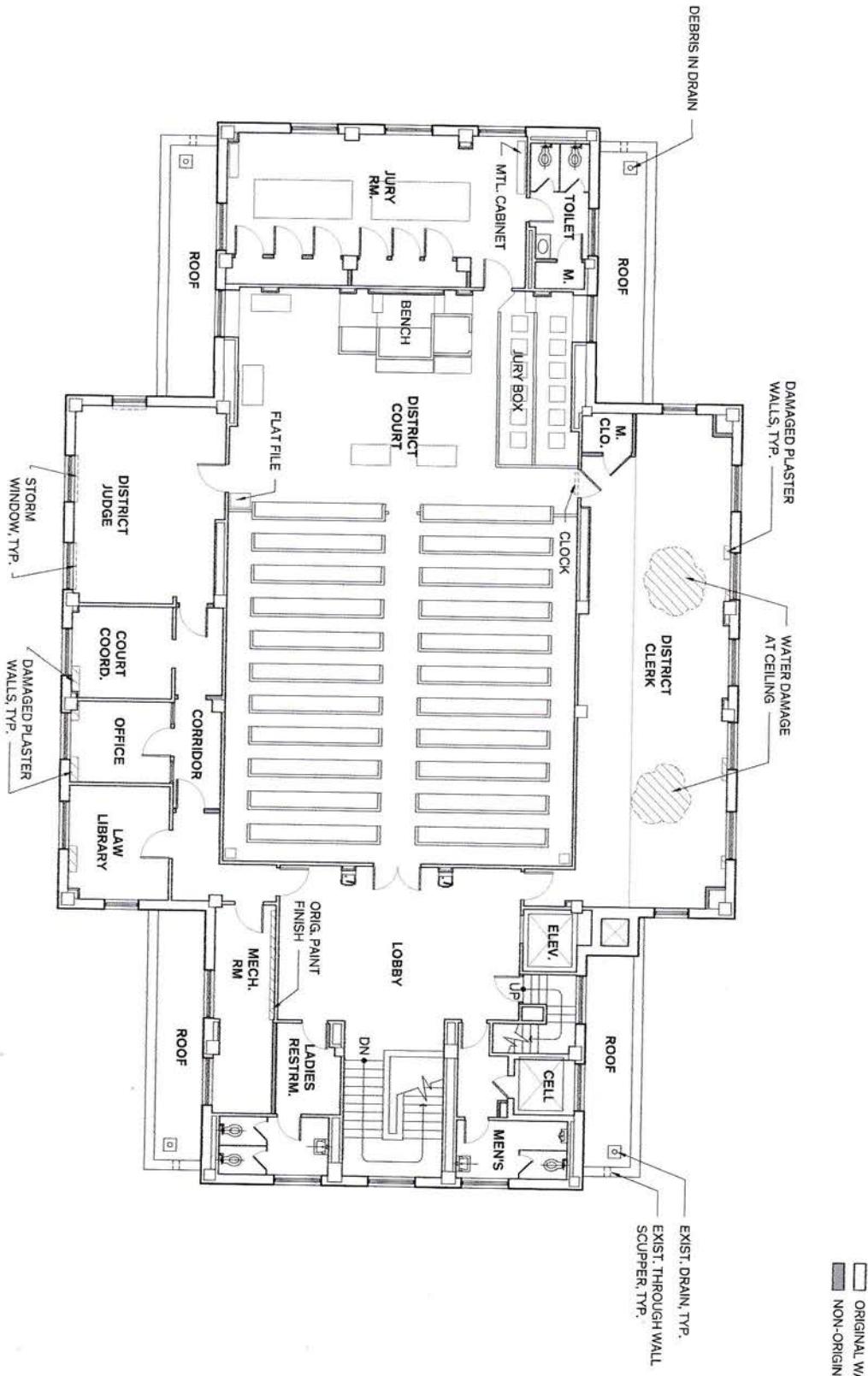
Existing Second Floor Plan

Scale: 3/32" = 1'



