

# **PROJECT MANUAL**

## **Historic Roof Repairs Agricultural Heritage Museum 0601 SAGM**

Project# 22-1025  
OSE# R0324--20X/DEL  
South Dakota State University  
977 11<sup>th</sup> Street North  
Brookings, South Dakota 57007

Prepared By

**South Dakota State University**  
Facilities and Services Building  
North Campus Drive  
Brookings, South Dakota 57007

This Project Manual provides for liquidated delay damages in the amount of \$150.00 per calendar day for the Contractor's delay in completion of the work. See the Bid Form and Article 10 of the General Conditions for details.

**March 22<sup>nd</sup>, 2024**

THIS PAGE LEFT BLANK

## Table of Contents

### PROCUREMENT AND CONTRACTING DOCUMENTS

#### **DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS**

001000	-	Table of Contents	Pg. 2
001100	-	Index	Pg. 2
002000	-	Invitation to Bid	Pg. 2
002513	-	Prebid Meeting	Pg. 2
003000	-	Bidder's Checklist	Pg. 2
004000	-	Asbestos Containing Materials Statement	Pg. 2
005200	-	Instructions to Bidders	Pg. 8
005201	-	Bid Form	Pg. 4
005202	-	Bid Modification Form	Pg. 2
005203	-	Sample Bid Envelope	Pg. 2
005204	-	Bid Bond	Pg. 2
005205	-	Performance and Payment Bond	Pg. 8
005206	-	Non-Resident Bidder Affidavit	Pg. 2
005207	-	Contractor's Statement of Skills and Capabilities	Pg. 4
005208	-	Resident Non-Resident Subcontractor Certification	Pg. 2
006000	-	Agreement for Construction	Pg. 4
007000	-	General Conditions	Pg. 50

### SPECIFICATIONS

#### **DIVISION 01 - GENERAL REQUIREMENTS**

011000	-	Summary	Pg. 4
012200	-	Unit Prices	Pg. 2
013591	-	Historic Treatment Procedures	Pg. 10
015000	-	Temporary Facilities and Controls	Pg. 4
015639	-	Temporary Tree and Plant Protection	Pg. 4
017300	-	Execution	Pg. 6
017419	-	Construction Waste Management and Disposal	Pg. 2

#### **DIVISION 02 - EXISTING CONDITIONS**

024119	-	Selective Demolition	Pg. 4
--------	---	----------------------	-------

#### **DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES**

061063	-	Exterior Rough Carpentry	Pg. 4
061516	-	Wood Roof Decking	Pg. 4
062013	-	Exterior Finish Carpentry	Pg. 6

**DIVISION 07      THERMAL AND MOISTURE PROTECTION**

070150	-	Preparation for Re-Roofing	Pg. 6
071326	-	Self-Adhering Sheet Waterproofing	Pg. 4
071353	-	Elastomeric Sheet Waterproofing	Pg. 6
072100	-	Thermal Insulation	Pg. 2
073213	-	Clay Roof Tile	Pg. 8
076200	-	Copper Flashing and Trim	Pg. 8
077200	-	Roof Accessories	Pg. 4
079200	-	Joint Sealants	Pg. 6

**DIVISION 09      FINISHES**

099113	-	Exterior Painting	Pg. 6
--------	---	-------------------	-------

**DRAWINGS**

G001	-	Title Sheet
D101	-	Roof Demolition
A101	-	Roof Plan
A201	-	Building Sections
A202	-	Building Sections
A221	-	Details
A222	-	Details
A223	-	Details

END OF TABLE OF CONTENTS

## Section 001100 – INDEX

## PART 1 – Index

## 1.1 STATE OF SOUTH DAKOTA PROJECT MANUAL

- A. Front End Sections
- B. General Conditions
- C. Special Conditions
- D. Technical Specifications
- E. Construction Drawings

## 1.2 FRONT END INDEX

001100	INDEX
002000	INVITATION TO BID
002513	PREBID MEETING
003000	BIDDER’S CHECKLIST
004000	ASBESTOS CONTAINING MATERIALS STATEMENT
005200	INSTRUCTIONS TO BIDDERS
005201	BID FORM AND/OR EXPLANATION OF ALTERNATES
005202	FACSIMILE MODIFICATION TO BID FORM
005203	FORMAT FOR SEALED ENVELOPE
005204	BID BOND
005205	PERFORMANCE & PAYMENT BOND
005206	NON-RESIDENT BIDDER AFFIDAVIT
005207	CONTRACTOR’S STATEMENT OF SKILLS & CAPABILITIES
005208	RESIDENT SUBCONTRACTOR CERTIFICATION
006000	AGREEMENT FOR CONSTRUCTION
007000	GENERAL CONDITIONS AND INDEX

THIS PAGE LEFT BLANK

## SECTION 002000 – INVITATION TO BID

South Dakota State University  
Agricultural Heritage Museum Historic Roof Repairs  
SDSU Work Order# 22-103807  
OSE Project# R0324--20X/DEL

Sealed bids will be received by the Associate Vice President of Facilities & Services on behalf of South Dakota State University and the Board of Regents at the Office of Facilities & Services, Box 2150, FS100, South Dakota State University, Brookings, South Dakota 57007 until **2:00 PM on April 25<sup>th</sup>, 2024** for labor and materials associate with the **Agricultural Heritage Museum Historic Roof Repairs** on the campus of South Dakota State University. All times listed are local to the construction site.

**Contractors please note:** There will be a recommended on-site pre-bid meeting at **1:00 PM on April 18<sup>th</sup>, 2024**, in the Facilities & Services Building, 1451 Stadium Road, Room 103, on the campus of South Dakota State University in Brookings, SD. Each Contractor wishing to submit a bid is required to attend the mandatory pre-bid meeting. Each Contractor shall examine the premises and be satisfied as to the existing site conditions before submitting a sealed bid.

The project consists of the removal, salvage, and reinstallation of approximately 12,000 square feet of existing French clay roofing tiles, ridge, and hip caps. The project also includes the removal and disposal of roofing membrane, asphalt underlayment, miscellaneous rough carpentry, and deteriorated decorative wood carpentry. New construction will include roofing membrane, underlayment, ice & water shield, copper flashing, copper gutters, 20% replacement clay roofing tiles, rough carpentry, ornamental carpentry, sealants, and exterior paint. Copper downspouts are to be salvaged and remain in place. Inspect the existing tongue & groove roof decking for damage and irregularities, repair as required to maintain a stable substrate for the roof assembly installation.

Copies of the Plans and Specifications may be viewed or obtained by bidders at the office of SDSU Facilities & Services, 1451 Stadium Road, phone (605) 688-6251 OR at regional builder's exchanges. Anyone requesting, reviewing, or copying plans and specifications for this project (such individual is hereinafter referred to as "bidder") agrees that they are doing so for the sole purpose of submitting a bid on the project. In consideration of the State of South Dakota providing such plans and specifications for the purpose of preparing a bid, bidder further agrees:

The plans and specifications are the sole property of the State;

Any copies of the plans and specifications obtained from the State or its agent, will be returned to the office of SDSU Facilities & Services immediately after the State provides notice that the bidder will not be awarded a contract, or thirty (30) days after the bid opening for the project, whichever occurs first;

Any copies of the plans and specifications made by the bidder will be destroyed immediately after the State provides notice that the bidder will not be awarded a contract, or thirty (30) days after the bid opening for the project, whichever occurs first;

If the bidder does not submit a bid, bidder will fulfill the requirements listed above on or before the date of the bid opening;

The plans and specifications are to be used only with respect to this project and are not to be used for any other project or purposes other than preparing a bid for this project;

The plans and specifications will not be disseminated to any person or entity for purposes other than obtaining pricing information without the express written approval of the State;

All information contained in the plans and specifications is confidential; and should the bidder disseminate the plans and specifications to an individual or entity for the purpose of obtaining pricing information, the bidder will require that individual or entity to adhere to the terms set forth herein. The bidder, however, assumes no liability for the misuse of the plans and specifications by this third party or such third party's failure to comply with the provisions contained herein.

Should the bidder be awarded a contract for construction of the project, the bidder does not need to return or destroy plans and specifications until after completion of the project.

Each bid over \$50,000.00 must be accompanied by a certified check, cashier's check, or draft in the amount of 5% of the base bid and all add alternates and drawn on a State or National Bank or a 10% bid bond issued by a surety authorized to do business in the State of South Dakota and made payable to the Board of Regents of the State of South Dakota.

South Dakota State University reserves the right to reject any or all bids and to waive any irregularities therein.

Barry Mielke, Assistant Vice President  
Facilities & Services  
South Dakota State University



## SECTION 002513 - PREBID MEETING

## PART 1 - Prebid Meeting

## 1.1 PREBID MEETING

- A. Owner will conduct a Prebid meeting as indicated below:
  - 1. Meeting Date: April 18, 2024
  - 2. Meeting Time: 1:00 p.m., local time.
  - 3. Location: South Dakota State University  
Facilities & Services, Room 103  
1451 Stadium Road  
Brookings, SD 57007
- B. Attendance:
  - 1. Prime Bidders: Attendance at Prebid meeting is recommended.
- C. Bidder Questions: Submit written questions to be addressed at Prebid meeting a minimum of two business days prior to meeting.
- D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:
  - 1. Procurement and Contracting Requirements:
    - a. Advertisement for Bids.
    - b. Instructions to Bidders.
    - c. Bonding.
    - d. Insurance.
    - e. Bid Security.
    - f. Bid Form and Attachments.
    - g. Bid Submittal Requirements.
    - h. Bid Submittal Checklist.
    - i. Notice of Award.
  - 2. Communication during Bidding Period:
    - a. Obtaining documents.
    - b. Bidder's Requests for Information.
    - c. Bidder's Substitution Request/Prior Approval Request.
    - d. Addenda.
  - 3. Contracting Requirements:
    - a. Agreement.
    - b. The General Conditions.
    - c. Other Owner requirements.

4. Construction Documents:
    - a. Scope of Work.
    - b. Temporary Facilities.
    - c. Use of Site.
    - d. Work Restrictions.
    - e. Alternates, Allowances, and Unit Prices.
  5. Schedule:
    - a. Project Schedule.
    - b. Contract Time.
    - c. Liquidated Damages.
    - d. Other Bidder Questions.
  6. Site/facility visit or walkthrough.
  7. Post-Meeting Addendum.
- E. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees and others known by the issuing office to have received a complete set of Procurement and Contracting Documents. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.
1. Sign-in Sheet: Minutes will include list of meeting attendees.
  2. List of plan holders: Minutes will include list of plan holders.

END OF SECTION 00 2513

## SECTION 003000 – BIDDER’S CHECKLIST

The following items need to be submitted along with your bid. All bids and any modifications to bids must be in the hands of SDSU Facilities and Services on or before the time set for opening bids in the Invitation for Bids.

- ☐ All blanks on the Bid Form are filled in.
- ☐ Receipt of all addenda is noted on the Bid Form.
- ☐ Bid Form is signed by an officer of the corporation or, if not a corporation, a proprietor or partner.
- ☐ For bids of \$50,000.00 or higher, a bid bond or security is submitted with the bid.
- ☐ If a foreign contractor, a fully executed “Non-Resident Bidder Affidavit” is submitted with the bid.
- ☐ The bid, bid bond or security, and “Non-Resident Bidder Affidavit” are placed in a sealed envelope labeled in accordance with the “Instructions to Bidders.”



THIS PAGE LEFT BLANK

## SECTION 004000 – ASBESTOS STATEMENT

## ASBESTOS CONTAINING MATERIALS CAUTION:

It is brought to the contractor's attention that asbestos containing materials (greater than 1%) may be present outside the project requirements yet within the building or area. The contractor shall take the necessary precautions so as not to disturb this material. If asbestos containing materials are disturbed, the contractor shall follow and comply with the state rules promulgated under SDCL 34-44 pertaining to asbestos, and 29 CFR 1926.58, 40 CFR Part 61, 40 CFR Part 763 as in effect and the United States Environmental Protection Agency publication entitled "Guidance for Controlling Asbestos Containing Materials in Buildings" (EPA 560/5-85-024, June 1985).

## ASBESTOS CONTAINING MATERIALS STATEMENT:

In accordance with the provisions of SDCL 34-44-8, all bidders and contractors are hereby notified that this project **MAY** involve asbestos containing materials (greater than 1%). Proper procedures shall be followed in handling asbestos containing materials. This statement constitutes the warning and specifications required by SDCL 34-44-8. The owner or those representing the owner shall not be held responsible or liable for any injury to any individual resulting from his or her handling of or proximity to such materials. Further, the owner shall not be responsible for any extra cost to the bidder or contractor beyond that specified and included in the bid resulting directly or indirectly from handling of or proximity to these materials. Bidders are further instructed that no asbestos containing materials are to be installed in this project.

The contractor is cautioned that hidden materials unknown to the owner and inaccessible for testing may be found during the demolition work of this project which may be asbestos containing materials. Proper procedures shall be followed upon discovery of these materials. The owner or those representing the owner in any capacity shall not be held responsible or liable for any injury or cost to any person resulting from handling of or proximity to such materials.

## ASBESTOS LIABILITY STATEMENT

In accordance with amended SDCL 34-44, neither the owner, employees, or agents of the owner, nor any other person may have any claim, right or action against the prime contractor for any asbestos related injury or damage arising from the activities of a certified asbestos abatement subcontractor. Unless exempt under applicable state and federal law, no asbestos abatement work may be performed except by a certified asbestos contractor. A certified asbestos abatement subcontractor shall hold the owner and general contractor harmless from any liability arising from such subcontractor's activities on the project. A certified asbestos abatement contractor shall cause the owner and, if acting as a subcontractor, the general contractor to be named as additional insureds and provide sufficient proof of insurance for purposes of this section.

THIS PAGE LEFT BLANK

## SECTION 005200 – INSTRUCTIONS TO BIDDERS

### 1. Examination of Plans, Specifications and Site.

Bidders should carefully examine the site of the proposed work, subsurface conditions, the Plans and Specifications, and the bid and contract documents governing the project. The submission of bids is conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered; the character, quality, and scope of the proposed work; the quality and quantity of the materials to be furnished; and the requirements of the bid, the Plans and Specifications, and the other Contract Documents.

### 2. Submission of Bids.

Each bid must:

- a. Be submitted on the prescribed bid form; all blank spaces for bid prices must be filled in, in ink or typewritten, in both words and figures;
- b. Include any addenda issued during the time of advertising for bids the same as though it had been included in the original Plans and Specifications; and
- c. Be submitted in a sealed opaque envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted, see section 005203 Sample Envelope. If forwarded by mail, Federal Express, or other commercial courier, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified on the bid form.

All bids and any modifications to bids must be in the hands of SDSU Facilities and Services on or before the time set for opening bids in the Invitation for Bids. Bid Modifications will be accepted by electronic mail if received prior to the time set for opening bids.

Bids not properly marked may be disregarded. Bids will not be disregarded if received after the scheduled time for bid opening.

### 3. Modification of Bids.

- a. Bids may be modified by mail, electronic mail, or facsimile notice received at the place designated in the Invitation to Bid, not later than the time set for the opening of bids. Bid modifications shall not reveal the bid price but shall provide the addition or subtraction or the modification so that the final prices or terms will not be known to the public corporation until the sealed bid is opened see section 005202 Bid Modification Form. Any bid modification may not be withdrawn after the time set for the opening of bids. No bid made shall be changed or altered by telephone. No oral changes, alterations or conditions will be accepted under any circumstance.
- b. Bidders submitting a facsimile (FAX) modification need to keep in mind that SDSU Facilities and Services has only one FAX machine available to receive facsimile modifications. SDSU cannot and does not guarantee that this one FAX machine will be



available during the last few minutes before bid opening. It is common for multiple bidders to try to FAX last minute modifications at the same time, tying up the machine. Bidders assume the risk that SDSU will not receive last minute FAX modifications before the time set for the opening of bids. Pursuant to the requirements of SDCL §5-18A-6(6), SDSU will not accept any FAX modification received in its offices after the time set for the opening of bids.

#### **4. Contractor's Qualification Statement.**

For bids of \$100,000.00 or more, the low bidder, upon request, must submit to SDSU Facilities and Services, within 48 hours of said request, *Contractor's Statement of Skills and Capabilities* with their bids. The Contractor's Qualification Statement (AIA Document A305) or the AGC's Contractor Qualification Statement may be used provided it includes all the information required by the State of South Dakota.

#### **5. Bid Security.**

*Each bid over \$50,000.00 must be accompanied by a bid security as follows:*

a. Certified Check, Cashier's Check or Draft.

A certified check, cashier's check, or draft for five percent (5%) of the amount of the bid, including all add alternates, such check to be certified or issued by either a State or National Bank and *payable to said public corporation or officer.*

b. Bid Bond.

In lieu of a certified check as a bid guarantee, a bid bond of ten percent (10%) of the total amount of the bid, including all alternates, may be furnished by the Contractor. See Exhibit "C" for Bid Bond form. Such a bond is to be issued by a surety authorized to do business in the State of South Dakota. Such bond shall be payable to said public corporation or officer as guaranty that such bidder will enter a contract with said public corporation, its Board or officers thereof, in accordance with the terms of such letting and bid in case such bidder be awarded the contract.

No bidder shall be required to leave his/her certified check or other guaranty or bid bond posted for a longer period than thirty (30) days if the bid is not accepted. The certified check or other guaranty of the successful bidder shall be returned to him forthwith upon the execution of the contract and surety herein provided for.

#### **6. Withdrawal of Bids.**

Any bid may be withdrawn by letter or by telegraphic communications or in person before the time specified in the advertisement therefore. Withdrawal of a bid does not prejudice a bidder's right to submit a new bid within the time designated for the submission of bids. No bids may be withdrawn after the time designated in the Invitation to Bid for the opening of bids.

**7. Request for Interpretation.**

Any person who plans to bid on the project may submit to the Owner a written request for an interpretation of any part of the Plans and Specifications or Contract Documents. Requests for interpretations shall be made not less than ten (10) days prior to the opening of bids. Any interpretation will be in writing and furnished to each person receiving Plans and Specifications for bidding. The Owner will not be responsible for any other explanation or interpretation.

**8. Or Equal Clause.**

Whenever a material, article, or piece of equipment is identified on the Plans or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard; and any materials, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the requirements of Article 6.3.4 of the General Conditions are met and the material, article, or equipment so proposed is, in the opinion of SDSU Facilities and Services, of equal substance and functions.

**9. Preference for South Dakota Products, Labor and Materials.**

By virtue of statutory authority in SDCL § 5-18A-6(10) et seq. preference will be given to South Dakota products, labor and materials as provided by law.

**10. Opening of Bids.**

Bids will be received until the time for opening designated in the Invitation to Bid. All bids received within the designated time will be opened and read aloud at the time and place designated in the Invitation to Bid. Bidders and their authorized agents are invited to attend.

**11. Relief from Mistake in Bid.**

A bidder claiming a mistake in a bid must give the State written notice of the alleged mistake within five calendar days after the bids are opened, specifying in detail how the mistake occurred. Relief will only be granted for clerical or mathematical mistakes which can be documented to the satisfaction of SDSU Facilities and Services.

**12. Rejection of Bids.**

Bids may be rejected if they show any alteration of form, additions not called for, conditional bids, incomplete bids, unexplained erasures, or irregularities of any kind. The State may waive any informality in the bids received. When bids are signed by an agent other than an authorized corporate officer or member of a partnership, a power of attorney must be filed with the bid. Otherwise, the bid will be rejected as irregular and unauthorized. If there is reason to believe that collusion among the bidders exists, any or all bids may be rejected. The State reserves the right to reject all bids if in the judgment of SDSU Facilities and Services it is in the best interest of the State.

**13. Award of Contract.**

If the contract is awarded, it will be awarded to the responsible bidder submitting the lowest bid, subject to paragraph 16 below, which complies with the Invitation to Bid and with these instructions. The successful bidder will be notified within thirty (30) calendar days of the date bids are opened. After notice of award, the successful bidder will be presented with a contract agreement. The contract will require the completion of work according to the Plans and Specifications and the Contract Documents. Conditional bids will not be accepted.

**14. Responsibility.**

The Owner may make such investigations as he/she deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

**15. Nonresident Bids.**

SDCL § 5-18A-26, provides that the Contract shall be let to the lowest responsible bidder; provided, however, a resident bidder may be allowed a preference on any such contract as against the bid of any bidder from any other State or foreign province which enforces or prefers resident bidders. The amount of the preference given to the resident bidder shall be equal to the preference in the other state.

**16. Subcontractor Certification.**

SDCL§ 5-18B-6, provides that prior to execution of a public improvement project a successful bidder shall certify:

1. That no more than twenty percent of the cost of labor included in the contract is being provided by nonresident subcontractors; or
2. More than twenty percent of the cost of labor included in the contract is being provided by nonresident subcontractors because resident contractors are not available and at competitive prices.

**17. Method of Award.****a. Bidding procedure involving only a base bid:**

If the base bid is within the amount of funds available to finance the construction contract, then a contract award will be made to that responsible bidder submitting the low base bid. If the low bid exceeds the funds available to finance the construction, the State may negotiate with the low bidder to produce a bid amount within the availability of funds.

**b. Bidding procedure involving a base bid and alternate bids:**

If the base bid is within the amount of funds available to finance the construction contract and the Owner wishes to accept alternate bids, then contract award will be made to that responsible bidder submitting the low combined bid, consisting of the base bid and any combination of add or deduct alternative bids found to be most advantageous to the Owner. Under this procedure, if the Owner wishes to make an award on low base bid only, then a contract award will be made to that responsible bidder submitting the low base bid. If the low bid exceeds the funds available to finance the construction, the State may negotiate with the low bidder to produce a bid amount within the availability of funds.

**18. Execution of Agreement.**

Within ten (10) calendar days after the proposed contract agreement is presented to the successful bidder for execution, the successful bidder must execute the contract documents and, *if the Contract is for more than \$50,000.00*, provide a performance and labor and material payment bond.

**19. Performance & Labor and Material Payment Bond.**

If the Contract is for more than \$50,000.00, provide a performance and labor and material payment bond produced by a South Dakota licensed insurance producer (agent) and issued by a South Dakota licensed surety in an amount not less than the amount of the awarded contract. The performance and labor and material payment bond Surety or Sureties shall meet all requirements of South Dakota Law.

This bond is to secure the faithful performance of the contract and the payment of those to whom the bidder may become legally indebted for labor, materials, tools, equipment, or services of any kind used or employed by the bidder in performing the work. The surety bond shall be on the form attached hereto as section 005205. *(Failure on the part of the bidder to furnish such bond in the time stated shall be cause for consideration by the State of awarding the Contract to the second low bidder and the retention of the bid deposit.)*

**20. Power of Attorney.**

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

**21. Default.**

The failure to execute the contract documents or to furnish bonds required by these instructions within ten (10) calendar days after the proposed contract agreement is presented for execution constitutes a default. In the event of a default, the State may award the contract to the next lowest bidder or may readvertise for bids. The State may charge against the defaulting bidder the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed plus the State's additional administrative cost necessitated by the bidder's failure to execute the Contract Documents, irrespective of whether the amount thus due exceeds the amount of the bid bond. If a more favorable bid is received by readvertising, the defaulting bidder shall have no claim against the State for a refund.

**22. Commencement of Work/Time of Completion.**

The contractor for the general construction shall commence work under the contract within ten (10) consecutive calendar days after issuance of written Notice to Proceed and shall substantially complete all work under the contract within the timeframe specified in the Bid Form.

**23. Liquidated Damages.**

See Article 10.3.4 of the General Conditions.

**24. Applicable Laws and Regulations.**

The bidder's attention is directed to the fact that all applicable South Dakota laws, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written out in full.

**25. South Dakota Tax Information for Public Contracts.**

Contractors performing public contracts in South Dakota may become responsible for two types of taxes: the excise tax upon realty improvement contracts and the sales/use tax upon materials.

**All contractors** must secure a license from the Department of Revenue before engaging in the construction activities in this State.

Detailed information on tax requirements may be obtained from the Department of Revenue, Anderson Building, Pierre, South Dakota 57501. Telephone 605.773.3311.

**26. Applicable Standards.**

In addition to codes, Standards and Regulations referenced for compliance in the various sections of the Specifications, the work shall comply with the following:

ANSI Z53.1 - 1971, and as revised  
Safety color code for marking physical hazards

ANSI A13.1 - 1975, and as revised  
Scheme for the identification of piping systems

ANSI C2, and as revised  
National Electrical Safety Code

**27. Affirmative Action Plan.**

The State of South Dakota requires that all contractors, vendors, and suppliers, employing fifty or more persons, doing business with any State Agency, Department, or Institution, place on file a statement of Affirmative Action that said contractor, vendor, or supplier does not discriminate in its employment practices regarding race, color, religion, sex or national origin.

No award of any contract with the State of South Dakota shall be executed or awarded and approved by the State for any service, supply, or commodity unless the successful bidder submits such statement.

The above statement may be submitted to SDSU Facilities and Services with the contractor's bid, or prior to award of contract.

**28. Procurement Law.**

This project is subject to the provisions of SDCL § 5-18A and 5-18B et seq.

THIS PAGE LEFT BLANK

## SECTION 005201 – BID FORM

1. PROJECT: Agricultural Heritage Museum Historic Roof Repairs
2. SDSU WO#: 22-103807
3. OSE#: R0324--20X/DEL

**To:** South Dakota State University  
Facilities and Services  
Box 2150 FS 100  
Brookings, SD 57007

Phone: 605-688-4136  
Fax: 605-688-4010

The undersigned, being familiar with the local conditions affecting the work, and with the Contract Documents, including the Invitation to Bid, Instructions to Bidders, Bid Form, Explanation of Alternates, Modification to Bid Form, Bid Bond Form, Performance and Payment Bond, Acknowledgment of Surety, Sample Certification of Surety, Non-Resident Bidder Affidavit, Form of Agreement for Construction, General Conditions, Special Conditions, Technical Specifications, Plans and Addenda which govern the purchase of material and labor and the awarding of contracts hereby proposes to do all the work and provide all the material and equipment which pertains to this project.

as provided for in the project manual dated: \_\_\_\_\_

for the following base bid and alternates:

**BASE BID**

\_\_\_\_\_  
DOLLARS (\$\_\_\_\_\_)

**Alternate No. 1** - Add/Deduct to/from the base bid the sum of

\_\_\_\_\_  
DOLLARS (\$\_\_\_\_\_)

**Alternate No. 2** - Add/Deduct to/from the base bid the sum of

\_\_\_\_\_  
DOLLARS (\$\_\_\_\_\_)



**UNIT PRICES:**

For changing quantities of work items from those indicated by the contract drawings upon written instruction from the Architect and SDSU Facilities and Services, the following unit prices shall prevail:

1. \_\_\_\_\_ \$ \_\_\_\_\_
2. \_\_\_\_\_ \$ \_\_\_\_\_
3. \_\_\_\_\_ \$ \_\_\_\_\_

The above unit prices shall include all labor, materials, bailing, shoring removal, overhead, profit, insurance, etc., to cover the finished work of the several kinds called for. Changes shall be processed in accordance with Article 14 of the General Conditions.

The Owner also reserves the unrestricted privilege to reject any unit prices for additions to or deductions from the scheduled amount of work as given in the Bid, if the same are considered excessive or unreasonable, or to accept by including the same in the contract as unit prices applicable in the event of addition to or deduction from the work to be performed under the contract, any or all such unit prices which may be considered fair or reasonable.

The above bid includes all applicable State and Municipal Sales and Use Taxes on materials, and State and Municipal Excise Taxes and all other State and Federal Taxes that would affect the amount of the bid. (See Instructions to Bidders-SD Sales and Use Tax Information for Public Contracts.)

In addition, any material furnished by the State for use in this project is subject to Use Tax and Excise Tax. The total taxable value of materials furnished by the State for this project is \$ .

*A Performance and Payment Bond as required by General Conditions will not be required on contracts which do not exceed Fifty Thousand Dollars (\$50,000). (See SDCL 5-21-1.1 as amended).*

*If discrepancies remain at the time of substantial completion, a value will be assigned to each of the discrepancies and two (2) times their estimated value will be retained from payment to the contractor until completed and accepted. (See SDCL 5-18-13 as amended).*

**Within ten (10) days after Contractor's receipt of the Agreement for Construction, the Contractor shall submit to SDSU Facilities and Services, the executed Agreement for Construction, Performance and Payment Bond, Certificates of Insurance and Affirmative Action Plan (if applicable).**

**Work shall be commenced within ten (10) consecutive calendar days after written Notice to Proceed by SDSU Facilities and Services and shall be substantially completed Friday, October 25<sup>th</sup>, 2024.**

The undersigned acknowledges receipt of the following addenda to the drawings and/or specifications (give number and date of each):

Addenda Nos. \_\_\_\_\_ dated \_\_\_\_\_ respectively.

The undersigned acknowledges that they have read and understand the Asbestos-Containing Materials Statement contained in the project manual.

Accompanying this proposal is a certified check, cashier's check, or draft in the amount of 5% of the base bid and all add alternates, and drawn on a State or National Bank in the amount of \$ \_\_\_\_\_ or a 10% bid bond issued by a surety authorized to do business in the State of South Dakota, in the amount of \$ \_\_\_\_\_.  
(Not applicable if Bid is under \$50,000.)

It is understood that the right is reserved by the Owner to reject all bids and to waive any irregularities. It is further understood by the Bidder that they may not withdraw the Bid within 30 days after the actual opening thereof.

