Rockwall Independent School District

# Request for COMPETITIVE SEALED PROPOSALS

RFCSP 2526.03-004
RHHS and Hays Elementary
Roof Replacement

| Date | Event |
|---|---|
| March 6, 2026 | 1st Advertisement / Issue Date |
| March 12, 2026 | Pre-Bid Conference – 10:00 A.M. (CST) |
| March 16-20, 2026 | *RISD Spring Break* |
| March 24, 2026 | Deadline for questions – 12:00 P.M. (CST) |
| March 25, 2026 | Addendum Posted |
| April 2, 2026 | Deadline for responses – 2:00 P.M. (CST) |
| April 20, 2026 | Recommendation to RISD Board of Trustees |

** The District will make every effort to adhere to this schedule; however, dates are subject to change. Any changes will be posted in the form of an addendum on the RISD website. Additional addendums may be posted at the discretion of RISD. Potential respondents are responsible for watching the website for such publications.*

**Deliver Sealed Responses to:**
Rockwall ISD Administration Building
Purchasing Department
1050 Williams Street
Rockwall, Texas 75087

**Rockwall ISD Purchasing Department:**
*(Contact during Procurement)*
Jana Hunter, MBA, RTSBA
Director of Purchasing
972-771-0605
jana.hunter@rockwallisd.org

**Rockwall ISD Operations Department:**
*(Contact during Project)*
Eddie Guajardo
Facility Services Project Manager
972-771-0605
Eddie.guajardo@rockwallisd.org

**Pre-Bid Information:**
March 12, 2026 – 10:00 A.M. (CST)
RISD Administration Bldg.

# NOTICE

The Rockwall Independent School District (RISD) is soliciting proposals per the specifications stated elsewhere in this solicitation document. A response to this solicitation is an offer to contract with Rockwall ISD and its members based on the specifications and standard terms and conditions contained in the bid document.

Respondents are cautioned to read this document completely and submit all documents. Each respondent, by submitting a response, represents that he/she has read and understands the proposal. Failure to examine the documents will be at the vendor's risk.

Respondents shall familiarize themselves with existing conditions in the material and labor markets prior to submission of an offer. The fact that an offer is submitted will be construed by the RISD Board of Trustees to indicate that the respondent agrees to carry out the furnishing of products and services in full accordance with the specifications and other contract documents not withstanding existing material and labor market conditions. A signed, submitted proposal constitutes an offer to perform the work and/or deliver the product(s) and/or services specified in the solicitation.

The vendor should propose his/her lowest and best price. All pricing information shall be entered on the proposal in ink or typewritten. Pricing should include packaging and transportation unless otherwise noted by the vendor.

If the vendor is awarded a contract under this solicitation, the prices proposed by the vendor shall remain fixed and firm during the term of the contract, provided, however that the vendor may offer incentive discounts from this fixed price to the District at any time during the contractual term.

Jana Hunter

Jana Hunter, MBA, RTSBA
Director of Purchasing

March 6, 2026
Release Date

## DISTRICT OVERVIEW

Rockwall ISD, situated in Rockwall County, Texas, comprises approximately two-thirds of the county's area and shares the county's boundary lines on the North, West and South. The eastern boundary of the district is an irregular line running through the town of Fate.

The District currently has 21 campuses comprised of 16 elementary schools, 3 middle schools, 2 high schools, a College and Career Academy and an alternative school. The District currently serves approximately 18,500 students and employs approximately 2300 employees.

Rockwall ISD has grown by more than 3,000 over the last decade and is expected to grow by nearly 6,000 students by 2030.

Rockwall ISD's Call to Action: Rockwall ISD empowers learners to embody independence, value relationships, and achieve excellence as thriving members of a dynamic community.

We believe that:

- Collaborative relationships create a culture where learners thrive.
- An effective learning environment is collaborative, safe, challenging, and responsive to the diverse needs of all students.
- Learning is a partnership that engages all members of our community to empower empathetic and responsible citizens for success among themselves.
- All learners deserve to be challenged in preparation for lifelong learning and future success.

Core Values:

- Relationships
- Innovation
- Excellence

Rockwall INDEPENDENT SCHOOL DISTRICT

*Additional information about Rockwall ISD can be obtained on its website: [www.rockwallisd.com](http://www.rockwallisd.com)*

# CODE OF CONDUCT

Vendors and their suppliers, installers and all others working on Rockwall ISD facilities are required to understand and adhere to the following rules and responsibilities. Failure to comply with the following rules and responsibilities may result in a work's removal from the facilities and/or the termination of all subcontractor's contract. Vendors are responsible for the suppliers and installers adherence to these policies. All personnel working on RISD facilities will indicate their understanding and agreement to comply with these rules and responsibilities by submitting a response to this solicitation.

1. Vendor's employees, installers and suppliers who will be entering the district should check in with the Rockwall ISD designated representative.
2. Vendor's employees, installers and suppliers must wear picture ID badges while on Rockwall ISD property.
3. The use of any tobacco products is prohibited on district property. These prohibited items include but are not limited to cigarettes, cigars, vapes and smokeless tobacco.
4. Drugs and alcoholic beverages are prohibited.
5. The use of vulgar or improper language is prohibited.
6. Unacceptable behavior including physical or verbal intimidation, horseplay, or fighting by any individual on district property will result in immediate remove from property.
7. School requirements may occasionally result in the untimely termination of a subcontractor's daily activities. Vendors are expected to anticipate and understand these circumstances and work with RISD to make-up any scheduling.
8. All contact with student is strictly prohibited.
9. Vendor's employees, installers and suppliers must be properly dressed in work attire which includes the use of proper work shoes and personal protection equipment (as needed).
10. Vendor's employees, installers and suppliers will promptly leave the premises at the end of each work shift or once business purpose has been served.
11. Vendor's employees, installers and suppliers will comply with all state and district rules regarding weapon free zones.
12. Vendor's employees, installers and suppliers shall submit such background information as may be requested by Rockwall ISD to perform criminal background evaluations/investigations.
13. No person who has charges pending or who has been convicted, received probation or deferred adjudication for the following shall be engaged to work on RISD property where students are present: Any offense against a child, any sex offense, any crimes against persons involving weapons or violence, any felony offense against property; or any offense that Rockwall ISD determines to compromise the safety and well-being of staff, students and/or property.

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## STANDARD TERMS AND CONDITIONS

The following instructions by the Rockwall Independent School District are intended to afford potential respondents an equal opportunity to participate in the solicitation process. The following Terms and Conditions are standard for the District and apply to all types of purchasing, including this solicitation. In these Terms and Conditions, the terms *respondent, contractor*, *proposer*, *vendor*, and/or *bidder* refer to the person/firm that submits the offer to this solicitation document. The terms *RISD*, *owner*, *district*, and/or *government entity* refer to Rockwall Independent School District.

The documents contained in this solicitation represent the potential agreement between the successful respondent and the school district and supersedes any prior discussions, negotiations, representations, agreements, written or oral.

Any specifications, details, or specific instructions for this solicitation will be found following these Standard Terms and Conditions. Some of the Standard Terms and Conditions may not be applicable to a specific bid or proposal. To the extent each of the terms and conditions is applicable, these shall be deemed to be part of the vendor's bid or proposal documents. If there are specific terms and conditions contained in the bid or proposal documents which are inconsistent with the Standard Terms and Conditions, the specific terms and conditions in the bid and solicitation documents shall control. By submitting a bid or proposal, each vendor or proposer agrees to waive any claims it has or may have against the Owner, the Architect, and their respective officers, trustees, employees, agents, or representatives, arising out of or in connection with the administration, evaluation, recommendation, or selection of any bid or proposal; waiver of any requirements under the bid or proposal documents or contract documents; acceptance or rejection of any bid or proposal; and award of the contract.

The district guarantees no minimum dollar amount in purchase orders against this contract. The scope of this request and requirements of the District as shown in the specifications shall not be considered as binding on the District, and the work actually may be less than or greater than projected.

The RISD can terminate any resulting award for this request with thirty (30) calendar day notice, in the event no funds or insufficient funds are appropriated and budgeted or are otherwise not available in the next fiscal year for obligations herein provided, however, this provision shall not be construed so as to permit RISD to terminate this request in order to enter other contracts or make other arrangements for essentially the same services made the subject of this solicitation.

All bids and proposals from the vendor must remain open for acceptance for sixty (60) days after submittal.

## AUTHORITY

The Board of Trustees has delegated to the superintendent the authority to make budgeted purchases for goods and services. Functional area experts, day-to-day contract administrators/managers, teachers, principals, and/or other district employees are not authorized to substantially amend this solicitation document or to substantially modify the subsequent contract. Substantially includes, but is not limited to, changes to delivery dates, place of delivery, and/or specifications that significantly alter the form, fit, and function of a product or the scope of work of a service. Amendments to solicitation documents may be made by the Director of Purchasing. Modifications to contracts/agreements will be made by the Director of Purchasing in accordance with the RISD Board of Trustee guidance, policies, and/or procedures. If a vendor acts on the guidance of a district employee that is not authorized to make changes, the vendor does so at his or her own risk or peril. Also, if a vendor attempts, or gains, a modification/amendment from a district employee that is not authorized to make changes, the vendor does this at his or her own risk or peril and risks the termination of his or her contract/agreement. The functional administrator for this contract is Eddie Guajardo, Facility Services Project Manager.

## CONTACT

Contact between soliciting vendors and user departments during this solicitation process or evaluation process is prohibited. Any attempt by a soliciting firm to contact the department may result in disqualification.