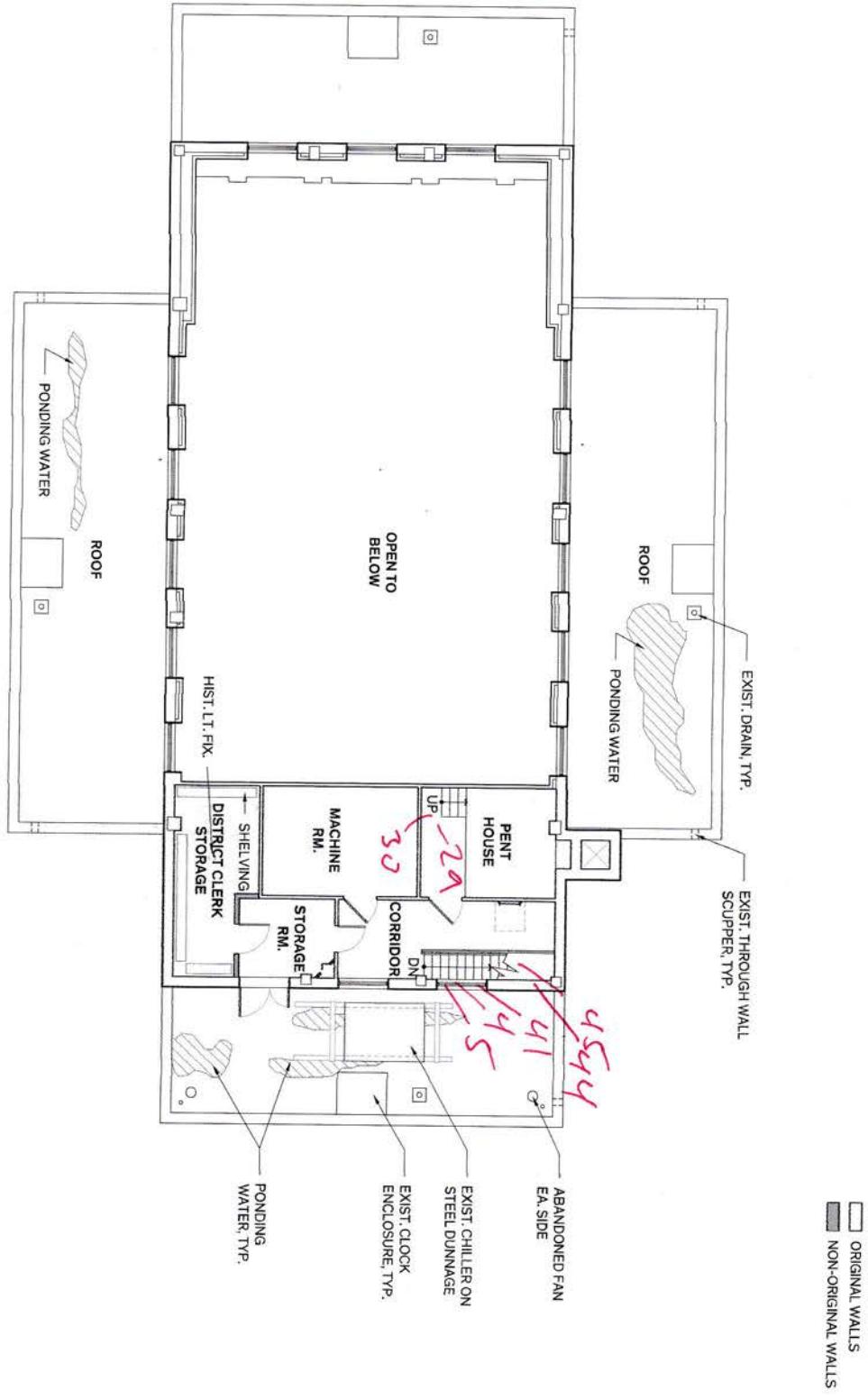
Existing Third Floor Plan

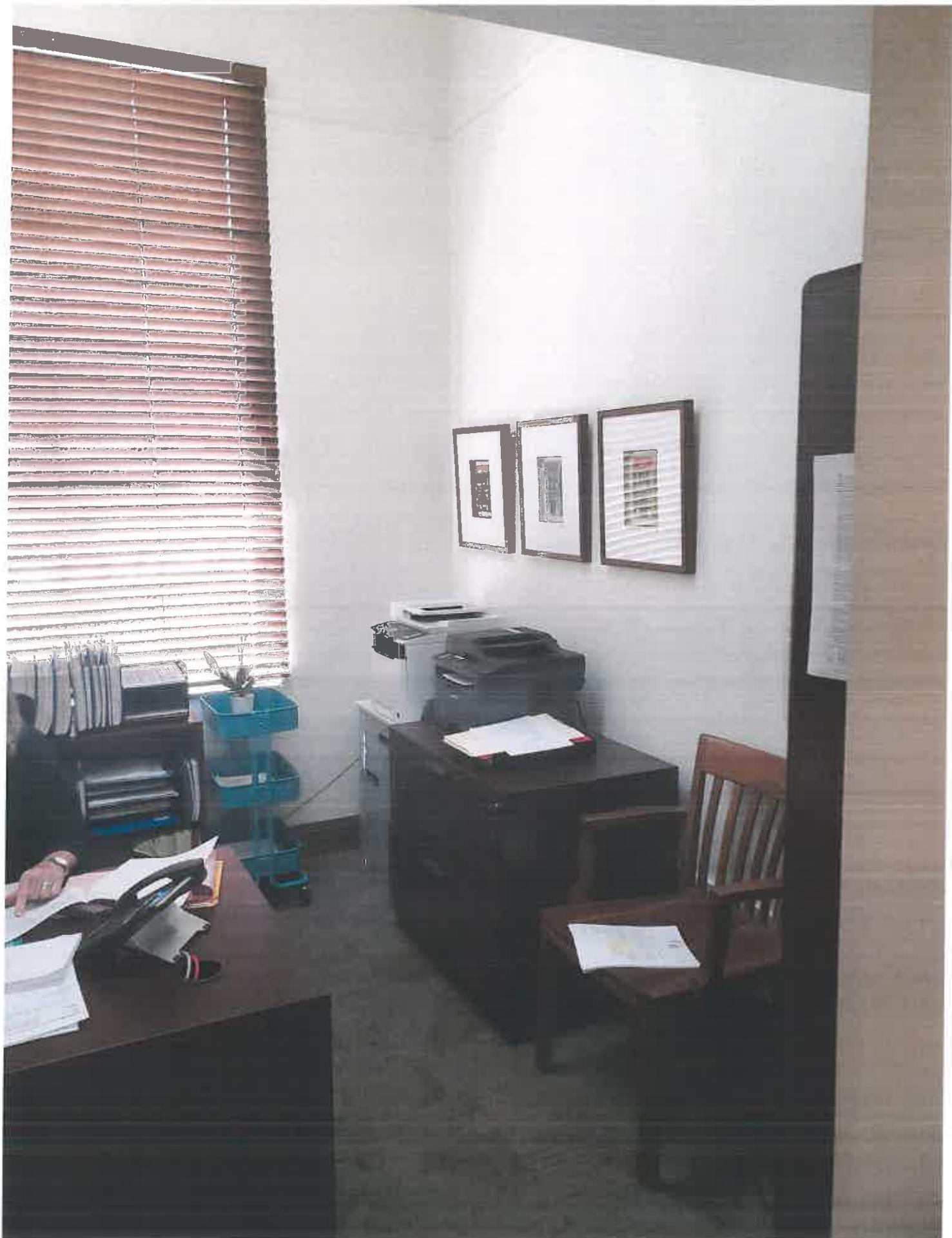
Scale: 3/32" = 1"