The bidder asserts they have reviewed all provisions of the General Conditions including the provision for assessment of liquidated delay damages found in Article 10 of the General Conditions. Bidder agrees that the damages anticipated by the Owner in the event of delay in completion of the project are uncertain in amount and difficult to prove; the amount stipulated in Article III of the Agreement for Construction is a reasonable amount associated with the anticipated loss and injury; and the Owner's actual damages in the event of delay would be impracticable or extremely difficult to fix. Bidder agrees to be bound by the liquidated damages set forth in Article III of the Agreement for Construction. Bidder further agrees that the liquidated amount stipulated in Article III of the Agreement for Construction is not a penalty.

BIDDER: \_\_\_\_\_  
(Type Name of Firm)

BY: \_\_\_\_\_  
(Signature of Firm's Representative)

\_\_\_\_\_  
(Type Name and Title of Firm's Representative)

TELEPHONE \_\_\_\_\_

FACSIMILE \_\_\_\_\_

E-MAIL ADDRESS \_\_\_\_\_

BUSINESS ADDRESS \_\_\_\_\_

STATE OF INCORPORATION \_\_\_\_\_

THIS PAGE LEFT BLANK

## SECTION 005202 – BID MODIFICATION FORM

1. PROJECT: Agricultural Heritage Museum Historic Roof Repairs
2. SDSU WO#: 22-103807
3. OSE#: R0324--20X/DEL

**To:** South Dakota State University  
Facilities and Services  
Box 2150 FS 100  
Brookings, SD 57007

Phone: 605-688-4136  
Fax: 605-688-4010

Please make the following modifications to our bid on the referenced project. This modification is per the Instructions to Bidders Item #3 included in the original bid documents and modifies our sealed bid.

*Note To Bidder: Please circle the appropriate ADD/DEDUCT and "X" out the undesired action.*

**Modification to Base Bid - ADD / DEDUCT to our Base Bid the Sum of**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**Modification to Alternate #1 - ADD / DEDUCT to our Alternate #1 Bid the Sum of**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**Modification to Alternate #2 - ADD / DEDUCT to our Alternate #2 Bid the Sum of**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**Modification to Alternate #3 - ADD / DEDUCT to our Alternate #3 Bid the Sum of**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**UNIT PRICES MODIFICATION**

UNIT PRICE 1.      ADD / DEDUCT      \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

UNIT PRICE 2.      ADD / DEDUCT      \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

UNIT PRICE 3.      ADD / DEDUCT      \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

The undersigned acknowledges receipt of the following addenda to the drawings and/or specifications (give number and date of each):

Addenda Nos. \_\_\_\_\_ dated \_\_\_\_\_ respectively.

It is understood that the right is reserved by the Owner to reject all bids and to waive any irregularities. It is further understood by the Bidder that they may not withdraw his Bid within 30 days after the actual opening thereof.

BIDDER: \_\_\_\_\_  
(Type Name of Firm)

BY: \_\_\_\_\_  
(Signature of Firm's Representative)

\_\_\_\_\_  
(Type Name and Title of Firm's Representative)

TELEPHONE \_\_\_\_\_

FACSIMILE \_\_\_\_\_

E-MAIL \_\_\_\_\_

BUSINESS ADDRESS \_\_\_\_\_

STATE OF INCORPORATION \_\_\_\_\_

## SECTION 005203 – SAMPLE BID ENVELOPE

1. PROJECT: Agricultural Heritage Museum Historic Roof Repairs
2. SDSU WO#: 22-103807
3. OSE#: R0324--20X/DEL

Return Address

John Smith  
Contractor  
Box 1  
Anytown, USA

TO: SOUTH DAKOTA STATE UNIVERSITY  
FACILITIES & SERVICES  
BOX 2150 FS 100  
BROOKINGS, SD 57007

**BID FOR:** PROJECT NAME  
**LOCATION:** BROOKINGS, SD  
**OSE#:** XX-XXXX  
**TO BE OPENED:** HOUR & DATE  
**ADDENDA RECEIVED:** NUMBERS

THIS PAGE LEFT BLANK

## SECTION 005204 – BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

as Principal, and

as Surety, are hereby held and firmly bound unto

as owner for the penal sum of \_\_\_\_\_ which, well and

truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors,

administrators, successors, and assigns.

Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

The condition of the above obligation is such that whereas the Principal has submitted to

\_\_\_\_\_ a certain Bid, attached hereto and hereby

made a part hereof to enter into a contract in writing for the \_\_\_\_\_

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

NOW, THEREFORE,

- a. If said Bid shall be rejected, or in the alternate
- b. If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract, attached hereto (properly completed in accordance with said bid) and shall furnish a bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Bid.



Then this obligation shall be void, otherwise the same shall remain in force and effect: it being expressly understood and agreed that the liability of the Surety for all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates, and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extensions of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

\_\_\_\_\_(L.S.)  
Principal

\_\_\_\_\_  
Surety

SEAL

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

## SECTION 005205 – PERFORMANCE AND PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, THAT WE

(Contractor) \_\_\_\_\_

hereinafter called "Principal", and

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

a corporation, organized and existing under the laws of the State of and duly authorized to transact business in the State of South Dakota, hereinafter called "Surety", are held and firmly bound unto the State of South Dakota, hereinafter called "Obligee", in the just and full sum of \_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) lawful money of the United States of America to be paid to the State of South Dakota, which payment to be made, we bind ourselves, our heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that:

WHEREAS, Principal has initiated the Contract with Obligee, dated this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, for the construction of:

AGRICULTURAL HERITAGE MUSEUM HISTORIC ROOF REPAIRS

SOUTH DAKOTA STATE UNIVERSITY, BROOKINGS, SD

OSE# R0324--20X/DEL

which Contract is herein referred to and made a part hereof as fully and to the same extent as if the same were entirely written herein; and

WHEREAS it was one of the conditions of the award by Obligee of the Contract entered into that these presents should be executed.

PROVIDED, FURTHER, that the Surety, for consideration received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, to work to be performed thereunder or to the specifications accompanying the Contract shall in any manner affect its obligation on this Bond. The Surety hereby does waive notice of any such change,

extension of time, alteration, or addition to the terms of the Contract, to the work or to the specifications.

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

NOW, THEREFORE, if the Principal in all respects complies with the terms and conditions of the Contract and his (their or its) obligations thereunder, including specifications therein referred to and made a part thereof and any alteration made in such specifications as herein or therein provided, then this obligation is void, but otherwise remains in full force and effect.

A further condition of this bond is that in the event the Principal fails to pay all just claims and demands on the part of any employee, person, firm or corporation for labor and materials furnished for or used in connection with the prosecution of the work under the Contract, or fails to pay any tax which may accrue to the State of South Dakota under the provisions of the "Use Tax Act of 1939 and The Excise Tax on Realty Improvements under SDCL 10-46A," and Sections 5-21-3 and 5-21-4 of the South Dakota Codified Laws, this bond and the sureties thereon shall be responsible to such person, firm or corporation and to the State of South Dakota for the full payment of the value of such labor and materials so furnished, including payment of South Dakota use taxes and excise taxes on realty improvements.

SIGNED AND SEALED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_\_.

**INDIVIDUAL PRINCIPAL**

By \_\_\_\_\_ Name \_\_\_\_\_  
(Affix Seal if available)

**PARTNERSHIP OR CORPORATE PRINCIPAL**

By \_\_\_\_\_ Name \_\_\_\_\_  
Title \_\_\_\_\_ Business Name \_\_\_\_\_  
(Affix Corporate Seal if available)  
Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**INDIVIDUAL, PARTNERSHIP OR CORPORATE SURETY**

By \_\_\_\_\_ Name \_\_\_\_\_  
Title \_\_\_\_\_ Business Name \_\_\_\_\_  
(Affix Corporate Seal if available)  
Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Surety's South Dakota License Number: \_\_\_\_\_

Attorney-In-Fact's Name: \_\_\_\_\_

Attorney-In-Fact's South Dakota License Number: \_\_\_\_\_

**ACKNOWLEDGMENT OF PRINCIPAL  
(Individual)**

State of \_\_\_\_\_)

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_, known to me to be the individual described in and who executed the foregoing instrument and acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

**ACKNOWLEDGMENT OF PRINCIPAL  
(Partnership)**

State of \_\_\_\_\_)

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_, who acknowledged himself/herself to be one of the partners of \_\_\_\_\_, a partnership, and that he/she, as such partner, being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the partnership by himself/herself as a partner.

\_\_\_\_\_  
Notary Public

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

**ACKNOWLEDGMENT OF PRINCIPAL  
(Corporation)**

State of \_\_\_\_\_)

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_, who acknowledged himself/herself to be the \_\_\_\_\_ of \_\_\_\_\_, a corporation, and that he/she, as such \_\_\_\_\_ being authorized so to do, executed the foregoing instrument for the purposes therein contained, by signing the name of the corporation by himself/herself as \_\_\_\_\_.

\_\_\_\_\_  
Notary Public

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

**ACKNOWLEDGMENT OF SURETY  
(Corporate Officer)**

State of \_\_\_\_\_)

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, a Notary Public in and for said County, personally appeared \_\_\_\_\_ personally known to me, who being by me duly sworn, did say that he/she aforesaid officer of the \_\_\_\_\_ of \_\_\_\_\_, a corporation duly organized and existing under the laws of the State of \_\_\_\_\_, that the seal affixed to the foregoing instrument is the corporate seal of said corporation, that the said instrument was signed, sealed and executed in behalf of said corporation by authority of its Board of Directors, and further acknowledges that the said instrument and the execution thereof to be the voluntary act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto subscribed by name and affixed by official seal at \_\_\_\_\_, the day and year last above written.

\_\_\_\_\_  
Notary Public

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.



**ACKNOWLEDGMENT OF SURETY  
(Attorney-In-Fact)**

State of \_\_\_\_\_)

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_ known to me or satisfactorily proven to the person whose name is subscribed as attorney in fact for \_\_\_\_\_ and acknowledged that he/she executed the same as the act of his/her principal for the purpose therein contained.

IN WITNESS WHEREOF, I hereunto subscribed my name and affixed my official seal at \_\_\_\_\_, the day and year last above written.

\_\_\_\_\_  
Notary Public

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

**APPROVAL AS TO FORM**

Approved as to form this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Assistant Attorney General

## SECTION 005206 – NON-RESIDENT BIDDER AFFIDAVIT

State of \_\_\_\_\_)

County of \_\_\_\_\_)

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

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

Affiant's Name: \_\_\_\_\_

Affiant's Title: \_\_\_\_\_

Project Name: \_\_\_\_\_ Agricultural Heritage Museum Historic Roof Repairs \_\_\_\_\_

Project Location: \_\_\_\_\_ South Dakota State University, Brookings, SD \_\_\_\_\_

OSE Project Number: \_\_\_\_\_ R0324--20X/DEL \_\_\_\_\_

**AFFIDAVIT WHEN NO PREFERENCE IS GIVEN**

I do hereby affirm that \_\_\_\_\_ resides in the country of \_\_\_\_\_ in the state or province of \_\_\_\_\_ and that said country and/or state or province does not grant a preference to resident bidders for work on behalf of said country, state or province.

Dated: \_\_\_\_\_ Signed: \_\_\_\_\_

**AFFIDAVIT WHEN PREFERENCE IS GIVEN**

I do hereby affirm that \_\_\_\_\_ resides in the country of \_\_\_\_\_ in the state or province of \_\_\_\_\_ and that said country and/or state or province does grant a preference to resident bidders for work on behalf of said country, state, or province, the nature and extent of such preference being.

Dated: \_\_\_\_\_ Signed \_\_\_\_\_

**ACKNOWLEDGEMENT OF AFFIANT**

State of \_\_\_\_\_)

County of \_\_\_\_\_)

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me personally appeared \_\_\_\_\_, known to me to be the affiant who, being duly sworn, declares all statements made in this affidavit to be true and correct to the best of his or her knowledge.

\_\_\_\_\_  
Notary Public

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

## SECTION 005207 – CONTRACTOR’S STATEMENT OF SKILLS AND CAPABILITIES

Project Name: \_\_Agricultural Heritage Museum Historic Roof Repairs\_\_

Location: \_\_South Dakota State University, Brookings, SD\_\_

OSE #: \_\_R0324--20X/DEL\_\_

**CONTRACTOR INFORMATION****A. Business Structure****Submitted By:**

## 1. Current Business Name and Address.

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

e-mail: \_\_\_\_\_

## 2. How many years has your company been in business under the name listed above?

## 3. Has your company been in business under any other business name(s)?

If so, list previous business name(s) and the years your company operated under each name:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 4. If a corporation, provide the:

Date and State of incorporation: \_\_\_\_\_

Type of corporation: \_\_\_\_\_

Names of Officers

President: \_\_\_\_\_

Vice-president(s): \_\_\_\_\_

\_\_\_\_\_

Secretary: \_\_\_\_\_

Treasurer: \_\_\_\_\_

## 5. If a partnership, provide the:

State of Organization: \_\_\_\_\_

Partnership type: \_\_\_\_\_

Date of organization: \_\_\_\_\_

Names of partners: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## 6. If individual, provide:

Date of organization: \_\_\_\_\_

Name of owner: \_\_\_\_\_

## 7. Use this space to describe your company's business structure if it differs from those listed above:

8. List the states and trades in which you may legally do business where applicable. Provide registration or license number(s): \_\_\_\_\_
9. If your company is organized under the laws of another state, has it registered with the Secretary of State for the State of South Dakota and/or the Department of Revenue?

**B. Background and History**

1. What types of Work does your company perform with its own forces?
2. Has your company ever failed to complete Work it had contracted to perform? Provide details if the answer is “yes.”
3. Within the last five years, has any officer or principal of your company been an officer or principal of another company that failed to complete Work that the latter company contracted to perform? Provide details if “yes.”
4. List all judgments, claims, suits at law, or arbitration proceedings pending or outstanding against your company or its officers regarding any construction contracts:
5. Within the last five years, has your company filed lawsuits or requested arbitration regarding any construction contracts?
6. On separate paper, provide a list of major construction projects your company is currently working on. For the purposes of this document “major construction projects” shall be considered anything of average size or greater for your company. Provide name of owner, location, architect, contract amount, and scheduled completion.

7. On separate paper, list the major construction projects your company has completed in the last five years. For the purposes of this document “major construction projects” shall be considered anything of average size or greater for your company. Provide name of owner, project, location, architect, contract amount, and scheduled completion.
8. On separate paper, list the construction background/experience of the key personnel in your company.
9. What is the average annual value of construction your company has performed within the last five years?

### **C. References**

1. List your company’s Business/Industry References:
2. List your company’s Financial References:
3. Provide the name and address of your company’s Surety, as well as the name and address of the Agent:

## SECTION 005208 – RESIDENT &amp; NON-RESIDENT SUBCONTRACTOR CERTIFICATION

Company: \_\_\_\_\_ Contract Amount: \_\_\_\_\_

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

Project Name: Agricultural Heritage Museum Historic Roof Repairs

Location: South Dakota State University, Brookings, SD

OSE#: R0324--20X/DEL

### Resident Subcontractors

[illegible]



### Non-Resident Contractors

Company	Location	Labor Cost	% Value of Contract
Total:			

As defined in 5-18A:

(26) "Resident," any person, partnership, association, limited liability company, foreign limited liability company, corporation, or foreign corporation licensed to do business within this state that has maintained a substantial and bona fide place of business and has conducted business from within this state for at least one year prior to the date on which a contract was awarded. The members of the partnership or association shall have been bona fide residents of the state for one year or more immediately prior to bidding upon the contract. A foreign corporation licensed pursuant to §§ 47-1A-1501 to 47-1A-1532, inclusive, is not a resident as defined by this section if the state or country in which it is organized enforces or prefers resident bidders.

If more than 20% of the labor cost included in the contract is being provided by nonresident subcontractors, please explain:

---

---

---

---

**SECTION 006000 – AGREEMENT FOR CONSTRUCTION**

1. Project Manual & Drawings Prepared By:
  - a. South Dakota State University Facilities & Services
2. Project: Agricultural Heritage Museum Historic Roof Repairs

THIS Agreement is made on the \_\_\_\_\_ day of \_\_\_\_\_, 2024 by and between \_\_\_\_\_ (the "Contractor") and the State of South Dakota represented by its legal officers (the "Owner").

WITNESSETH, that the Contractor and the Owner for the consideration stated herein agree as follows:

**ARTICLE I, CONTRACT DOCUMENTS:**

The following documents and any other documents incorporated in them by reference constitute the contract documents:

1. This Agreement
2. The Project Manual
3. The Project Drawings
4. Addenda issued prior to execution of this Agreement
5. Contractor's Performance and Labor and Material Payment Bond

These documents constitute the entire and integrated agreement between the parties hereto and supersede prior negotiations, representations, or agreements, either written or oral. The Index for items 2 and 3 is in Section 001100 for the Project Manual.

**ARTICLE II, STATEMENT OF WORK:**

To the extent not otherwise provided in the contract documents, contractor shall furnish and pay for all labor, tools, equipment, supplies, materials, appurtenances, utilities, charges, fees, permits, and all other construction accessories and services required to complete the work specified in the contract documents in strict compliance with the contract documents.

**ARTICLE III, DATE OF COMMENCEMENT AND COMPLETION:**

The work shall be commenced within ten (10) consecutive calendar days after the date of issuance of the Notice to Proceed by the Owner and shall be substantially completed not later than \_\_\_\_\_, subject to adjustments of the contract time as provided in the contract documents. Should the Contractor fail to substantially complete the work within the time set forth herein, or within such extra time as may have been allowed by increases in the contract, or by formally approved extensions granted by the Owner, the Contractor and the Contractor's surety shall be liable for and shall pay the Owner \$\_\_\_\_\_ per calendar day as liquidated damages for each calendar day of delay until the work is substantially complete.

**ARTICLE IV, CONTRACT SUM:**

- A. For the performance of the work specified in the Contract Documents, Owner will pay Contractor and Contractor will accept as full compensation the sum of \$\_\_\_\_\_, subject to additions or deductions as provided in the contract documents.
- B. Contract sum includes the following alternates, if any, which are described in the Contract Documents and are hereby, accepted by the Owner:
- i. Alternate One: \_\_\_\_\_
  - ii. Alternate Two: \_\_\_\_\_
  - iii. Alternate Three: \_\_\_\_\_
- C. Unit Prices, if any, are as follows:
- i. 06 1516 Wood Roof Decking
    - A. Units: 2'x4' Sheet
    - B. Unit Price: \_\_\_\_\_
  - ii. 06 2013 Exterior Finish Carpentry
    - A. Units: Lineal Feet
    - B. Unit Price: \_\_\_\_\_
  - iii. 07 2100 Thermal Insulation
    - A. Units: Square Feet
    - B. Unit Price: \_\_\_\_\_
  - iv. 07 3213 Clay Roof Tile
    - A. Units: Each
    - B. Unit Price: \_\_\_\_\_

Where the quantities originally contemplated are so changed that application of the agreed unit price to the quantity of work performed is shown to create a hardship to the Owner or the Contractor, there shall be an equitable adjustment of the contract to prevent such hardship.

**ARTICLE V, PROGRESS PAYMENTS:**

The Owner shall make progress payments on a monthly basis for work accomplished in accordance with General Conditions, Article 11.

**ARTICLE VI, ACCEPTANCE AND FINAL PAYMENT:**

Final payment less amounts withheld to cover the cost of nonconforming work, shall be made by the Owner in accordance with General Conditions Sub-Article 11.8.

**ARTICLE VII, NOTICE:**

All notices, demands and other communications required by the Contract Documents shall be in writing and shall be deemed to have been duly given if personally delivered, mailed first class (postage prepaid), or e-mailed:

1) **If to Contractor:**

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

2) **If to Owner:**

Barry Mielke, Associate Vice President  
SDSU Facilities & Services  
Box 2150 FS 100  
Brookings, SD 57007  
Barry.Mielke@sdstate.edu

Either party may change the addresses set forth for notice herein upon written notice thereof to the other.

IN WITNESS WHEREOF, THE parties hereto have caused this instrument to be executed in one original counterpart the day and year above first written:

CONTRACTOR: \_\_\_\_\_

By: \_\_\_\_\_  
(Affix Corporate Seal if Available)

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

Fed. Emp. Tax ID#: \_\_\_\_\_

OWNER: STATE OF SOUTH DAKOTA

\_\_\_\_\_  
Barry Dunn, President  
South Dakota State University

THIS PAGE LEFT BLANK

## SECTION 007000 – GENERAL CONDITIONS

1. Project:           Agricultural Heritage Museum  
                  Historic Roof Repairs  
                  South Dakota State University  
                  Brookings, South Dakota
2. OSE#: R0324--20X/DEL
3. SDSU Project# 22-1025

**INDEX**

	Article
Definitions	1
Execution, Correlation & Intent	2
Ownership, Use of Documents, Confidentiality of Documents	3
Ownership of Work Product	3.1
Confidentiality of Documents	3.2
Return of Documents	3.3
Terms to Be Included in Subcontracts	3.4
OWNER's Responsibilities	4
Owner's Rights & Responsibilities	5
Information & Services Required of the Owner	5.1
Owner's Right to Stop the Work	5.2
Owner's Right to Carry Out the Work	5.3
Owner's Right to Access for Observation or Other Work	5.4
Contractor's Responsibilities	6
Review of Contract Documents	6.1
Supervision & Construction Procedures	6.2
Labor & Materials	6.3
Substitutions	6.3.4
Guarantees/Warranty	6.4
Taxes	6.5
Permits, Fees & Notices	6.6
Superintendent	6.7
Construction Progress Schedule	6.8
Documents & Samples at the Site	6.9
Shop Drawings, Product Data & Samples	6.10
Shop Drawing & Product Data Procedures	6.10.9
Samples Procedures	6.10.10
Use of Site	6.11
Cutting & Patching of Work	6.12

Cleaning Up	6.13
Communications	6.14
Royalties & Patents	6.15
Indemnification	6.16
Default	6.17
Subcontractors	7
Definitions	7.1
Award of Subcontracts & Other Contracts	7.2
Sub-Contractual Relations	7.3
Work by Owner or by Separate Contractors	8
Owner's Right to Perform Work & Award Separate Contracts	8.1
Mutual Responsibility	8.2
Owner's Right to Clean Up	8.3
Miscellaneous Provisions	9
Governing Law	9.1
Successors & Assigns	9.2
Written Notice	9.3
Claims for Damages	9.4
Performance & Labor and Material Payment Bond	9.5
Rights & Remedies	9.6
Tests	9.7
Litigation/Arbitration	9.8
Time	10
Definitions	10.1
Progress & Completion	10.2
Delays & Extensions of Time	10.3
Beneficial Occupancy	10.4
Payments & Completion	11
Contract Sum	11.1
Schedule of Values	11.2
Monthly Application for Payment	11.3
Recommendation for Payment	11.4
Progress Payments	11.5
Payments Withheld	11.6
Substantial Completion	11.7
Final Completion & Final Payment	11.8
Protection of Persons & Property	12
Safety Precautions & Programs	12.1
Safety of Persons & Property	12.2
Emergencies	12.3

Insurance	13
Workmen's Compensation Insurance	13.1.1
Commercial General Liability Insurance	13.1.2
Business Automobile Liability Insurance	13.1.3
All-Risk Builder's Risk Insurance	13.1.4
Certificates of Insurance	13.2
Changes in the Work	14
Change Orders	14.1
Site Conditions	14.4
Claims for Additional Cost	14.5
Minor Changes in the Work	14.6
Uncovering & Correction of Work	15
Uncovering of Work	15.1
Correction of Work	15.2
Acceptance of Defective or Non-Conforming Work	15.3
Termination of the Contract	16
Termination by the Contractor	16.1
Termination by the Owner	16.2
Termination for Convenience	16.3



## **Article 1**

### **Definitions**

**1.1 Owner:** The owner is the State of South Dakota acting through the legally appointed commissioner for the Bureau of Administration and his representative, the Office of the State Engineer and their delegate, South Dakota State University.

**1.2 Architect/Engineer:** The term “architect/engineer” (hereinafter OWNER) means the person or entity identified as such on the cover sheet to the drawings or plans and his/her authorized representative including his/her consulting engineer(s).

**1.3 Contractor:** The term "contractor" means the person or entity identified as such in the Agreement for Construction and his authorized representatives.

**1.4 Subcontractor:** Any individual, firm or corporation to whom the Contractor sublets any part of the contract for supplying materials and labor, or only labor, at the site of the project.

**1.5 The Contract Documents:** The documents identified as the Contract Documents in the Agreement for Construction.

**1.6 The Contract:** The Contract Documents form the contract. The contract may be amended or modified only in writing in the manner set forth in Article 14. Nothing contained in the Contract Documents shall create any contractual relationship between the owner and any subcontractor, sub-subcontractor or supplier.

**1.7 The Work:** The completed construction required by the Contract Documents, and every part thereof, and includes all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated into such construction.

**1.8 The Project:** The total construction of which the work performed under the Contract Documents may be the whole or a part.

**1.9 The Drawings or Plans:** The graphic and pictorial portions of the Contract Documents showing the design, dimensions and layout of the work including, but not limited to, plan views, elevation views, details, sections, schedules, and diagrams.

**1.10 The Specifications:** The written requirements in the Contract Documents for materials, equipment, construction systems, standards, and workmanship.

**1.11 The Project Manual:** The manual compiled for the work containing the Invitation for Bid, Instructions to Bidders, blank form of Bid Bond, blank form of Agreement for Construction, blank form of Performance and Labor and Material Payment Bond, sample forms, General Conditions, and Special Conditions.

## **Article 2**

### **Execution, Correlation, and Intent**

**2.1** By executing the contract, the contractor represents he has examined the plans, specifications, site of the proposed Work and Contract Documents in accordance with the requirements of the Instructions to Bidders.

**2.2** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by anyone shall be as binding as if required by all. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results. Words and abbreviations which have well-known technical, or trade meanings are used in the Contract Documents in accordance with such recognized meanings. All work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of work and/or materials unless otherwise directed by written change.

**2.3** The organization of the Specifications into Divisions, Sections and Articles, and the 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.

**2.4** The Owner does not assume any liability arising out of jurisdictional issues raised or claims advanced by trade organizations or other interested parties based on the arrangement or manner of subdivision of the content of the Specifications and Drawings.

**2.5** The Contractor and all Subcontractors shall refer to all the Drawings, including those showing primarily the work of the mechanical, electrical, and other specialized trades, and to all of the Sections of the Specifications, and shall perform all work reasonably inferable therefrom as being necessary to produce the indicated results. The Contractor shall promptly report any discrepancy or omission which it observes in the Construction Documents and any need for clarification or interpretation to the Owner. The Contractor's failure to do so will cause any additional cost incurred by the Contractor to be its sole

responsibility. The Contractor shall number Requests for Information in consecutive order. The Contractor shall maintain a log of each Request for Information indicating the date it was issued, the date or dates of any correspondence and/or discussions on the Request for Information, and the date a final answer is received.

**2.6** The General Conditions and the Special Conditions are a part of each Section of the Specifications. The Special Conditions for Mechanical and Electrical Trades, if any, are part of each Section of the Specifications referenced therein, and apply to the work of the trades affected thereby.

**2.7** A typical or representative detail indicated on the Drawings shall constitute the standard for workmanship and material throughout corresponding parts of the Work. Where necessary, and where reasonably inferable from the Construction Documents, the Contractor shall adapt such representative detail for application to such corresponding parts of the Work. The details of such adaptation shall be subject to prior approval by the OWNER. Repetitive features shown in the outline on the drawings shall be in exact accordance with corresponding features completely shown.

**2.8** The layout of mechanical and electrical systems, equipment, fixtures, piping, ductwork, conduit, specialty items, and accessories indicated on the Drawings is diagrammatic, and all variations in alignment, elevation, and detail required to avoid interferences and satisfy

architectural and structural limitations are not necessarily shown. Actual layout of the Work shall be carried out without affecting the architectural, engineering and structural integrity and limitations of the Work and shall be performed in such sequence and manner as to avoid conflicts, provide clear access to all control points, including valves, strainers, control devices, and specialty items of every nature related to such systems and equipment, obtain maximum headroom, and provide adequate clearances as required for operation and maintenance.

**2.9** The Drawings shall not be scaled for dimensions. If figured dimensions are not given in the Drawings, the Contractor shall request the same from the OWNER giving reasonable advance notice.

**2.10** All indications or notations which apply to one of several similar situations, materials or processes shall be deemed to apply to all such situations, materials, or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

**2.11** Where codes, standards, requirements and publications or public and private trade associations or other bodies are referred to in the Specifications, references shall be understood to be in the latest revision prior to the date of receiving bids, except where otherwise indicated.

**2.12** Where no explicit quality or standards for materials or workmanship are established for work, such work is to be of good quality for the intended use and consistent with the quality of the surrounding work, of the construction of the Project generally, and industry standards.

**2.13** All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents. A copy of the manufacturer's written or printed directions shall be provided to the Owner upon completion of the project.

### **Article 3**

#### **Ownership, Use of Documents, Confidentiality of Documents.**

##### **3.1 Ownership Of Work Product**

Any plans, specifications, engineering calculations, technical data, reports, miscellaneous drawings, and all information contained therein provided by the State, its consultants, employees, contractors, and agents to the contractor for the contractor's performance of its obligations under this agreement are the property of the State. They are to be used only with respect to this Project and are not to be used for any other project. The contractor may not disseminate these materials to any person or entity, nor may the contractor use these materials for purposes other than working for the state, without the express written approval of the state. The state shall not unreasonably withhold such approval for dissemination of these materials as necessary to subcontractors and suppliers.