## VENDOR QUESTIONS

Any explanation desired or questions by a vendor regarding the meaning or interpretation of these instructions or any other documents included in this solicitation must be requested in writing to RISD, Director of Purchasing, 1050 Williams Street, Rockwall, TX 75087 (jana.hunter@rockwallisd.org) with sufficient time allowed for a reply to reach vendors before the submission of their offers. The email subject line for questions should read: "Questions" followed by the solicitation number and title. The deadline for questions regarding this solicitation is March 24, 2025.

## ADDENDA

Written responses to vendor questions shall be presented in the form of an Addendum and posted on the District's website at: https://www.rockwallisd.com/Page/380. Respondents should monitor the Purchasing page on the RISD website for such postings. Oral explanations or instructions will not be binding. Rockwall ISD reserves the right to post addendums up to, and including, the business day prior to the deadline. Vendors who submit a bid or proposal without acknowledging receipt of all addenda issued may be deemed to have submitted a bid or proposal not responsive to the solicitation. Failure to receive such addenda does not relieve the vendor from any obligation under the bid or proposal submitted. All formal written addenda become a part of the vendor bid or proposal documents.

**PRE-BID MEETING**

Any scheduled pre-bid meeting, will be noted on the cover page of this document. In the event a pre-bid meeting is held, attendance is highly recommended to all potential responders. The purpose of this meeting will be to answer any questions regarding the proposal specifications. Proposers are reminded, however, that verbal responses are not binding – only questions answered by formal written agenda will be binding and will be made part of the proposal documents. Proposers must satisfy themselves, upon examination of these specifications in the pre-bid conference, as to the intent of the specifications. After submission of the proposal, no complaint or claim that there was any misunderstanding in regard to items listed for proposal will be entertained from either party.

**SUBMISSION**

The responsibility for compliance with this solicitation and the subsequent contract shall be with the bidder/respondent. In submitting a response to this solicitation, respondent understands and agrees to be bound by the terms and conditions, provided in this document, which shall be incorporated into any future contracts, agreements, or purchase orders relating to any resulting agreement between the vendor and Rockwall ISD.

Submissions to this request are due by: April 2, 2026 – 2:00 P.M. (CST)Date and Time

Responses must be plainly marked on the outside with the vendor's name and address and the solicitation number. A shipping label has been provided in this packet and its use is highly encouraged. Respondents are instructed to submit (1) one original hard copy (marked ORIGINAL) and (1) one additional hard copy.

Responses must be delivered in a sealed envelope or container and submitted to the Purchasing Department at the RISD Administration Building in sufficient time to be received and time-stamped on or before the published date and time shown within this document or on any subsequent addenda. No other published dates will be binding. Late submissions will not be accepted. Unsigned, unsealed, faxed or late responses will not be accepted. Rockwall ISD will not be responsible for mail delivered from the post office. No oral, telegraphic, telephonic, electronic mail or facsimile transmitted responses will be considered. RISD Purchasing personnel will be the official time keeper for all submissions.

Each vendor shall furnish the information required by the solicitation documents. Proposals should provide straightforward, concise information that satisfies the requirements of this solicitation. Emphasis should be placed on conformity to the instructions and requirements of this solicitation and the completeness and clarity of content. Links to web sites for supporting documentation are not acceptable. Expensive bindings, color displays, and advertising materials are not necessary or desired.

Offers submitted on other than authorized forms or with different terms or provisions may be considered to be non-responsive. The vendor must sign the Offer Form and return with the other certifications provided

herein. Failure to manually sign the offer may disqualify it from being considered. The person signing the documents must initial erasures or other changes. Signatures by an agent are to be accompanied with evidence of his authority unless such evidence has been previously furnished to RISD.

**EXCEPTIONS/MODIFICATIONS/WITHDRAWAL**

Responses deposited with Rockwall ISD may be withdrawn prior to the time set for opening. A response may not be withdrawn after the submittal deadline. By submitting a response, the proposer warrants and guarantees that the document has been carefully reviewed and checked and that it is in all things true and accurate and free of mistakes. If any exceptions are taken to any portion of the bid or proposal, the vendor must clearly indicate the exceptions taken and include a full explanation. Vendor's failure to identify exceptions or proposed changes will constitute acceptance by the vendor of the bid or proposal as proposed by the District. The District reserves the right to reject a bid or proposal containing exceptions, additions, qualifications, or conditions. Any bid or proposal to the District by the vendor, or contract between the District and the vendor, can be modified or withdrawn only by written agreement between Rockwall ISD and the vendor.

**BID OPENING**

Submittals may be publicly opened immediately after the response deadline on the same day. Responses received by hand delivery or mail after the stated due date and time will remain unopened. Trade secrets and confidential information contained in response shall not generally be open for public inspection, but RISD's records are a matter of public record.

**DISQUALIFICATION**

Any bid or proposal that does not contain all required contents required by District may be disqualified. Vendor is strongly encouraged to carefully review its bid or proposal documents prior to submitting their response to ensure all requirements are met. Failure to provide the information requested, in its entirety, may be grounds for disqualification of the bid or proposal. Bidders or proposers may also be disqualified and their bids or proposals not considered, among other reasons, for any of the following specific reasons:

a. Reason for believing collusion exists among respondents
b. Reasonable grounds for believing that any respondent is interested in more than one solicitation for the work contemplated
c. Where the respondent, any sub-contractor or supplier, or the surety on any bond given, or to be given, is in litigation with the District or where such litigation is contemplated or imminent, in the sole opinion of the District
d. Respondent being in arrears on any existing contract/purchase order or having defaulted or failed to perform in a satisfactory manner on a previous purchase order
e. Lack of competency as revealed by pertinent facts, including but not necessarily limited to, experience and equipment, financial statement and questionnaires

f. Uncompleted work that, in the judgement of the District, will prevent or hinder the prompt completion of addition work if awarded.
g. Where the bidder or proposer has failed to perform in a satisfactory manner on a previous purchase order or contract.

RISD expressly reserves the right to:

a. Reject any or all proposals
b. Consider a response irregular if it shows any omissions, alterations of form, additions, or conditions not called for; failure to return all forms and copies; or irregularities of any kind.
c. Waive any minor informality or deficiency in a bid or proposal if it is determined to be in the best interest of RISD
d. Award to a single vendor, multiple vendors, each line item separately, or in any combination it determines to be in the best interest of the District. If the Respondent chooses to propose "All or None" or is not agreeable to multiple or split awards, it must be noted as a deviation and included with the response.
e. Reissue a request
f. Consider and accept an alternate proposal as provided herein when most advantageous to RISD, including the utilization of other District contracts, contracts awarded by other governmental agencies, other school boards, or cooperative agreements in lieu of any offer received or award made as a result of this proposal, if it is in the best interest to do so.
g. Cancel the contract with a thirty-day written notice, without prejudice, for factors including, but not limited to, non-availability or non-appropriation of funds
h. Procure any item or services by other means to meet time-sensitive requirements
i. As part of the evaluation process, seek additional information from bidders or proposers, interview bidders or proposers, and negotiate the terms of a proposal as allowed by Texas law.
j. Negotiate price/delivery for service(s)/products(s) identified by this request. The District reserves the right to reject any and all bids that comply with the specifications or to accept a higher bid that complies, when, in judgment of the District, such proposal offers additional value or function, which justifies the difference in price.
k. Make an award without discussion with any proposer.
l. Be the sole judge of acceptable proposal responses.
m. Cancel part or this entire contract at any time during the term without cause. Notification will be submitted in writing no less than thirty (30) days prior to the effective date. Upon receipt of such notice from the District, vendor shall not thereafter incur, and RISD shall have no liability for, any costs under this solicitation that are not necessary for actual performance of the request between the date of the notice of termination for convenience and the effective date of that termination for convenience. In the event of a termination for convenience hereunder, RISD shall have no liability to vendor for lost or anticipated profit resulting there from.

n. Terminate for default all or any part of this contract if vendor breaches any of the terms hereof or if the vendor becomes insolvent or files any petition in bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which RISD may have in law or equity, specifically including, but not limited to, the right to collect for damages or demand specific performance. RISD may terminate the contract and debar the vendor for future "bidding" for violations of the federal requirements including, but not limited to, "Contract Work Hours and Safety Standards Act", "Equal Employment Opportunity Act", and "Energy Policy and Conservation Act".

Purchases of service or equipment from a business owned in whole or in part by a Rockwall ISD employee shall be permitted only when approved by the Director of Purchasing and when determination has been made that such equipment or service is not an extension of the employee's regular job responsibility at the District. Failure on part of Proposer to disclose ownership by the District employee may be grounds for disqualification.

**EVALUATION**

Proposals may be evaluated by an Evaluation Committee comprised of key Rockwall ISD personnel in order to fairly evaluate all qualified proposals. Evaluation by committee members will be combined into one score, which will be compared to the other proposals.

To the extent allowed by law, discussions/negotiations may be conducted with vendors who are deemed to be within the competitive range. If discussions/negotiations are conducted, respondents may be required to submit a best and final offer. The best and final offer may be required as early as 24 hours after completion of discussions/negotiations.

In determining to whom to award a contract and per the Texas Government Code 2269.055, the district will consider and apply any existing laws, including any criteria, related to historically underutilized business and any existing laws, rules or applicable municipal charters, including laws applicable to local governments, related to the use of women, minority, small, or disadvantaged business. The district may also consider the following criteria. At the discretion of the district and in evaluation of this solicitation, point values are indicated after each criteria item.

| Govt. Code 2269 | Criteria | Weight |
|---|---|---|
| (1) | The Price | 60 |
| (2) | The offeror's experience and reputation | 15 |
| (3) | The quality of the offeror's goods or services | 20 |
| (4) | The offeror's proposed personnel | 5 |
| (5) | Any other relevant factor specifically listed in the request for bids, proposals or qualifications | 0 |

In determining an award of a contract under Texas Government Code 2269.055, the government entity shall:

a. Consider and apply any existing laws, including any criteria, related to historically underutilized businesses; and
b. Consider and apply any existing laws, rules, or applicable municipal charters, including laws applicable to local governments, related to the use of women, minority, small or disadvantaged business.