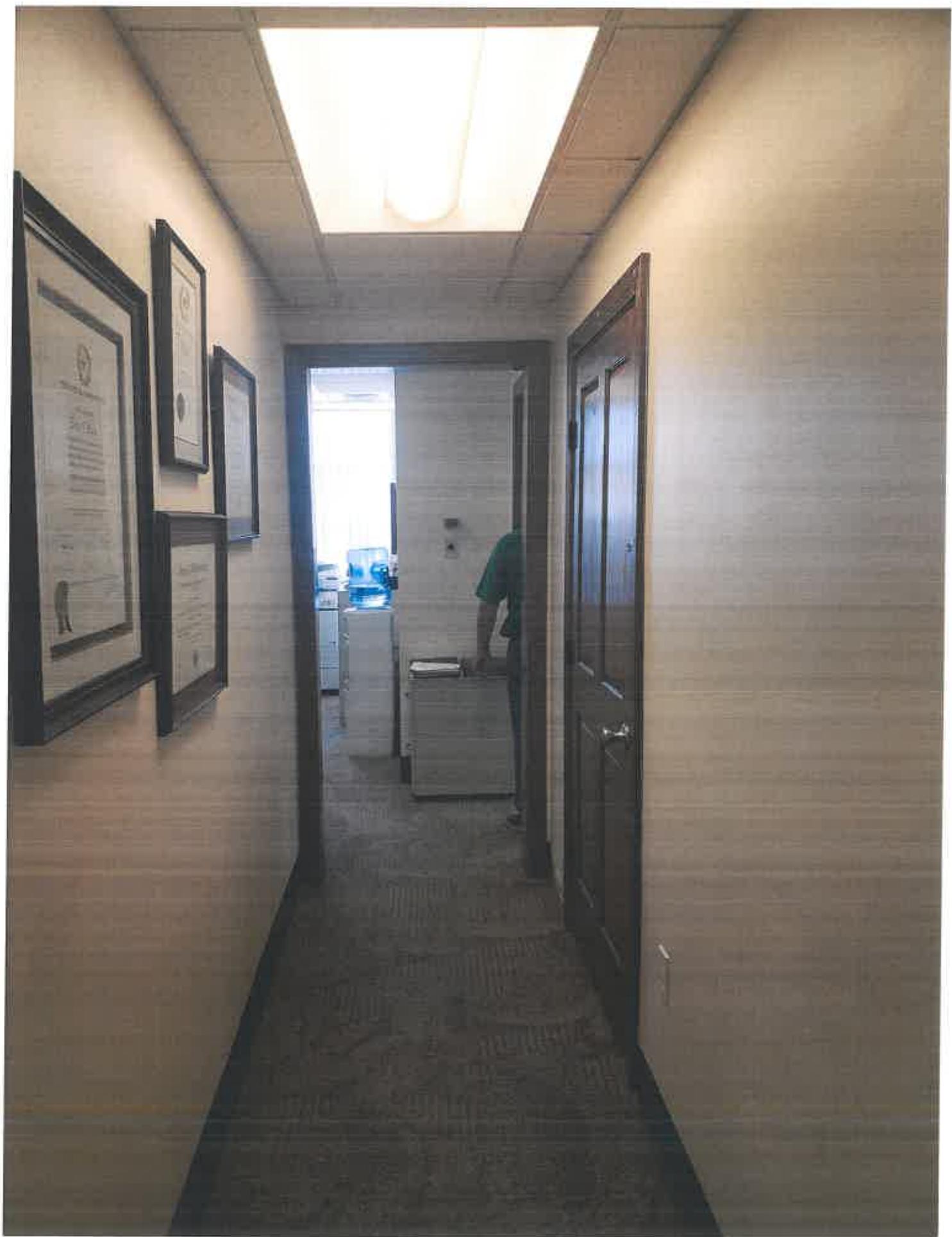


1
Existing
Fourth Floor Plan

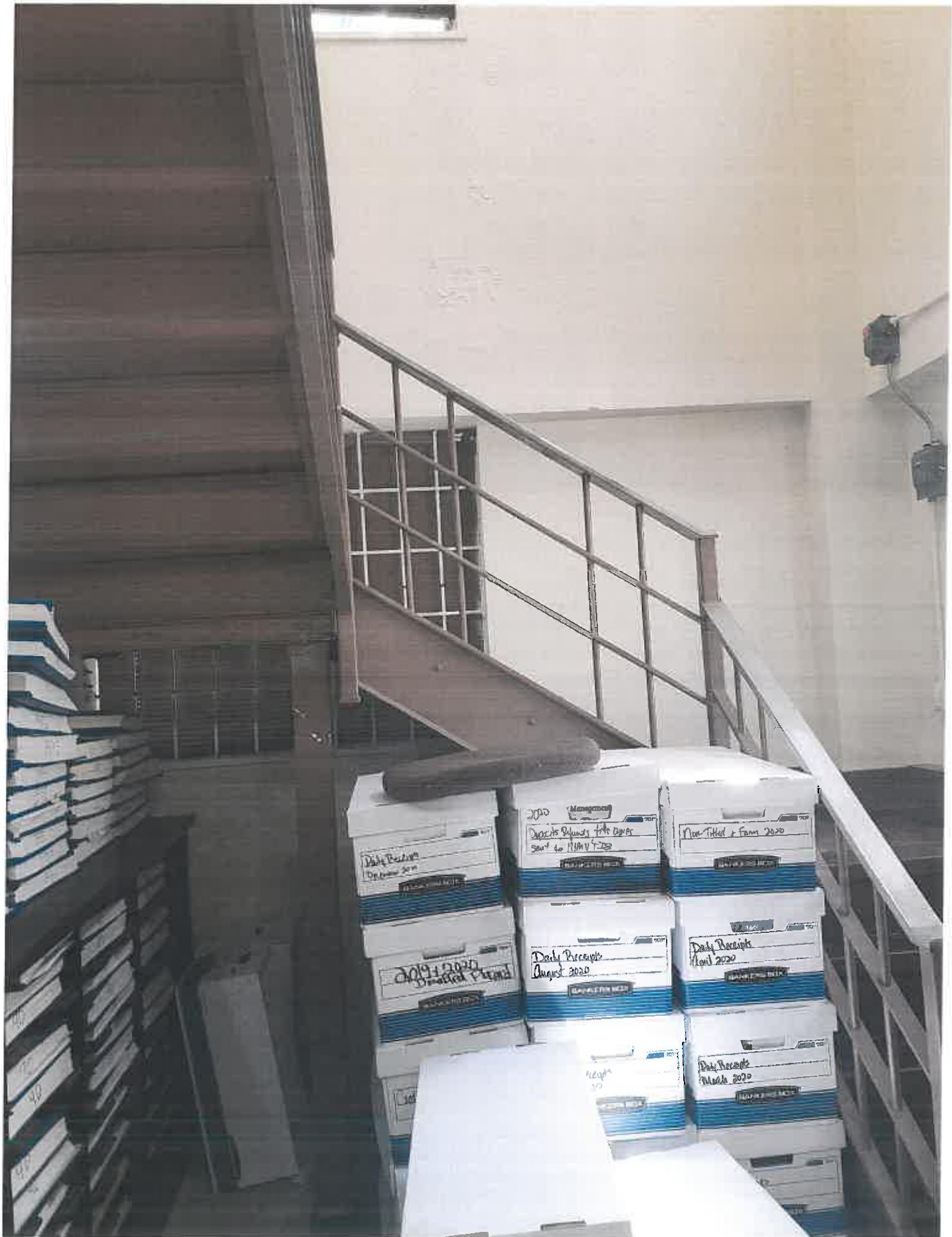
Scale: 3/32" = 1"













ROOF PROPOSAL / CONTRACT



March 13, 2019
Washington County Courthouse
100 East Main Street
Brenham, TX 77833
ATTN: Washington County

We appreciate the opportunity to earn your business. The last 25 years show that our company strives for quality workmanship, competitive prices, and complete customer satisfaction. I have included the scope of work to be performed on this project. If you have any questions, please feel free to contact me.