##### **3.2 Confidentiality Of Documents**

All reports, plans, specifications, engineering calculations, technical data, miscellaneous drawings, and information contained therein provided to or prepared by the contractor, its owners, officers, employees, agents, consultants, suppliers, and subcontractors in connection

with the contractor's performance under this Agreement are confidential and the contractor, its owners, officers, employees, agents, consultants, suppliers, and subcontractors shall not disclose this information to any person, individual, or entity without the express written permission of the state.

### **3.3 Return Of Documents**

All documents covered by Article 3 shall be delivered to the OWNER at the completion of the work. The contractor may not retain any such documents for its own use without the express written permission of the state and any documents that are retained, with or without state permission, shall be subject to all the requirements of Article 3.

### **3.4 Terms To Be Included in Subcontracts**

The contractor shall include the requirements of Article 3 in any contract it enters into with any consultants, subcontractors, suppliers, persons, individuals, or entities for the performance of any of the contractor's obligations under this agreement.

## **Article 4 OWNER'S RESPONSIBILITIES**

**4.1** The OWNER, under the direction of the State Engineer, will provide administration of the Contract as hereinafter described. The OWNER will represent the Owner during construction. The OWNER will advise and consult with the Owner. The Owner's instructions to the Contractor may be forwarded through the OWNER. The OWNER will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified by written instrument in accordance with Sub-Article 4.15.

**4.2** The Contractor shall accept instructions only from the OWNER or State Engineer, and not the OWNER's consulting engineers, except as the OWNER and State Engineer shall authorize in writing.

**4.3** The OWNER will visit the construction site at intervals appropriate to the stage of construction to keep generally familiar with the progress and quality of the work completed and to determine in general if the Project is being constructed in a manner such that when completed it would be in conformance with the plans and specifications and other Contract Documents. The OWNER will not, however, be required to make exhaustive or continuous on-site inspections to check the quality or quantity of work. Based on such observations or inspections, the OWNER shall keep the Owner informed of the progress and quality of the work on the Project and endeavor to guard the Owner against defects and deficiencies in the work of the Contractor. The OWNER will maintain written reports of all site visits.

**4.4** The OWNER shall not have control over or charge of and shall not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Project, since these are solely the Contractor's responsibilities under the Agreement for Construction. The OWNER shall not be responsible for the Contractor's schedules or failure to carry out the Project in accordance with the Contract Documents. The OWNER shall not have control over or charge of acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons performing portions of the Project, except to the extent that the OWNER may formally notify the Contractor

of the unacceptability of various portions of the Project or failure to carry out the Work on the Project in accordance with the Contract Documents.

**4.5** The OWNER will inform the Contractor on behalf of and in consultation with the Owner to cease work on the Project or portions thereof affected by those items that are unacceptable and remain uncorrected until such time as corrections are made.

**4.6** The OWNER shall always have access to the Work wherever it is in preparation and progress. The Contractor shall provide facilities for such access so the OWNER may perform his functions under the Contract Documents.

**4.7** Except as may otherwise be provided in the Contract Documents or when direct communications have been approved by the OWNER, the Owner and its representatives and the Contractor shall communicate through the OWNER. Communications by and with the OWNER's consultants shall be through the OWNER.

**4.8** The OWNER will determine the amounts owing to the Contractor based on inspections and observations at the site, and on evaluations of the Contractor's Monthly Applications for Payment and shall issue Certificates of Payment for amounts due on forms provided by the State Engineer. A Certificate of Payment constitutes a representation by the Owner, based upon the inspections and the information provided by the Contractor in the Application, that the Project has progressed to the point indicated; that to the best of the OWNER's knowledge, information and belief, the quality of the work on the Project is in accordance with the Contract Documents; and that the Contractor is entitled to payment in the amount certified.

**4.9** The OWNER shall have authority to reject work on the Project which does not conform to the Contract Documents. Whenever the OWNER considers it necessary or advisable for implementation of the intent of the Contract Documents, the OWNER will have authority to recommend additional inspection or testing of the Work in accordance with the provisions of the Contract Documents, whether such work is fabricated, installed, or completed. However, neither this authority of the OWNER 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 OWNER to any Construction Contractor, Subcontractors, material and equipment suppliers, their agents or employees or other persons performing portions of the work on the Project.

**4.10** The OWNER shall review and approve or take other appropriate action on Shop Drawings, Product Data and Samples submitted by Construction Contractors to determine if they conform with the design concept for the Project and with the information provided in the Contract Documents and submit these documents or information to the Owner for approval or comments with reasonable promptness so as to cause no delay to the prosecution of the Project.

Approval or acceptance of a specific item shall not necessarily indicate the OWNER's approval of an assembly of which the item is a component. When professional certification of equipment is required by the Contract Documents, the OWNER will be entitled to rely upon that certification to determine that the materials, systems, or equipment will meet the performance criteria required in the Contract Documents.

**4.11** The OWNER will conduct, at the time and place approved by the Owner, with representatives of the State agencies involved in the Project and the Contractor, inspections to establish dates of Project acceptance and completion. The OWNER shall have other OWNERS,

Structural, Mechanical, or Electrical Engineers, or other consultants in their employ in attendance at this and at various progress inspections as may be necessary to evaluate whether the work completed on the Project is in conformance with the Contract Documents. The OWNER will receive and forward to the Owner, with comments on completeness or acceptability, those warranties, operation manuals, and other documents required by the Contract Documents and assembled by the Contractor.

**4.12** The OWNER will review the final estimate for final payment to the Contractor and provide a Certificate of Final Payment to the Owner.

**4.13** The OWNER will provide to the Owner or the Contractor, upon written request in the form of a Request for Information, interpretations, and decisions in writing, or in the form of drawings, on matters concerning performance under the Contract Documents, and execution or performance of the Work on the Project. Response to such requests shall be made with reasonable promptness and within any time limits agreed upon. The final decision on all such questions shall be made by the State Engineer.

**4.14** The OWNER will prepare Change Orders in accordance with Article 14 and will have authority to order minor changes in the Work as provided in Sub-Article 14.6.

**4.15** The duties, responsibilities, and limitations of authority of the OWNER as the Owner's representative during construction as set forth in the Contract Documents will not be modified or extended without written consent of the Owner and the Contractor.

## **Article 5 OWNER'S RIGHTS AND RESPONSIBILITIES**

### **5.1. Information and Services Required of the Owner.**

**5.1.1.** The Owner shall furnish a survey describing the legal limitations and utility locations for the site of the project.

**5.1.2.** The Owner shall secure and pay for necessary easements, and other property rights required for the construction of the Project.

**5.1.3.** Information under the Owner's control shall be furnished by the Owner with reasonable promptness after receipt from the Contractor of a written request for such information.

**5.1.4.** Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, 2 sets of paper prints of Drawings and 3 sets of Specifications necessary for the execution of the Work.

**5.1.5.** The Owner may forward instructions to the Contractor through the OWNER or give instructions through the State Engineer.

**5.1.6.** The foregoing is in addition to other duties and responsibilities of the Owner enumerated herein and especially those in respect to Work by the Owner or by separate

contractors, Payments and Completion, and insurance in Articles 8, 10, 11 and 13.

**5.2. Owner's Right to Stop the Work:** If the Contractor fails to correct defective Work as required by Article 15 or fails to carry out the Work in accordance with the Contract Documents in any material respect, the Owner, in addition to its other remedies, by a written order signed by the State Engineer or by the State Engineer's designated representative may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

**5.3. 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 in any material respect and fails within three working days after receipt of written notice from the Owner or in such time as may be established in written notice from Owner to commence and continue correction of such default or neglect with diligence and promptness, or if the Work is not being performed properly or in accordance with the scheduling provisions of the Contract Documents in any material respect, whether or not the Contractor is in default, the Owner may, after the expiration of such notice period and without prejudice to any other remedy he may have, make good such deficiencies. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the OWNER's and State Engineer's additional services made necessary by such default, neglect, or failure. If the payments then or thereafter due the contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner upon demand. If, in the sole judgment of the Owner, an emergency exists as a result of the Contractor's default, neglect or failure to correct defective work, which in the Owner's opinion, requires more immediate corrective action than the Contractor is able to provide, then the Owner may, without notice to the Contractor, perform such corrective work or cause it to be performed by others. The Owner shall also have the right to carry out the Work, or any part thereof, during the period of any work stoppage without terminating the Contract. If the Owner wishes to exercise this right it will give the Contractor three days notice of its intent to do so. In any such case, an appropriate deductive Change Order shall be issued in accordance with Article 14, the amount of which shall not exceed an amount which equals the estimated direct cost, including the State Engineer's fees, of performing the work which the Owner elects to perform and the proportionate amount of the Contractor's fee associated therewith.

**5.4. Owner's Right to Access for Observation or Other Work:** The Owner reserves the right of access to any part of the Work, at any time, for the purpose of observation, or testing, or to install other work, either with its own forces or with separate contractors. Such access is not to be construed to mean partial occupancy by the Owner, and no claim for additional compensation by the Contractor because of such access or installation of work will be considered. Contractor shall cooperate with Owner during Owner's access or performance of work.

## **ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES**

**6.1 Review of Contract Documents:** The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Owner any error, inconsistency, or omission he may discover. The Contractor shall not be liable to the Owner for any damage resulting from any such errors, inconsistency, or omission he may discover and report, nor for any damage resulting from any such errors, inconsistencies, or omissions which he could not reasonably have discovered. The Contractor shall perform no portion of the work at any time without Construction Documents or, where required, Shop Drawings, Product Data or Samples for such portions of the Work bearing the OWNER's appropriate action stamp.

### **6.2 Supervision and Construction Procedures.**

**6.2.1** The Contractor shall supervise and direct the Work, using the skill and attention necessary to complete the Work in a workmanlike manner. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the contract. The Owner shall not have control over, or responsibility for, any such matters.

**6.2.2** Nothing contained in the Contract Documents shall be interpreted by implication or otherwise as a direction by the Owner to the Contractor as to construction means, methods, techniques, sequences, and procedures. If there is express reference to such means, methods, techniques, sequences, and procedures, it is solely for the purpose of insuring that the Work will be produced in accordance with the desired objectives as set forth in the Construction Documents, but such express reference shall in no way relieve the Contractor of his responsibilities in connection therewith. If the Contractor does not wish to accept the responsibility for any means, techniques, sequences, or procedures which are expressly set forth in the Construction Documents, then the contractor shall notify the OWNER in writing of the actual means, methods, techniques, sequences, and procedures which he will employ on the Work if these differ from those expressly referred to in the Construction Documents. All loss, damage or liability or cost of correcting defective Work arising from the employment of any construction means, methods, techniques, sequences, or procedures shall be borne by the Contractor notwithstanding that any of the same shall have been referred to expressly in the Construction Documents.

**6.2.3** The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors, Sub-subcontractors, materialmen and suppliers and their agents and employees, and other persons performing any of the Work.

**6.2.4** The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the OWNER in his administration of the Contract, by the use or occupancy of part of the Work by the Owner as provided in Sub-Article 5.4, by the performance of work related to the Project by others as provided in Sub-Article 8.1, or by inspections, tests or approvals required or performed under Sub-Article 9.7 by persons other than the Contractor.



**6.2.5** The Contractor shall retain a competent Registered Professional Engineer or Registered Land Surveyor, acceptable to the Owner who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the site and shall establish sufficient lines and grades for the construction of associated work such as, but not limited to, roads, utilities, and site grading. The Engineer or Land Surveyor shall certify as to the actual location of the constructed facilities in relation to property lines, building lines, easements, and other restrictive boundaries.

**6.2.6** The Contractor shall establish the building grades, lines, levels, column, wall, and partition lines required by the various Subcontractors in laying out their work.

**6.2.7** The Contractor shall coordinate and supervise the work performed by Subcontractors to the end that the work is carried out without conflict between trades or jurisdictional disputes and so that no Subcontractor, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall always afford each other Subcontractor, any separate contractor, and the Owner, every reasonable opportunity for the installation of work and the storage of materials and shall provide access to and the use of necessary loading dock and hoist facilities, adequate storage room and necessary utilities and other services.

**6.2.8** Wherever the work of a Subcontractor is dependent upon the work of other Subcontractors, or the Contractor, the Contractor shall require the Subcontractor to:

**6.2.8.1** Coordinate his work with the dependent work.

**6.2.8.2** Provide necessary dependent data and requirements.

**6.2.8.3** Supply and/or install items to be built into dependent work of others.

**6.2.8.4** Make provisions for dependent work of others.

**6.2.8.5** Examine dependent drawings and specifications.

**6.2.8.6** Examine previously placed dependent work.

**6.2.8.7** Check and verify dependent dimensions of previously placed work.

**6.2.8.8** Notify Contractor of previously placed dependent work or dependent dimensions which are unsatisfactory or will prevent a satisfactory installation of his work; and

**6.2.8.9** Not proceed with his work until the unsatisfactory dependent conditions have been corrected. Installation of Work by a Subcontractor in any given area shall constitute acceptance by the Subcontractor and Contractor of the previously placed dependent work.

### **6.3 Labor and Materials.**

**6.3.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether incorporated or to be incorporated in the Work. The word "provide" shall mean furnish and install completely, including connections, unless otherwise specified. All connection charges, assessments or inspection fees which may be imposed by any public agency or utility company are included in the Contract Sum and shall be the Contractor's responsibility, except the final water and sewer connection charges which shall be paid by the Owner.

**6.3.2** The Contractor shall always enforce strict discipline and good order among his employees and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to him. The Contractor shall be responsible to maintain and observe, and to require his Subcontractors to maintain and observe, sound labor practices, and shall require each Subcontractor to take all steps reasonably necessary to avoid labor disputes or stoppages.

**6.3.3** Except in the event of emergency, no substantial field operations shall be performed outside of regular working hours without the prior notification of the Owner. The Contractor will not be entitled to additional compensation for work performed outside of regular working hours except as otherwise expressly agreed in writing by the Owner prior to the performance of such overtime work. Additional compensation for such authorized overtime shall be limited to the direct cost of the premium portion only of such authorized overtime. No additional indirect cost or fee shall be included.

#### **6.3.4 Substitutions**

**6.3.4.1** The products, materials and equipment of manufacturers referred to in the Specifications and on the Drawings are intended to establish the standard of quality and design required by the OWNER; however, products, materials, and equipment manufacturers, other than those specified, may be used, if equivalent and approved in writing by the OWNER.

**6.3.4.2** It is deemed that the term 'or approved equal' is included after all products, materials and equipment referred to in the Specifications or on the Drawings.

**6.3.4.3** The Owner will be the sole judge of equivalency of proposed substitute products, materials, and equipment. The Owner will issue to the Contractor written approval or rejection of the substitution.

**6.3.4.4** If the Contractor desires to use a substitute item, he shall make application to the OWNER in writing in sufficient time (having regard to the progress of the Work, the period of delivery of the goods concerned and adequate time for the Owner's review) stating and fully identifying the proposed substitute, cost changes (if any), and submitting substantiating data, sample, brochures, etc. of item proposed. It is the Contractor's responsibility to provide sufficient evidence by tests or other means to support any request for approval of substitution.

**6.3.4.5** Prior to proposing any substitute item, the Contractor shall satisfy himself that the item

he proposes is, in fact, equal to that specified, that it will fit into the space allocated, that it affords comparable ease of operation, maintenance and service, that its appearance, longevity and suitability for the climate and use are comparable to that specified, and that the substitution is in the Owner's best interest.

**6.3.4.6** The burden of proof that a proposed substitution is equal to a specified item shall be upon the Contractor, who shall support his request with sufficient test data and other means to permit the State Engineer and OWNER to make a fair and equitable decision on the merits of the proposal. Any item by a manufacturer other than those cited in the Contract Documents, or of brand name or model number or of generic species other than those cited in the Contract Documents will be considered a substitution.

**6.3.4.7** Materials and methods proposed as substitutions for specified items shall be supported by certification of their acceptance for use by an authority, person or persons having jurisdiction over the use of the specified material or method.

**6.3.4.8** Acceptance of substitutions shall not relieve the Contractor from responsibility for compliance with all the requirements of the Construction Documents. The Contractor shall be responsible at his own expense for any changes in other parts of the work of his Contract or the work of other contractors caused by his substitutions, including cost of all design and redesign services related thereto incurred by the OWNER and his consultants.

**6.3.4.9** The Contract completion time shall not be extended by any circumstances resulting from a proposed substitution, nor shall the Contractor be entitled to any compensation for any delay caused thereby or related thereto.

**6.3.4.10** All costs for the evaluation of proposed substitutions, whether approved or not, shall be borne by the Contractor.

**6.3.5** All materials and equipment shall be delivered, handled, stored, installed and protected to prevent damage in accordance with best current practice in the industry, in accordance with manufacturers' specifications and recommendations, and in accordance with Contract Document requirements. The Contractor will store packaged materials and equipment in their original and sealed containers, marked with the brand and manufacturer's name, until ready for use, and deliver materials and equipment in ample time to facilitate inspections and tests prior to installation. The term 'delivery' in reference to any item specified or indicated, means the unloading and storing with proper protection at the project site. Damaged materials or equipment will be rejected and removed from the site by the Contractor.

**6.3.6** Before ordering materials, equipment, or performing Work, the Contractor shall verify indicated dimensions. If a discrepancy exists, the Contractor shall notify the OWNER of the same immediately. The OWNER will then clarify the intended design. The Contractor shall take field measurements required for the proper fabrication and installation of the Work. Upon commencement of any item of Work, the Contractor shall be responsible for dimensions related to such item of Work.

#### **6.4 Guarantees/Warranty.**

**6.4.1** The Contractor guarantees and warrants to the Owner that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. This guarantee/warranty is not limited by the provisions of Sub-Article 15.2.

**6.4.2** The Contractor will indemnify the Owner against loss, including loss of use and lost revenues resulting from a breach of the Contractor's guaranty and warranty under Sub-Article 6.4.1, whether the loss arises before or after the Owner's acceptance of the Project.

**6.4.3** Where the contract documents provide for equipment and material warranties in addition to the Contractor's guarantees and warranty contained in Sub-Article 6.4.1, such warranties shall at a minimum:

**6.4.3.1** Provide that the term of the warranty shall start on the date of substantial completion of the project or the date the Owner takes beneficial occupancy of any portion of the project that requires the use or start-up of the warranted equipment or material, whichever date occurs first.

**6.4.3.2** Provide complete repair or replacement of defective equipment or material.

**6.4.3.3** Provide all materials, shipping, and labor necessary to repair or replace defective equipment or material at no expense to the Owner.

**6.4.3.4** Provide that any replacement parts used in repairing or replacing defective equipment or material shall be new or in a like-new condition.

**6.4.3.5** Provide for the complete repair or replacement of defective equipment or material within two weeks after receiving written notice of the defect, provided however, that the Owner can, at its sole discretion, grant an extension of time for good cause shown; and

**6.4.3.6** Provide for no limitation of liability should the Contractor and/or manufacturer fail to repair or replace defective equipment or material within the time specified in Sub-Article 6.4.3.4 or should the remedy of repair or replacement otherwise fail.

**6.4.3.7** Be construed under South Dakota law.

**6.4.3.8** Provide that any legal action brought on the warranty shall be brought only in a South Dakota court.

**6.5 Taxes:** The Contractor shall pay all sales, consumer, use, excise, and other similar taxes for the Work or portions thereof which are to be provided by the Contractor which are legally enacted at the time bids are received.

## **6.6 Permits, Fees, and Notices.**

**6.6.1** The Contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of the Work which are customarily secured after execution of the Contract, and which are legally required at the time the bids are received. The State does not require that inspection and license fees be paid to a municipality for work performed on State property.

**6.6.2** The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work and shall indemnify the Owner against all costs, fines and damages, and all actions, claims and proceedings, due to its failure to do so.

**6.6.3** The Contractor and its Subcontractors shall acquaint themselves with all codes governing their work and shall complete the work in conformance with all codes governing their work.

**6.6.4** It is not the responsibility of the Contractor to make certain that the Contract Documents are in accordance with applicable laws, statutes, building codes and regulations. If the Contractor observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be accomplished by appropriate modification.

**6.6.5** If the Contractor performs any Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Owner, he shall assume full responsibility therefore and shall bear all costs attributable thereto.

**6.7 Superintendent:** The Contractor shall employ a competent superintendent and necessary assistants all of whom are acceptable to the Owner and who shall attend the Project site during the progress of the Work. The Superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be confirmed on written request in each case. The Superintendent shall not be changed without the Owner's consent.

## **6.8 Construction Progress Schedule.**

**6.8.1** The Contractor shall, within 5 days, or within such time as determined by the OWNER, after date of Notice to Proceed, prepare and submit to the OWNER for approval a reasonable schedule showing the critical path, order in which the Contractor proposes to carry on the work and, the date on which he will start the several salient features (including procurement of materials, plant and equipment). The progress schedule shall indicate appropriately the percentage of work scheduled for completion at any time. If at any time the sequence of work is modified, the Construction Progress Schedule shall be updated.

**6.8.2** The Construction Progress Schedule shall reflect the time required for the preparation and

processing of shop drawings and submittals and the lead time required in connection with the procurement of manufactured or processed materials and equipment.

**6.8.3** The Contractor shall furnish sufficient forces, construction plant, and equipment, and shall work such hours, including night shifts, overtime operations, and Sunday and holiday work, as may be necessary to insure the prosecution of the work in accordance with the approved progress schedule.

**6.8.4** Whenever major portions of the Work fall behind the planned schedule, the Owner shall be notified and advised of action being taken to return the project to its original schedule and such action shall be indicated on the Construction Progress Schedule which shall then be reissued. If, in the opinion of the Owner, the Contractor is not taking adequate steps to improve or maintain the progress of the work, the Owner may require him to increase the number of shifts, and/or overtime operations, days of work, and/or the amount of construction plant, all without additional cost to the Owner.

**6.9 Documents and Samples at the Site:** The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders, and other Modifications, in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be available to the Owner and shall be delivered to the Owner upon completion of the Work.

#### **6.10 Shop Drawings, Product Data and Samples.**

**6.10.1** Shop Drawings are drawings, diagrams, schedules, or other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

**6.10.2** Product Data are illustrations, standard schedules, performance charts, instructions brochures, diagrams and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

**6.10.3** Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

**6.10.4** The Contractor shall submit a schedule for submittal of Shop Drawings, Product Data and Samples to the OWNER for review. The Contractor shall review, approve, and submit to the OWNER, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the OWNER or any separate contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents, in accordance with the schedule reviewed by the OWNER.

**6.10.4.1** The OWNER reserves the right to review Shop Drawings, Product Data, Samples, and submittals in a sequence consistent with the sequence of erection, installation and assembly of the various elements of the Work.

**6.10.4.2** The Contractor's identification of Shop Drawings, Product Data and Samples shall include verification of information required in Sub-Articles 6.10.9.2 and 6.10.10.2.

**6.10.4.3** No extension of time will be granted, nor will any consideration be given to claims arising out of the Contractor's failure to submit any Shop Drawing, Product Data, Samples or related submittals according to the schedule or otherwise in a manner which does not allow adequate lead time for OWNER's review, or does not allow ample time for revision, resubmission and subsequent review by the OWNER as required.

**6.10.4.4** Composite Drawing: In the interest of coordination and expediting the work in critical areas, i.e. exterior wall components, mechanical/electrical systems, and other areas so requested by the OWNER, the Contractor shall prepare and submit to the OWNER for review, Composite Drawings embodying the Work of the various trades and/or Subcontractors involved. After review, the Contractor shall distribute prints or reviewed Composite Drawings to affected trades and/or Subcontractors. The Contractor shall require that the involved trades and/or Subcontractors cooperate in preparation of the Composite Drawings to assure proper coordination between trades and/or Subcontractors. The participating trades and/or Subcontractors shall indicate their approval in these drawings.

**6.10.5** By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all materials, field measurement, and field construction criteria related thereto, checked the Shop Drawings, Product Data, and Samples for complete dimensional accuracy; that he has checked to insure that work contiguous with and having bearing on the work shown on the Shop Drawings is accurately and clearly shown, that he has checked the Shop Drawings against the Composite Drawings prepared by the Contractor, that the Work has been coordinated and that the equipment will fit into the assigned spaces, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Construction Documents.

**6.10.5.1** Any Shop Drawing, Product Data or Sample submitted without Contractor's approval will not be processed for review by the OWNER, but will be returned to the Contractor for his compliance with the above procedures, in which event it will be deemed that the Contractor has not complied with the provisions herein specified and the Contractor shall bear the risk of all delays as if no Shop Drawing, Product Data and Sample had been submitted.

**6.10.5.2** Shop Drawings shall bear a coordination and approval stamp signed by the Contractor and each contiguous Subcontractor, which shall confirm the representations set forth in Sub-Article 6.10.5. Shop Drawings shall bear the seal of a registered professional engineer or OWNER when required by the Specifications or State Law.

**6.10.6** The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Construction Documents by the OWNER's approval of Shop Drawings, Product Data or Samples under Sub-Articles 4.10 and 6.10.9 unless the Contractor has specifically informed the OWNER in writing of such deviation at the time of submission and the OWNER has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data or Samples

by the OWNER's approval thereof. Any deviation shall also be indicated on such Shop Drawing, Product Data, Sample, or related submittal by circling or other approved means.

**6.10.7** The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the OWNER on previous submittals. Unless such written notice has been given, the OWNER's Action on a resubmitted Shop Drawing, Product Data, or Sample shall not constitute Review and Action of any changes not requested on the prior submittal.

**6.10.8** No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the OWNER as provided in Sub-Article 6.10.9. All such portions of the Work shall be in accordance with approved submittals.

**6.10.8.1** No Shop Drawing, Product Data or Sample shall be issued to the field without the OWNER's Action Stamp affixed thereto.

#### **6.10.9 Shop Drawing & Product Data Procedures**

**6.10.9.1 Shop Drawing Requirements:** Shop Drawings shall show design, materials (kind, thickness and finish), dimensions, connections, rough openings, routing details, and other details necessary to insure that they accurately interpret Contract Drawings and Specifications and also show adjoining work in such detail as required to provide proper connection with same. Shop Drawings shall be numbered consecutively and insofar as possible shall be uniform in size.

**6.10.9.2 Identification:** All Shop Drawings and Product Data shall be identified with the name of the Project, Project Number, building or buildings for which the Shop Drawings and Product Data are being submitted, and shall contain the OWNER's name, Contractor's name, Subcontractor's name, date of submittal, drawing number, revision, if any, as well as the Specification Section under which the Work is to be performed and the Drawing and detail numbers that relate to the Shop Drawings and Product Data.

**6.10.9.3 Transmittals:** All Shop Drawings and Product Data shall be accompanied by a letter of transmittal from the Contractor setting forth the same identification information as required above under Sub-Article 6.10.9.2. Contractor shall number transmittals consecutively in sequence with the sample transmittals and shall indicate the Submittal Procedure number being followed. Transmittal shall also indicate if Shop Drawing is resubmittal and note OWNER's file number for original submittal.

**6.10.9.4 Submittal Procedures:** The Contractor shall submit copies of Shop Drawings and Product Data to the OWNER in accordance with Submittal Procedure numbers listed below. Reproducible prints shall be sepias or ozalid prints with positive side up. Black and white prints shall be black line on white background.

**6.10.9.4.1 Submittal Procedure No. 1:** Architectural Shop Drawings: One reproducible print and three black and white prints submitted directly to OWNER.



**6.10.9.4.2 Submittal Procedure No. 2:** Structural, Mechanical and Electrical Shop Drawings: One reproducible print and three black and white prints submitted directly to OWNER.

**6.10.9.4.3 Submittal Procedure No. 3:** Vertical Transportation and Special equipment, i.e., Elevators, Conveyors, etc., Shop Drawings: One reproducible print and five black and white prints submitted directly to OWNER.

**6.10.9.4.4 Submittal Procedure No. 4:** When Product Data is submitted in the form of brochures, manufacturers' standard drawings, or catalog cuts not readily available in reproducible form, 7 copies of each shall be submitted directly to the OWNER; additional copies shall be furnished only upon request by the OWNER.

**6.10.9.5 OWNER's Distribution & Stamp:** Following the OWNER's review of each Shop Drawing and Product Data submission, the OWNER will retain the black and white prints, and return the reviewed reproducible print to the Contractor with the OWNER's stamp and signature affixed thereto, annotated as follows:

**6.10.9.5.1 "A Action":** "A Action" means the submission is in general conformance with the design concept. Construction, fabrication and/or manufacture can proceed subject to the provision that the Work shall be in accordance with the requirements of the Construction Documents. Final acceptance of the Work shall be contingent upon such compliance.

**6.10.9.5.2 "B Action":** "B Action" means the submission is in general conformance with the design concept subject to notations by the OWNER on the returned Shop Drawings. Construction, fabrication and/or manufacture can proceed subject to the provision that the Work shall be carried out in compliance with all annotations and/or corrections indicated on the returned Shop Drawings and Product Data and in accordance with the requirements of the Construction Documents. Final acceptance of the Work shall be contingent upon such compliance.

**6.10.9.5.3 "C Action":** "C Action" means that the Contractor shall revise and resubmit the Shop Drawings and Product Data in accordance with all annotations and/or corrections indicated therein. Construction, fabrication and/or manufacture cannot proceed. Shop Drawings and Product Data bearing "C Action" stamp shall not be permitted on the Project Site.

**6.10.9.5.4 "D Action":** "D Action" means that the submission is rejected for nonconformance with the design concept and the Contractor shall make a new submittal which shall comply with the requirements of the Construction Documents. Construction, fabrication and/or manufacture cannot proceed. Shop Drawings and Product Data bearing "D Action" stamp shall not be permitted on the Project Site.