As provided by Texas Government Code 2269.054 ("Right to Work"), Rockwall ISD will not consider whether the vendor is a member of, or has any other relationship, with any organization, and the specifications are not intended to, and do not, deny or diminish the right of a person to work because of the person's membership or other relationship status with respect to any organizations.

It is the intent and policy of the District not to discriminate on the basis of sex, disability, race, color, or national origin in its programs and/or activities, nor in its employment practices.

**LOBBYING**

In order to ensure the integrity of the selection process, the vendor's employees, officers, agents, or other representatives shall not lobby or attempt to influence a vote or recommendation related to the vendor's response, directly or indirectly, through any contact with school board members or other district officials involved in the solicitation from the date it is released until the award.

**AWARD**

Successful vendor(s) may be notified in writing of District's award. No assignment of a bid, proposal, or resulting contract is permitted without the prior notice to and written consent of Rockwall ISD by means of a Notice to Proceed and/or Authorized Purchase Order or signed contract after a recommendation has been accepted by the RISD Board of Trustees. If respondent requires any other agreement, a draft document must be provided with the proposal. No work shall begin, goods procured or delivered, or costs incurred by vendor until the notice is received. Any cost incurred by the vendor prior to the notice shall not be reimbursed by the District.

Tabulations may be requested by contacting the Director of Purchasing via email upon award of a contract based upon approval by the RISD Board of Trustees, if required. Otherwise, information may be released after award of the contract by the Superintendent or designee.

**TERM**

If this solicitation is for a set time period only, or a single purchase, the award will last until the goods or services have been delivered, completed and accepted by the District. Renewing the contract would imply doing so under the same terms and conditions. The District reserves the right to acquire reasonable amounts of additional goods/services, as listed in the bid or proposal, subject to verification of the same or lower prices and conditions of the bid or proposal and consistent with Texas law. After the initial contract term, the District reserves the right to extend the contract as indicated in this request.

**PRICING**

All prices proposed by the vendor, and accepted by the District, shall remain in effect throughout the term of the bid proposal, award, contract, or purchaser order, and cannot be increased during that term without written agreement between the vendor and the Rockwall ISD Board of Trustees or its designee. Rockwall ISD reserves the right to show a preference to any bid or proposal that provides a standard discount percentage for goods or services, or a discount for early payment of any bill to the vendor for its goods or services.

**BILLING AND PAYMENTS**

Per CH Local of District Policy - The District limits its purchases through the use of properly drawn and authorized purchase orders. Consequently, the District is not responsible for items not ordered via this method. The purchase order number shall appear on all itemized invoices to ensure payment. District employees shall not be permitted to purchase supplies or equipment for personal use through the District's business office without an authorized purchase order. Completing work or providing product without a purchase order may result in non-payment by the district and/or termination of awarded contract.

The District is a tax-exempt entity under Texas law. Vendor should not include tax on its bid, proposal, quote or invoice to the District. Vendor shall submit itemized invoices on each purchase order in a timely manner following delivery.

Invoices shall indicate the purchase order number and be submitted to RISD Business Office, Attn: Accounts Payable, 1050 Williams Street, Rockwall TX 75087 or emailed to accountspayable@rockwallisd.org.
The vendor shall make no charge or addition to the accepted price for delivering, placing, or invoicing product(s). Payment shall not be due until all items on the purchase order have been received by RISD (unless specified in the specifications) and the above instruments are submitted and the invoice has been accepted by RISD. All prices shall be F.O.B. destination.

District shall make all payments under this Agreement from current revenues available. In the event no funds, or insufficient funds due to non-appropriation, are available at any time or during any fiscal period when such payment is due, in accordance with Local Government Code Ann. §271.903, District shall notify vendor of such occurrence and this Agreement shall terminate on the last day of the fiscal period for which payment was received without penalty or expense to District of any kind whatsoever. However, District shall be responsible to remit payment for all services provided by the Vendor to the District prior to the termination date.

**GOODS**

The vendor warrants that it owns and is legally able to transfer ownership of the goods or materials that are the basis of the solicitation to Rockwall ISD. The vendor warrants that it owns a clear title free of any materialman's, suppliers, or other type of liens, mortgage, encumbrance, or other security interest in the goods or materials supplied to Rockwall ISD. Any breach to this warranty of title shall be considered a default by the vendor and good cause for termination of the award, contract, or purchase order.

Strict conformance with the standards, specifications, and requirements of the bid or proposal is required by Rockwall ISD. Unless otherwise stated in the specifications, all supplies and components to be provided shall be new (not used or reconditioned, and not of such age or so deteriorated as to impair their usefulness or safety), of current production, and of the most suitable grade for the purpose intended. If at any time during the term of an awarded agreement the vendor believes the furnishings of supplies or components which are not new is necessary or desirable, it shall notify the District immediately, in writing, including the reasons and proposing any consideration which will flow to the District if authorization to use such supplies or components is granted.

If a brand name or specific model name is shown in the proposed specifications or bid form, such usage is to indicate an acceptable standard which must be considered if bidding better or equivalent products. Any bid or proposal for such better or equivalent products shall provide significant information on the products to allow the District to determine whether or not they are acceptable.

Any proposed substitution of goods or services to be supplied by the vendor shall require prior written acceptance by the District, unless stated otherwise. The vendor shall be bound to provide all proposed goods or services if its bid or proposal is accepted and awarded by Rockwall ISD, and no changes shall be acceptable unless agreed to in writing by the District.

Vendor assumes all liability for delivering non-compliant goods. The District reserves the right to reject any tender of non-compliant goods and shall require the vendor to take possession of such defective goods at no cost to District, and replace them with compliant goods at no cost to District, unless Rockwall ISD elects, in writing, to accept such non-compliant goods. Such non-confirming goods shall constitute good cause for

termination of the contract, purchase order, or award, if not accepted by written agreement by Rockwall ISD or cured by the vendor.

Respondent agrees to ascertain whether goods manufactured in accordance with the specifications will give rise to the rightful claim of any third person by way of infringement or the like. If vendor is of the opinion that an infringement or the like will result, he/she will notify RISD to this effect in writing within two weeks after the signing of this a contract. If RISD does not receive notice and is subsequently held liable for the infringement or the like, vendor will indemnify RISD for any damages due to such claim. If vendor, in good faith, ascertains that production of the goods in accordance with the specifications will result in infringement or the like, this document shall be null and void. RISD may pay vendor for the reasonable cost (as determined by RISD) of his/her search as to infringements.

Respondent warrants that the product sold to RISD shall conform to the standards promulgated by the federal government including, but not limited to, the U.S. Department of Labor under the Occupational Safety and Health Act (OSHA) and the Consumer Product Safety Commission (CPSC). In the event the product does not conform to applicable safety standards, RISD may return the product for correction or replacements at the vendor's expense. In the event vendor fails to make the appropriate correction within a reasonable time (i.e., 2 weeks) correction may be made by RISD at vendor's expense.

The terms of the agreement are “no arrival, no sale”. The title and risk of loss of the goods shall not pass to the District until the District actually receives and takes possession of the goods/services at the point or points of delivery. The District shall have the right to inspect the goods at delivery before accepting them.

The vendor shall be responsible for replacing or correcting any defective product or service supplied to the District in response to the Solicitation at no cost to Rockwall ISD.

**DELIVERY**

Performance of service/delivery of goods shall be made to the location identified on each purchase order or resulting contract. All work performed, as herein shown under the specifications, shall be of the highest quality workmanship and shall in every respect meet or exceed the industry standards for this type of good/service. Every tender or delivery of goods must fully comply with all provisions of this contract as to time of delivery, quality and the like. All delivered equipment, materials or merchandise must be new, unused, free of liens, and in the manufacturer's original packing unless otherwise specified. If a tender is made which does not fully conform, this shall constitute a breach of the contract, purchase order, and award, and the vendor shall not have the right to substitute a conforming tender, provided, where the time for performance has not yet expired, the vendor may reasonably notify the district of his intention to cure and may then make a conforming tender within the contract time but not afterward.

The vendor will package goods in accordance with good commercial practice. Each shipping container shall be clearly and permanently packed as follows: (a) vendor's name and address;(b) Consignee's name, address and purchase order or purchase release number and the supply agreement number if applicable; (c) Container number and total number of containers, e.g., box 1 of 4 boxes; and (d) the number of the container bearing the packing slip. The vendor shall bear the costs of packaging and delivery at reasonable costs unless otherwise provided. Acceptance by the District of any delivery shall not relieve the vendor of any guarantee or warranty, express or implied, nor shall it be considered an acceptance of material not in accordance with the specifications and shall not waive the District's right to request replacement of defective material.

**NOTICE OF DELAYS**

Whenever the vendor encounters any difficulty which delays or threatens to delay timely performance, the vendor shall immediately give notice, in writing, to the District, including all relevant information. Such notice shall not in any way constitute a basis for an extension of the delivery or performance schedule or be construed as a waiver by Rockwall ISD of any right or remedies to which it is entitled by law or pursuant to provisions herein. Failure to give such notice, however, may be grounds for denial of any request for an extension of the delivery or performance schedule because of such delay.