SCOPE OF WORK FOR: Washington County Courthouse

50 Mil Duro-Fleece Plus - REROOF

1. Remove approximately 9,291 SF of existing roof down to the deck, to include parapet walls, and properly dispose of debris.
2. Fully Adhere approximately 7,013 SF of 4.0" Polyisocyanurate insulation to the structural deck.
3. Fully Adhere approximately 7,013 SF of a NEW 1/4" Tapered insulation drainage system to the structural deck.
4. Fully Adhere approximately 7,013 SF of 1/4" Primed Densdeck to the insulation.
5. Fully Adhere approximately 7,013 SF of 50 mil white Duro-Fleece Plus® roofing membrane according to manufacturer's specifications to receive a 20 year NDL warranty.
6. Mechanically fasten approximately 2,278 SF of 1/2" OSB over the parapet wall surface.
7. Mechanically fasten approximately 2,278 SF of 50 mil Duro-Tuff® flashing membrane at parapet walls. The membrane will be run up and over the wall and terminated under new 6" two pc metal fascia (standard color), in lieu of the coping cap.
8. Install (2) New overflow scuppers at parapet wall.
9. Install custom factory pipe boots, curb flashings, pitch pans, and flashings on all roof penetrations.
10. Clean up and remove all debris caused by the roof installation.
11. Complete all work to manufacturers specifications.

The above referenced job will be completed for the sum of:

\$177,755.00

This price includes **all labor, materials, and equipment** to complete said project.

Upon completion of installation, a **20 Year (NDL) Manufacturer Warranty** will be issued by Duro-Last Roofing, Inc. and DK. Haney Roofing, Inc.

Notes:

1. Due to market fluctuations, pricing good for 30 days from today.
2. Bonds, permits, and fees, if any, are excluded.
3. TERMS: 60% (\$106,653.00) due at contract signing; Balance of (\$71,102.00) is due upon completion of the job.
4. Tax excluded. A tax-exempt certificate must be presented prior to construction.
5. **This proposal was developed using DK Haney Roofing's TIPS Contract Number 180702.**

General Terms:

1. The "Work" DK Haney, Inc. is agreeing to perform is set forth in this Proposal which shall supersede any other agreement between the parties to the contrary. DK Haney is not obligated to perform any work beyond or in addition to the Work provided for herein unless a written Change Order has been signed and agreed to by customer and DK Haney Roofing, Inc. If customer requests for DK Haney Roofing, Inc. to perform additional work which is performed, then customer agrees to pay DK Haney Roofing, Inc., for such work at market rates.
2. DK Haney Roofing, Inc. is not responsible for any claim, damages, loss, or expense suffered by customer that is caused by acts of God, preexisting conditions of the structure upon which the Work is being performed or that is outside of the scope of work of DK Haney, Inc. or caused by the negligent acts or omission of customer or its employees and any person directly or indirectly acting on its behalf.
3. Once signed by both parties, this Contract represents the entire agreement of the parties with respect to the Work and supersedes all prior agreements, representations or understandings and this Contract can be amended only by a written signed amendment.
4. This Contract is governed by Texas law. Any and all disputes between the parties, of any kind, related to this Contract or otherwise, shall be determined by binding arbitration with the American Arbitration Association pursuant to its Construction Industry Rules which shall be held in Fort Worth, Texas at a location and with one neutral arbitrator both to be selected by DK Haney, Inc.
5. If the Manufacturer issues the applicable warranty for the Work performed by DK Haney, Inc., then that shall be conclusive evidence that DK Haney Roofing, Inc. has performed its Work in a good and workmanlike manner, in conformance with industry standards and in full compliance with its obligations under this Contract.
6. If customer fails to timely pay DK Haney Roofing, Inc. then DK Haney Roofing, Inc. shall be entitled to recover from customer all costs, expenses and attorneys fees incurred in pursuing collection from customer of the just amount owed. All outstanding amounts due shall bear interest at the rate of 12% per year compounded annually. Customer hereby grants DK Haney and its assigns permission to copyright, edit, use, re-use and publish photographs or videos of roofs installed on Customer's property by DK Haney. Customer waives right to inspect or pre-approve said photos or videos. Customer understands these materials may include the name, location and recognizable parts of customers building.

Thank you for your consideration,

DK. Haney Roofing, Inc.

By Dustin Haney - President & CEO

By signing and dating below I have read and agreed to the acceptance of the above proposal.