**6.10.9.6 Contractor's Distribution:** When transparencies are returned "A Action" or "B Action", the Contractor shall obtain and provide such number of prints to the Subcontractor as may be required by the Subcontractor for his distribution. The Contractor shall have copies of all "A Action" or "B Action" Shop Drawings and Product Data at the Project Site at all times and shall

make them available to the OWNER's representatives.

**6.10.9.7 Cost of Submittal and Distribution:** All charges in connection with the delivery of Shop Drawings and Product Data to the OWNER shall be paid by the Contractor. All charges in connection with the distribution of Shop Drawings and Product Data to the Contractor shall be paid by the Contractor.

#### **6.10.10 Samples Procedures**

**6.10.10.1 Sample Requirements:** Where possible, all samples required for a particular Specification Section shall be submitted together.

**6.10.10.1.1** Samples shall be submitted from the same source which will supply the actual job. Samples shall be of adequate size to show quality, type, color, range, finish, texture, and other specified characteristics.

**6.10.10.1.2** Samples of materials or products which are normally furnished in containers or packages, which bear descriptive labels and/or application or installation instructions, shall be submitted with such labels and/or instructions.

**6.10.10.2 Identification:** All Samples shall be labeled, tagged, or otherwise clearly identified. Labels or tags shall set forth the name of the Project, the project number, buildings for which the Sample is being submitted, OWNER, Contractor, Subcontractor, and/or supplier, the name of the manufacturer, fabricator, or processor, the trade designation, grade and quality of the material or product, the date of submittal, and specific identification of each sample and a precise reference to the Specification Article and Sub Article wherein the material, product, or element of the Work is specified. Each label or tag shall have sufficient clear space to permit the application of the approval stamp of the Contractor, and the action stamp of the OWNER.

**6.10.10.3 Transmittals:** All samples shall be accompanied by a letter of transmittal from the Contractor setting forth the same identification information as required above under Sub-Article 6.10.4.2. Contractor shall number transmittals consecutively in sequence with the Shop Drawings and Product Data transmittals. Where appropriate, test data and/or manufacturers' certificates shall be referenced in and forwarded with the letter of transmittal. Samples without accompanying certificates or test data will be returned without action.

**6.10.10.4 Submittal Procedure:** The Contractor shall submit the number of samples as indicated below:

**6.10.10.4.1** In the event that a range of variations in texture, graining, color, or other characteristics may be anticipated in furnished materials, assemblies, or elements of the Work, enough samples of such materials or products shall be submitted to indicate the full range of characteristics which will be present in the materials or products proposed for the Work. Any such materials or products delivered or erected prior to approval of full range samples shall be subject to rejection.

**6.10.10.4.2** All Samples shall be submitted in triplicate to the OWNER's home office, or when directed by the OWNER, except as otherwise set forth in other Sections of the Contract Documents.

**6.10.10.5 OWNER's Distribution & Stamp:** Following the OWNER's review of each Sample submission, the OWNER will return one set of each submission to the Contractor with the OWNER's stamp and signature affixed thereto and annotated in a manner conforming to the convention established in Sub-Article 6.10.9.5.

**6.10.10.6 Contractor's Distribution:** When Samples are returned 'Action A' or 'Action B', the Contractor shall retain such Samples in a suitable place at the Project Site for use by the Contractor, his Subcontractors, the OWNER and his authorized representatives to ensure that all work is being installed in accordance with these Samples. The remaining Samples will be retained by the OWNER.

**6.10.10.7 Cost of Submittal and Distribution:** All charges in connection with the delivery and subsequent distribution of Samples to the Owner shall be paid by the Contractor.

## **6.11 Use of Site.**

**6.11.1** The Contractor shall confine operations at the Site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the Site with any unnecessary or surplus materials or equipment or debris.

**6.11.2** Notwithstanding the designation of construction limits or the indication of temporary fences or barricades, the provisions of the Contract Documents governing certain portions or phases of the Work may require that certain operations be carried out beyond such designated limits. Trenching, utility work, site development, landscaping, and all other work, if required beyond such designated limits, shall be scheduled in such a manner as to cause or occasion a minimum of inconvenience or disturbance or interference with the normal operation of the Owner, abutters, and the public. The Contractor shall obtain the Owner's prior approval for such operations, prosecute such operations expeditiously and restore the affected area and other areas needed for access to their original condition immediately upon completion of such operations, unless otherwise specified herein.

**6.11.3** All operations, including pumping, draining and control of surface and ground water shall be carried out so as to avoid endangering the Work of any adjacent facility or property, or interrupting, restricting or otherwise infringing or interfering with the use thereof.

**6.11.4** The Contractor shall confine operations at the site to work related activities. The Contractor shall not use the site for lodging or as a personal residence.

## **6.12 Cutting and Patching of Work.**

**6.12.1** The Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the Work or to make its several parts fit together properly.

**6.12.2** The Contractor shall not damage or endanger any portion of the Work or the work of the Owner or any separate contractors or adjacent facilities by cutting, patching, or otherwise altering any work, or by excavation. The Contractor shall not cut or otherwise alter the work of the Owner or any separate contractor except with the written consent of the Owner and of such separate contractor. The Contractor shall not unreasonably withhold from the Owner or any separate contractor his consent to cut or otherwise alter the Work.

**6.12.3** Structural elements of the Work shall not be cut, patched or otherwise altered or repaired without prior written authorization by the OWNER.

**6.12.4** Authorization to proceed with remedial operations for any damaged or defective element or portion of the Work shall not constitute a limitation or a waiver of the OWNER's right to require the removal and replacement of any work which fails to fulfill the requirements of the Contract Documents.

### **6.13 Cleaning Up.**

**6.13.1** The Contractor shall always keep the Site and related streets free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work, he shall remove all his waste materials and rubbish from and about the Project as well as his tools, construction equipment, machinery, and surplus materials. All waste and rubbish shall be removed from the Site at least weekly and more often if necessary.

**6.13.2** If the Contractor fails to maintain a clean and safe Project and/or fails to clean up at the completion of the Work, the Owner may do so as provided in Sub-Article 5.3 and the cost thereof shall be charged to the Contractor.

**6.14 Communications:** Except where otherwise directed by the OWNER or otherwise provided in the Contract Documents, the Contractor shall forward all communications to the Owner.

**6.15 Royalties and Patents:** The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular manufacturer or manufacturers is specified, but if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner in writing.

### **6.16 Indemnification.**

**6.16.1** To the fullest extent permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, and its consulting engineers, and their respective successors, agents and employees from and against all claims, damages, liabilities, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury,

sickness, disease or death, or to injury to or destruction of tangible property (including the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any tortious act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligations shall not be construed to negate, abridge, or otherwise reduce any other right or obligation or indemnity which would otherwise exist as to any party or person described in this Sub-Article 6.16.

**6.16.2** In any and all claims against the Owner, or any of its consultants, and their respective successors, agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this Article 6.16 shall not be limited in any way by any limitation on the amount or type of damages, compensations or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

**6.16.3** The obligations of the Contractor under this Sub-Article 6.16 shall not extend to indemnification of the OWNER or other design consultants employed by him, his consultant, agents or employees for damages, claims, losses or expenses arising out of: (a) the preparation or approval by the OWNER or his design consultants of maps, drawings, opinions, reports, Change Orders, designs or specifications, or (b) the giving of or the failure to give directions or instructions by the OWNER or his design consultants provided such giving or failure to give is the primary cause of the damage, claim, loss or expense.

**6.16.4** The Contractor agrees to defend, indemnify and save the Owner, and OWNER, or any of its consulting engineers, and their respective successors, agents or employees harmless from all costs, liabilities, damages or expenses, including reasonable attorneys' fees, incurred by them, by virtue of any claim or claims whatsoever filed by any Subcontractor, Sub-subcontractor, mechanic, laborer or materialman making claims arising from the Work associated with the Contractor. The Contractor also hereby agrees to defend, indemnify and hold harmless, protect, and defend the Owner and its consulting engineers, and their respective successors, agents or employees from and against any liability, claim, judgment, loss, damage, including but not limited to direct, indirect and incidental and consequential damages, attorneys fees, court costs and expense of collection, occasioned in whole or in part by the failure of the Contractor, its Subcontractor, or Sub-subcontractors to comply with any of the terms or provisions of the Contract Documents.

## **6.17 Default.**

**6.17.1** The Contractor shall be in default of the Contract if:

**6.17.1.1** Contractor refuses or fails to prosecute the Work in accordance with the Contract Documents in any material respect.

**6.17.1.2** Contractor fails to make proper payment to Subcontractors or for materials or labor (provided Owner shall have paid to Contractor any payments due from Owner in connection with

such materials or labor);

**6.17.1.3** Contractor disregards laws, ordinances, rules, building codes and regulations or orders of any public authority having jurisdiction;

**6.17.1.4** Contractor fails to coordinate its work with other contractors and Subcontractors as required under Article 8 of these General Conditions;

**6.17.1.5** Contractor fails to comply with the scheduling requirements of the Contract;

**6.17.1.6** Contractor fails to promptly replace rejected material or correct rejected workmanship; or

**6.17.1.7** Contractor fails in any material respect to observe any other terms, provisions, conditions, covenants, and agreements in the Contract to be observed and performed on the part of the Contractor.

**6.17.2** In the event of any default by Contractor under the Contract, Owner shall have the right to take such measures as it deems necessary to correct the default, at the Contractor's sole cost and expense and to deduct such costs, including but not limited to the State Engineer's and OWNER's fees, as it may incur from amount otherwise owing to the Contractor, or to terminate the Contract in accordance with Sub-Article 16.2 of the General Conditions in addition to any and all other remedies that Owner may now or hereafter have. If the amounts owing to the Contractor are insufficient to cover the Owner's cost of corrections, the Contractor shall pay such amount promptly upon demand.

## **Article 7**

### **SUBCONTRACTORS**

#### **7.1 Definitions.**

**7.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform any of the Work at the site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative. The term Subcontractor does not include any separate contractor or his subcontractors.

**7.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform any of the Work at the site. The term Sub-subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub-subcontractor or an authorized representative thereof.

**7.2 Award of Subcontracts and Other Contracts for Portions of the Work.** The Contractor shall investigate each of its proposed Subcontractor's capabilities to assure each is responsible and has the requisite experience, skill, physical plant, and financial strength necessary to perform each Subcontractor's respective Work. The Contractor shall not contract with any Subcontractor

that is not responsible or does not have the requisite experience, skill, physical plant, and financial strength necessary to perform its part of the Work.

### **7.3 Sub Contractual Relations.**

**7.3.1** The Contractor shall not include any provisions in its Contracts with its Subcontractors which will in any way prejudice the rights of the Owner and the Architect/Engineer under the Contract between the Owner and the Contractor.

**7.3.2** The Subcontract agreement shall require the Subcontractor to consent to any assignment of the Subcontract to the Owner in the event of a default by the Contractor hereunder.

**7.3.3** Nothing in Article 7 shall be construed to create a privity of Contract between the Owner and any Subcontractor.

## **Article 8**

### **WORK BY OWNER OR BY SEPARATE CONTRACTORS**

#### **8.1 Owner's Right to Perform Work and to Award Separate Contracts.**

**8.1.1** The Owner reserves the right to perform work related to the Project with his own forces, and to award separate contracts in connection with such work. Such work may include Work assigned to the Contractor under the Contract Documents which Work is not being performed properly or in accordance with the scheduling provisions of the Contract Documents, whether the Contractor is in default under Sub-Article 6.17 and whether the Owner has terminated the Contract under Sub-Article 16.2. If the Owner elects to exercise this right it will do so upon reasonable notice to the Contractor. There shall be an appropriate adjustment in amounts payable to the Contractor to reflect the Work undertaken by the Owner, which the parties shall confirm by Change Order in accordance with Article 14. If the Contractor claims that delay is involved because of such action by the Owner, he shall make such claim as provided elsewhere in the Contract Documents.

**8.1.2** When separate contracts are awarded for different portions of the Project or other work on the site, the term Contractor in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**8.1.3** The Owner will provide for the coordination of the work, of his own forces and of each separate contractor with the Work of the Contractor, who shall cooperate therewith as provided in Sub-Article 8.2.

#### **8.2 Mutual Responsibility.**

**8.2.1** The Contractor shall afford the Owner and separate contractors reasonable opportunity and all required facilities for the introduction and storage of their materials and equipment and the execution of their work, and shall connect and coordinate his Work with theirs as required by the

Contact Documents.

**8.2.2** If any part of the Contractor's Work depends for proper execution or results upon the work of the Owner or any separate contractor, the Contractor shall, prior to proceeding with the Work, promptly report to the OWNER any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of the Contractor to report shall constitute an acceptance of the Owner's or separate contractor's work as fit and proper to receive his Work, except as to defects which may subsequently become apparent in such work by others.

**8.2.3** Any costs caused by defective or ill-timed work shall be borne by the party responsible, therefore;

**8.2.4** Should the Contractor wrongfully cause damage to the work or property of the Owner or of a separate Contractor, or to other work on the site, the Contractor shall promptly remedy such damage as provided in Sub-Article 12.2.5.

**8.2.5** Should the Contractor wrongfully cause damage to the work or property of any separate contractor, the Contractor shall upon due notice promptly attempt to settle with such other contractor by agreement, or otherwise resolve the dispute. If such separate contractor sues or initiates an arbitration proceeding against the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor who shall participate in the defense of such proceedings at the Contractor's expense, and if any judgment or award against the Owner arises therefrom the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorneys' fees and court or arbitration costs which the Owner has incurred.

**8.3 Owner's Right to Clean Up:** If a dispute arises between the Contractor and separate contractors as to their responsibility for cleaning up the Project, the Site and related streets and walks on a routine basis as required by Sub-Article 6.13, the Owner may clean up and charge the cost thereof to the contractors responsible therefore as the Owner shall determine to be just.

## **Article 9**

### **MISCELLANEOUS PROVISIONS**

**9.1 Governing Law:** The Contract shall be governed by South Dakota Law.

**9.2 Successors and Assigns:** The Owner and the Contractor each binds himself, his successors, assigns and legal representatives to the other party hereto and to the successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it without the written consent of the Owner, nor shall the Contractor assign any money due or to become due to him hereunder, without the previous written consent of the Owner.

**9.3 Written Notice:** All notices, demands and other communications hereunder shall be in writing and shall be deemed to have been given if sent pursuant to Article VII of the Agreement



for Construction.

**9.4 Claims for Damages:** Should either party to the Contract suffer injury or damage because of any act or omission of the other party or of any of his employees, agents or others for whose acts he is legally liable, claim shall be made in writing to such other party within 14 days after the first observance of such injury or damage.

**9.5 Performance and Labor and Material Payment Bond:** Before commencing the Work, the Contractor shall provide a Performance and Labor and Material Payment Bond in accordance with the requirements of the Instructions to Bidders.

## **9.6 Rights and Remedies.**

**9.6.1** The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. This provision relates particularly to the Contractor's obligations under Sub-Article 15.2.2.

**9.6.2** No action or failure to act by the Owner or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## **9.7 Tests.**

**9.7.1** If the Construction Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the Owner timely notice of its readiness so the Owner may observe such inspection, testing or approval. The Contractor shall perform and bear all costs of such inspections, tests, and approvals, unless otherwise provided.

**9.7.1.1** Where certain testing and inspection requirements are set forth in the various Sections of the Construction Documents to be performed at the expense of the Owner, the Owner will retain the services of testing laboratories, agencies, or consultants, to perform such tests or inspections and render such services as may be required to verify that the work fulfills the requirements and intent of the Construction Documents. Such services will be performed in a manner consistent with the requirements of the Owner and the various agencies having jurisdiction over the Work and in accordance with reasonable standards of architectural and engineering practice.

**9.7.1.2** The Owner reserves the right to modify the scope of or to re-allocate any of the testing and inspection services specified in the various Sections of the Construction Documents to be performed by a testing laboratory, agency or consultant retained by the Owner in connection with the Work when it can be satisfactorily established that such adjustment in scope is consistent with the intent of the Construction Documents. If the Contractor shall not concur with such modification of scope or re-allocation of such services, he shall immediately notify the Owner in writing.

**9.7.2** If the OWNER determines that any Work requires special inspection, testing, or approval which Sub-Article 9.7.1 does not include, he will upon written authorization from the Owner, order the performance of such services by qualified independent testing laboratories, agencies or consultants as may reasonably be required or instruct the Contractor to order such special inspection, testing or approval, and the Contractor shall give notice as provided in Sub-Article 9.7.1. If such special inspection or testing reveals a failure of the Work to comply with the requirements of the Construction Documents, the Contractor shall bear all costs thereof, including the cost of the tests, correction of the Work, the cost of retesting, and compensation for the OWNER's additional services made necessary by such failure; otherwise the Owner shall bear such costs, and an appropriate Change Order shall be issued.

**9.7.2.1** If OWNER's observation or any inspection or testing undertaken pursuant to Sub-Article 9.7 reveals a failure in any one of a number of identical or similar items or elements incorporated in the Work to comply with (1) the requirements of the Construction Documents or, (2) with respect to the Performance of the Work, with laws, ordinances, rules, regulations, building codes or orders of any public authority having jurisdiction, the OWNER will have the authority to order inspection and/or testing of all such items or elements of the Work, or of a representative number of such items or elements of the Work, as he may in his reasonable opinion consider necessary or advisable, and the Contractor shall bear all costs thereof, including the cost of the tests, correction of the Work, the cost of retesting, and the OWNER's additional services, if any are required, made necessary thereby. However, neither the OWNER's authority to act under Sub-Article 9.7 nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the OWNER to the Contractor, any Subcontractor, any of their agents or employees, or any other person performing any of the Work.

**9.7.3** Required certificates of inspection, testing or approval shall be secured by the Contractor and promptly delivered to the OWNER.

**9.7.3.1** The Contractor shall obtain and deliver promptly to the Owner any certificates of final inspection of any part of his Work or operating permits for any mechanical or electrical apparatus, such as elevators, escalators, boilers, air compressors, fire alarms, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Except as is otherwise provided in Sub-Article 10.1.3, receipt of such permits or certificates by the Owner shall be a condition precedent to Completion of the Work.

**9.7.3.2** Copies of reports issued because of services performed at the expense of the Owner pursuant to the provisions of this Article will be distributed to all parties to the Contract.

**9.7.4** If the owner is to observe the inspections, tests or approvals required by the Contract Documents, they will do so promptly and, where practicable, at the source of supply.

**9.7.5** In connection with testing and inspection services performed at the expense of the Owner, the Contractor shall provide Samples of materials and/or elements of the Work required as test specimens and shall provide incidental labor and facilities at the site reasonably required in

support of such services.

**9.7.6** The cost of testing services required solely for the convenience of the Contractor in his scheduling and performance of the Work shall be borne by the Contractor.

**9.7.7** The cost of testing services related to remedial operations performed to correct deficiencies in the Work shall be borne by the Contractor.

**9.7.8** If, during the course of the performance of any testing, inspection, control, balancing, adjusting, or similar work by the Contractor or an agent of the Contractor, it is the opinion of the OWNER that the Contractor or said agent has failed to perform such work in a satisfactory manner, the Contractor shall, at his own expense, retain the services of a service organization which is satisfactory to the OWNER for the performance of such work.

## **9.8 Litigation/Arbitration.**

**9.8.1** Unless otherwise specifically provided in this Agreement, all claims, counterclaims, disputes, or other matters in question between the Owner and the Contractor arising out of, or relating to this Agreement, or the breach thereof, will be decided in a circuit court of competent jurisdiction within the State of South Dakota.

**9.8.2** The Contractor shall carry on the Work and maintain its progress during any dispute or litigation proceedings, and the Owner shall continue to make payments to the Contractor to the extent required by the Contract Documents and South Dakota Law.

## **Article 10 TIME**

### **10.1 Definitions.**

**10.1.1** The Contract Time is the period allotted in the Construction Contract for Substantial Completion of the Work as defined in Sub-Article 10.1.3, including authorized adjustments thereto.

**10.1.2** The date of commencement of the Work is the date established in the Notice to Proceed.

**10.1.3** The date of Substantial Completion of the Work is the date certified by the OWNER when construction is sufficiently completed in accordance with the Contract Documents so that the Owner can occupy and utilize the Project for the use for which it is intended, and such Work is fully completed in accordance with the Contract Documents except for minor items, adjustments or corrections which have no material effect upon the utilization, function or intrinsic values of the entire Project, including all of its mechanical, electrical and other systems and facilities.

**10.1.4** The term “day” as used in the Contract Documents shall mean calendar day unless otherwise specifically designated.

## **10.2 Progress and Completion.**

**10.2.1** All time limits stated in the Contract Documents, including the Construction Completion Schedule, are of the essence of the Contract.

**10.2.2** The Contractor shall begin the Work on the date of commencement as defined in Sub-Article 10.1.2. He shall carry the Work forward expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

## **10.3 Delays and Extensions of Time.**

**10.3.1** If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner, or by any employee of either, or by changes in the Construction Completion Schedule required by the Owner, or by any separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes not caused by the labor practices of the Contractor or any Subcontractor in contravention of applicable labor practices, fire, unusual delay in transportation, severe and unusual weather conditions not reasonably anticipatable, unavoidable casualties, or any other causes beyond the Contractor's control and not occurring due to the fault or neglect of the Contractor, any Subcontractor or any other person for whose acts the Contractor is responsible, then the Contract Time shall be extended by Change Order for such reasonable time as the Owner shall determine, or the Owner may elect to require the Contractor to accelerate the Work, in which case the Contract Sum shall be increased by a Change Order in the amount of the direct cost to the Contractor (exclusive of overhead and profit of necessary over-time labor).

**10.3.2** Any claim for extension of time shall be made in writing to the Owner not more than 10 days after the commencement of the delay; otherwise, it shall be waived. In the case of continuing delay only one claim is necessary. The Contractor shall provide an estimate of the probable effect on such delay on the progress of the Work.

**10.3.2.1** Such claims shall set forth in detail the nature of the circumstances which form the basis for each such claim, the date upon which each such alleged cause of delay began, or began to affect the timely prosecution of the Work, and ended, or ceased to have an adverse effect upon the timely prosecution of the Work, and the number of days extension of time requested as a consequence of each such alleged cause of delay. The Contractor shall provide such supporting documentation as the Owner may require, including, where appropriate, a revised Construction Completion Schedule indicating all the activities affected by the circumstances which form the basis for the claim.

**10.3.2.2** The Contractor shall not be entitled to a separate extension of time because of each one of several causes of delay which may have a concurrent or interrelated effect on the progress of the Work.

**10.3.2.3** The Owner shall have the right to defer his decision or decisions with reference to any claim or claims for an extension of time made pursuant to the provisions of this Article until the facts or circumstances which form the basis for such claim or claims may be fully assessed to the

Owner's reasonable satisfaction.

**10.3.2.4** Notwithstanding the provisions of Sub-Article 10.3.2, claims for an extension of time arising out of authorized changes in the Work shall be made in writing prior to or concurrent with the submission of the Contractor's proposal pursuant to such change. No extension of time arising out of changes in the Work will be granted after the date upon which the Contractor is authorized to proceed with such change or changes in the Work unless specific provisions governing a subsequent determination of an extension of time have been incorporated in such authorization to proceed with such change or changes in the Work. No claim for damages or separate compensation for delay arising from such change in the Work shall be recognized or be deemed valid, it being understood that any additional cost to the Contractor arising from such change shall be included in the amended Contract Sum set forth in such Change Order.

**10.3.2.5** Time extensions will not be granted for rain, wind, snow, or other natural phenomena of normal intensity for the locality where work is performed. Determinations of the extent of delay attributable to unusual weather phenomena shall be made by comparing the weather for the contract period involved with the average of the preceding five (5) year climactic range during the same period on the calendar. National Oceanic and Atmospheric Administration National Weather Service statistics for the locality or area where the work is performed shall be used to determine the five (5) year average weather conditions. Time extensions for weather delays do not entitle the Contractor to "extended overhead" recovery.

**10.3.3** If no agreement is made stating the dates upon which interpretations as provided in Sub-Article 4.13 shall be furnished, then no claim for delay shall be allowed on account of failure to furnish such interpretations until 15 days after written request is made for them, and not then unless such claim is reasonable.

**10.3.4** Should the contractor fail to substantially complete the work within the time agreed upon in the contract documents, or within such extra time as may have been allowed by increases in the contract or by formally approved extensions granted by the owner, the contractor and the contractor's surety shall be liable for and shall pay the owner the sums stipulated in the agreement for construction as liquidated damages for each calendar day of delay until the work is substantially complete. This sum is not a penalty but is liquidated damages due the owner from the contractor by reason of inconvenience to the public, added cost of engineering and supervision, and other items which have caused an expenditure of public funds resulting from the contractor's failure to complete the work within the time specified in the contract. In addition to liquidated damages, if any delay on the part of the contractor, any subcontractor or sub-subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable results in any claim by third parties against the owner arising out of such delay, the contractor shall pay, satisfy, and discharge all losses, damages and expenses arising out of such claims, including attorneys' fees, and shall indemnify and hold harmless the owner and their agents and employees from and against all costs, fees, losses, damages, and expenses arising out of such claims enforced against the owner.

**10.3.5** No extension of time will be granted to the Contractor for any delay other than those described in Sub-Article 10.3.1.

**10.3.5.1** Should the Contractor fail, refuse or neglect to supply a sufficiency of workmen or to deliver the materials with such promptness as to prevent delay in the progress of the Work, or fail in any material respect diligently to commence and prosecute the Work and to proceed in accordance with the approved construction schedule, or if the different parts thereof are not commenced, prosecuted, finished, delivered or installed in such manner as will insure substantial completion in accordance with the approved Construction Completion Schedule, or if the Contractor shall fail in the performance of any of his obligations under this Contract in any material respect, the Owner shall have the right to direct the Contractor, upon three days notice at the Contractor's cost and expense, to furnish such additional labor and to expedite deliveries of materials (or the Owner may furnish such labor and expedite such deliveries at the cost of the Contractor), which labor or expediting shall, in the Owner's opinion, be sufficient to speed up and complete the Work in accordance with the Construction Completion Schedule.

**10.3.5.2** If such additional labor shall not be available, the Owner shall have the right to direct the Contractor at the latter's own cost and expense, to work overtime to such an extent as will be sufficient, in the Owner's opinion, to speed up and complete the Work as herein provided.

**10.3.6** The Contractor's right to make a claim or claims for an extension of time, as provided in Sub-Article 10.3.1, shall not preclude the Contractor's right to make a claim for delay damages arising out of the Owner's significant interference, by action or inaction, with the Contractor's Work.

#### **10.4 Beneficial Occupancy.**

**10.4.1** The Owner shall have the privilege of Beneficial Occupancy and the use and benefit of designated areas, subdivisions, or portions of the Project prior to completion and acceptance of the entire Project, provided that such Beneficial Occupancy shall not unduly interfere with the Contractor's operations nor unduly delay him in completing the entire Work. Such occupancy and use shall be further subject to the provisions set forth herein and the provisions of SDCL § 5-18B-13.

**10.4.2** In the event that the Owner desires to exercise the privilege of Beneficial Occupancy, he shall give reasonable notice to the OWNER and the Contractor. If the OWNER determines that such proposed occupancy is reasonable and proper, the Contractor shall cooperate with the Owner in providing services and facilities reasonably required for the health, safety and comfort of the occupants and other parties lawfully present and/or entering or leaving the premises. Mutually acceptable arrangements shall be made between the Owner and the Contractor regarding procedures, terms and conditions governing the operation and maintenance of such services and facilities as may be utilized for the benefit of the Owner. The Owner will assume proportionate and reasonable responsibility for operation of systems, equipment and/or utilities required to provide such services, in part or in total, including proportionate and reasonable expenses of operation incidental thereto. No such Beneficial Occupancy shall accelerate the commencement of any warranty period on any system but only on the components being utilized.

**10.4.3** The Owner's Beneficial Occupancy or use of such designated areas, subdivisions, or portion of the Work shall not constitute acceptance of systems, materials, or elements of the Work which are not in accordance with the requirements of the Contract Documents; nor relieve the Contractor from his obligations to complete the Work; nor for responsibility for loss or damage due to or arising out of defects in, or malfunctioning of, systems, materials, equipment, or elements of the Work; nor from other unfulfilled obligations or responsibilities of the Contractor under the Contract. If, however, damage results solely from any act of the Owner, the Owner will assume its proportionate responsibility for such damage.

## **Article 11**

### **PAYMENTS AND COMPLETION**

**11.1 Contract Sum:** The Contract Sum is stated in the Agreement for Construction.

**11.2 Schedule of Values:** Before the first Application for Payment, the Contractor shall submit to the Owner and a schedule of values allocated to the various portions of the Work, prepared in such form, and supported by such data to substantiate its accuracy as the Owner may require. The format and number of copies of such Applications for Payment shall be as directed by the Owner. This schedule, unless objected to by the Owner, shall be used as a basis for the Contractor's Applications for Payment.

#### **11.3 Monthly Application for Payment.**

**11.3.1** No later than the 5th day of each month the Contractor shall submit to the OWNER his monthly itemized application for Payment. The Contractor shall not submit more than one pay application per month. The monthly Application for Payment shall be on AIA Document G702 and supported by such data substantiating the Contractors right to partial payment as the Owner may require; including but not limited to receipts, releases, and waivers of liens.

**11.3.1.1** In applying for payment, the Contractor shall submit his monthly payment estimate based upon the approved schedule of work for the project, itemized in such form and supported by such evidence as will show his right to the payment claimed. Claims made on account of materials delivered and suitably stored at the site, but not incorporated in the work, shall be conditioned upon submission by the Contractor of Bills of Sale or such other procedure as will establish the Owner's title to such material or otherwise adequately protect the Owner's interest.