**SAFETY DATA SHEET (SDS)**

The vendor shall provide, at no cost to DISTRICT, at least one (1) copy of any Safety Data Sheet (SDS) applicable to any goods or materials to be supplied by the vendor in response to this solicitation.

**WARRANTIES**

Warranties for goods and services shall be a minimum of one (1) year from completion of the bid or proposal. If goods or services to be provided are of comparable quality, the District may give preference to longer warranties when evaluating the bid or proposal.

The price to be paid by Rockwall ISD shall be that contained in vendor's response, which the vendor warrants to be no higher than the vendor's current prices on orders by others for products of the kind and specification covered by the agreement for similar quantities under similar or like conditions and methods of purchase. In the event the vendor breaches this warranty, the prices of the items shall be reduced to the vendor's current prices on orders by others or, in the alternative, Rockwall ISD may cancel this contract without liability to the vendor for breach or the vendor's actual expense.

The vendor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for commission, percentage, brokerage, or contingent fee excepting bona fide employees of bona fide established commercial or selling agencies maintained by the vendor for the purpose of securing business. For breach or violation of this warranty, Rockwall ISD shall have the right in addition to any other right or rights to cancel this contract without liability and to deduct from the

contract price, or otherwise recover the full amount of such commission, percentage, brokerage or contingent fee.

The vendor shall not limit or exclude any implied warranties and any attempt to do so shall render this contract voidable at the option of the District. The vendor warrants that the goods furnished will conform to the specifications, drawings and descriptions listed in the bid invitation and to the sample(s) furnished by the vendor, if any. In the event of a conflict between the specifications, drawings and descriptions, the specifications shall govern. All equipment items awarded as a result of the bid will be covered by an all parts and labor warranty, including any/all transportation charges, for a minimum period of one (1) year.

**CONTRACTORS**

Persons providing services on a project ("subcontractor" in Texas Labor Code 406.096) include all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity that furnishes persons to provide services on the project.

Services include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. Services do not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

The proposer declares that in the event of the award of a contract to the undersigned to this offer will comply with the Immigration Reform & Control Act of 1986.

Respondents will provide their own tools/equipment required/expected of their craft/trade. The contractor is responsible for permits and fees required and compliance with all local, state, and federal rules, regulations, and statutes. The job site shall be in a clean, safe and orderly condition at all times. It shall be the contractor's responsibility to remove all debris, materials, and equipment from the job site upon completion of the work specified.

The contractor shall agree to waive all right of subrogation against the District, its officials, employees and volunteers for losses from work performed by contractor for the District.

The contractor shall hold the District harmless from and indemnify it against all liability, including attorney's fees, which may arise from and accrue directly from the performance of the work or any obligation of Contractor or failure of Contractor to perform any work or obligation provided for in this Agreement.

**INSURANCE**

The successful respondent, at his/her own expense, shall provide and maintain insurance with fiscally sound firms (at least an AM Best rating of A-) authorized to do business in Texas. Insurance requirements also apply to any sub-contractor(s) in the event that any work is sublet. The contractor is responsible for making sure the sub-contractor(s) meets the minimum insurance requirement limits as by law.

Insurance must remain in effect for the duration of this contract. Should any policy be canceled before the expiration date, the issuing company will mail thirty (30) days written notice to the certificate holder, RISD. The contractor shall notify the district in writing by certified mail or personal delivery, within ten days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the district showing that coverage has been extended.

Vendor may be required to provide a copy of insurance coverage to RISD. If the district is to be named as an additional insured on the vendor's insurance coverage, the certificate indicating this should be provided within ten (10) calendar days from date of award. The bid/proposal number and title should be noted in the "Description of Operations/Locations/Vehicles/Special Items" block of the certificate and the "Certificate Holder" block of the certificate should read, "RISD, Attn: Director of Purchasing, 1050 Williams Street, Rockwall, TX 75087." Additional insurance requirements may be required for construction and/or services projects and will be identified elsewhere in this document.

The contractor represents to the district that all employees of the contractor who will provide services on the project will be covered by statutory workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code 401.011 (44) for all employees of the contractor, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

The contractor shall post on each project site a notice, in the text, form, and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project is required for the duration of the project. Duration of the project includes the time from the beginning of the

work on the project until the project has been completed and accepted by the district.

The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor that entitled the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.

**TERMINATION**

Vendor shall be considered in default, and such default shall be grounds for the District to terminate any resulting award for this solicitation and/or pursue any and all relief, at law or in equity, to which it may be entitled by reason of such default, in the presence of a failure to perform any of its obligations under any resulting agreement and fails to correct such non-performance within ten (10) calendar days of written notice from the District to do so. In case of default of the vendor, RISD reserves the right to terminate the purchase order. In case of default of three (3) purchase orders, the district reserves the right to terminate the contract and suspend future business with the vendor.

Rockwall ISD shall have the right to terminate any purchase order to, contract with, or awarded to the vendor, in whole or in part, for cause (including breach of the proposal, warranties, or contract by the vendor**,** or because of loss of federal funding) or for the District's convenience at any time. Any award, contract, or purchase order is subject to termination by the District if any person significantly involved in initiating, negotiating, securing, drafting, or creating the solicitation on behalf of the District, is at any time while the solicitation is in effect, an employee of the vendor in any capacity or as a consultant to the District with respect to the subject matter of the Solicitation.

If deemed necessary, inspections will be made by authorized District personnel on a routine basis. Any deficiencies in the work performance disclosed during such inspections must be corrected following receipt of notification by the Vendor. Continued failure to take such corrective actions could, at the District's discretion, lead to termination of any resulting award.

**FORCE MAJEURE**

Neither the District nor the vendor shall be responsible or deemed to be in default of its obligations to the other to the extent any failure to perform or delay in performing its obligations under the bid or proposal is caused by events or conditions beyond the reasonable control of that party, and are not due to the negligence or willful misconduct of such party (hereinafter, "Force Majeure events"). For purposes of the bid or proposal, Force Majeure events shall include, but not be limited to, acts of God or public enemy, war, riot or civil commotion, strikes, epidemic, fire, earthquake, tornado, hurricane, flood, explosion, weather-related emergencies, or other catastrophes, or events or conditions due to law, regulations, ordinances, order of a court of competent jurisdiction, or executive decree or order. However, in the event of such delayed non-performance or nonperformance, the party so delayed shall furnish prompt written notice to the other party

(including the date of inception of the Force Majeure event and the extent to which it will affect performance) and shall undertake all efforts reasonably possible to cure the delay or nonperformance and mitigate its effects, or to otherwise perform. The District shall not be responsible for payment for any product or service delayed or foreclosed by any Force Majeure event unless and until such delayed or foreclosed product or service is provided. These provisions shall not preclude the District from canceling or terminating any resulting award (or any order for any goods or services included herein), or from revising the scope of the work, as otherwise permitted under the bid or proposal.

**CONFLICTS**

Effective January 1, 2006 and pursuant to Texas H.B. No. 914 and in accordance with Chapter 176 of the Texas Local Government Code, Section 176.006, any person or entity who contracts or seeks to contract with RISD for the sale or purchase of property, goods, or services (as well as agents of such persons, hereafter referred to as Vendors) are required to file, on an annual basis, a Conflict of Interest Questionnaire with the District. Each covered person or entity who seeks to or who contracts with RISD is responsible for complying with any applicable disclosure requirements. RISD will post the completed questionnaires on its website. Information regarding H.B. No. 914 may be obtained from the Texas Ethics Commission's website at http://www.ethics.state.tx.us.

Any board member who has any substantial interest, either direct or indirect, in any business entity seeking to contract with the District, shall, before any vote or decision on any matter involving the business entity, file an affidavit stating the nature and extent of interest and shall abstain from any participation in the matter. This is not required if the vote or decision will not have any special effect on the entity other than its effect on the public. However, if a majority of the governing body are also required to file, and do file similar affidavits, then the member is not required to abstain from further participation.
*Local Government Code Chapter 171*

In 2015, the Texas Legislature adopted House Bill 1295, which added section 2252.908 of the Government Code. The laws states that a governmental entity or state agency may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties (Form 1295) to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The business entity is responsible for first electronically filing Form 1295 with the Ethics Commission. This filing process creates a certification of filing and a completed Form 1295 must be printed, signed by an authorized agent of the business entity and submitted to the school district.

**GRATUITIES**

Please note that a "gift to a public servant" is a Class A misdemeanor offense if the recipient is a government employee who exercise some influences in the purchasing process of the governmental body. This would certainly apply to anyone who helps establish specifications or is involved in product selection or directs a

purchase.

The District may, by written notice to the vendor, cancel this solicitation, its contract, purchase order, or award without liability to the vendor if it is determined by the District that gratuities, in the form of entertainment, compensation, gifts, or otherwise were offered or given by the vendor, or any agent or representative of the vendor, to any Board of Trustee member, officer, or employee of the Rockwall Independent School District with an intent to secure favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such an agreement. In the event this contract is canceled by the District pursuant to this provision, Rockwall ISD shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount used by the vendor to provide such gratuities.

**FACILITIES**

Rockwall ISD is a tobacco-free, drug-free, weapon-free and alcohol-free environment. No one may use, consume, carry, transport or exchange alcohol beverages, tobacco, cigarettes, electronic cigarettes, controlled substances and/ or illegal drugs while in a school district building or while on school district property. It is the responsibility of the vendor to ensure that its employees, agents, and subcontractors are not under the influence of drugs or alcohol and/or in possession of drugs, tobacco, alcohol, or weapons. If an employee, agent, or subcontractor of vendor is found to be under the influence and/or in possession of drugs/tobacco, alcohol, or weapons at the time of service, the vendor will be notified at once by District that the individual(s) must be immediately restricted from all Rockwall ISD campuses/departments. Repeated offenses by vendor could result in contract termination for default.