Customer: _____

Signature

Date

1420 Markum Ranch Rd
P: 817.546.2266
T: 866 DRY IT IN
F: 817.546.2212

DKHaneyRoofing.com

From: [James Geroni](#)
To: [Troy Boulton](#)
Subject: [Duro Last parapet wall](#)

OPTION: Enter a file(s). The email recipient has access to the file(s) you attach. To use the file(s) or open an attachment, click the recipient's name or the file name in the message area.

Please see below information you requested. I will send you a copy of our proposal in a separate email shortly.

Thank you,

James Geroni
Architect
DR. Henry Hartman
1000 North Main Street, Suite 300
Austin, TX 78701
(512) 477-1511
(512) 477-1511



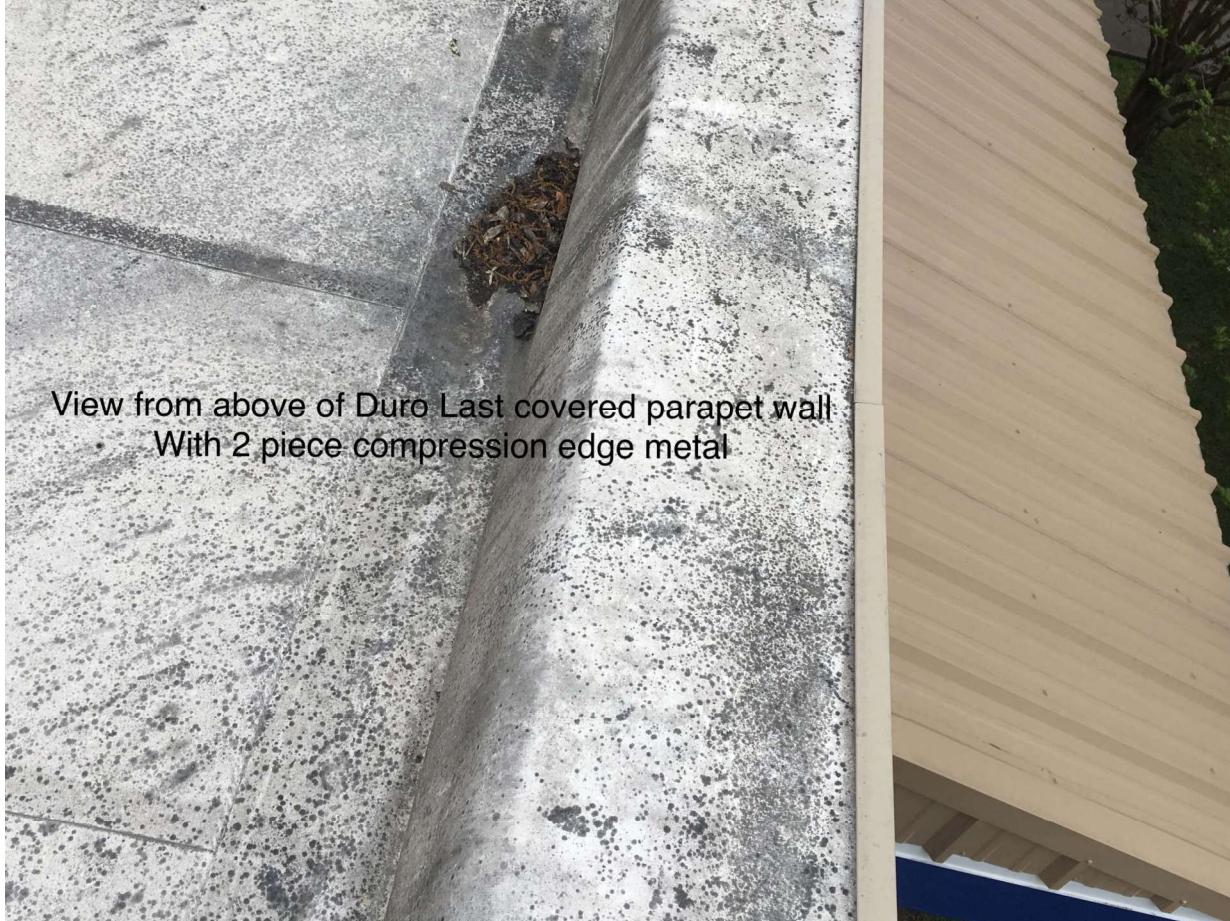
 [Begin New Email Message](#)

From: [James Geroni](#) <[James.Geroni@drhh.com](#)>
To: [Troy Boulton](#) <[Troy.Boulton@drhh.com](#)>
Subject: [Duro Last parapet wall](#)

Please let me know if you have any questions. I will answer some of the questions below about the proposal.
1. The Duro Last parapet wall will be a 2 piece compression edge metal system. The compression edge metal is a single piece below. This edge metal will be attached to the wooden edge on top of the wall. It will not affect the stone or concrete joints. This should prevent water from entering the top of the parapet wall while maintaining the correct appearance.
2. No rehang will be required on the parapet wall. The rehangs are already there. We will rehang by the previous contractor.
3. The project is to be signed over to the previous contractor. They will do the parapet.