**11.3.1.2** If the Contractor chooses to apply for payment for materials which cannot be incorporated into the Work, and cannot be stored on the site, he may do so provided the following conditions are met:

Unless otherwise agreed to by the Owner, the material shall be stored in a bonded or insured commercial warehouse within a geographic radius of 15 miles of the construction site, with the Owner being listed on the bond or insurance certificate as the sole beneficiary in the case of loss or damage to the stored materials. The Contractor shall be responsible for all storage, insurance or transportation costs associated with the materials. Conditions of insurance will apply to applicable portions of Sub-Article 11.3.1.2. Contractor shall provide the Owner with bills of

sale, or such other documents as will establish the ownership of the materials.

**11.3.2** The Contractor warrants that title to all Work, materials and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances, hereinafter referred to in this Article as "liens"; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

**11.3.3** Monthly applications received after the 5th day of the month will be treated as if submitted on the 5th day of the following month.

#### **11.4 Recommendation for Payment.**

**11.4.1** By the 15th of each month, the OWNER will review the Contractors Monthly Application for Payment and make his certification to the Owner with a copy to the Contractor, for such amount as the OWNER believes is properly due or notify the Contractor in writing his reasons for withholding a Certificate as provided in Sub-Article 11.6.1.

**11.4.2** The issuance of a Certification for Payment will constitute a representation by the Owner, based on his observations at the site as provided in Sub-Article 4.3 and the data comprising the Monthly Application for Payment, that the Work has progressed to the point indicated; that, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to the result of any subsequent tests required by or performed under the Contract Documents, to minor deviations from the Contract Documents correctable prior to completion, and to any specific qualifications stated in his Certificate); and that the OWNER believes that the Contractor is entitled to payment in the amount recommended. However, by issuing a Certification for Payment, the OWNER shall not thereby be deemed to represent that he has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work or that he has reviewed the construction means, methods, techniques, sequences or procedures, or that he has made any examination to ascertain how or for what purpose the Contractor has used the moneys previously paid on account of the Contract Sum. The Owner will not be bound by the amount stated in the Certification of Payment in making determinations of amounts properly payable to the Contractor.

#### **11.5 Progress Payments.**

**11.5.1** Based upon his review of the Monthly Application for Payment, and the OWNERs Certification, the Owner shall make progress payments to the Contractor in such amounts as the Owner reasonably determines are properly due less the aggregate of previous payments in each case. Payment of amounts determined to be due by the Owner under each Monthly Application for Payment shall be due to the Contractor 20 days after the 15th of each month. unless the



OWNER's certification was delayed by following the procedures of Article 11.6.1. In such case, payment shall be 25 days after the 15th of each month. The Owner shall at all times retain an amount sufficient to complete the Work pursuant to SDCL §§ 5-18B-11 and 5-18B-13. If the Owner retains any portion of a certified progress payment that is properly due and undisputed beyond the time for payment specified herein and for reasons other than those required by statute, the Owner shall owe and pay the Contractor four percent (4%) interest compounded annually on the retained amount starting from the date payment first becomes due under this article.

**11.5.2** The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which said Subcontractor is entitled reflecting any amounts withheld, if any, from payments to the Contractor on account of such Subcontractor's Work. The Contractor shall not withhold retainage from its Subcontractors unless retainage is withheld from the Contractor by the Owner. The Contractor shall, by an appropriate agreement with each Subcontractor, require each Subcontractor to make payments to his Sub-subcontractors in a similar manner.

**11.5.3** The Owner shall, on request, furnish to any Subcontractor, if practicable, information regarding the percentages of completion or the amounts applied for by the Contractor and the action taken thereon by the Owner on account of Work done by such Subcontractor.

**11.5.4** Neither the Owner shall have any obligation to pay or to see to the payment of any moneys to any Subcontractor except as may otherwise be required by law.

**11.5.5** No Certification for Payment, nor any progress payment, nor any partial or entire use or occupancy of the Project by the Owner, shall constitute acceptance or approval of any Work not in accordance with the Contract Documents.

## **11.6 Payments Withheld.**

**11.6.1** The OWNER may decline to certify the full payment of the amount requested by the Contractor in his monthly application to the extent necessary to reasonably protect the Owner. If the OWNER is unable to certify payment in the amount of the Application, he will, within 10 days after receipt of the monthly application, notify the Contractor in writing the reasons he cannot make such a certification. If the Contractor and the OWNER cannot agree on a revised amount within five days of OWNER sending written notice, the OWNER will promptly issue a Certification for Payment for the amount for which he is able to certify to the Owner pursuant to Sub-Article 11.4.2. The OWNER may also decline to certify payment because of subsequently discovered evidence or subsequent observations, he may nullify the whole or any part of any Certification for Payment previously issued, and the Owner may withhold payment of all or any part of an Application for Payment, to such extent as may be necessary to protect the Owner from loss because of:

**11.6.1.1** Defective work not remedied.

**11.6.1.2** Third party claims filed or reasonable evidence indicating probable filing of such

claims.

**11.6.1.3** Failure of the Contractor to make payments properly to subcontractors or for labor, materials, or equipment.

**11.6.1.4** Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum.

**11.6.1.5** Damage to the Owner or another contractor.

**11.6.1.6** Reasonable evidence that the Work will not be completed within the Contract Time.

**11.6.1.7** Failure to carry out the Work in accordance with the Contract Documents.

**11.6.1.8** A lien or attachment is filed, and such lien is not discharged within 5 days of demand from the Owner.

**11.6.1.9** Failure of the Contractor and/or of the Mechanical or Electrical Subcontractors to comply with the mandatory requirements for maintaining "up to date" Record Drawings.

**11.6.1.10** Incomplete or otherwise inadequate Application for Payment; or

**11.6.1.11** Reasonable evidence that the Contractor is in material breach of his obligations under the Contract.

**11.6.2** When the above grounds in Sub Article 11.6.1 are removed, payment shall be made for amounts withheld because of them.

## **11.7 Substantial Completion.**

**11.7.1** When the Contractor considers that the Work, or a designated portion thereof which is acceptable to the Owner, is Substantially Complete as defined in Sub Article 10.1.3 the Contractor shall prepare for submission to the Owner a list of items to be completed or corrected. The failure to include any item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Owner on the basis of an inspection determines that the Work or designated portion thereof is Substantially Complete, the OWNER will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities and damage to the Work, and shall fix the time within which the Contractor shall complete the items listed therein. Warranties and Guarantees 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. The Certificate of Substantial Completion shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in such Certificate.

**11.7.2** Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by Owner, the Owner shall make payment, reflecting adjustment for defective or incomplete work, if any, for such Work or portion thereof, as provided in the Contract Documents. Double the amount necessary to complete the Work shall be retained by the Owner pursuant to SDCL. § 5-18-13.

### **11.8 Final Completion and Final Payment.**

**11.8.1** Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Owner will promptly make such inspection and, when they find the Work acceptable under the Contract Documents and the Contract fully performed, the OWNER will promptly issue a final Certificate for payment stating that to the best of his observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in said final Certificate, is due and payable. The OWNER's Final Certificate of Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Sub-Article 11.8.2 have been fulfilled.

**11.8.2** The final payment shall not become due until the Contractor submits to the Owner (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of surety to final payment, (3) if required by the Owner, other data establishing payment or satisfaction of all such obligation, such as receipts, releases and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Owner, (4) an Unemployment Compensation Contribution Certificate from the South Dakota Department of Labor, and (5) a full and complete release of the Owner from all liability under the Contract and otherwise, except to the extent provided in Sub-Article 11.8.4. If the Contractor fails to furnish such releases or waivers of liens as the Owner reasonably requires determining that there are no outstanding liens, the Owner may require that Contractor, as a condition of final payment to furnish a bond satisfactory to the Owner to indemnify the Owner against any such liens. The cost of such bond shall be borne by the Contractor. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

**11.8.3** Owner shall make final payment of all sums due to the Contractor 30 days after the completion and acceptance of the project by the Owner and Contractor's compliance with Article 11.8.2 above. If the Owner fails to make final payment to the Contractor within the time specified herein, the Owner shall pay the Contractor interest at the rate of eight percent (8%) compounded annually on the amount retained starting from the date final payment first becomes due.

**11.8.4** The acceptance of final payment by the Contractor shall constitute a complete and unconditional waiver and release of any and all claims by the Contractor of whatever nature, and regardless whether they are then known or unknown, and a complete and unconditional release of the Owner and every person for whom the Owner is responsible for any and all matters related

to the Contract or otherwise, except those claims which have been made in writing and identified by the Contractor as not having been settled at that time.

## **Article 12**

### **PROTECTION OF PERSONS AND PROPERTY**

**12.1 Safety Precautions and Programs:** The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work, and for safeguarding all adjacent properties and facilities.

#### **12.2 Safety of Persons and Property.**

**12.2.1** The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury, or loss to:

**12.2.1.1** All employees on the Work and all other persons who may be affected thereby;

**12.2.1.2** All the Work and all materials and equipment to be incorporated therein, whether in storage or off the site, under the care, custody, or control of the Contractor and any of his Subcontractors or Sub-subcontractors; and

**12.2.1.3** Other property at the site or adjacent thereto, including but not limited to, work of the Owner or of separate contractors, trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement during construction.

**12.2.2** The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury, or loss, and shall indemnify the Owner and the OWNER and save them harmless against all claims, penalties, actions and proceedings relating thereto or the Contractor's failure so to comply.

**12.2.3** The Contractor shall erect and maintain, as required by existing conditions and progress of the Work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities.

**12.2.4** When the use or storage of any hazardous materials or equipment is necessary for the execution of the Work, the Contractor shall exercise the utmost care and shall carry on such activities under the supervision of properly qualified personnel.

**12.2.5** The Contractor shall promptly remedy all damage or loss to any property referred to in Sub-Articles 12.2.1.2 and 12.2.1.3 caused in whole or in part by the Contractor, any Subcontractor, any Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the Contractor is responsible under Sub-Articles 12.2.1.2 and 12.2.1.3, except damage or loss attributable to the acts or omissions of the Owner 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 his obligations under Sub-Article 6.16.

**12.2.6** The Contractor shall designate a responsible member of his organization at the Site whose duty shall be the prevention of accidents. This person shall be qualified as a safety supervisor by experience, training, or education and shall have the responsibility to insure and enforce safety requirements on behalf of the Contractor and shall be designated by the Contractor in writing to the Owner.

**12.2.7** The Contractor shall issue weekly safety reports to the Owner attesting to conditions on the Site relating to safety and to actions taken.

**12.2.8** The Contractor shall not load or permit any part of the Work to be loaded to endanger its safety.

**12.2.9** The structure of the Project is designed to support the loads of the finished building. No provision is included for stresses or loads imposed by construction operations. If the Contractor desires to place such loads more than the design load shown on drawings, he shall submit drawings and calculations prepared by, and bearing the seal of a professional structural engineer of the proposed method for supporting such loads for the OWNER's review and approval. No loading of any kind more than design loads shall be placed on any part of the building structure prior to the OWNER's approval of submitted drawings and calculations. The costs of the OWNER's review shall be borne by the Contractor.

**12.2.10** The Contractor shall prepare a written report setting forth the circumstances and details related to any accident or occurrences involving death, bodily injury, sickness, disease, personal injury, and/or loss or injury to or destruction of tangible property. Such reports shall be forwarded promptly to the insurance carriers and the Owner.

**12.3 Emergencies:** In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss and shall as promptly as conditions permit notify the insurance carriers, Owner the nature of the emergency and circumstances related thereto. Immediately thereafter, the Contractor shall prepare a written report setting forth in detail the action taken and describing in detail all circumstance and conditions which are related to such action.

## **Article 13**

### **INSURANCE**

**13.1** The Contractor shall not commence work under this contract until he has obtained all the insurance required under this article and such insurance has been approved by the Owner. Each contractor shall maintain and shall ensure that each subcontractor maintain for the life of the contract:

**13.1.1 Worker's Compensation Insurance** as required by South Dakota Law and Employers

Liability Insurance with a limit of not less than \$1,000,000 for each accident.

**13.1.2 Commercial General Liability Insurance** or equivalent form with a limit of not less than \$1,000,000 for each occurrence. If such insurance contains a general aggregate limit, it shall apply separately to this Agreement or be no less than two times the occurrence limit.

**13.1.3 Business Automobile Liability Insurance** or equivalent form with a limit of not less than \$1,000,000 for each accident. Such insurance shall include coverage for owned, hired, and non-owned vehicles.

**13.1.4 Builder's Risk Insurance** in the full amount of this contract, upon any building, structure, equipment, and appliance in the process of construction or installation under state contract and upon all materials on site, until such time as the building, structure, equipment, and appliances have been finally accepted by the Owner and the contract completed. This insurance shall include the interest of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Work and shall insure against loss by physical damage including, without duplication of coverage, fire, flood, extended coverage, theft, vandalism, malicious mischief, and collapse.

## **13.2 Certificates of Insurance.**

**13.2.1** Certificates of the above insurance shall be filed with the Owner and shall be subject to the Owner's approval for adequacy of protection. Each respective contractor shall provide the certificates for the insurance required herein.

**13.2.2** The Owner's approval or acceptance of such certificates of insurance shall in no way release or relieve the respective contractor from any responsibility, liability or obligation devolving upon him.

**13.2.3** All insurance policies and certificates shall be issued only by companies authorized to do business in the State of South Dakota and acceptable to the Owner. It shall be the Contractor's responsibility to keep the respective insurance policies and coverages current and in force for the life of the contract.

## **Article 14**

### **CHANGES IN THE WORK**

**14.1 Change Orders:** A Change Order is a written order to the Contractor signed by the Owner, issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his agreement therewith, including the adjustment in the Contract Sum or the Contract Time.

**14.2** The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and the Contract Time being adjusted accordingly. All such changes to the Work shall be authorized by Change Order and shall be performed under the applicable conditions of the

Contract Documents.

**14.3** The cost or credit to the Owner resulting from a change in the Work shall be determined in one or more of the following ways:

**14.3.1** By mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Such lump sum proposals shall be supported by a completely detailed analysis of the proposed change subdivided into the Work of the Contractor and/or the Work of each Subcontractor and/or Sub-subcontractors involved in the proposed change, as applicable, with each such subdivision further broken down into the following elements:

**14.3.1.1** Number of man-hours of labor to be performed by each trade, craft or classification of employee involved in the proposed change.

**14.3.1.2** The hourly rate for each such trade, craft, or classification of employee, including the appropriate wage supplement for social security, old age and unemployment contributions, and such other employee benefits as may be established by statute or by written agreement negotiated by and between organizations representing such crafts or trades and representatives of their employers.

**14.3.1.3** The estimated quantity of each item or element of material and/or equipment in the proposed change.

**14.3.1.4** The unit cost of each such item or element of material and/or equipment.

**14.3.1.5** Rental of items or units of construction plant and equipment with a schedule of the period or periods of use of such item or unit in connection with the proposed change.

**14.3.1.6** Rental terms and rates for each such item or unit of construction plant and equipment. Rental for equipment shall be based on the following:

**14.3.1.6.1** Hourly rental rates shall be based on 80% of the applicable rates for equipment listed in the 'Green Book', latest edition, (published by the Associated Equipment Distributors, 615 West 22nd Street, Oakbrook, Illinois, 60523).

**14.3.1.6.2** Hourly rental rates for equipment not listed in the 'Green Book' shall be based on 100% of the applicable rates for equipment listed in the 'Blue Book', latest edition (published by Dataquest, 1290 Ridder Park Drive, San Jose, California, 95131).

**14.3.1.6.3** Hourly rental rates determined from the 'Green Book' or 'Blue Book' include all items of cost and expense to the Contractor, including gas, oil, maintenance, repairs, insurance, and transportation to and from construction site.

**14.3.1.7** Power and/or other utilities entering the proposed change.

**14.3.1.8** Rates and terms applicable to such power and/or other utilities.

**14.3.1.9** Additional premiums, if applicable, for the extension of insurance and bond coverages as required herein to the proposed change.

**14.3.1.10** Applicable federal, state, and local taxes.

**14.3.1.11** Indirect Cost and Fee computed as a percentage override applied to net cost in accordance with the provisions of this Article.

**14.3.2** By unit prices stated in the Contract Documents or subsequently agreed upon;

**14.3.3** By cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee;

**14.3.4** By the method provided in Sub-Article 14.3.12.

**14.3.5** The Contractor shall require that the itemized analysis of each portion of the proposed change to be performed by a Subcontractor and/or Sub-subcontractor be prepared by each such Subcontractor and/or Sub-subcontractor in accordance with the format established herein. Copies of all such itemized analysis shall be appended to the Contractor's itemized analysis of the proposed change in the Work.

**14.3.6** For purposes of calculating Indirect Cost and Fee in relation to Change Orders, the net cost of a proposed change in the Work shall include, and unless otherwise agreed in writing prior to the performance of the proposed change, shall be limited to the fair and reasonable estimated cost of the total of all of the individual items, elements, or components involved in proposed change in the Work (including adds and deducts) as set forth in Sub-Articles 14.3.1.1 through 14.3.1.11.

**14.3.7** For each portion of a proposed net additive change in the Work to be performed directly by the Contractor, the cost to Owner shall include an increment for the Indirect Cost and Fee of the Contractor associated with such portion of proposed change of 8% of the net cost of the Work.

**14.3.8** For each portion of a proposed net additive change in the Work to be performed directly by a Subcontractor, in addition to an increment or increments for Subcontractor's Indirect Cost and profit associated therewith of 8%, the cost to the Owner shall include a supplementary increment or increments for Contractor's Indirect Cost and Fee associated therewith of 6% of the net cost of the Work.

**14.3.9** In computing Indirect Cost and Fee, the percentage for Indirect Cost and Fee shall be taken on basic wage only. No percentage override shall be taken on Social Security, Old Age and Unemployment contributions, contributions to Industry funds, education, and Training Funds and/or similar wage supplements, contributions, or benefits.



**14.3.10** Items, elements, or components of changes in the Work or proposed changes which shall be classified as Indirect Cost and excluded from net cost shall include, but shall not necessarily be limited to:

**14.3.10.1** All classifications of administrative, supervisory, and clerical personnel not engaged manually in the performance of the Work, including timekeepers, clerks, watchmen, and security personnel.

**14.3.10.2** Miscellaneous expense, job burden, and/or other generalized categories of cost or expense.

**14.3.10.3** Use of small tools.

**14.3.10.4** Insurance other than insurance coverage required herein.

**14.3.11** In changes in the Work involving both additions to and deductions in the Work, or any portion or element thereof, or the relocation or rearrangement of items, portions, or elements thereof, or the substitution of any items, portions, or elements thereof, such additions and deductions shall be balanced, and the Contractor's Fee computed on the same basis for deductions as well as additions. If at the request of the Owner a number of unrelated changes in the Work are set forth individually, summarized and totaled in a single Change Order for reasons of administrative convenience, the amount or amounts of individual deductive changes in the Work set forth therein shall, in any event, be balanced against the amount or amounts of individual additive changes in computing the Contractor's Fee for the purpose of adding and deducting.

**14.3.12** If none of the methods set forth in Sub-Articles 14.3.1, .3.2 or .3.3 is agreed upon, the Contractor, provided he receives a written order signed by the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Owner based on the reasonable expenditures and savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for the Contractor's Fee. In such case, and also under Sub-Articles 14.3.3 and .3.4 above, the Contractor shall keep and present, in such form as the Owner may prescribe, an itemized accounting together with appropriate supporting data for inclusion in a Change Order, at the end of each day, and will submit to the Owner or his designated representative: (a) daily time slips showing the name of each workman employed on such work, the number of hours which he is employed thereon, the character of his duties, and the wages and benefits to be paid to him and on his behalf, and (b) a memorandum of the equipment used in the performance of such Work, together with the rental claimed therefor. Unless otherwise provided in the Contract Documents, cost shall be limited to the following: cost of materials, including sales tax and cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; worker's or workmen's compensation insurance; bond premiums; rental value of equipment and machinery; and the additional costs of supervision and field office personnel directly attributable to the change. Pending final determination of cost to the Owner, payments on account shall be made based on amounts reasonably estimated by the Owner. The amount of credit to be allowed by the Contractor to the Owner for any deletion or

change which results in a net decrease in the Contract sum will be the amount of the actual net cost as confirmed and agreed to by the Owner. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance or credit for the Contractor's Fee shall be figured based on the net increase, or decrease, if any, with respect to that change.

#### **14.4 Differing Site Conditions**

**14.4.1** The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the OWNER of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in the work of the character provided for in the contract.

**14.4.2** The OWNER shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, the Contract Sum shall be adjusted as provided in this Article, provided that the work has been ordered in writing by the Owner and as provided in Sub-Article 14.1 above. There shall be included in the adjustment to the Contract Sum under the preceding sentence a reasonable allowance for any extraordinary increase in Indirect Cost borne by the Contractor because of such additional work.

#### **14.5 Claims for Additional Cost.**

**14.5.1** If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Owner a written notice thereof within 10 days after the occurrence of the event giving rise to such claim except where claim is made in connection with deviations in Shop Drawing or Sample submittals, in which case claim shall be made in writing to the OWNER concurrently with such submittals. This notice shall be given by the Contractor before proceeding to execute the work, except in an emergency endangering life or property in which case the Contractor shall proceed in accordance with Sub-Article 12.3. No such claim shall be valid unless so made. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

**14.5.2** If the Contractor claims that additional cost is involved because of, but not limited to, (1) any written interpretation pursuant to Sub-Article 4.13, (2) any order by the Owner to stop the Work pursuant to Sub-Article 5.2 where the Contractor was not at fault, (3) any written order for a minor change in the Work issued pursuant to Sub-Article 14.6, or (4) any deviation in Shop Drawing or Sample submittals from the requirements of the Contract Documents, the Contractor shall make such claim as provided in Sub-Article 14.5.1.

**14.6 Minor Changes in the Work:** The OWNER will have authority to order minor changes in the Work not involving an adjustment to the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be made by written order and shall be binding on the Owner and the Contractor. The Contractor shall carry out such written orders promptly.

**Article 15****UNCOVERING AND CORRECTION OF WORK****15.1 Uncovering of Work.**

**15.1.1** If any portion of the Work should be covered contrary to the request of the Owner, or the requirements specifically expressed in the Contract Documents, it must, if required in writing by the Owner, be uncovered for his observation and shall be replaced at the Contractor's expense.

**15.1.2** If any other portion of the Work has been covered which the Owner has not specifically required to observe prior to being covered, the Owner may request to see such Work and it shall be uncovered by the Contractor. If such work is found in accordance with the Construction Documents, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such work be found not in accordance with the Construction Documents, the Contractor shall pay such costs unless it be found that this condition was caused by the Owner or a separate contractor as provided in Article 8, in which event the Owner shall be responsible for the payment of such costs.

**15.2 Correction of Work.**

**15.2.1** The Contractor shall promptly correct all Work rejected by the OWNER as defective or as failing to conform to the Construction Documents whether observed before or after Substantial Completion and whether fabricated, installed or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for additional services and the Owner's fees made necessary thereby.

**15.2.2** If, at any time after the Owner's acceptance of the fully completed Project any of the Work is found not to have been provided in conformance with the Construction Documents, or, if within one year after such acceptance any of the Work is otherwise found to be faulty or defective, the Contractor shall correct it promptly after receipt of a written notice from the Owner to do so. The Contractor shall also repair or replace any part of the Work which is damaged by the defective condition or the remedial Work. This obligation shall survive termination of the Contract, subject to the terms of any applicable statute of limitations. The Owner shall give such notice promptly after discovery of the condition.

**15.2.3** The Contractor shall remove from the Site all portions of the Work which are defective or non-conforming and which have not been corrected under Sub-Articles 6.4.1, 15.2.1 and 15.2.2, unless removal is waived by the Owner.

**15.2.4** If the Contractor fails to correct defective or non-conforming Work as provided in Sub-Articles 6.4.1, 15.2.1 and 15.2.2, the Owner may correct it in accordance with Sub-Article 5.3.

**15.2.5** If the Contractor does not proceed with the correction of such defective or non-conforming Work within a reasonable time fixed by written notice from the Owner may remove it and may store the materials or equipment at the expense of the Contractor. If the

Contractor does not pay the cost of such removal and storage within 10 days thereafter, the Owner may upon 10 additional days written notice sell such Work at auction or a private sale and shall account for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor, including compensation for the OWNER's additional services made necessary thereby. If such proceeds of sale do not cover all costs which the Contractor should have borne, the difference shall be charged to the Contractor and an appropriate Change Order shall be issued. If the payments then or thereafter due to the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner upon demand.

**15.2.6** The Contractor shall bear the cost of making good all work of the Owner or separate contractors destroyed or damaged by such correction removal.

**15.2.7** Nothing contained in this Article shall be construed to establish a period of limitation with respect to any other obligation which the Contractor might have under the Contract Documents, including Sub-Article 6.4 hereof. The establishment of any time period prescribed by the terms of any warranty required by the Contract Documents relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which his obligation to comply with the Contract Documents may be sought to be enforced, nor the time within which proceedings may be commenced to establish the Contractor liability with respect to his obligations other than specifically to correct the Work.

**15.3 Acceptance of Defective or Non-Conforming Work:** If the Owner prefers to accept defective or non-conforming Work, he may do so instead of requiring its removal and correction, in which case a Change Order will be issued to reflect a reduction in the Contract Sum where appropriate and equitable. Such an adjustment shall be made regardless of the final payment status.

## **Article 16**

### **TERMINATION OF THE CONTRACT**

**16.1 Termination by the Contractor:** If the Work is stopped for a period of 90 days under an order of any court or any public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, then the Contractor may, upon 7 additional days written notice to the Owner, terminate the Contract and recover from the Owner payment for all Work executed to the termination date, together with reasonable demobilization costs. The Contractor shall have no other right to terminate the Contract for any reason.

### **16.2 Termination by the Owner.**

**16.2.1** If the Contractor is in default under the Contract Documents, the Owner may, without prejudice to any other right or remedy and upon written notice to the Contractor, terminate the contract.

Prior to termination of the Contract, the Owner shall give the Contractor and his surety 10 calendar days written notice, during which the Contractor and/or his surety may rectify the cause of the termination. If rectified to the satisfaction of the Owner within said 10 days, the Owner may rescind its notice of termination. If not rectified, the termination for cause shall become effective at the end of the 10 day notice period. In the alternative, the Owner may postpone the effective date of the termination notice, at its sole discretion, if it should receive reassurances from the Contractor and its surety that the causes of termination will be remedied in a time and manner which the Owner finds acceptable. If at any time more than 10 days after the notice of termination, the Owner determines that the Contractor or its surety has not or is not likely to rectify the causes of termination in an acceptable manner or within the time allowed, then the Owner may immediately terminate the Contract for cause by giving written notice to the Contractor and its surety. In no event shall termination for cause terminate the obligations of the Contractor's surety on its payment and performance bonds.

Notice of termination, whether initial or given after a period of postponement, may be served upon the Contractor and the surety by mail or any other means at their last known places of business in South Dakota or elsewhere, by delivery to any officer or management/supervisory employee of either wherever they may be found, or, if no such officer, employee or place of business is known or can be found by reasonable inquiry within 3 days, by posting the notice at the job site. Failure to accept or pick up registered or certified mail addressed to the last known address shall be deemed to be delivery.

Upon termination of the Contract, the Owner shall take possession of the premises and of all materials, tools, appliances, equipment, and other facilities on the Project, wherever stored, and may finish the Work by whatever method he may deem expedient. The Contractor shall assign Subcontracts to the Owner or to a designated substitute contractor promptly upon request. In such a case the Contractor shall not be entitled to receive any further payment until the Work is finished and the Owner has determined its damages owing to the Contractor's default.

**16.2.2** If the costs of finishing the Work, including compensation for the Owner's additional services made necessary by the Contractor's default, and all other damages suffered by the Owner on account of the Contractor's default, exceed the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner, and this obligation for payment shall survive the termination of the Contract. If the costs of finishing the Work are less than the unpaid portion of the contract Sum, the Owner shall pay the unpaid balance of any amount properly owing to the Contractor for all Work executed to the date of termination, less actual damages. The Owner will not be obligated to pay any further amount on account of Direct Cost, Indirect Cost or Fee.

**16.2.3** If it should be judicially determined that the Owner improperly terminated this Contract for cause, then the termination shall be deemed to be a termination for the convenience of the Owner.

### **16.3 Termination for Convenience.**

**16.3.1** The Owner may terminate this Contract at any time without cause, in whole or in part,

upon giving the Contractor notice of such termination. Upon such termination, the Contractor shall immediately cease Work and remove from the project site all its labor forces and such of its materials as Owner elects not to purchase or to assume in the manner hereinafter provided. Upon such termination, the Contractor shall take such steps as Owner may require assigning to the Owner the Contractor's interest in all Subcontracts and purchase orders designated by Owner. After all such steps have been taken to Owner's satisfaction, the Contractor shall receive as full compensation for termination and assignment the following:

- (1) All amounts then otherwise due under the terms of this Contract,
- (2) Amounts due for work performed after the latest Request for Payment through the date of termination,
- (3) Reasonable compensation for the actual cost of demobilization incurred by the Contractor as a direct result of such termination. The Contractor shall not be entitled to any compensation for lost profits or for any other type of contractual compensation or damage other than those provided by the preceding sentence. Upon payment of the foregoing, the Owner shall have no further obligations to Contractor of any nature.

**16.3.2** In no event shall termination for the convenience of the Owner terminate the obligations of the Contractor's surety on its payment and performance bonds.