For the safety of students, all vendor personnel will sign visitor log in the office at the campus. An identification badge will be worn as required by the campus administrator. Vendor personnel are expected to maintain proper dress and exhibit a vendor badge or wear vendor issued shirts displaying the vendor logo. All contractors must also be in a uniform that identifies them at all times.

All vendor personnel are required to stay within the designated installation areas and may only enter a teacher's classroom when accompanied by District personnel.

At the time of offer submission, the person or entity submitting an offer must give notice to the district if the person or an owner or operator of the business entity has been convicted of a felony. The notice must include a general description of the conduct resulting in this conviction of a felony. The District may terminate a contract with a person or business if the District determines that the person or business failed to give such notice or misrepresented the conduct resulting in the conviction. This requirement does not apply to a publicly held corporation.

Texas Education Code Chapter 22 requires service contractors to obtain criminal history record information regarding covered employees and to certify to the District that they have done so. Covered employees with

disqualifying convictions are prohibited from serving at a school district. Covered employees are all employees of a contractor who have or will have continuing duties related to the service to be performed at the District and have or will have direct contact with students. The District will be the final arbiter of what constitutes direct contact with students.

Vendors (owners, officers, employees, volunteers, etc.) may not work on District property where students may or may not be present when they have charges pending, have been convicted, received probation or deferred adjudication for the following:

- Any offense against a child
- Any sex offense
- Any crimes against persons involving weapons or violence
- Any felony offense involving controlled substances
- Any felony offense against property
- Any other offense the District believes might compromise the safety of students, staff, or property.

**ASBESTOS**

Vendors who perform work inside the RISD facilities are hereby notified that buildings may contain asbestos containing materials. This notification is required by both the State of Texas Department of State Health Services and the Federal EPA Asbestos regulations. These guidelines cover both RISD's responsibilities and the Employer's responsibility to their employees. As a Vendor it is your responsibility to check each building prior to performing any work in that facility. These building materials may include but are not limited to: ceiling tile, floor tile and mastic, sheetrock, tape and bed compound, thermal pipe insulation, spray-on ceiling material, calks, and roofing products. As there have been numerous asbestos containing products manufactured over the years, you must check each building's Asbestos Management Plan. This plan is normally kept in the main office. Check with the school secretary and she will allow you to look at it. It is the vendor's responsibility to notify all employees working for them that RISD facilities may contain asbestos and where their employees may find the facility's Asbestos Management Plan.

Products and/or services procured under this agreement may be of a construction nature and will require certification that materials utilized and installed in conjunction with any project involving construction, be it new, renovation or contracted trade services, are free of asbestos and lead.

**PUBLIC INFORMATION ACT (PIA) / FREEDOM OF INFORMATION ACT (FOIA)**

By entering into a contract, pursuant to Texas Government Code Ann. Chapter 552, Subchapter J, the vendor agrees to be bound by the following terms if the contract has a stated expenditure of at least $1,000,000 for the purchase of goods or services by the District or if the contract results in the expenditure of at least $1,000,000 in public funds for the purchase of goods or services by the District in a fiscal year of the Rockwall ISD. If the district receives a written request for public information related to this Contract that is in the possession or custody of the vendor and not in the possession or custody of the District, Rockwall ISD shall

send, not later than the third business day after the date the District receives the written request, a written request to the vendor that vendor provide that information to the District.

The vendor must:

- Preserve all contracting information related to the contract as provided by the records retention requirements applicable to the District for the duration of the contract;

- Promptly, within four business days, provide to the District any requested contracting information that is in the custody or possession of the vendor upon request of the Rockwall ISD; and,

On completion of the contract, either:

- Provide to the District at no cost all contracting information related to the contract that is in the custody or possession of the vendor; or

- Preserve the contracting information related to the contract as provided by the records retention requirements applicable to the District.

If the requirements of Subchapter J, Chapter 552, Texas Government Code Ann. apply to this Solicitation or Contract, the vendor agrees that the contract can be terminated if the vendor knowingly or intentionally fails to comply with the requirements of that subchapter. Texas Government Code Ann. Chapter 552.374.

Further, under Texas Government Code Ann. Chapter 552.372(c), Rockwall ISD may not accept a bid from or award a contract to an entity that the District has determined has knowingly or intentionally failed in a previous bid or contract to comply with Subchapter J, unless the District determines and documents that the entity has taken adequate steps to ensure future compliance.
If a vendor fails to provide the requested information to the District, Texas Government Code Ann. §552.373 requires the District to notify the vendor in writing of the failure and allow 10 business days to cure the violation. Rockwall ISD may terminate the contract if vendor fails to remedy the failure, the District determines the failure was knowing and intentional, and steps have not been taken to ensure future compliance.

**INDEMNITY**

Except as otherwise expressly provided or prohibited by law, respondent shall defend, indemnify, and hold RISD harmless from and against all claims, liability, loss and expenses, including reasonable costs, collection expenses, and attorneys' fees incurred, which arise by reason of the acts or omissions of respondent, its agents or employees in the performance of its obligations under this contract. This clause shall survive termination of this contract.

**ANTI-TRUST**

Successful respondent shall assign to RISD any and all claims for overcharges associated with this contract which arise under the antitrust laws of the United States, 15 USCA, Section 1 et seq., and which arise under the antitrust laws of the State of Texas, Tex. Bus. & Com. Code, Section 15.01, et seq.

**MEDIATION**

In the event of any dispute arising out of, related to, or regarding vendor's bid or proposal, or charges for goods or services provided by the vendor, those disputes will be resolved under the terms of Texas Government Code Ann. Chapter 2251. The vendor further agrees that any dispute regarding the sufficiency of the goods or services supplied by the vendor that is not resolved by discussion with the District, will be submitted to mediation in Rockwall County, Texas, with a mutually-agreed mediator, before either party may file suit. The costs of the mediator will be divided equally between the parties. In the event of any litigation between the parties, the prevailing party shall be entitled to recover reasonable and necessary attorneys' fees from the other party.

**LITIGATION**

This procurement, and any resulting award, contract, purchase order, or other agreement arising out of or related to it, shall be governed and interpreted by the laws of the State of Texas, and any litigation shall be conducted in state district court. Mandatory and exclusive venue shall be in Rockwall County, Texas, or, if no county is specified, then in the county in which the Owner's main administrative office is located.

# SPECIFICATIONS

**Purpose:**
Rockwall ISD is requesting solicitation of proposals for a turnkey Roof Replacement at Heath High School and Hays Elementary.

The locations which work will be required are the following:

| | Facility Name | Facility Address |
|---|---|---|
| 1 | Hays Elementary | 1880 Tannerson Dr, Rockwall, TX 75087 |
| 2 | Heath High School | 801 Laurence Dr, Heath, TX 75032 |

**Scope Notes:**

- Contractor to provide and install all roofing equipment and material.
- Include any possible electrical, gas or ventilation reworking or upgrading.
- Work to begin 5/26/2026 and be compete 7/31/2026

**Vendor Qualifications**

- Proposer to provide all metal roofing as well as any PVC roofing.
- Proposer must have adequate personnel on their staff to perform the required tasks as outlined in this CSP.
- Proposer must have job supervisor present on-site, at all times during this project.
- Proposer to provide proof of Liability Insurance – if awarded the project.
- Proposer to provide adequate bonding as indicated in contract – if awarded the project. Rockwall ISD is not responsible for the funding these Payment and Performance bonds. The awarded must fund and provide these to the District.