Thank you and please let me know if there is any other information I can provide. Yes.





**View from above of Duro Last covered parapet wall
With 2 piece compression edge metal**

Proposed edge metal detail



4 2-Piece Compression



Scupper option available
With matching metal color

6 Metal Flange Scupper



Metal color sample against existing coping cap

From: [Brit Barr](#)
To: [James Germany](#)
Cc: [Bobby Branham](#); [Susan Frocheur](#)
Subject: RE: Washington County Courthouse reroof
Date: Thursday, May 30, 2019 1:35:19 PM

James, thanks for the quick response and clarifications.

As far as THC is concerned, the work can proceed.

Best wishes for good working weather.

Brit Barr, Architect
Courthouse Program Reviewer
Texas Historic Courthouse Preservation Program
Texas Historical Commission, Division of Architecture
P.O. Box 12276
Austin, TX 78711-2276
Desk 512.463.6088
Cell 512.468.9565
www.thc.texas.gov

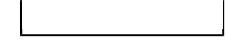


From: James Germany [mailto:jamesg@dkhaneyroofing.com]
Sent: Thursday, May 30, 2019 1:18 PM
To: Brit Barr
Cc: Bobby Branham; Susan Frocheur
Subject: Re: Washington County Courthouse reroof

CAUTION: External Email – This email originated from outside the THC email system. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please see answers to questions below.

James Germany
Sales Representative
DK Haney Roofing
[1420 Markum Ranch Road](#)
[Fort Worth, TX 76126](#)
o [817.546.2266](#)
m 936.662.4544



On May 30, 2019, at 11:57 AM, Brit Barr <Brit.Barr@thc.texas.gov> wrote:

Bobby, James, Susan –

Thank you for providing the information I needed this morning. Following are a few comments and questions to be resolved for all parties to be assured that the scope of work is clear. It may be necessary to amend the proposal to clarify these items:

1. What is the condition of the existing roof drains? Are they to remain in service, or be replaced?

A. The existing roof drains will remain in service. New Duro Last inserts will be installed to ensure water tightness.

2. Does the proposal include work on the 4 lower roof levels? These areas also have roof drains and overflow scuppers. The proposal only includes 2 new scuppers to be used in existing locations, blocked up by previous roof work. These are most likely at the upper roof, north side.

A. Yes this proposal includes all sections of the roof with new Duro Last scupper inserts in all scuppers. This proposal was originally written up using the insurance exactomate information which included two new scuppers. After I examined the building I found that the scuppers are already in place but had been covered up by the previous installation

3. We cannot determine the dimension of the vertical leg of the 2-piece metal edge. A maximum of 4" is preferred.

A. This metal is custom made to needed size. We can match the size currently on the building.

4. The 'light stone' color sample appears to be a good match for the building. The sample is held against the existing coping cap. How does it look next to the building's limestone finish? This can be confirmed in the field during the course of the work.

A. I agree, before beginning of work we can revisit this and make sure we match as close as

possible.

5. THC agrees with Architexas, that fasteners should be installed into the mortar joints to avoid damaging the masonry. Coated fasteners should be used to avoid galvanic corrosion between dissimilar metals.

A. There is a wood nailing installed on top of the block wall. We will use this to fasten cleats too so we do not disturb the masonry or block.

6. The illustration for the metal edge detail (attached with proposal) shows fasteners very close to the outside edge of the masonry parapet.

There is a very real risk of damage to the masonry if care, attention, and a high level of worker supervision are not given to this installation. Below are a few photos of what can go terribly wrong.

A. Same answer as #5. We prefer not to disturb any masonry or block if at all possible and the wood nailing solves this problem.

I hope this answers the questions, if you need anything else please don't hesitate to ask.

Thank you
James Germany
936-662-4544

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[cid:image011.jpg@01D516E7.3873D770]

[cid:image012.jpg@01D516E7.3873D770]

[cid:image013.jpg@01D516E7.3873D770]

With resolution of these items and those already presented by Architexas, THC believes there will be no adverse effect to the building by this proposed work.

We have no review authority over the terms and conditions of the contract, and these should be reviewed by the county.

Thank you for the opportunity to offer input on the proposed work for the historic Washington County Courthouse.