## SECTION 01 1000 - SUMMARY

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 00 and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

## A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

## B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

## 1.3 PROJECT INFORMATION

## A. Project Identification: Agricultural Heritage Museum Historic Roof Repairs

1. Project Location: South Dakota State University  
Agricultural Heritage Museum  
977 11<sup>th</sup> Street North  
Brookings, SD 57007

2. SDSU Project#: 22-1025

## B. Owner: South Dakota State University

1. Owner's Representative: Gwen McCausland
2. SDSU Project Manager: Christopher Gross  
SDSU Facilities & Services  
Phone: (605) 690-0693  
Email: christopher.gross@sdstate.edu



#### 1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
1. Project consists of the removal, salvage, and reinstallation of approximately 12,000 square feet of existing French clay roofing tiles, ridge, and hip caps. The project also includes the removal and disposal of roofing membrane, asphalt underlayment, miscellaneous rough carpentry, and deteriorated decorative wood carpentry. New construction will include roofing membrane, underlayment, ice & water shield, copper flashing, copper gutters, 20% replacement clay roofing tiles, rough carpentry, ornamental carpentry, sealants, and exterior paint. Copper downspouts are to be salvaged and remain in place. Inspect the existing tongue & groove roof decking for damage and irregularities, repair as required to maintain a stable substrate for the roof assembly installation.
  2. Project cost range is anticipated to be under eight-hundred thousand dollars (\$800,000.00).
- B. Type of Contract:
1. Project will be constructed under a single prime contract.

#### 1.5 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of the Project site beyond areas in which the Work is indicated.
1. Driveways, Walkways and Entrances: Always keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

#### 1.6 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.

2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

#### 1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work to normal business working hours of 5 a.m. to 9 p.m., Monday through Friday, unless otherwise indicated.
  1. Weekend Hours: No Restrictions.
- C. 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 Owner not less than two days in advance of proposed utility interruptions.
  2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. Nonsmoking Site: Smoking is not permitted on campus.
- E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

#### 1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases. These conventions are as follows:
  1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
  1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
  2. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1000

## SECTION 01 2200 - UNIT PRICES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
  - 1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

## 1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

## 1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 SCHEDULE OF UNIT PRICES

## A. Unit Price No. 01 – Tongue &amp; Groove Wood Roof Decking:

1. Description: Remove and dispose of damaged or deteriorated wood roof decking. Install new wood roof decking to match existing thickness according to Section 06 1516 “Wood Roof Decking.”
2. Unit of Measurement: Square Foot.

## B. Unit Price No. 02 – Copper Flashing &amp; Coping:

1. Description: Remove and dispose of existing metal flashing. Install new copper flashing & coping according to Section 07 6200 “Metal Flashing & Trim”.
2. Unit of Measurement: Lineal Foot.

## C. Unit Price No. 03 – Exterior Finish Carpentry

1. Description: Remove and dispose of damaged or deteriorated exterior finish carpentry. Install new exterior finish carpentry to match existing according to Section 06 2013 “Exterior Finish Carpentry”.
2. Unit of Measurement: Lineal Foot.

## D. Unit Price No. 04 – Exterior Painting

1. Description: Clean and remove existing chipped or failing paint, prepare surface for new paint, repair damaged surfaces. Paint surfaces according to Section 09 9113 “Exterior Paint”.
2. Unit of Measurement: Square Foot.

## E. Unit Price No. 05 – Thermal Insulation

1. Description: Remove and dispose of damaged or deteriorated rigid roofing insulation. Install new rigid polyurethane insulation to match existing thickness according to Section 07 2100 “Thermal Insulation”.
2. Unit of Measurement: Square Foot.

## F. Unit Price No. 06 – Wood Roof Decking

1. Description: Remove and dispose of damaged or deteriorated wood roof decking. Install new wood roof decking to match existing thickness according to Section 06 1516 “Wood Roof Decking”.
2. Unit of Measurement: Square Foot.

END OF SECTION 01 2200

## SECTION 013591 - HISTORIC TREATMENT PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section includes general protection and treatment procedures for entire Project and the following specific work:
  - 1. Removal, reuse, and repair of French clay roof tile.
  - 2. Surface cleaning of French clay roof tile.
  - 3. Removal and repair of exterior finish carpentry.
- B. Related Requirements:
  - 1. Section 062013 "Exterior Wood Finish Carpentry" for specific requirement for repair, cleaning, and installation of exterior finish carpentry.
  - 2. Section 073126 "French Clay Roof Tile" for specific requirements for removal, cleaning, and installation of French clay roof tile.
  - 3. Section 090190 "Maintenance of Painting and Coating" for specific requirements for stripping and repainting of decorative paint finishes.

## 1.3 DEFINITIONS

- A. Consolidate: To strengthen loose or deteriorated materials in place.
- B. Dismantle: To disassemble and detach items by hand from existing construction to the limits indicated, using small hand tools and small one-hand power tools, so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.
- C. Existing to Remain: Existing items that are not to be removed or dismantled.
- D. Historic: surfaces, materials, finishes, and overall appearance which are important to the successful preservation and restoration as determined by the Owner.
- E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by Owner.
- F. Reconstruct: To remove existing item, replicate damaged or missing components, and reinstall in original position.
- G. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.
- H. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

- I. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.
- J. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.
- K. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.
- L. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.
- M. Reproduce: To fabricate a new item, accurate in detail to the original, and in either the same or a similar material as the original, unless otherwise indicated.
- N. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.
- O. Retain: To keep existing items that are not to be removed or dismantled.
- P. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials unless otherwise indicated.
- Q. Salvage: To protect removed or dismantled items and deliver them to Owner **[ready for reuse]**.
- R. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.
- S. Strip: To remove existing finish down to base material unless otherwise indicated.

#### 1.4 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects of interest or value to the Owner that may be encountered during removal and dismantling work remain the Owner's property. Carefully dismantle and salvage each item or object.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Construction Schedule for Historic Treatments: Indicate for entire Project the following for each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces:
  - 1. Coordination of Owner's and others' continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's historic treatment operations.
- C. Historic Treatment Program: Submit before work begins.

- D. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

## 1.6 QUALITY ASSURANCE

- A. Historic Treatment Program: Prepare a written plan for historic treatment for whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other Sections.
  - 1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
  - 2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- B. Mockups: Prepare mockups of specific historic treatment procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.
  - 1. Typical Removal Work: Remove typical roof assembly, flashing, gutters, downspouts, and accessories to existing substrate as shown on Drawings. Salvage French clay roof tiles, gutters, and downspouts for reinstallation. Reconstruct damaged substrate and decorative wood, prepare surfaces for reinstallation of roofing assembly, and finishes.
  - 2. Paint Removal: Remove chipped, flaking, and damaged paint from soffits and fascia. Prepare areas for new paint and finishes as shown on Drawings.
  - 3. Typical Dismantling Work: Dismantle an **approximately 50-sq. ft. (4.6-sq. m)** area of typical French clay roof tiles for review and approval by the Owner prior to continuing work.
  - 4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.
- C. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI/ASSE A10.6.
- E. Historic Treatment Preconstruction Conference: Conduct conference at project site prior to construction.
  - 1. General: Review methods and procedures related to historic treatment including, but not limited to, the following:
    - a. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
    - b. Review qualifications of personnel assigned to the work and assign duties.
    - c. Review material application, work sequencing, tolerances, and required clearances.
    - d. Review areas where existing construction is to remain and requires protection.
  - 2. Removal and Dismantling:
    - a. Inspect and discuss condition of construction to be removed or dismantled.
    - b. Review requirements of other work that relies on substrates exposed by removal and dismantling work.



## 1.7 STORAGE AND PROTECTION OF HISTORIC MATERIALS

- A. Salvaged Historic Materials:
  - 1. Clean only loose debris from salvaged historic items unless more extensive cleaning is indicated.
  - 2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Protect items from damage during storage.
- B. Historic Materials for Reinstallation:
  - 1. Repair and clean historic items as indicated and to functional condition for reuse.
  - 2. Protect items from damage during storage.
  - 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.
- C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Owner, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.
- D. Storage and Protection: When taken from their existing locations, catalog and store historic items within a weathertight enclosure where they are protected from wetting by rain, snow, condensation, or ground water, and from freezing temperatures.
  - 1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans elevations, sections, or photographs by annotating the identifying marks.
  - 2. Secure stored materials to protect from theft.

## 1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to removal and dismantling area. Conduct removal and dismantling work so Owner's operations will not be disrupted.
- B. Notify Owner of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Owner. Owner will remove hazardous materials under a separate contract.
    - a. In the case of asbestos, stop work around the potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Reassign workers to continue work in unaffected areas. Resume work around the area after safe working conditions are verified.

## 1.9 COORDINATION

- A. Coordinate historic treatment procedures in this Section with public circulation patterns at Project site. Some work is near public circulation patterns, sidewalks, University parking lots, and public streets. Public circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

## PART 2 - PRODUCTS - (Not Used)

## PART 3 - EXECUTION

### 3.1 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

- A. Removal Equipment: Use only hand-held tools except as follows or unless otherwise approved by Owner on a case-by-case basis.
- B. Dismantling Equipment: Use manual, hand-held tools, except as follows or otherwise approved by Owner on a case-by-case basis:
  - 1. Hand-held power tools and cutting torches are permitted only as submitted in the historic treatment program. They must be adjustable to penetrate or cut only the thickness of material being removed.
  - 2. Pry bars more than 18 inches (450 mm) long and hammers weighing more than 2 lb (0.9 kg) are not permitted for dismantling work.

### 3.2 EXAMINATION

- A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
  - 1. Verify that affected utilities have been disconnected and capped.
  - 2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage.
  - 3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
  - 4. Engage a professional engineer to survey the condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures because of removal and dismantling work.
- B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs. Repairs to all damaged areas not documented prior to construction shall be the responsibility of the Contractor.
- C. Perform surveys as the Work progresses to detect hazards resulting from historic treatment procedures.

### 3.3 PROTECTION, GENERAL

- A. Comply with temporary barrier requirements in Section 015000 "Temporary Facilities and Controls."
- B. Ensure that supervisory personnel are on-site and on duty when historic treatment work begins and during its progress.
- C. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures.
  - 1. Use only proven protection methods, appropriate to each area and surface being protected.
  - 2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where historic treatment work is being performed.
  - 3. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of historic treatment work.
  - 4. Contain dust and debris generated by removal and dismantling work and prevent it from reaching the public or adjacent surfaces.
  - 5. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
  - 6. Protect floors and other surfaces along haul routes from damage, wear, and staining.
- D. Temporary Protection of Historic Materials:
  - 1. Protect existing historic materials with temporary protections and construction. Do not deface or remove existing materials.
  - 2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by Owner.
- E. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
- F. Utility and Communications Services:
  - 1. Notify Owner, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by the historic treatment work before commencing operations.
  - 2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for the historic treatment work.
  - 3. Maintain existing services unless otherwise indicated; keep in service and protect against damage during operations. Provide temporary services during interruptions to existing utilities.
- G. Existing Roofing: Prior to the start of work in an area, install roofing protection.

### 3.4 PROTECTION FROM FIRE

- A. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or highly combustible materials, including welding, torch-cutting, soldering, brazing, paint removal with heat, or other operations where open flames or implements utilizing high heat or combustible solvents and chemicals are anticipated:

1. As far as practical, restrict heat-generating equipment to shop areas or outside the building.
  2. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
  3. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
  4. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
  5. Fire Watch: Before working with heat-generating equipment or highly combustible materials, station personnel to serve as a fire watch at each location where such work is performed. Fire-watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows.
    - a. Train each fire watch in the proper operation of fire-control equipment and alarms.
    - b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
    - c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
    - d. Have fire watch perform final fire-safety inspection each day beginning no sooner than 20 minutes after conclusion of work at Project site to detect hidden or smoldering fires and to ensure that proper fire-prevention is maintained.
- B. Fire Extinguishers, Fire Blankets, and Rag Buckets: Maintain fire extinguishers, fire blankets, and rag buckets for disposal of rags with combustible liquids. Maintain each as suitable for the type of fire risk in each work area. Ensure that nearby personnel and the fire watch are trained in fire-extinguisher and blanket operation.

### 3.5 GENERAL HISTORIC TREATMENT

- A. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.
- B. Halt the process of deterioration and stabilize conditions unless otherwise indicated. Perform work as indicated on Drawings. Follow the procedures in subparagraphs below and procedures approved in historic treatment program:
1. Retain as much existing material as possible; repair and consolidate rather than replace.
  2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
  3. Use reversible processes wherever possible.
  4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
  5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation **photographs** or **video recordings**. Comply with requirements in Section 013233 "Photographic Documentation."
- C. Notify Owner of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.
1. Do not proceed with the work in question until directed by Owner.

- D. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to approval of Owner.
- E. Where Work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.
- F. Identify new and replacement materials and features with permanent marks hidden in the completed work to distinguish them from original materials. Record a legend of identification marks and the locations of the items on record Drawings.

### 3.6 HISTORIC REMOVAL AND DISMANTLING

- A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.
- B. Perform work according to the historic treatment program and approved mockup(s).
  - 1. Provide supports or reinforcement for existing construction that becomes temporarily weakened by the work, until the work is completed.
  - 2. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
  - 3. Do not operate air compressors inside building, unless approved by Owner in each case.
  - 4. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
  - 5. Do not use explosives.
- C. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.
- D. Removing and Dismantling Items on or near Historic Surfaces:
  - 1. Use only dismantling tools and procedures within **12 inches (300 mm)** of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
  - 2. Unfasten items to be removed, in the opposite order from which they were installed.
  - 3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
  - 4. Dismantle anchorages.
- E. Masonry Walls:
  - 1. Remove masonry carefully and erect temporary bracing and supports as needed to prevent collapse of materials being removed.
  - 2. Dismantle top edge and sides before removing wall. Stop removal work and immediately inform Owner if any structural elements above or adjacent to the work show signs of distress or dislocation during any phase of removal work.
  - 3. Remove wall in easily managed pieces.
  - 4. During removal, Contractor is responsible for the stability of the partially remaining wall. Notify Owner of the condition of temporary bracing for wall if work is temporarily stopped during the wall's removal.

## F. Steelwork:

1. Expose structural steel for examination by Owner and Contractor's professional engineer before proceeding with removal or dismantling.
2. If distress in structure is apparent during performance of the work, stop removal or dismantling and take immediate precautionary measures to ensure safety of the structure. Inform Owner of the problem, steps taken, and proposed corrective actions.
3. Brace and support structural steel being removed and remaining during removal and dismantling.
4. Concrete-Encased Steel: Where steel is known to be encased by concrete being removed, saw cut with blades that will cut no deeper than the thickness of the concrete cover with an adequate margin for error in the location of the steel. Isolate sections of concrete by saw cutting before beginning removal.

## G. Anchorages:

1. Remove anchorages associated with removed items.
2. Dismantle anchorages associated with dismantled items.
3. In non-historic surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section specific to the historic surface being patched.

## 3.7 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

- A. Existing Items to Be Removed and Salvaged: copper flashing.
- B. Existing Items to Be Dismantled and Reinstalled: copper gutters, copper downspouts, and French clay roof tiles.
- C. Existing Items to Remain: exterior wood finish carpentry, wood substrate, rigid insulation.

## 3.8 HISTORIC TREATMENT SCHEDULE

END OF SECTION 013591

THIS PAGE LEFT BLANK

## SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

## 1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.
- C. Electric Power Service: Owner will pay electric power-service use charges for electricity used by all entities for construction operations. Contractor shall provide connections and extensions of existing services as required for construction operations.

## 1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, staging areas, and parking areas for construction personnel.
- B. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
  - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
  - 2. Indicate sequencing of roof replacement work that requires moisture protection. Describe plans for dealing with water from these operations and temporary moisture protection throughout construction. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.



## PART 2 - PRODUCTS: NOT USED

## PART 3 - EXECUTION

### 3.1 SUPPORT FACILITIES INSTALLATION

- A. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in General Conditions.
- D. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

### 3.2 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- C. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

### 3.3 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

### 3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

END OF SECTION 01 5000

THIS PAGE LEFT BLANK

## SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes:
  - 1. Perform operations required to verify tree protection status, protect, and maintain trees and tree protection elements that are in place at the beginning of the contract. Work includes:
    - a. Protection of existing trees.
    - b. Maintenance of installed tree protection elements.
    - c. Pruning of existing trees to be protected.
- B. Related Sections
  - 1. Section 015000 "Temporary Facilities and Controls"

#### 1.2 DEFINITIONS

- A. CRZ - The Critical Root Zone of a tree is described as an area equal to 1-foot radius for every inch diameter of a tree at breast height.

#### 1.3 SUBMITTALS

- A. Submit in accordance with the General Conditions the following:
  - 1. Schedule and Work Plan: Submit detailed schedule and work plan for each part of the work.
  - 2. Damage to Existing Features: It shall be the Contractor's responsibility to inform the Owner in writing of any existing plant material that is damaged. Failure to take this precaution shall make the Contractor liable for replacement at his own expense.

#### 1.4 QUALITY ASSURANCE

- A. Tree Protection Limits: Areas requiring tree protection, as indicated on the plans, or within the Critical Root Zone (CRZ).
  - 1. Notify the Owner before undertaking any work within tree protection limits. Owner may elect to have arborist work within tree protection area completed by Owner.
  - 2. Flagging of Existing Trees: Flag trees to remain with a bright colored ribbon. Notify the Owner to verify all trees that are flagged.
  - 3. Preinstallation Conference: Before starting tree protection and trimming, meet with Owner, and other concerned entities. Review tree protection and trimming procedures and responsibilities.
- B. Tree Pruning Standards: Comply with ANSI A300, "Trees, Shrubs, and Other Woody Plant Maintenance--Standard Practices," unless more stringent requirements are indicated.

## PART 2 - PRODUCTS

### 2.1 TREE PROTECTION FENCING

- A. Standard Fencing:
  - 1. Chain link fence materials including posts, braces, and mesh may be salvaged materials from site or other used material to form a 6-foot high enclosure.
  - 2. Posts: Minimum 1-1/2" steel pipe.
  - 3. Mesh: 2" x 2" x 11 ga. min. chain link fabric.

### 2.2 MISCELLANEOUS MATERIALS

- A. Water used for tree watering shall be potable water supplied by the Contractor.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Flagging of Existing Trees: Flag trees to remain with a bright colored ribbon. Notify the Owner at least 48 hours prior to commencing work to verify all trees that are flagged.
- B. Temporary Fencing: Install temporary fencing located as indicated or outside the drip line of trees to protect remaining vegetation from construction damage. Install fencing before site preparation, grading, clearing, and grubbing operations.
- C. Restrict foot and vehicular traffic over root zones to prevent excessive compaction of soil.
- D. Protect tree root systems from damage due to noxious materials caused by runoff or spillage while mixing, placing, or storing construction materials. Protect root systems from flooding, eroding, or excessive wetting caused by dewatering operations.
- E. Do not store construction materials, debris, or excavated material within the drip line of remaining trees. Do not permit vehicles or foot traffic within the drip line; prevent soil compaction over root systems.
- F. Provide mulch ground cover to protect root systems from construction activities in areas indicated and detailed in the drawings.

### 3.2 TREE PRUNING

- A. Owner to approve any removal of branches from existing trees. Contractor to request any removal of branches in writing at least two weeks before the planned work. In general, branches of existing trees are to be preserved and protected.
- B. If the Owner shall approve and oversee the removal of branches from trees.
- C. Pruning Standards: Prune trees according to ANSI A300.
- D. Cut branches with sharp pruning instruments; do not break or chop.

- E. Chip branches removed from trees, spread chips as directed by Owner.

### 3.3 TREE REPAIR AND REPLACEMENT

- A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to written instructions of the qualified arborist.
- B. Remove and replace dead and damaged trees that the qualified arborist determines to be incapable of restoring to a normal growth pattern.
  - 1. Provide new trees of the same size and species as those being replaced; plant and maintain as specified.
- C. Remove any damaged and destroyed trees from the site. Grub stumps and repair the ground surface. All costs shall be borne by the Contractor.

### 3.4 DISPOSAL OF WASTE MATERIALS

- A. Burning is not permitted.
- B. Revise below when disposal of some or all materials to designated site storage areas is permitted.
- C. Disposal: Remove excess excavated material, displaced trees, and excess chips from Owner's property.

END OF SECTION 015639

THIS PAGE LEFT BLANK

## SECTION 01 7300 - EXECUTION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Installation of the Work.
  - 2. Cutting and patching.
  - 3. Progress cleaning.
  - 4. Protection of installed construction.
- B. Related Requirements:
  - 1. Section 011000 "Summary" for limits on use of Project site.
  - 2. Section 017419 "Waste" for construction waste management and disposal.
  - 3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
  - 4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

#### 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original condition after installation of other work.

#### 1.4 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.



- a. Water, moisture, or vapor barriers.
  - b. Membranes and flashings.
  - c. Brick and stone masonry.
  - d. Steel angles, lintels, or masonry ties.
- 2. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Owner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
  - a. Brick and stone masonry.
  - b. Masonry mortar and sealant joints.
  - c. Steel windows and railings.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Owner for the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Owner according to requirements in Section 013100 "Project Management and Coordination."
- C. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
- D. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- E. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- F. Conduct construction operations so no part of the Work is subjected to damaging operations or loading more than that expected during normal conditions of occupancy.
- G. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- H. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- I. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
- J. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- K. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.3 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Patching: Patch construction by filling, repairing, refinishing, closing, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
  - 2. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

### 3.4 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F .
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

- E. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- F. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- G. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- H. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01 7300

THIS PAGE LEFT BLANK

## SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
  - 1. Recycling nonhazardous demolition and construction waste.
  - 2. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
  - 1. Section 024119 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements.

#### 1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

#### 1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 RECYCLING CONSTRUCTION WASTE

## A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

## 3.2 DISPOSAL OF WASTE

## A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

## B. Burning: Do not burn waste materials.

## C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 01 7419

## SECTION 024119 - SELECTIVE DEMOLITION

## PART 1 - GENERAL

## 1.1 SUMMARY

## A. Section Includes:

1. Demolition and removal of selected portions of building.
2. Salvage and reuse of existing items to be reused or recycled.

## B. Related Requirements:

1. Section 011000 "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 013591 "Historic Treatment Procedures" for historic removal and dismantling.
3. Section 015639 "Temporary Tree and Plant Protection" for temporary protection of existing trees and plants that are affected by selective demolition.
4. Section 017300 "Execution" for cutting and patching procedures.

## 1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed, and salvaged, or removed and reinstalled.

## 1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

## 1.4 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at the project site.
  1. Inspect and discuss condition of construction to be selectively demolished.
  2. Review structural load limitations of existing structure.



3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and require protection.
6. Review locations for storage of materials to be removed and reinstalled.
7. Review cleaning procedures for materials to be reinstalled.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
  1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's and building occupants on-site operations are uninterrupted.
  2. Coordination for shutoff, capping, and continuation of utility services.
  3. Coordination of Owner's continuing occupancy of existing building.
- B. Inventory: Submit a list of items to be removed and salvaged or reinstalled and delivered to Owner prior to start of demolition.
- C. Documentation of Existing Conditions: Submit photographs or video before Work begins.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

#### 1.7 FIELD CONDITIONS

- A. The Owner will occupy portions of the building immediately adjacent to the selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Notify Owner of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
  1. Hazardous materials will be removed by Owner before start of the Work.
  2. If suspected hazardous materials are encountered, do not disturb; immediately notify Owner. Hazardous materials will be removed by Owner under a separate contract.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Survey of Existing Conditions: Record existing conditions by use of measured drawings, preconstruction photographs, and/or video.
  - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."
  - 2. Inventory and record the condition of items to be removed and salvaged. Provide **photographs** or **video** of conditions that might be misconstrued as damage caused by salvage operations.
  - 3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

### 3.2 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  - 3. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

### 3.3 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
  2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering, and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
  3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  4. Do not use cutting torches until the work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain **fire watch and** portable fire-suppression devices during flame-cutting operations.
  5. Maintain adequate ventilation when using cutting torches.
  6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  8. Dispose of demolished items and materials promptly.
- B. Work in Historic Areas: Selective demolition may be performed only in areas of the Project that are not designated as historic. In historic spaces or on historic surfaces, the terms "demolish" or "remove" shall mean historic "removal" or "dismantling" as specified in Section 013591 "Historic Treatment Procedures."
- C. Removed and Salvaged Items:
1. Clean salvaged items.
  2. Store items in a secure area until delivery to Owner.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Protect items from damage during transport and storage.
  3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner, items may be removed to a suitable, protected storage location during selective demolition, cleaned, and reinstalled in their original locations after selective demolition operations are complete.
- 3.4 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS
- A. Roofing: Remove no more existing roofing than what can be covered in one day by new roofing so that building interior remains watertight and weathertight. See Section 073126 "Clay Tile Roof" for new roofing requirements.
1. Remove and recycle copper flashing.
  2. Remove and reinstall copper gutters & downspouts.
  3. Remove and reinstall existing French clay roof tiles. Store and clean tiles onsite prior to reinstallation.

4. Remove existing roof membrane, flashings, copings, and roof accessories.

### 3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site.
  1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.7 SELECTIVE DEMOLITION SCHEDULE

- A. Existing Construction to Be Removed:
  1. Metal flashing and coping.
  2. Roofing rubber membrane and asphalt underlayment.
  3. Damaged clay roof tile.
  4. Damaged wood decking, exterior rough carpentry, and exterior finish carpentry.
- B. Existing Items to Be Removed and Reinstalled:
  1. Copper gutters & downspouts.
  2. French clay roof tiles & trim pieces.
- C. Existing Items to Remain:
  1. Wood decking, exterior rough carpentry, and exterior finish carpentry that is stable and does not show signs of deterioration.

END OF SECTION 024119

THIS PAGE LEFT BLANK

## SECTION 061063 - EXTERIOR ROUGH CARPENTRY

### 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. Wood Furring.
  - 2. Wood Roof Decking.
- B. Related Requirements:
  - 1. Section 061516 "Wood Roof Deck."
  - 2. Section 062013 "Exterior Finish Carpentry."

#### 1.3 DEFINITIONS

- A. Boards: Lumber of less than 2-inches nominal (38 mm actual) in thickness and 2-inches nominal (38 mm actual) or greater in width.
- B. Dimension Lumber: Lumber of 2-inches nominal (38 mm actual) or greater but less than 5-inches nominal (114 mm actual) in least dimension.
- C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
  - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
  - 2. NLGA: National Lumber Grades Authority.
  - 3. RIS: Redwood Inspection Service.
  - 4. SPIB: The Southern Pine Inspection Bureau.
  - 5. WCLIB: West Coast Lumber Inspection Bureau.
  - 6. WWPA: Western Wood Products Association.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates:
  - 1. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.
- B. Certificates of Inspection: Issued by lumber grading agency for exposed wood products not marked with grade stamp.
- C. Evaluation Reports: For preservative-treated wood products, from ICC-ES.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials under cover and protected from weather and contact with damp or wet surfaces. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 LUMBER, GENERAL

- A. Comply with DOC PS 20 and with grading rules of lumber grading agencies certified by ALSC's Board of Review as applicable. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by ALSC's Board of Review.
  - 1. The factory marks each item with a grade stamp from a grading agency.
  - 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
  - 3. Provide dressed lumber, S4S, unless otherwise indicated.

### 2.2 LUMBER

- A. Hand select wood for uniform consistency of exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.
- B. Dimension Lumber: Construction or No. 2 grade and any of the following species:
  - 1. Hem-fir or hem-fir (North); NLGA, WCLIB, or WWPA.
  - 2. Douglas fir-larch, Douglas fir-larch (North), or Douglas fir-south; NLGA, WCLIB, or WWPA.
  - 3. Redwood; RIS.
- C. Dimension Lumber: Construction Heart redwood; RIS.
- D. Boards: Any of the following species and grades:
  - 1. Douglas fir, C & better finish or C Select; NLGA, WCLIB, or WWPA.
  - 2. Hem-fir, C & better finish or C Select; NLGA, WCLIB, or WWPA.
  - 3. Redwood, Heart B or Select Heart; RIS.
  - 4. Western red cedar, Grade B; NLGA, WCLIB, or WWPA.

### 2.3 PRESERVATIVE TREATMENT

- A. Pressure treated boards and dimension lumber with waterborne preservative according to AWWA U1; Use Category UC3b for exterior construction not in contact with the ground and use Category UC4a for items in contact with the ground.
- B. Preservative Chemicals: Acceptable to authorities having jurisdiction.
  - 1. Do not use chemicals containing arsenic or chromium.
- C. Use process for boards and dimension lumber that does not include water repellents or other substances that might interfere with application of indicated finishes.
- D. After treatment, redry dimension lumber to 19 percent maximum moisture content.

- E. Mark treated wood with the treatment quality mark of an inspection agency approved by ALSC's Board of Review.
- F. Application: Treat all wood unless otherwise indicated on Drawings.

## 2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated, acceptable to authorities having jurisdiction, and that comply with requirements specified in this article for material and manufacture. Provide nails or screws, of sufficient length, to penetrate not less than 1-1/2 inches (38 mm) into wood substrate.
  - 1. Use copper fasteners.
- B. Nails: ASTM F 1667.
- C. Power-Driven Fasteners: ICC-ES AC70.
- D. Wood Screws and Lag Screws: ASME B18.2.1, ASME B18.6.1, or ICC-ES AC233.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Prime wood indicated to be painted, including both faces and edges. Cut to required lengths and prime ends. Comply with requirements in Section 099113 "Exterior Painting."