**Contractor Responsibilities**

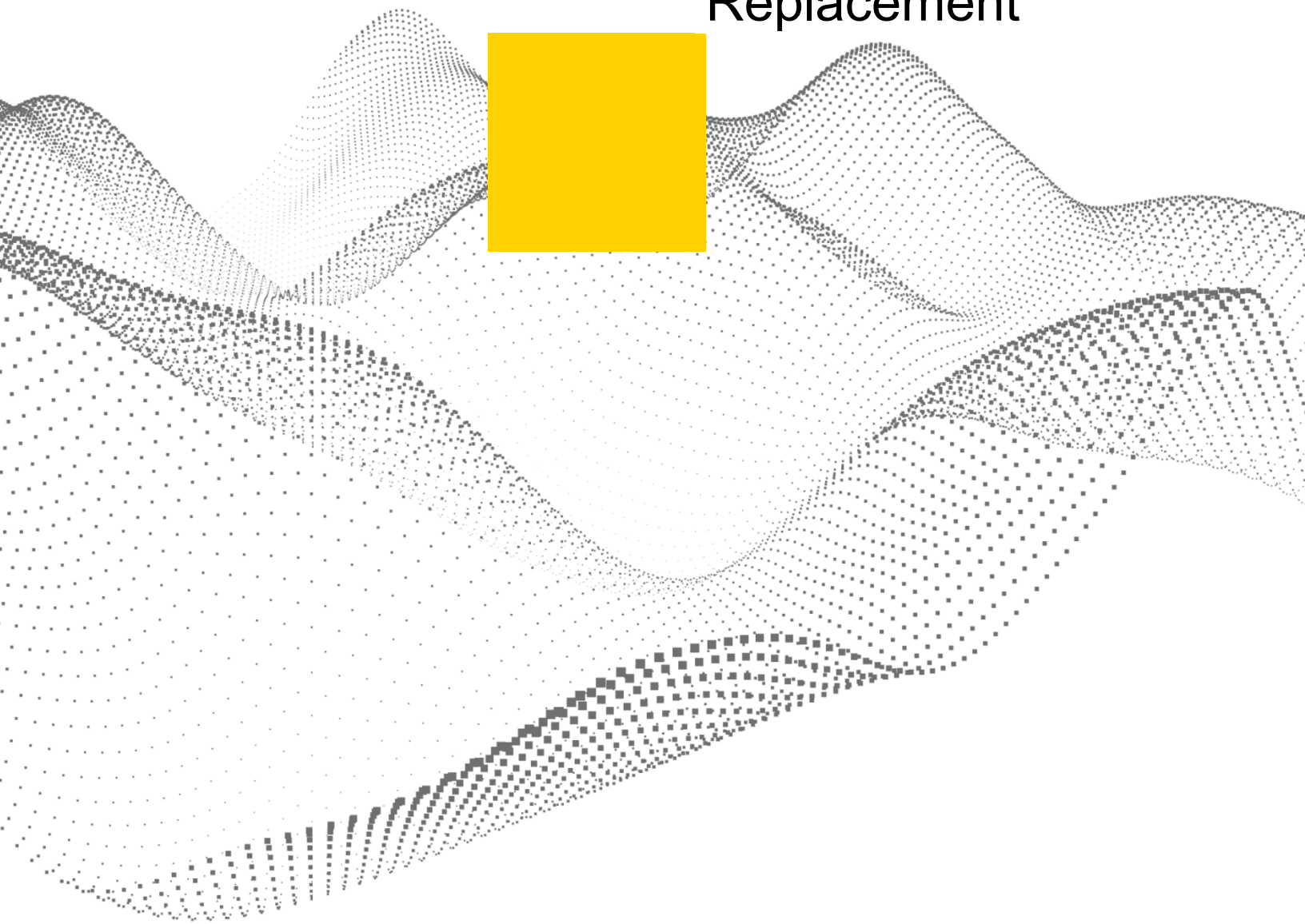
- Contractor to communicate with Project Manager the daily project plan.
- Contractor to check in with the front office personnel during school hours before starting this work.
- Contractor shall wear identifying apparel and badge.
- All vendor motorized vehicles shall be identified with the company's name and/or logo in clear view.
- Contractor shall perform work in a personal and safe manner without interrupting normal business/ class routines. This may require after hours work or weekend work depending on location.
- The proposer will take adequate precautions to protect all surfaces. The proposer will repair any damages to RISD property caused as a result of carelessness or neglect.
- Contractor is responsible to clean work areas, all refuse to be hauled off and shall not be disposed in district dumpsters.

- Contractor shall be responsible to procure and pay for any required permits required to complete the project.
- Clean site daily of nails metal shavings and all trash.
- Return grounds to its original state after project is complete. Replacing any sod, sprinkler or sprinkler line as well as any damaged curbs or concrete to the ISD standards.
- Contractor to provide their own trash container and porta-potties.
- Standard form owner/Contractor Agreement

CORGAN

**PROJECT MANUAL**

# Rockwall-Heath High School Campus Roof Replacement



Issue for Construction
26 February 2026
26004.0000

Corgan Associates, Inc.
401 North Houston Street
Dallas, Texas 75202
214 748 2000

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**DOCUMENT 00 01 07**

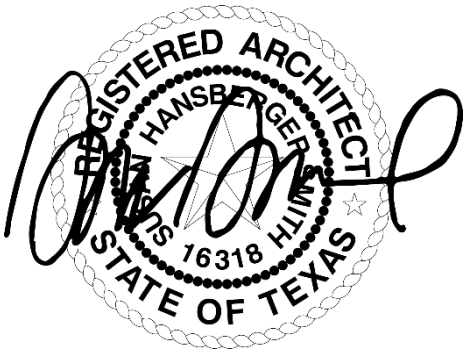
**SEALS PAGE**

# Project Manual

Issue for Construction
26 February 2026
26004.0000

# Rockwall-Heath High School Campus Roof Replacement

ARCHITECT OF RECORD
Corgan Associates, Inc.
401 North Houston Street
Dallas, Texas 75202
214 748 2000
Responsible for Sections marked with (CAI) in Document 00 01 10 "Table of Contents."




Architect of Record — Date: 02/26/26

ROOFING ARCHITECT OF RECORD
DRYTEC Moisture Protection Technology Consultants
8750 N Central Expressway, Suite 725
Dallas, Texas 75231
214 363 2192
Responsible for Sections marked with (DRY) in Document 00 01 10 "Table of Contents."




02/26/26
Roofing Architect of Record Date

**END OF DOCUMENT**

# DOCUMENT 00 01 10

# TABLE OF CONTENTS

## CONTRACT DOCUMENTS PACKAGES

Issue for Construction ..... 02/26/26

Designer Responsibility (DR): For DR codes, seals, and designer contact information; refer to Document 00 01 07 "Seals Page."


| Division | Section Title | DR Code | Date |
|---|---|---|---|
| **DIVISION 00 — PROCUREMENT AND CONTRACTING REQUIREMENTS** | | | |
| 00 01 01 | Project Title Page | | 02/26/26 |
| 00 01 07 | Seals Page | | 02/26/26 |
| 00 01 10 | Table of Contents | | 02/26/26 |
| 00 73 43 | Wage Rate Requirements | | 02/26/26 |
| | Attachment: General Decision | | 02/26/26 |
| **DIVISION 01 — GENERAL REQUIREMENTS** | | | |
| 01 10 00 | Summary | CAI | 02/26/26 |
| 01 22 00 | Unit Prices | CAI | 02/26/26 |
| 01 25 00 | Substitution Procedures | CAI | 02/26/26 |
| | Attachment: Substitution Request Form | CAI | 02/26/26 |
| 01 26 00 | Contract Modification Procedures | CAI | 02/26/26 |
| 01 29 00 | Payment Procedures | CAI | 02/26/26 |
| 01 31 00 | Project Management and Coordination | CAI | 02/26/26 |
| 01 32 00 | Construction Progress Documentation | CAI | 02/26/26 |
| 01 32 33 | Photographic Documentation | CAI | 02/26/26 |
| 01 33 00 | Submittal Procedures | CAI | 02/26/26 |
| 01 35 16 | Alteration Project Procedures | CAI | 02/26/26 |
| 01 40 00 | Quality Requirements | CAI | 02/26/26 |
| 01 41 00 | Regulatory Requirements | CAI | 02/26/26 |
| 01 42 00 | References | CAI | 02/26/26 |
| 01 50 00 | Temporary Facilities and Controls | CAI | 02/26/26 |
| 01 60 00 | Product Requirements | CAI | 02/26/26 |
| 01 73 00 | Execution | CAI | 02/26/26 |
| 01 77 00 | Closeout Procedures | CAI | 02/26/26 |
| 01 78 23 | Operation and Maintenance Data | CAI | 02/26/26 |
| 01 78 39 | Project Record Documents | CAI | 02/26/26 |
| **DIVISION 07 — THERMAL AND MOISTURE PROTECTION** | | | |
| 07 27 00 | Fluid Applied Membrane Air Barriers | DRY | 02/26/26 |
| 07 56 50 | Minor Roof Renovation Work | DRY | 02/26/26 |
| 07 60 00 | Sheet Metal Work | DRY | 02/26/26 |
| 07 61 40 | SSMR & Insulation | DRY | 02/26/26 |
| 07 71 00 | Roof Specialties | DRY | 02/26/26 |
| 07 72 00 | Roof Accessories | DRY | 02/26/26 |

| Division | Section Title | DR Code | Date |
|---|---|---|---|
| **DIVISION 09 — FINISHES** | | | |
| 09 24 00 | Portland Cement Plastering | DRY | 02/26/26 |
| 09 96 53 | Elastomeric Coatings | CAI | 02/26/26 |

**END OF DOCUMENT**

# DOCUMENT 00 73 43

# WAGE RATE REQUIREMENTS

## 1.1 FEDERAL PARTICIPATION DISCLOSURE

A. This project will be partially funded with Federal funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal laws and regulations associated with that program.

## 1.2 DUTY TO PAY PREVAILING WAGE RATES

A. In compliance with Section 2258, Subchapter B of the Texas Government Code, Contractor shall pay not less than wage scale of various classes of labor as shown in the Attachment to this Document. The wage rates set forth are minimum rates only. Owner will not consider any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate stipulated in the Contract. The Attachment is not a representation that quantities of qualified labor adequate to perform the Work may be found locally at specified wage rates.

## 1.3 ATTACHMENT

A. The attached Document is part of the Procurement and Contracting Requirements for Project. They provide Owner's information and are made available for Bidders' convenience and information.

B. Attachment: Document 00 73 43.10 "General Decision" dated 01/02/2026.

**END OF DOCUMENT**

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## GENERAL DECISION

General Decision Number: TX20260281 01/02/2026

Superseded General Decision Number: TX20250281

State: Texas

Construction Type: Building

Counties: Hunt, Kaufman and Rockwall Counties in Texas.

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

| Modification Number | Publication Date |
|---|---|
| 0 | 01/02/2026 |

ASBE0021-011 06/01/2025

| | Rates | Fringes |
|---|---|---|
| ASBESTOS WORKER/HEAT & FROST INSULATOR (Duct, Pipe and Mechanical System Insulation) | $ 33.23 | 7.52 |

BOIL0074-003 01/01/2025

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

CARP1421-002 10/01/2023

| | Rates | Fringes |
|---|---|---|
| MILLWRIGHT | $ 32.02 | 11.27 |

ELEV0021-006 01/01/2025

| | Rates | Fringes |
|---|---|---|
| ELEVATOR MECHANIC | $ 51.93 | 38.435+a+b |

FOOTNOTES:
A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked.

B. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

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ENGI0178-005 06/01/2020

| | Rates | Fringes |
|---|---|---|
| POWER EQUIPMENT OPERATOR | | |
| (1) Tower Crane | $ 32.85 | 13.10 |
| (2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above | $ 28.75 | 10.60 |
| (3) Hydraulic cranes 59 Tons and under | $ 32.35 | 13.10 |

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IRON0263-005 06/01/2025

| | Rates | Fringes |
|---|---|---|
| IRONWORKER (ORNAMENTAL AND STRUCTURAL) | $ 29.64 | 8.43 |

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PLUM0100-005 11/01/2024

| | Rates | Fringes |
|---|---|---|
| HVAC MECHANIC (HVAC Unit Installation Only) | $ 39.76 | 14.04 |
| PIPEFITTER (Excludes HVAC Pipe Installation) | $ 39.76 | 14.04 |

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SUTX2014-061 07/21/2014

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 19.89 | 0.00 |
| CARPENTER, Excludes Drywall Hanging, Form Work, and Metal Stud Installation | $ 16.62 | 0.00 |
| CAULKER | $ 15.16 | 0.00 |
| CEMENT MASON/CONCRETE FINISHER | $ 13.21 | 0.00 |
| DRYWALL HANGER AND METAL STUD INSTALLER | $ 15.42 | 0.00 |
| ELECTRICIAN (Alarm | | |

| | | |
|---|---|---|
| Installation Only) | $ 20.93 | 3.86 |
| ELECTRICIAN (Communication Technician Only) | $ 17.62 | 2.92 |
| ELECTRICIAN (Low Voltage Wiring Only) | $ 17.97 | 2.63 |
| ELECTRICIAN, Excludes Low Voltage Wiring and Installation of Alarms/Sound and Communication Systems | $ 20.65 | 3.05 |
| FORM WORKER | $ 12.13 | 0.00 |
| GLAZIER | $ 16.55 | 3.13 |
| HIGHWAY/PARKING LOT STRIPING: Operator (Striping Machine) | $ 10.04 | 2.31 |
| INSTALLER - SIDING (METAL/ALUMINUM/VINYL) | $ 14.74 | 0.00 |
| INSTALLER - SIGN | $ 15.61 | 0.00 |
| INSULATOR - BATT | $ 13.00 | 0.00 |
| IRONWORKER, REINFORCING | $ 12.37 | 0.00 |
| LABORER: Common or General | $ 11.25 | 0.00 |
| LABORER: Mason Tender - Brick | $ 10.54 | 0.00 |
| LABORER: Mason Tender - Cement/Concrete | $ 10.75 | 0.00 |
| LABORER: Pipelayer | $ 13.00 | 0.35 |
| LABORER: Plaster Tender | $ 12.22 | 0.00 |
| LABORER: Roof Tearoff | $ 11.28 | 0.00 |
| LABORER: Landscape and Irrigation | $ 11.09 | 0.00 |
| LATHER | $ 16.00 | 0.00 |
| OPERATOR: Backhoe/Excavator/Trackhoe | $ 12.83 | 0.00 |
| OPERATOR: Bobcat/Skid Steer/Skid Loader | $ 13.93 | 0.00 |

| | | |
|---|---|---|
| OPERATOR: Bulldozer | $ 18.29 | 1.31 |
| OPERATOR: Drill | $ 15.69 | 0.50 |
| OPERATOR: Forklift | $ 13.21 | 0.81 |
| OPERATOR: Grader/Blade | $ 12.96 | 0.00 |
| OPERATOR: Loader | $ 13.46 | 0.85 |
| OPERATOR: Mechanic | $ 17.52 | 3.33 |
| OPERATOR: Paver (Asphalt, Aggregate, and Concrete) | $ 18.44 | 0.00 |
| OPERATOR: Roller | $ 15.04 | 0.00 |
| PAINTER (Brush, Roller and Spray), Excludes Drywall Finishing/Taping | $ 13.21 | 2.33 |
| PAINTER: Drywall Finishing/Taping Only | $ 13.76 | 2.84 |
| PLASTERER | $ 15.75 | 0.00 |
| PLUMBER (HVAC Pipe Installation Only) | $ 22.16 | 5.46 |
| PLUMBER, Excludes HVAC Pipe Installation | $ 22.31 | 5.18 |
| ROOFER | $ 17.19 | 0.00 |
| SHEET METAL WORKER (HVAC Duct Installation Only) | $ 20.88 | 5.19 |
| SHEET METAL WORKER, Excludes HVAC Duct Installation | $ 24.88 | 5.97 |
| SPRINKLER FITTER (Fire Sprinklers) | $ 22.94 | 0.00 |
| TILE FINISHER | $ 11.22 | 0.00 |
| TILE SETTER | $ 14.25 | 0.00 |
| TRUCK DRIVER: 1/Single Axle Truck | $ 16.40 | 0.81 |
| TRUCK DRIVER: Dump Truck | $ 12.39 | 1.18 |

TRUCK DRIVER: Flatbed Truck.....$ 19.65 8.57

TRUCK DRIVER: Semi-Trailer Truck.....$ 12.50 0.00

TRUCK DRIVER: Water Truck.....$ 12.00 4.11

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses

(29CFR 5.5 (a) (1) (iii)).

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

Union Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

Survey Rate Identifiers

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

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

State Adopted Rate Identifiers

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

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WAGE DETERMINATION APPEALS PROCESS

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

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

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to

davisbaconinfo@dol.gov or by mail to:

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION

**END OF ATTACHMENT**

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# SECTION 01 10 00

# SUMMARY

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes:

1. Project Information
2. Work covered by Contract Documents
3. Owner furnished products.
4. Contractor's use of premises and site.
5. Owner occupancy.
6. Work sequence.
7. Work restrictions.
8. Specification and drawing conventions.
9. Hazardous materials.

### 1.2 PROJECT INFORMATION

A. Project Information:

1. Project Identification: Rockwall-Heath High School Campus Roof Replacement for Rockwall ISD; 801 Laurence Drive, Heath, Texas 75032.
2. Code Requirements: This project is governed by the Codes as indicated on the Drawings, with local amendments applicable to Heath, Texas. The Contractor shall comply with all requirements of the Codes and the Local Authority Having Jurisdiction.

B. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage as specified in Section 01 31 00 "Project Management and Coordination."

### 1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Roof replacement at Rockwall-Heath High School.

B. Type of Contract:

1. Single Prime: Project will be constructed under a single prime (lump sum) contract.

2. Project is tax exempt. The Contract will be executed with separate contract sums for materials and services to comply with requirements of 1991 Texas House Bill 11.
3. Contract: Contract form provided by Owner.

C. Items noted "NIC" (Not in Contract) are provided by Owner.

## 1.4 OWNER FURNISHED PRODUCTS

A. Owner furnished items shall be as indicated on the Drawings as Owner Furnished Contractor Installed (OFCI) items.

B. Owner Responsibilities: Owner reserves the right to furnish certain products. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner furnished products and making building services connections.

1. Owner will arrange for and deliver Shop Drawings, Product Data, and Samples to Contractor.
2. Owner will arrange and pay for delivery of Owner furnished items according to Contractor's Construction Schedule.
3. Upon delivery, Owner and Contractor will inspect delivered items for damage. Assist Owner with inspection.

    a. If Owner furnished items are damaged, defective, or missing, Owner will arrange for replacement.

4. Owner will arrange for manufacturer's field services and for delivery of manufacturer's warranties to Contractor.
5. Owner will furnish Contractor a potential delivery date for Owner furnished products.

C. Contractor Responsibilities: Using Owner furnished delivery dates, incorporate delivery dates of Owner furnished items in Contractor's Construction Schedule.

1. Review Shop Drawings, Product Data, and Samples and return to Architect noting discrepancies or anticipated problems in use of product.
2. Receive, unload, and store Owner furnished items at site.
3. Upon delivery, inspect delivered items with owner for damage.
4. Protect Owner furnished items from damage during storage and handling, including damage from exposure to the elements.
5. If Owner furnished items are damaged as a result of Contractor's operations, repair or replace items.
6. Install and incorporate Owner furnished items into the Work.

## 1.5 CONTRACTOR'S USE OF PREMISES AND SITE

A. Unrestricted Use: Contractor shall have complete and exclusive use of immediate premises and site, with all exceptions as agreed to with the Owner. To the extent possible, limit use of site to areas within the Contract limits if so indicated. Do not

disturb portions of site beyond areas in which the Work is indicated and protect all items to remain from damage.

1. Driveways, Walkways and Entrances: Keep driveways, loading areas, entrances, fire exits or lanes, or delivery routes serving premises clear and available to Owner, Owner's employees, the public, and emergency vehicles. Do not use these areas for parking or for storage of materials.

    a. The Contractor shall protect all driveways, walkways and paving from damage during construction. Any damaged driveways, walkways and entrances shall be repaired by the Contractor at no additional cost to the Owner.

2. Coordinate use of premises under direction of Architect and Owner. Contractor shall be responsible for monitoring use of premises by employees and subcontractors.

B. Existing Utility Interruptions: Do not interrupt utilities serving facilities unless permitted under the following conditions and after providing temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions. Include length of service outages and intended scope of Work in all such notifications.
2. Obtain Owner's written permission before proceeding with utility interruptions.

C. Access routes for delivery of materials and equipment shall be as indicated on drawings by Contractor. Do not use access routes other than those indicated without permission of Owner and Architect.