Brit Barr, Architect
Courthouse Program Reviewer
Texas Historic Courthouse Preservation Program
Texas Historical Commission, Division of Architecture
P.O. Box 12276
Austin, TX 78711-2276
Desk 512.463.6088

Cell 512.468.9565
www.thc.texas.gov<<http://www.thc.texas.gov>>

[cid:image001.jpg@01CA7E37.0FD5EEA0]

From: Bobby Branham [<mailto:bbranham@wacounty.com>]
Sent: Thursday, May 30, 2019 9:50 AM
To: Brit Barr
Subject: RE: Washington County Courthouse reroof

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Thanks Brit

From: Brit Barr [<mailto:Brit.Barr@thc.texas.gov>]
Sent: Thursday, May 30, 2019 9:05 AM
To: Susan Gammage
<Susan.Gammage@thc.texas.gov<<mailto:Susan.Gammage@thc.texas.gov>>>; Bobby Branham <bbranham@wacounty.com<<mailto:bbranham@wacounty.com>>>
Cc: James Germany <jamesg@dkhaneyroofing.com<<mailto:jamesg@dkhaneyroofing.com>>>;
Susan Frocheur <sfrocheur@architexas.com<<mailto:sfrocheur@architexas.com>>>
Subject: RE: Washington County Courthouse reroof

Susan, I believe I can squeeze in the review on this if you will forward the information Bobby has provided. I'm back in town now for awhile – I hope.

Brit Barr, Architect
Courthouse Program Reviewer
Texas Historic Courthouse Preservation Program
Texas Historical Commission, Division of Architecture
P.O. Box 12276
Austin, TX 78711-2276
Desk 512.463.6088
Cell 512.468.9565
www.thc.texas.gov<<http://www.thc.texas.gov>>

[cid:image001.jpg@01CA7E37.0FD5EEA0]

From: Susan Gammage
Sent: Thursday, May 30, 2019 9:00 AM
To: Bobby Branham
Cc: James Germany; Susan Frocheur; Brit Barr

Subject: RE: Washington County Courthouse reroof

Hi Bobby

The THC typically requires 30 days to review proposed work, and state law requires that a county contact the THC for review at least 180 days prior to implementing any work. I will review this and provide comment as soon as I am able, or I will ask Brit if he has more available time, since he is the reviewer for Washington County. I have copied him here.

Thank you for your patience,
Susan

Susan Gammage, Architect
Senior Project Reviewer
Texas Historic Courthouse Preservation Program
Division of Architecture
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711-2276
Desk 512.463.5860
www.thc.texas.gov<<http://www.thc.texas.gov>>

[cid:image001.jpg@01CA7E37.0FD5EEA0]

From: Bobby Branham <bbranham@wacounty.com<<mailto:bbranham@wacounty.com>>>>
Sent: Thursday, May 30, 2019 8:56 AM
To: Susan Gammage
<Susan.Gammage@thc.texas.gov<<mailto:Susan.Gammage@thc.texas.gov>>>>
Cc: James Germany <jamesg@dkhaneyroofing.com<<mailto:jamesg@dkhaneyroofing.com>>>;
Susan Frocheur <sfrocheur@architexas.com<<mailto:sfrocheur@architexas.com>>>>
Subject: RE: Washington County Courthouse reroof

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Susan

I need an answer on our roof project asap. At this time our roof is leaking and causing more damage to the building. I can't start my inside repairs until I have the roof repaired which will take a month to complete.

I have a County Judge asking me every day any word yet on the roof. We are going back with the same type of roofing system we have which was approved by the Commission when it was installed 23 years ago.

I have less than a year to complete this project or the County will lose \$80,000 which was held back by TAC our insurance Company.

Thanks for your help and let me know if you need more information.

From: Susan Gammage [<mailto:Susan.Gammage@thc.texas.gov>]

Sent: Thursday, May 23, 2019 10:59 AM
To: James Germany <jamesg@dkhaneyroofing.com<<mailto:jamesg@dkhaneyroofing.com>>>
Cc: Bobby Branham <bbranham@wacounty.com<<mailto:bbranham@wacounty.com>>>
Subject: RE: Washington County Courthouse reroof

Got it! I'll look at this today or tomorrow.

Thank you,
Susan

Susan Gammage, Architect
Senior Project Reviewer
Texas Historic Courthouse Preservation Program
Division of Architecture
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711-2276
Desk 512.463.5860
www.thc.texas.gov<<http://www.thc.texas.gov>>

[cid:image001.jpg@01CA7E37.0FD5EEA0]

From: James Germany
<jamesg@dkhaneyroofing.com<<mailto:jamesg@dkhaneyroofing.com>>>
Sent: Tuesday, May 7, 2019 11:59 AM
To: Susan Gammage
<Susan.Gammage@thc.texas.gov<<mailto:Susan.Gammage@thc.texas.gov>>>
Cc: Bobby J. Branham <bbranham@wacounty.com<<mailto:bbranham@wacounty.com>>>
Subject: Washington County Courthouse reroof

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Ms. Gammage,
Please find attached information for the Washington County Courthouse reroof. I will be sending you another email with information on the edge details. Please contact me with any questions you may have or if you need any more information.

<image001.jpg>
<image010.jpg>
<image011.jpg>
<image012.jpg>
<image013.jpg>
<WASHINGTON County proposal .pdf>
<ArchiTexas Comments on Washington Roof Proposal.docx>

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.



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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)

« »
« »

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For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.



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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.