### 3.2 INSTALLATION, GENERAL

- A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.
- B. Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.
- C. Install metal framing anchors to comply with manufacturer's written instructions.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- F. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with the function of members or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- G. Apply copper naphthenate field treatment to comply with AWWA M4, to cut surfaces of preservative-treated lumber.
- H. Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. ICC-ES AC70 for power-driven fasteners.



- I. Use common wire nails unless otherwise indicated. Select fasteners of size that do not fully penetrate members where opposite side is exposed to view. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads unless otherwise indicated.

END OF SECTION 061063

## SECTION 061516 - WOOD ROOF DECKING

### 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 **glued-laminated** wood roof decking
- B. Related Requirements:
  - 1. Section 061000 "Rough Carpentry" for dimension lumber items associated with wood roof decking.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. For glued-laminated wood roof decking, include installation instructions and data on lumber, adhesives, and fabrication.
  - 2. For preservative-treated wood products include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Schedule delivery of wood roof decking to avoid extended on-site storage and to avoid delaying the Work.
- B. Store materials under cover and protected from weather and contact with damp or wet surfaces. Provide for air circulation within and around stacks and under temporary coverings. Stack wood roof decking with surfaces that are to be exposed in the final Work protected from exposure to sunlight.

### PART 2 - PRODUCTS

#### 2.1 WOOD ROOF DECKING, GENERAL

- A. General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by ALSC's Board of Review.

#### 2.2 SOLID-SAWN WOOD ROOF DECKING

- A. Standard for Solid-Sawn Wood Roof Decking: Comply with AITC 112.
- B. Roof Decking Species: Douglas fir-larch, Douglas fir-larch (North), hem-fir, hem-fir (North), western hemlock, or western hemlock (North).
- C. Roof Decking Nominal Size: **2 by 6**.

- D. Roof Decking Grade: **Select** Decking.
- E. Grade Stamps: Factory mark each item with grade stamp of grading agency. Apply grade stamp to surfaces that are not exposed to view.
- F. Moisture Content: Provide wood roof decking with **19** percent maximum moisture content at time of dressing.
- G. Face Surface: Rough sanded or wire brushed.
- H. Edge Pattern: Channel grooved.

### 2.3 GLUED-LAMINATED WOOD ROOF DECKING

- A. Face Species: Douglas fir-larch or Douglas fir-larch (North), Western cedars, or western cedars (North).
- B. Roof Decking Nominal Size: 2 by 8.
- C. Face Grade: Service: Face knot holes, stains, end splits, skips, roller splits, planer burns, and other nonstrength-reducing characteristics are allowed. Strength-reducing characteristics are not allowed.
- D. Moisture Content: Provide wood roof decking with 15 percent maximum moisture content at time of dressing.
- E. Face Surface: Rough sanded or wire brushed.
- F. Edge Pattern: Beaded edge.
- G. Laminating Adhesive: Wet-use type complying with ASTM D 2559.
  - 1. Adhesives shall contain no urea-formaldehyde resins.

### 2.4 PRESERVATIVE TREATMENT

- A. Pressure treat wood roof decking according to AWWA U1; Use Category UC2.
  - 1. For laminated roof decking, treat lumber before gluing.
- B. Use process that does not include water repellents or other substances that might interfere with application of indicated finishes.
- C. After treatment, redry materials to **15** percent maximum moisture content.

### 2.5 ACCESSORY MATERIALS

- A. Fasteners for Solid-Sawn Roof Decking: Provide fastener size and type complying with AITC 112 for thickness of deck used.
- B. Fasteners for Glued-Laminated Roof Decking: Provide fastener size and type complying with requirements in "Installation" Article for installing laminated roof decking.
- C. Nails: Common; complying with ASTM F 1667, Type I, Style 10.

- D. Spikes: Round; complying with ASTM F 1667, Type III, Style 3.
- E. Fastener Material: Hot-dip galvanized steel.
- F. Installation Adhesive: For glued-laminated wood roof decking indicated to be of diaphragm design and construction, provide adhesive that complies with research/evaluation report.
- G. Sealants: Latex, complying with ASTM C 834 **Type OP, Grade NF** and with applicable requirements in Section 079200 "Joint Sealants," recommended by sealant manufacturer and manufacturer of substrates for intended application.

## 2.6 FABRICATION

- A. Shop Fabrication: Where preservative-treated roof decking is indicated, complete cutting, trimming, surfacing, and sanding before treating.
- B. Seal Coat: After fabricating and surfacing roof decking, apply a saturation coat of penetrating sealer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine walls and support framing in areas to receive wood roof decking for compliance with installation tolerances and other conditions affecting performance of wood roof decking.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install solid-sawn wood roof decking to comply with AITC 112.
  - 1. Locate end joints for **combination simple and two-span continuous lay-up**.
- B. Install laminated wood roof decking to comply with manufacturer's written instructions.
  - 1. Locate end joints for **combination simple and two-span continuous lay-up**.
  - 2. Nail each course of glued-laminated wood roof decking at each support with one nail slant nailed above the tongue and one nail straight nailed through the face.
    - a. Use 12d nails for 2-by-6 and 2-by-8 roof decking.
    - b. Use 30d nails for 3-by-6 and 3-by-8 roof decking.
    - c. Use 60d nails for 4-by-6 and 4-by-8 roof decking. Predrill roof decking to prevent splitting.
    - d. Use 30d tongue nails in bottom tongue and 3/8-inch (10-mm) face spikes for 5-by-6 and 5-by-8 roof decking. Predrill roof decking at spikes to prevent splitting.
  - 3. Slant nail each course of glued-laminated wood roof decking to the tongue of the adjacent course at 30 inches (750 mm) o.c. and within 12 inches (300 mm) of the end of each unit. Stagger nailing 15 inches (380 mm) in adjacent courses.
    - a. Use 6d nails for 2-by-6 and 2-by-8 roof decking.
    - b. Use 8d nails for 3-by-6 and 3-by-8 roof decking.
    - c. Use 10d nails for 4-by-6 and 4-by-8 roof decking.
    - d. Use 16d nails for 5-by-6 and 5-by-8 roof decking.

4. Glue adjoining roof decking courses together by applying a 3/8-inch (10-mm) bead of adhesive to the top of tongues, according to research/evaluation report.
- C. Where preservative-treated roof decking must be cut during erection, apply a field-treatment preservative to comply with AWWPA M4.
  1. For solid-sawn roof decking, use inorganic boron (SBX).
  2. For laminated roof decking, use copper naphthenate.
- D. Apply joint sealant to seal roof decking at exterior walls at the following locations:
  1. Between roof decking and supports located at exterior walls.
  2. Between roof decking and exterior walls that butt against underside of roof decking.
  3. Between tongues and grooves of roof decking over exterior walls and supports at exterior walls.

### 3.3 ADJUSTING

- A. Repair damaged surfaces and finishes after completing erection. Replace damaged roof decking if repairs are not approved by Architect.

### 3.4 PROTECTION

- A. Provide water-resistive barrier over roof decking as the Work progresses to protect roof decking until roofing is applied.

END OF SECTION 061516

## SECTION 062013 - EXTERIOR FINISH CARPENTRY

### 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. Exterior wood trim.
  - 2. Plywood soffits.
- B. Related Requirements:
  - 1. Section 061063 "Exterior Rough Carpentry" for elevated decks including stairs and railings.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
  - 1. Include data for wood-preservative treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.
  - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.
  - 3. Include copies of warranties from chemical-treatment manufacturers for each type of treatment.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Compliance Certificates:
  - 1. For lumber that is not marked with grade stamp.
  - 2. For preservative-treated wood that is not marked with treatment-quality mark.
- B. Evaluation Reports: For the following, from ICC-ES:
  - 1. Wood-preservative-treated wood.
- C. Sample Warranties: For manufacturer's warranties.

#### 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

## 1.7 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
  - 1. For exterior ornamental wood columns, comply with manufacturer's written instructions and warranty requirements.
- B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
  - 1. Indications that materials are wet, or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## PART 2 - PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and the following grading rules:
  - 1. NeLMA: Northeastern Lumber Manufacturers' Association, "Standard Grading Rules for Northeastern Lumber."
  - 2. NLGA: National Lumber Grades Authority, "Standard Grading Rules for Canadian Lumber."
  - 3. SPIB: The Southern Pine Inspection Bureau, "Standard Grading Rules for Southern Pine Lumber."
  - 4. WCLIB: West Coast Lumber Inspection Bureau, Standard No. 17, "Grading Rules for West Coast Lumber."
  - 5. WWPA: Western Wood Products Association, "Western Lumber Grading Rules."
- B. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
  - 1. For exposed lumber, mark grade stamp on end or back of each piece.
- C. Softwood Plywood: DOC PS 1.
- D. Hardboard: ANSI A135.4.

### 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC3b.
  - 1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent respectively.
  - 2. For exposed items indicated to receive transparent finish, do not use chemical formulations that contain colorants or that bleed through or otherwise adversely affect finishes.

3. Do not use material that is warped or does not comply with requirements for untreated material.
4. Mark lumber with treatment-quality mark of an inspection agency approved by the American Lumber Standard Committee's Board of Review.
  - a. exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
5. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
  - a. For exposed plywood indicated to receive a stained or natural finish, mark back of each piece.

## 2.3 EXTERIOR TRIM

- A. Lumber Trim for Painted Finish:
  1. Species and Grade: Hem-fir, Prime; NLGA, WCLIB, or WWP.
  2. Species and Grade: Northern white cedar, D Select; NeLMA or NLGA.
  3. Maximum Moisture Content: 15 percent.
  4. Face Surface: Surfaced (smooth).
  5. Factory Priming: Factory coated on faces and edges with exterior primer compatible with topcoats specified.
- B. Moldings for Painted Finish: WMMPA WM 4, P-grade wood moldings. Made from kiln-dried stock to patterns included in WMMPA WM 12.
  1. Species: Redwood, Western red cedar, Eastern white, Idaho white, lodgepole, or ponderosa pine.
  2. Finger Jointing: Not allowed.
  3. Factory Priming: Factory coated on faces and edges with exterior primer compatible with topcoats specified.

## 2.4 PLYWOOD SOFFITS

- A. Plywood Type: Exterior, Grade A-C.
  1. Face Grade: 303-OC.
  2. Face Grade: 303-6-S.
- B. Thickness: 15/32 inch (11.9 mm).
- C. Face Species: Western red cedar or Redwood.
- D. Pattern: Channel groove; grooves 4 inches (101.6 mm) o.c.
- E. Surface: Smooth.

## 2.5 MISCELLANEOUS MATERIALS

- A. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches (38 mm) into wood substrate.
  1. For redwood, provide brass/bronze fasteners.
  2. For prefinished items, provide matching prefinished aluminum fasteners where face fastening is required.
  3. For pressure-preservative-treated wood, provide stainless-steel fasteners.



4. For applications not otherwise indicated, provide stainless-steel or aluminum fasteners.
- B. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.
- C. Flashing: Comply with requirements in Section 076200 "Copper Flashing and Trim" for flashing materials installed in exterior finish carpentry.
- D. Sealants: Latex, complying with ASTM C 834 Type OP, Grade NF and with applicable requirements in Section 079200 "Joint Sealants," recommended by sealant manufacturer and manufacturer of substrates for intended application.

## 2.6 FABRICATION

- A. Back out or kerf backs of standing and running trim wider than 5 inches (125 mm), except members with ends exposed in finished work.
- B. Ease edges of lumber less than 1 inch (25 mm) in nominal thickness to 1/16-inch (1.5-mm) radius and edges of lumber 1 inch (25 mm) or more in nominal thickness to 1/8-inch (3-mm) radius.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.
- B. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed. Cut to required lengths and prime ends. Comply with requirements in Section 099113 "Exterior Painting."

### 3.3 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly treated, or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
- B. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
  1. Scribe and cut exterior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

2. Install to tolerance of 1/8 inch in 96 inches (3 mm in 2438 mm) for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch (0.8-mm) maximum offset for flush installation and 1/16-inch (1.5-mm) maximum offset for reveal installation.

### 3.4 STANDING AND RUNNING TRIM INSTALLATION

- A. Install flat-grain lumber with bark side exposed to weather.
- B. Install trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches (610 mm) long except where necessary.
  1. Use scarf joints for end-to-end joints.
  2. Stagger end joints in adjacent and related members.
- C. Fit exterior joints to exclude water. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Plane backs of casings to provide uniform thickness across joints, where necessary for alignment.
- D. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

### 3.5 ADJUSTING

- A. Replace exterior finish carpentry that is damaged or does not comply with requirements. Exterior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

### 3.6 CLEANING

- A. Clean exterior finish carpentry on exposed and semi exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

### 3.7 PROTECTION

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
  1. Indications that materials are wet, or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 062013

THIS PAGE LEFT BLANK

## SECTION 070150 - PREPARATION FOR RE-ROOFING

## 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. Roof tear-off.
  - 2. Partial roof tear-off.
  - 3. Temporary roofing membrane.
  - 4. Roof re-cover preparation.
  - 5. Removal of base flashings.
- B. Related Sections:
  - 1. Section 011000 "Summary" for use of the premises and phasing requirements.
  - 2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.
  - 3. Section 024119 "Selective Demolition".

## 1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

## 1.4 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Roofing Systems: EPDM roofing membrane and French Clay Roof Tiles, wood sheet roof decking, roof insulation, tongue & groove roof decking, and components and accessories between deck and roofing membrane.
- C. Roof Tear-Off: Removal of existing EPDM roofing membrane.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Salvage: Removal of existing French Clay Roof Tiles, temporary storage on-site, preparation for reuse, and reinstallation.
- F. Existing to Remain: Existing items of construction that are not indicated to be removed.

### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

### 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer is approved by warrantor of existing roofing system.
- B. Fastener pull-out test report.
- C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.
- D. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

### 1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system, approved by warrantor of existing roofing system to work on existing roofing.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Reroofing Conference: Conduct conference at Project site.
  - 1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
  - 2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
    - a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
    - b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
    - c. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
    - d. Existing deck removal procedures and Owner notifications.
    - e. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
    - f. Structural loading limitations of deck during reroofing.
    - g. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.

## 1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
  - 1. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.
- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Conditions existing at time of inspection for bidding will be maintained by the Owner as far as practical.
- E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
- F. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.
  - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

## PART 2 - PRODUCTS

### 2.1 TEMPORARY ROOFING MATERIALS

- A. Design and selection of materials for temporary roofing are responsibilities of Contractor.
- B. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft. (0.16 kg/sq. m).
- C. Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet.
- D. Glass-Fiber Felts: ASTM D 2178, Type IV, asphalt-impregnated, glass-fiber felt.
- E. Asphalt Primer: ASTM D 41.

### 2.2 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of [existing and] new membrane roofing system.
- B. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Approval's "Approval Guide."

- C. Metal Flashing Sheet: Metal flashing sheet is specified in Section 076200 "Sheet Metal Flashing and Trim."

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- B. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
  - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding.
- C. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

#### 3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day.
- B. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the cover board, salvage and reinstall French clay roof tiles, remove existing felt underlayment and metal flashing down to the cover board.
  - 1. Remove fasteners from cover board.
  - 2. Remove wet or damp boards and roof insulation. Removal will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

#### 3.3 DECK PREPARATION

- A. Inspect cover board after tear-off of membrane roofing system.
- B. If cover board surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner. Do not proceed with installation until directed by Architect.

#### 3.4 TEMPORARY ROOFING MEMBRANE

- A. Install approved temporary roofing membrane over area to be reroofed.
- B. Install temporary roofing membrane over area to be reroofed. Mechanically fasten base sheet and install a glass-fiber felt, lapping each sheet 19 inches (483 mm) over preceding sheet. Embed glass-fiber felt in a solid mopping of hot roofing asphalt applied within an acceptable temperature range. Glaze-coat completed surface with hot roofing asphalt.
- C. Remove temporary roofing membrane before installing new roofing membrane.

### 3.5 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
  - 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counter flashings that are to remain. Replace metal counter flashings damaged during removal with counter flashings specified in Section 076200 "Sheet Metal Flashing and Trim."
- C. Inspect parapet sheathing for deterioration and damage. If parapet sheathing has deteriorated, immediately notify Owner.

### 3.6 RECOVER BOARD INSTALLATION

- A. Install recover boards over roof insulation with long joints in continuous straight lines and end joints staggered between rows. Loosely butt recover boards together and fasten to deck.
  - 1. Tape joints of recover boards if required by roofing membrane manufacturer.
  - 2. Fasten recover boards to resist wind-uplift pressure at corners, perimeter, and field of roof.
  - 3. Install additional fasteners near board corners and edges as necessary to conform boards to substrate and to adjacent boards.

### 3.7 DISPOSAL

- A. Collect demolished materials and place them in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
  - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19



THIS PAGE LEFT BLANK

## SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

## 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. Bonded HDPE or polyethylene sheet waterproofing.

## 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
  - 1. Review waterproofing requirements including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
  - 2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.
- B. Shop Drawings: Show locations and extent of waterproofing and details of substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
  - 1. Include setting drawings showing layout, sizes, sections, profiles, and joint details of pedestal-supported concrete pavers.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Sample Warranties: For special warranties.

## 1.6 FIELD CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to damp or wet substrate.
  - 1. Do not apply waterproofing in snow, rain, fog, or mist.
- B. Maintain adequate ventilation during preparation and application of waterproofing materials.

## 1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard materials-only warranty in which manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

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

## PART 2 - PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Source Limitations for Waterproofing System: Obtain waterproofing materials from single source from single manufacturer.

### 2.2 BONDED HDPE OR POLYETHYLENE SHEET WATERPROOFING

- A. Bonded HDPE Sheet for Vertical Applications: Uniform, flexible, multilayered-composite sheet membrane consisting of either a HDPE film coated with a pressure-sensitive adhesive and protective release liner, total 32-mil (0.8-mm) thickness, or an HDPE film coated with a modified asphalt layer and a nonwoven geotextile-fabric final layer, total 73-mil (1.9-mm) thickness; with the following physical properties:
1. Tensile Strength, Film: 4000 psi (27.6 MPa) minimum; ASTM D 412.
  2. Low-Temperature Flexibility: Pass at minus 10 deg F (minus 23 deg C); ASTM D 1970.
  3. Peel Adhesion to Concrete: 5 lbf/in. (875 N/m) minimum; ASTM D 903, modified.
  4. Lap Adhesion: 2.5 lbf/in. (440 N/m) minimum; ASTM D 1876, modified.
  5. Hydrostatic-Head Resistance: 231 feet (70 m); ASTM D 5385, modified.
  6. Puncture Resistance: 100 lbf (445 N) minimum; ASTM E 154.
  7. Water Vapor Permeance: 0.01 perms (0.6 ng/Pa x s x sq. m) maximum; ASTM E 96/E 96M, Water Method.
  8. Water Absorption: 0.5 percent maximum; ASTM D 570.
- B. Bonded HDPE or Polyethylene Sheet for Horizontal Applications: Uniform, flexible, multilayered-composite sheet membrane consisting of either an HDPE film coated with pressure-sensitive adhesive and protective release liner, total 46-mil (1.2-mm) thickness, or a cross-laminated film of low- and medium-density polyethylene, coated with a modified asphalt layer and a nonwoven geotextile-fabric final layer, total 95-mil (2.4-mm) thickness; with the following physical properties:
1. Tensile Strength, Film: 2000 psi (13.8 MPa) minimum; ASTM D 412.
  2. Low-Temperature Flexibility: Pass at minus 10 deg F (minus 23 deg C); ASTM D 1970.
  3. Peel Adhesion to Concrete: 5 lbf/in. (875 N/m) minimum; ASTM D 903, modified.
  4. Lap Adhesion: 2.5 lbf/in. (440 N/m) minimum; ASTM D 1876, modified.
  5. Hydrostatic-Head Resistance: 231 feet (70 m); ASTM D 5385, modified.
  6. Puncture Resistance: 200 lbf (890 N) minimum; ASTM E 154.
  7. Water Vapor Permeance: 0.01 perms (0.6 ng/Pa x s x sq. m) maximum; ASTM E 96/E 96M, Water Method.
  8. Water Absorption: 0.5 percent maximum; ASTM D 570.
- C. Mastic, Adhesives, and Detail Tape: Liquid mastic and adhesives, and adhesive tapes recommended by waterproofing manufacturer.

## 2.3 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.
- B. Primer: Liquid solvent-borne primer recommended for substrate by sheet-waterproofing material manufacturer.
- C. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by sheet-waterproofing material manufacturer.
- D. Substrate Patching Membrane: Low-viscosity, two-component, modified asphalt coating.
- E. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick, predrilled at 9-inch (229-mm) centers.

## 2.4 INSULATION

- A. Insulation, General: Comply with Section 072100 "Thermal Insulation."

# PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the waterproofing.
  - 1. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 SURFACE PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D 4258.
- E. Corners: Prepare, prime, and treat inside and outside corners according to ASTM D 6135.

## 3.3 BONDED HDPE OR POLYETHYLENE SHEET-WATERPROOFING APPLICATION

- A. Install bonded HDPE or polyethylene sheets according to manufacturer's written instructions.

- B. Place and secure molded-sheet drainage panels over substrate. Lap edges and ends of geotextile to maintain continuity.
- C. Vertical Applications: Install sheet with HDPE face against substrate. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by membrane manufacturer. Overlap and seal seams, and stagger and tape end laps to ensure watertight installation. Mechanically fasten to substrate.
  - 1. Securely fasten top termination of membrane with continuous metal termination bar anchored into substrate and cover with detailing tape.
- D. Horizontal Applications: Install sheet with HDPE or polyethylene face against substrate. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required by membrane manufacturer. Overlap and seal seams, and stagger and tape end laps to ensure watertight installation.
- E. Corners: Seal lapped terminations and cut edges of sheet waterproofing at inside and outside corners with detail tape.
- F. Seal penetrations through sheet waterproofing to provide watertight seal with detail tape patches or wraps and a liquid-membrane troweling.
- G. Install sheet-waterproofing and auxiliary materials to produce a continuous watertight tie into adjacent waterproofing.
- H. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Tape perimeter of damaged or nonconforming area extending 6 inches (150 mm) beyond repaired areas in all directions. Apply a patch of sheet waterproofing and firmly secure with detail tape.

### 3.4 PROTECTION, REPAIR, AND CLEANING

- A. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.
- D. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 071326

## SECTION 071353 - ELASTOMERIC SHEET WATERPROOFING

### 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. EPDM rubber sheet waterproofing.
- B. Related Requirements:
  - 1. Section 071326 "Self-Adhered Waterproofing".
  - 2. Section 072100 "Thermal Insulation".
  - 3. Section 076200 "Copper Flashing and Trim".

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at project site.
  - 1. Review waterproofing requirements including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
  - 2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.
- B. Shop Drawings: Show locations and extent of waterproofing and details of substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
  - 1. Include setting drawings showing layout, sizes, sections, profiles, and joint details of pedestal-supported concrete pavers.
- C. Sample Warranties: For special warranties.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

## 1.6 FIELD CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended in writing by waterproofing manufacturer. Do not apply waterproofing to damp or wet substrate.
  - 1. Do not apply waterproofing in snow, rain, fog, or mist.
- B. Maintain adequate ventilation during preparation and application of waterproofing materials.

## 1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard materials-only warranty in which manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.
  - 1. **Warranty Period: 10 years from date of Substantial Completion.**

## PART 2 - PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Source Limitations for Waterproofing System: Obtain waterproofing materials from single source from single manufacturer.

### 2.2 SHEET WATERPROOFING

- A. EPDM Rubber Sheet: ASTM D 6134, Type I, 60-mil (1.5-mm) thick flexible sheet, unreinforced, formed from EPDM.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Carlisle, SynTec Sure-Seal 60-mil EPDM
    - b. Firestone, Rubbergard 60-mil EPDM
    - c. Versico, Versigard 60-mil EPDM

### 2.3 AUXILIARY MATERIALS

- A. General: Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.
- B. Concealed Sheet Flashing: Same material, construction, and thickness as sheet waterproofing or 60-mil-(1.5-mm-) thick, uncured EPDM, as required by manufacturer.
- C. Exposed Sheet Flashing: 60-mil (1.5-mm) thick EPDM, cured or uncured, as required by manufacturer.
- D. Bonding Adhesives: For bonding waterproofing sheets and sheet flashings to substrates and projections.
- E. Splicing Cement and Cleaner: Single-component butyl splicing cement and solvent-based splice cleaner.
- F. Lap Sealant: Single-component sealant.

- G. Waterproofing and Sheet-Flashing Accessories: Provide sealants, pourable sealers, cone, and vent flashings, inside and outside corner flashings, termination reglets, and other accessories recommended by waterproofing manufacturer for intended use.
- H. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick, predrilled at 9-inch (229-mm) centers.
- I. Protection Course: Semirigid sheets of asphalt-impregnated organic mat, mineral surface, with a nominal thickness of 1/8 inch (3 mm).

## 2.4 INSULATION

- A. Insulation, General: Comply with Section 072100 "Thermal Insulation."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the waterproofing.
  - 1. Verify that concrete has cured and aged for minimum time recommended in writing by waterproofing manufacturer.
  - 2. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 SURFACE PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids.
- E. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D 4258.
- F. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through waterproofing and at drains and protrusions.

### 3.3 FULLY ADHERED SHEET INSTALLATION

- A. Install fully adhered sheets over entire area to receive waterproofing according to manufacturer's written instructions and recommendations in ASTM D 5843.



- B. Accurately align sheets and maintain uniform side and end laps of minimum dimensions required. Stagger end laps.
- C. Apply bonding adhesive to substrates at required rate and allow it to partially dry.
- D. Apply bonding adhesive to sheets and firmly adhere sheets to substrates. Do not apply bonding adhesive to splice area of sheet.
- E. Install fully adhered sheets and auxiliary materials to tie into existing waterproofing.
- F. Repair tears, voids, and lapped seams in waterproofing that do not comply with requirements. Slit and flatten fishmouths and blisters. Patch with sheet waterproofing extending beyond repaired areas in all directions.
- G. Horizontal Application: Apply sheets with side laps shingled with slope of deck where possible.
  - 1. Spread sealant bed over deck drain flange at deck drains and securely seal sheet waterproofing in place with clamping ring.

### 3.4 SEAM INSTALLATION

- A. Cement and Tape Splice: Clean splice areas, apply splicing cement and butyl gum tape, and firmly roll side and end laps of overlapping sheets according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal edges of sheet terminations.

### 3.5 SHEET-FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to waterproofing manufacturer's written instructions.
- B. Form wall flashings using exposed sheet flashing.
- C. Extend deck sheet waterproofing to form wall flashings.
  - 1. Flash penetrations and field-formed inside and outside corners with uncured sheet flashing.
  - 2. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight installation. Apply lap sealant and seal edges of sheet-flashing terminations.
- D. Cover expansion joints and discontinuous deck-to-wall or deck-to-deck joints by extending deck sheet waterproofing over joints.
- E. Terminate and seal top of sheet flashings.

### 3.6 FIELD QUALITY CONTROL

Retain first paragraph below if required.

- A. Engage a site representative qualified by waterproofing membrane manufacturer to inspect substrate conditions, surface preparation; membrane application, flashings, protection, and drainage components, and to furnish daily reports to Architect.

### 3.7 PROTECTION, REPAIR, AND CLEANING

- A. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.
- D. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 071353

THIS PAGE LEFT BLANK

## SECTION 072100 - THERMAL INSULATION

## 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. Foam-plastic board insulation.
- B. Related Sections:
  - 1. Section 070150 "Preparation for Re-Roofing"
  - 2. Section 071326 "Self-Adhering Sheet Waterproofing"
  - 3. Section 071353 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing"
  - 4. Section 073200 "Clay Roof Tile"

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

## 1.4 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.

## 1.5 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings from an applicable testing agency.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
- B. Protect foam-plastic board insulation as follows:
  - 1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
  - 2. Always protect against ignition. Do not deliver foam-plastic board materials to Project site before installation time.
  - 3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

## PART 2 - PRODUCTS

### 2.1 FOAM-PLASTIC BOARD INSULATION

- A. Extruded-Polystyrene Board Insulation: ASTM C 578, of type and minimum compressive strength indicated below, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.
  - 1. Type V, 100 psi (690 kPa).

### 2.2 SPRAY POLYURETHANE FOAM INSULATION

- A. Closed-Cell Polyurethane Foam Insulation: ASTM C 1029, Type II, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

### 2.3 INSULATION FASTENERS

- A. Adhesively Attached, Spindle-Type Anchors: Plate welded to projecting spindle; capable of holding insulation of specified thickness securely in position indicated with self-locking washer in place.
  - 1. Plate: Perforated, galvanized carbon-steel sheet, 0.030 inch (0.762 mm) thick by 2 inches (50 mm) square.
  - 2. Spindle: Copper-coated, low-carbon steel; fully annealed; 0.105 inch (2.67 mm) in diameter; length to suit depth of insulation indicated.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean substrates of substances that are harmful to insulation [or vapor retarders, including removing projections capable of puncturing vapor retarders,] or that interfere with insulation attachment.

### 3.2 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
- D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.
- E. Spray-Applied Insulation: Apply spray-applied insulation according to manufacturer's written instructions. Do not apply insulation until installation of pipes, ducts, conduits, wiring, and electrical outlets in walls is completed and windows, electrical boxes, and other items not

indicated to receive insulation are masked. After insulation is applied, make flush with face of studs by using method recommended by insulation manufacturer.

- F. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
  - 1. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

### 3.3 PROTECTION

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

END OF SECTION 072100

THIS PAGE LEFT BLANK

## SECTION 073213 – CLAY ROOF TILE

## 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. Clay Roof Tiles.
  - 2. Underlayment.
  - 3. Related Roof Accessories.
- B. Related Sections:
  - 1. Section 061516 "Wood Roof Decking"
  - 2. Section 070150 "Preparation for Re-Roofing"
  - 3. Section 072100 "Thermal Insulation"
  - 4. Section 076200 "Copper Flashing and Trim"
  - 5. Section 077200 "Roof Accessories".

## 1.3 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: Of each color, size, texture, and shape.
  - 1. Include similar Samples of trim and accessories involving color selection.
  - 2. Match existing tile color, size, texture, and shape. Existing salvaged tiles shall be used to produce an acceptable match.
- C. Samples for Verification: For the following products, of sizes indicated, to verify color selected:
  - 1. Clay Roof Tile: Full size, of each color, size, texture, and shape.
  - 2. Ridge Cap: Full size, of each color, size, texture, and shape.
  - 3. Fasteners: Three fasteners of each type, length, and finish.

## 1.5 INFORMATIONAL SUBMITTALS

- A. Material Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each slate variety.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.



## 1.6 MATERIALS MAINTENANCE SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Clay Roof Tiles:
    - a. 20 percent of each type and color of field tiles, in unbroken bundles
    - b. 30 ridge tiles, in unbroken bundles

## 1.7 QUALITY ASSURANCE

- A. Source Limitations: Obtain each color of clay roof tile from a single manufacturer with consistent quality in appearance and physical properties.
- B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. Build mockups on northwest roof slopes to minimize visibility.
  - 1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at project site.

## 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store underlayment rolls on end, on pallets or other raised surfaces. Do not double stack rolls.
  - 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

## 1.9 PROJECT CONDITIONS

- A. Environmental Limitations: Proceed with installation of self-adhering sheet underlayment only within the range of ambient and substrate temperatures recommended by manufacturer.

## 1.10 WARRANTY

- A. Special Warranty: Standard form in which roofing Installer agrees to repair or replace slate roofing that fails in materials or workmanship within specified warranty period.
  - 1. **Warranty Period: Five years from date of Substantial Completion.**

## PART 2 - PRODUCTS

### 2.1 CLAY ROOF TILES

- A. ASTM C 1167, Standard Specification for Clay Roof; hard, dense, and sound; chamfered edges, with nail holes machine punched or drilled and countersunk. No broken or cracked slates, no broken exposed corners, and no broken corners on covered ends that could sacrifice nailing

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
2. Basis-of-Design Product: Subject to compliance with requirements, provide Ludowici French Low Profile Interlocking Tile or comparable product.
3. Overall Size: 9" x 16.25"
4. Exposure: 8.125" x 13.375"
5. Weight Per Square: 1,025 lbs.
6. Pieces Per Square: 133 pcs.
7. Color Blends: Custom (match existing).
8. Surface Texture: Smooth.
9. Nail Holes: Two per shingle.

B. Hip & Ridge Profiles:

1. Trim Group: Hip Starter, Hip Roll, Ridge, Ridge Terminal, and Gable Terminal. Match existing profiles as required to replace damaged tiles.

## 2.2 UNDERLAYMENT MATERIALS

- A. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-mil- (1.0-mm-) thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied. Provide primer for adjoining concrete or masonry surfaces to receive underlayment.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. Carlisle, WIP 100 Ice & Water Guard
  - b. MFM Building Products, Black Wind & Water Seal
  - c. GAP, WaterGuard

## 2.3 ACCESSORIES

- A. Elastomeric Sealant: ASTM C 920, elastomeric silicone sealant; of type, grade, class, and use classifications required to seal joints in clay tile roofing and remain watertight.
- B. Clay Tile Nails: ASTM F 1667, type I, Style 23, copper slating, wire nails; 0.135-inch (3.4-mm) minimum thickness; sharp pointed; with 3/8-inch (10-mm-) minimum diameter flat head; of sufficient length to penetrate a minimum of 3/4 inch (19 mm) into sheathing.
- C. Wood Nailer Strips and Eave Cants: Comply with requirements in Section 061000 "Rough Carpentry."

## 2.4 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
1. Sheet Metal: Copper.
- B. Fabricate sheet metal flashing and trim to comply with recommendations that apply to design, dimensions, metal, and other characteristics of the item in SMACNA's "Architectural Sheet Metal Manual."

## 2.5 ACCESSORIES

- A. Asphalt Roof Cement: ASTM D4586/D4586M, Type II.
- B. Mortar: ASTM C270, Type N or O. Match Tile Color.
- C. Joint Sealant: ASTM C920, non staining silicone, Type S, Grade NS, Class 100/50.
- D. Nailers: Preservative treated wood complying with Section 061000 "Rough Carpentry".
- E. Copper Wire: ASTM B3, 0.083 inch (2.11 mm) diameter, minimum.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking, or metal clips and that installation is within flatness tolerances.
  - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored and that provision has been made for flashings and penetrations through roofing.
  - 3. Verify roof accessories, vent pipes, and other projections through roof are in place and roof flashing is installed, or ready for installation, before installing clay roof tiles.
- B. Protect existing construction and completed work from damage.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION – GENERAL

- A. Install products according to manufacturer's instructions.
  - 1. When manufacturer's instructions deviate from specification, submit proposed resolutions for Owner's Representative consideration.

### 3.3 METAL DRIP EDGE INSTALLATION

- A. At eaves and rakes, install copper drip edges specified in Section 076200 "Metal Flashing & Trim".
  - 1. Eaves: install metal drip edge before underlayment.
  - 2. Rakes: install metal drip edge after underlayment.
- B. Secure metal drip edges with copper nails spaced maximum 10 inches (250 mm) on center along inner edges.

### 3.4 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply. Install underlayment, working from low point to high point and overlapping edges per manufacturer's instructions.

- B. Self-Adhering Sheet Underlayment: Install, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches (89 mm). Lap ends not less than 6 inches (152 mm), staggered 24 inches (600 mm) between courses. Roll laps with roller. Cover underlayment within seven days.

### 3.5 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
  - 1. Install metal flashings according to recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope of clay roof tiles at downslope sides of projections.
- C. Channel Flashing: Install at intersections with side slope and vertical surfaces.
  - 1. Vertical Leg Height: 5 inches (125 mm) minimum.
  - 2. Horizontal Leg Width: 3 inches (75 mm) minimum.
  - 3. Lap each length of channel flashing 8 inches (200 mm) minimum.
  - 4. Fasten vertical leg of channel flashing, 12 inches (300 mm) on center.
- D. Step Flashings: Install with a head lap of 3 inches (75 mm) and extend both horizontally and vertically. Install with lower edge of flashing just upslope of, and concealed by, butt of overlying slate shingle. Fasten to roof deck only.
  - 1. Length: length of tile plus 3 inches (75 mm).
  - 2. Vertical Leg Height: 8 inches (200 mm) minimum.
  - 3. Horizontal Leg Width: 6 inches (150 mm) minimum.
- E. Cricket Flashings: Install on upslope side and against the roof-penetrating element, extending concealed flange beneath upslope clay roof tiles and beyond each side.
- F. Hip Flashings: Install centrally over hip with lower edge of flashing concealed by butt of overlying slate shingle. Fasten to roof deck.
- G. Counterflashing: Overlap vertical leg of channel flashing and apron flashing with counterflashing 2 inches (50 mm) minimum.
- H. Open Valley Flashings: Install centrally in valleys, lapping ends at least 8 inches (205 mm) in direction to shed water. Fasten the upper end of each length to roof deck beneath overlap according to manufacturer's instructions.
  - 1. Width: 12 inches (300 mm) minimum, both sides of valley.
  - 2. Secure hemmed flange edges into metal cleats spaced 12 inches (305 mm) apart and fastened to roof deck.
- I. Rake Drip Edges: Install over underlayment and fasten to roof deck.
- J. Eave Drip Edges: Install beneath underlayment and fasten to roof deck.
- K. Pipe Flashings: Form flashing around pipe penetrations and slate shingles. Fasten and seal to slate shingles.

### 3.6 NAILER INSTALLATION

- A. Fasten wood nailers to roof deck at ridges, hips, and rakes.

### 3.7 CLAY TILE INSTALLATION

- A. General: Beginning at eaves, install clay tiles according to manufacturer's written instructions and to details and recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Lay courses parallel with eaves.
- C. Do NOT stretch courses.
- D. Space courses to finish even and parallel with upper-level terminations.
- E. Use special shapes to start and finish hips, rides, and rakes.
- F. Fit tiles closely at ridges, around vent pipes, flashing, and other projections through the roof.
- G. Secure each tile with two nails, where possible.
  - 1. Nails: copper
  - 2. Use copper wire fastening where nails are not possible.
- H. Maintain a 3-inch (75-mm) minimum head lap unless otherwise required by manufacturer.
- I. Recess eave closure tile minimum 1.5 inches (38 mm) from lower end of tile.
- J. Fill laps at the following locations with roof cement:
  - 1. End bands.
  - 2. Ridge cover tiles.
  - 3. Gable rakes at end bands.
  - 4. Gable rakes at field tiles.
- K. Use maximum .25 inch (6 mm) thick roof cement to level tile.
  - 1. Use mortar to level and bed tile where off-level dimension exceeds .25 inch (6 mm).
- L. Use sealant to point around eave closures, ridge cover joints, and top fixtures.
  - 1. Apply sealant cap bead over exposed fasteners.
  - 2. Comply with Section 079200 "Joint Sealants".
- M. Coordinate with Section 076200 "Metal Flashing & Trim" for installation of flashing with tile work. Keep flashing concealed except where exposed in valleys, edges, and vertical surfaces.
- N. Valleys: Open.
  - 1. Do NOT nail within valleys.

### 3.8 ADJUSTING AND CLEANING

- A. Remove and replace damaged or broken clay tiles.
- B. Remove excess debris from Project site.

- C. Upon completion remove cement splatter and excess roof cement from clay roof tiles and adjacent surfaces.

### 3.9 PROTECTION

- A. Protect clay roof tiles from construction operations.
- B. Do not allow traffic on the clay tiles after installation.

END OF SECTION 073126

THIS PAGE LEFT BLANK

## SECTION 076200 - COPPER FLASHING AND TRIM

### 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. Manufactured reglets, counterflashing, and base flashing.
  - 2. Wall flashing.
  - 3. Copings.
  - 4. Valley flashing.
  - 5. Formed roof-drainage copper metal fabrications.
  - 6. Formed low-slope roof copper metal fabrications.
  - 7. Exposed trim and fascia.
  - 8. Miscellaneous accessories.
- B. Related Requirements:
  - 1. Section 061000 "Rough Carpentry"
  - 2. Section 073213 "Clay Roof Tiles"
  - 3. Section 076220 "Copper Gutters & Downspouts"
  - 4. Section 077200 "Roof Accessories"

#### 1.3 COORDINATION

- A. Coordinate copper flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate copper metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Installation Requirements: Fabricator is responsible for installing system, including anchorage to substrate and necessary modifications to meet specified and drawn requirements and maintain visual design concepts in accordance with Contract Documents and following installation methods as stipulated in the "Copper in Architecture" handbook published by the Copper Development Association (CDA).
  - 1. System shall accommodate movement of components without buckling, failure of joint seals, undue stress on fasteners, or other detrimental effects when subjected to seasonal temperature changes and live loads.
  - 2. Design system capable of withstanding building code requirements for negative wind pressure.



### 1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at project site.
  - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect copper metal flashing and trim.
  - 3. Review requirements for insurance and certificates if applicable.
  - 4. Review copper metal flashing observation and repair procedures after flashing installation.

### 1.6 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.
- B. Product data for flashing, metal, and accessories: Manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product
- C. Shop Drawings: For copper metal flashing and trim.
  - 1. Shop drawings showing layout, profiles, methods of joining, and anchorage details, including major counterflashings, copings, trim/fascia units, and gravel stops systems. Provide layouts at 1/4-inch (1:50) scale and details at 3-inch (1:4) scale.
- D. Samples for Verification: For each type of exposed finish.
  - 1. 6-inch (150 mm) or 12-inch (300 mm) square samples of specified sheet materials to be exposed as finished surfaces.
- E. Sample Warranty: For special warranty.

### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For copper metal flashing and trim, and its accessories, to include in maintenance manuals.

### 1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in copper flashing and trim work with three years of experience in similar size and type of installations.
- B. Industry Standard: Except as otherwise shown or specified, comply with applicable recommendations and details of the "Copper in Architecture" handbook published by the Copper Development Association (CDA). Conform to dimensions and profiles shown.

### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store copper metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store copper metal flashing and trim materials away from uncured concrete and masonry.

- B. Packing, Shipping, Handling, and Unloading: Protect finish metal faces.
- C. Acceptance at Site: Examine each component and accessory as delivered and confirm that material and finish is undamaged. Do not accept or install damaged materials.
- D. Storage and Protection:
  - 1. Stack pre-formed material to prevent twisting, bending, and abrasions.
  - 2. Provide ventilation.
  - 3. Prevent contact with materials which may cause discoloration or staining.

#### 1.10 WARRANTY

- A. Warrant installed flashing, copings, gravel stops, and trim components to be free from defects in material and workmanship for period of 2 years.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. General: Copper metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed copper metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Copper metal Standard for Copper: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

#### 2.2 FLASHING AND TRIM MATERIALS

- A. Copper: ASTM B370; temper H00 (cold-rolled) except where temper 060 is required for forming; 16 oz. per sq. ft. (0.0216-inch thick) (0.55 mm) except as otherwise indicated.

#### 2.3 LAMINATED COMPOSITION SHEET FLASHING

- A. Copper/Fiberglass Laminated Flashing.
  - 1. Description: Asphalt free copper fabric flashing, 5-ounce minimum weight.
  - 2. Material: Copper sheet with 060 temper conforming to ASTM B370 bonded with a proprietary rubber-based adhesive, between two layers of fiberglass fabric weighing not less than 0.3 oz/sq.ft./layer with a minimum of 20x20 threads per inch.
- B. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
  - 1. Advanced Building Products, Inc.; Copper Sealtite 2000
  - 2. York Manufacturing Inc.; Multi-Flash 500 Series Asphalt Free

#### 2.4 COPPER METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Copper Sheet: ASTM B 370, cold-rolled copper sheet, H00 or H01 temper.
  - 1. Nonpatinated Exposed Finish: Mill.

## 2.5 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 50 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacturer.
  - 1. Thermal Stability: ASTM D 1970; stable after testing at 240 deg F (116 deg C) or higher.
  - 2. Low-Temperature Flexibility: ASTM D 1970; passes after testing at minus 20 deg F (29 deg C) or lower.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum.

## 2.6 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items as required for complete copper metal flashing and trim installation and as recommended by manufacturer of primary copper metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary copper metal.
  - 1. Fasteners for Copper Sheet: Copper or bronze.
- C. Solder:
  - 1. For Copper: ASTM B 32, Grade Sn50, with maximum lead content of 0.2 percent.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in copper metal flashing and trim and remain watertight.
- F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.
- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

## 2.7 MANUFACTURED COPPER METAL FLASHING AND TRIM

- A. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions and with interlocking counterflashing on exterior face, of same metal as reglet.
  - 1. Material: Copper, 16 oz./sq. ft. (0.55 mm thick).

2. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
3. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
4. Accessories:
  - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
  - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
5. Finish: Mill.

## 2.8 FABRICATION, GENERAL

- A. General: Custom fabricate copper metal flashing and trim to comply with details shown and recommendations in cited copper metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate copper metal flashing and trim in shop to greatest extent possible.
  1. Fabricate copper metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
  2. Obtain field measurements for accurate fit before shop fabrication.
  3. Form copper metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
  4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances: Fabricate copper metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
- C. Fabrication Tolerances: Fabricate copper metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."
- D. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
  1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- E. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited copper metal standard.
- F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- G. Fabricate cleats and attachment devices of sizes as recommended by cited copper metal standard for application, but not less than thickness of metal being secured.
- H. Solder:

1. Solder and seal metal joints except those indicated or required to be expansive type joints.
  2. Tin edges of copper sheets and cleats at soldered joints.
  3. After soldering, carefully remove flux and other residue from surfaces. Neutralize acid flux by washing with baking soda solution, and then flushing clear water rinse. Wipe and wash solder joints clean.
- I. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
1. Flat: Drive cleat.
  2. Corner: Double lock corner.
  3. Standing: Double lock standing lap seam.
- J. Copper Thickness: Comply with CDA recommendations for copper size and shape.
- K. Do not use graphite pencils to mark metal surfaces.

## 2.9 ROOF-DRAINAGE COPPER METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section required, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch (2400-mm) long sections. Furnish flat-stock gutter brackets and twisted gutter spacers and straps fabricated from same metal as gutters, of size recommended by cited copper metal standard but with thickness not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal as gutters. Shop fabricate interior and exterior corners.
1. Gutter Profile: 6" Half-Round.
  2. Expansion Joints: Butt type with cover plate.
  3. Gutters with Girth up to 15 Inches (380 mm): Fabricate from the following materials:
    - a. Copper: 16 oz./sq. ft. (0.55 mm thick).
  4. Gutters with Girth 16 to 20 Inches (410 to 510 mm): Fabricate from the following materials:
    - a. Copper: 16 oz./sq. ft. (0.55 mm thick).
  5. Gutters with Girth 21 to 25 Inches (530 to 640 mm): Fabricate from the following materials:
    - a. Copper: 20 oz./sq. ft. (0.68 mm thick).
  6. Gutters with Girth 26 to 30 Inches (660 to 760 mm): Fabricate from the following materials:
    - a. Copper: 24 oz./sq. ft. (0.82 mm thick).
  7. Gutters with Girth 31 to 35 Inches (790 to 890 mm): Fabricate from the following materials:
    - a. Copper: 24 oz./sq. ft. (0.82 mm thick).
- B. Downspouts: Fabricate round downspouts to dimensions indicated, complete with mitered elbows. Furnish with metal hangers from the same material as downspouts and anchors. Shop fabricate elbows.
1. Hanger Style: match existing.
  2. Fabricate from the following materials:
    - a. Copper: 16 oz./sq. ft. (0.55 mm thick).

- C. Parapet Scuppers: Fabricate scuppers to dimensions required, with closure flange trim to exterior, 4-inch (100-mm) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof. Fabricate from the following materials:
  - 1. Copper: [16 oz./sq. ft. (0.55 mm thick)]<Insert weight (thickness).>

## 2.10 LOW-SLOPE ROOF COPPER METAL FABRICATIONS

- A. Roof Edge Flashing and Fascia Cap: Fabricate in minimum 96-inch (2400-mm) long, but not exceeding 12-foot (3.6-m) long sections. Furnish with 6-inch (150-mm) wide, joint cover plates.
  - 1. Joint Style: Overlapped, 4 inches (100 mm) wide, Butted with expansion space and 6-inch (150-mm) wide, concealed backup plate.
  - 2. Fabricate from the Following Materials:
    - a. Copper: 20 oz./sq. ft. (0.68 mm thick).
- B. Copings: Fabricate in minimum 96-inch-(2400-mm-)long, but not exceeding 12-foot (3.6-m) long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, solder or weld watertight. Shop fabricate interior and exterior corners.
  - 1. Coping Profile: match existing profiles according to SMACNA's "Architectural Copper metal Manual."
  - 2. Joint Style: Butted with expansion space and 6-inch (150-mm) wide, concealed backup plate.
  - 3. Fabricate from the Following Materials:
    - a. Copper: 24 oz./sq. ft. (0.82 mm thick).
- C. Roof-to-Wall Transition, Roof-to-Roof Edge-Flashing, and Fascia-Cap Transition: Fabricate from the following materials: Shop fabricate interior and exterior corners.
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- D. Base Flashing: Fabricate from the following materials:
  - 1. Copper: 20 oz./sq. ft. (0.68 mm thick).
- E. Counterflashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- F. Flashing Receivers: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- G. Roof-Penetration Flashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- H. Roof-Drain Flashing: Fabricate from the following materials:
  - 1. Copper: 12 oz./sq. ft. (0.41 mm thick).

## 2.11 STEEP-SLOPE ROOF COPPER METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- B. Valley Flashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).

- C. Drip Edges: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- D. Eave and Rake Flashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- E. Counterflashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- F. Flashing Receivers: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).
- G. Roof-Penetration Flashing: Fabricate from the following materials:
  - 1. Copper: 16 oz./sq. ft. (0.55 mm thick).

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
  - 1. Verify compliance with requirements for installation tolerances of substrates.
  - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
  - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 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 in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller. Cover underlayment within 14 days.
- B. Apply slip sheet, wrinkle free, over underlayment before installing copper metal flashing and trim.

#### 3.3 INSTALLATION, GENERAL

- A. General: Anchor copper metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete copper metal flashing and trim system.
  - 1. Install copper metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

2. Install copper metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating copper metal.
  3. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
  4. Install exposed copper metal flashing and trim with limited oil canning, and free of buckling and tool marks.
  5. Torch cutting of copper metal flashing and trim is not permitted.
  6. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by copper metal manufacturer or cited copper metal standard.
1. Coat concealed side of copper metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
  2. Underlayment: Where installing copper metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
  2. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate [wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
  2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not use torches for soldering.
  2. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
  3. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.



### 3.4 ROOF-DRAINAGE SYSTEM INSTALLATION

- A. General: Install copper metal roof-drainage items to produce complete roof-drainage system according to cited copper metal standard unless otherwise indicated. Coordinate installation of roof perimeter flashing with installation of roof-drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchor them in position. Provide end closures and seal watertight with sealant. Slope to downspouts.
  - 1. Fasten gutter spacers to front and back of gutter.
  - 2. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches (600 mm) apart.
  - 3. Anchor gutter with gutter brackets spaced not more than 24 inches (600 mm) apart to roof deck, unless otherwise indicated, and loosely lock to front gutter bead.
  - 4. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet (15.24 m) apart. Install expansion-joint caps.
- C. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints.
  - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c.
  - 2. Provide elbows at base of downspout to direct water away from building.
  - 3. Connect downspouts to underground drainage system.
- D. Parapet Scuppers: Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
  - 1. Anchor scupper closure trim flange to exterior wall and solder to scupper.
- E. Conductor Heads: Anchor securely to wall, with elevation of conductor head rim at minimum of 1 inch (25 mm) below scupper discharge.
- F. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints minimum of 4 inches (100 mm) in direction of water flow.

### 3.5 ROOF FLASHING INSTALLATION

- A. General: Install copper metal flashing and trim to comply with performance requirements, copper metal manufacturer's written installation instructions, and cited copper metal standard. Provide concealed fasteners where possible, and set units true to line, levels, and slopes. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in cited copper metal standard unless otherwise indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch (75-mm) centers.
- C. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for FM Approvals' listing for required windstorm classification.
- D. Copings: Anchor to resist uplift and outward forces according to recommendations in cited copper metal standard unless otherwise indicated.

1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 24-inch (600-mm) centers.
  2. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch (600-mm) centers.
- E. Copings: Anchor to resist uplift and outward forces according to recommendations in FM Global Property Loss Prevention Data Sheet 1-49 for specified FM Approvals' listing for required windstorm classification.
- F. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.
- G. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches (100 mm) over base flashing. Lap counterflashing joints minimum of 4 inches (100 mm). Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.
- H. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

### 3.6 WALL FLASHING INSTALLATION

- A. General: Install copper metal wall flashing to intercept and exclude penetrating moisture according to cited copper metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

### 3.7 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align copper metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

### 3.8 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as copper metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of copper metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by copper metal flashing and trim manufacturer. Maintain copper metal flashing and trim in clean condition during construction.

- E. Replace copper metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

## SECTION 077200 - ROOF ACCESSORIES

Revise this Section by deleting and inserting text to meet Project-specific requirements.

This Section uses the term "Architect." Change this term to match that used to identify the design professional as defined in the General and Supplementary Conditions.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

- 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. Preformed flashing sleeves.
- B. Related Sections:
  - 1. Section 076200 "Copper Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

#### 1.4 ACTION SUBMITTALS

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
  - 1. Size and location of roof accessories specified in this Section.
  - 2. Method of attaching roof accessories to roof or building structure.
- B. Warranty: Sample of special warranty.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

## 1.7 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

## PART 2 - PRODUCTS

### 2.1 METAL MATERIALS

- A. Copper Sheet: ASTM B 370, manufacturer's standard temper.

### 2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Glass-Fiber Board Insulation: ASTM C 726, thickness as indicated.
- C. Polyisocyanurate Board Insulation: ASTM C 1289, thickness as indicated.
- D. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, and complying with AWPA C2; not less than 1-1/2 inches (38 mm) thick.
- E. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- F. Underlayment:
  - 1. Polyethylene Sheet: 6-mil (0.15-mm) thick polyethylene sheet complying with ASTM D 4397.
  - 2. Slip Sheet: Building paper, 3-lb/100 sq. ft. (0.16-kb/sq. m) minimum, rosin sized.
- G. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
  - 1. Fasteners for Copper Sheet: Copper, hardware bronze, or passivated Series 300 stainless steel.
- H. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- I. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- J. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.

- K. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

## 2.3 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 12 inches (300 mm) high, with removable metal hood and slotted metal collar.
  - 1. Metal: Copper sheet, 16 oz. (0.55 mm) thick.
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.
  - 1. Metal: Copper sheet, 16 oz. (0.55 mm) thick.
  - 2. Height: 7 inches (175 mm).

## 2.4 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
  - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

1. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
  2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.
- D. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.
- 3.3 REPAIR AND CLEANING
- A. Clean exposed surfaces according to manufacturer's written instructions.
- B. Clean off excess sealants.
- C. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

## SECTION 07 9200 - JOINT SEALANTS

### 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. Silicone joint sealants.
- B. Related Sections:
  - 1. Section 071326 "Self-Adhered Waterproofing"
  - 2. Section 071353 "Elastomeric Waterproofing"
  - 3. Section 073213 "Clay Tile Roof"
  - 4. Section 076200 "Copper Flashing and Trim"
  - 5. Section 077200 "Roof Accessories"

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.

#### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
  - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
  - 2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.



## 1.5 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F .
  2. When joint substrates are wet.
  3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

## 1.6 WARRANTY

- A. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  2. Disintegration of joint substrates from natural causes exceeding design specifications.
  3. Mechanical damage caused by individuals, tools, or other outside agents.
  4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## PART 2 - PRODUCTS

### 2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- D. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.2 SILICONE JOINT SEALANTS

- A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - a. Exterior insulation and finish systems.
    - b. Flashing and sheet metal systems.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- D. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

### 3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

### 3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

### 3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
  1. Joint Locations:
    - a. Joints in exterior finish systems.
    - b. Joints in exterior sheet metal flashing and trim.
  2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 25.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 07 9200

## SECTION 099113 - EXTERIOR PAINTING

## 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 surface preparation and the application of paint systems on **the following exterior substrates:**
  - 1. Wood.
- B. Related Requirements:
  - 1. Section 062013 "Exterior Finish Carpentry".

## 1.3 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Initial Selection: For each type of topcoat product.
  - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
  - 2. Step coats on Samples to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.
- C. Product List: For each product indicated, include the following:
  - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.

### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, **from the same product run**, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Paint: Provide **1 gal. (3.8 L)** of each material and color applied.

### 1.6 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. The Project Manager will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
    - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
  - 2. Final approval of color selections will be based on mockups.
    - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Project Manager at no added cost to Owner.
  - 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
  - 1. Maintain containers in clean condition, free of foreign materials and residue.
  - 2. Remove rags and waste from storage areas daily.

### 1.8 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, **available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following**:
  - 1. Diamond Vogel
  - 2. PPG
  - 3. Sherwin-Williams
  - 4. Benjamin Moore

## 2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
  - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.
- D. Colors: Match existing.

## 2.3 PRIMERS/SEALERS

- A. Primer, Latex for Exterior Wood: **MPI #6.**
  - 1. Behr Paint, Behr Premium Plus, Exterior Multi-Surface Primer
  - 2. Benjamin Moore, Insl-X, Blockout Exterior Primer
  - 3. PPG Architectural, PPG Paints, Seal Grip Exterior Acrylic Universal Primer/Sealer
  - 4. Sherwin-Williams, Sherwin-Williams, Exterior Latex Wood Primer
- B. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.

## 2.4 WATER-BASED PAINTS

- A. Latex, Exterior Low Sheen (Gloss Level 3-4): **MPI #15.**
  - 1. Behr Paint, Behr Premium Plus Ultra, Exterior Satin Enamel
  - 2. Benjamin Moore, Ultra Spec EXT, Exterior Acrylic Satin
  - 3. Diamond Vogel, EverCryl, Exterior Satin Acrylic
  - 4. PPG Architectural, Spectrum Paint, Rhino-Cryl Supreme Exterior Satin Acrylic
  - 5. Sherwin-Williams, Resilience, Exterior Acrylic Satin

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Wood: 15 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- E. Wood Substrates:
  1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
  2. Sand surfaces that will be exposed to view, and dust off.
  3. Prime edges, ends, faces, undersides, and backsides of wood.
  4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."
  1. Use applicators and techniques suited for paint and substrate indicated.
  2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
  3. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 CLEANING AND PROTECTION

- A. At the end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 EXTERIOR PAINTING SCHEDULE

- A. Wood Substrates: Including wood trim and architectural woodwork.
  - 1. Latex System:
    - a. Prime Coat: Primer, latex for exterior wood , **MPI #6**.
    - b. Intermediate Coat: Latex, exterior, matching topcoat.
    - c. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4), **MPI #15**.

END OF SECTION 099113



THIS PAGE LEFT BLANK