D. Assume full responsibility for protection and safekeeping of products stored on project site, including but not limited to all salvaged items. Store materials and products in areas indicated for staging and protect from damage.

E. Move stored products, under Contractor's control, which interfere with operations of Owner or as required by Architect. Do not unnecessarily encumber project site with materials and equipment.

F. Store all salvaged items and protect from damage and weather conditions.

G. Staging and material storage shall be limited to areas indicated. Obtain specific permission from Owner for use of other areas for storage and staging.

H. Do not overload existing or new structures with weight that would compromise safety. Verify design loads for structure if necessary prior to loading structure.

I. Obtain and pay for use of additional secured storage or Work areas needed for operations, material storage for new and salvaged items.

J. Protect existing lawns, landscaping, sidewalks, pavements, curbs, and utilities subject to damage by Work under this Contract. Repair or replace existing Work damaged by

Contractor. Replace existing lawns damaged by Contractor's activities with hydromulched lawn seed to provide full stand of replacement grass.

K. Parking areas for Contractor's personnel shall be as indicated by Owner.

## 1.6 OWNER OCCUPANCY

A. Schedule construction operations for completion of portions of Work for any Owner's occupancy prior to Substantial Completion of entire Work.

B. Contractor agrees to the use and occupancy of portion of Project by Owner prior to Substantial Completion of entire Project, provided Owner:

1. Secures written consent of Contractor except when, in opinion of Architect, Contractor is chargeable with unwarranted delay in final completion of uncompleted items or other Contract requirements.
2. Secures endorsement from insurance carrier and consent of surety permitting partial occupancy of Project or use of Project during remaining period of construction.

C. Use and occupancy prior to Substantial Completion of entire Project does not relieve Contractor of responsibility to maintain specified insurance coverage on 100 percent basis for benefit of Owner, Contractor and subcontractors until Project is complete and accepted by Owner.

D. After Owner occupancy, allow following:

1. Access for Owner's personnel.
2. Operation of heating, ventilating, air-conditioning, and electrical systems.

E. During partial occupancy, mutually acceptable arrangements shall be negotiated between Owner and Contractor regarding warranties and insurance requirements respecting portion of Work affected by partial occupancy and regarding operation and cost of building services so that costs attributable to partial occupancy shall be borne by Owner and costs attributable to performance of Work shall be borne by Contractor.

F. Prior to occupancy, execute Certificate of Substantial Completion, designating areas to be occupied by Owner.

## 1.7 WORK SEQUENCE

A. Construct Work in phases to accommodate Work to be completed on schedule and as agree with Owner; coordinate construction schedule and operations with Owner's representative.

B. Construct Work to minimize public inconvenience. Do not close off public use travel paths until completion of one stage of construction will provide alternative usage.

C. Owner may require certain Work to be performed after normal Working hours or on holidays or weekends. Negotiate all such Work with Owner prior to final Agreement.

## 1.8 WORK RESTRICTIONS

A. Work Restrictions: 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 in the existing building to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, unless otherwise indicated or required by the Authority Having Jurisdiction.

1. Weekend Hours: As permitted by Owner written authorization and in compliance with Local Ordinances.
2. Early Morning Hours: Comply with time restrictions set forth by the Local Authority Having Jurisdiction for restrictions.
3. Hours for Utility Shutdowns: Only during hours agreed to in writing by the Owner 2 weeks in advance.
4. Hours for Core Drilling or other noisy activity: During times unrestricted by the Owner and in accordance with Local Ordinances.

C. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.

D. Restricted Substances and Firearms: Use of tobacco products and other controlled substances and firearms on Project site is not permitted.

E. Employee Identification: Owner may require identification tags for Contractor personnel Working on site. If so required, insure all personnel onsite use identification tags at all times.

F. Comply with all Work Restrictions imposed by the Local Authority.

G. Abide by all road cleaning and other requirements imposed by the Local Authority.

## 1.9 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 when used in particular situations. 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 the specification sections.

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. Abbreviations: Materials and products are identified by abbreviations and scheduled on Drawings.

## PART 2 - PRODUCTS

### 2.1 HAZARDOUS MATERIALS - ASBESTOS

A. Owner requires that products and materials used meet the following requirements:

1. Contain not more than 1.0% of any kind or combination of asbestos, as determined by the Environmental Protection Agency (EPA) recommended test methods as listed in EPA/600R-93/116 July 1993 "Method for the Determination of Asbestos in Bulk Building Materials." This means one material component or a structure or layer of a material sample. Composite sample analysis is not allowed.

B. Contractor, by executing this Contract, accepts responsibility for prohibiting materials or products containing asbestos from being used on this Project.

C. Should Contractor furnish, use, or install products or materials containing asbestos, knowingly or otherwise, he has not met the requirements of this Contract.

### 2.2 HAZARDOUS MATERIALS – MOLD

A. If mold is present on the inside of the building; determine source of moisture and correct prior to performing the following:

1. Nonporous Surfaces: Mold growing on steel, aluminum or other nonporous materials may be cleaned using methods recommended by an Environmental Inspector licensed by the State of Texas.
2. Porous Surfaces: Entire mold contaminated surface must be removed and disposed of using methods recommended by an Environmental Inspector licensed by the State of Texas.
3. Following elimination of mold provide a report prepared by an Environmental Inspector licensed by the State of Texas that the building is free from mold contamination.

## PART 3 - EXECUTION

Not used.

**END OF SECTION**

# SECTION 01 22 00

# UNIT PRICES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for unit prices.

### 1.2 DEFINITIONS

A. Unit price is an amount incorporated into 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.

### 1.3 PROCEDURES

A. Unit prices include necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: Refer to the 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. 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. 1: Dormer Windows:

1. Description: Replace dormer windows in addition to dormer windows shown to be replaced on the Drawings.
2. Unit of Measurement: Per dormer window.

B. Unit Price No. 2: Repaint Stucco:

1. Description: Repaint stucco according to Section 09 96 53 "Elastomeric Coatings."
2. Unit of Measurement: Per square foot.

**END OF SECTION**

# SECTION 01 25 00

# SUBSTITUTION PROCEDURES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for substitutions.

### 1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet Project requirements but may offer advantage to Contractor or Owner.

B. Comparable Products: Products demonstrated and approved through the product substitution process to have similar qualities related to type, function, dimension, in service performance, physical properties, appearance, and characteristics equivalent to or exceeding those of the specified product and incorporated into the Contract Documents.

C. Substitutions submitted and accepted prior to the award of the Contract for Construction are deemed part of the Contract Documents and are not subject to substitution requirements.

### 1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Identify the Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use facsimile of form provided in Form 01 25 00.10 "Substitution Request Form."
2. Documentation: Demonstrate compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating the reason the specified product, fabrication, or installation method cannot be provided, if applicable.
b. Coordination of information, including a list of changes or revisions needed to other parts of the work and to construction performed by Owner and

separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitutions with those of the work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, physical characteristics, weight, size, durability, visual effect, noise levels, color and texture, vibration generation, interchangeability of parts or components, maintenance, compatibility with other materials, products, assemblies and components, equipment capacities and performance characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures. Mark cut sheet to indicate specific model or product.
e. Samples, where applicable or requested.
f. Certificates and manufacturer/installer/fabricator qualification data, where applicable.
g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of architects and owners.
h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES and local regulations.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within  days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or  days of receipt of additional information or documentation, whichever is later.

a. Form of Acceptance During Bidding: Addenda.
b. Form of Rejection During Bid Period: No response.
c. Forms of Acceptance During Construction: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the work.

d. Form of Rejection During Construction: Written rejection on Substitution Request Form.

4. No response will be given for substitutions submitted by individual subcontractors or material suppliers.
5. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

B. Substitution requests are not allowed when disguised as a submittal. Request substitutions in accordance with substitution procedures. Substitutions submitted as a Submittal will be returned without review or comment.

1. Contractor assumes full and complete responsibility for installing substitutions that have not been formally submitted and approved by the Architect.

## 1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

## 1.5 COORDINATION

A. Revise or adjust affected work necessary to integrate work of the approved substitutions.

## 1.6 PRODUCT SUBSTITUTIONS

A. Conditions for Consideration: Substitution requests will be considered when the request is submitted in writing on the Request for Substitution form by the Contractor.

B. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has the necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the work.

f. Requested substitution has been coordinated with other portions of the work.
g. Requested substitution provides specified warranty.

1) A warranty based on the same warranty period only is not considered equivalent to the specified warranty.

h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the work, is uniform and consistent, is compatible with other products, and is acceptable to each contractor involved.

C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume.

1) Additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has the necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the work.
h. Requested substitution has been coordinated with other portions of the work.
i. Requested substitution provides specified or better warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

D. Requests for substitutions will not be considered when:

1. Products are indicated or implied on Shop Drawings, Product Data Submittals, or Requests for Information (RFIs).

2. Requested directly by subcontractor or supplier.
3. Acceptance requires substantial revisions to Contract Documents or Contract time.
4. Additional cost to Owner is involved.
5. Substitute products shall not be ordered or installed without written acceptance of Architect. If proposed substitution is not accepted, provide specified product or materials.
6. Burden of proof for merits of proposed substitute is upon proposer. Architect's decision of acceptance or rejection of proposed substitution is final.
7. Review of Architect, acceptance, or failure to take exceptions to substitutions or other review documents, shall not relieve Contractor of its responsibility for compliance with performance or requirements of Contract Documents.
8. Contractor shall be responsible for and pay for all expenses incurred by Owner or Architect for changes to Contract Documents ultimately required by accepted Contractor requests for substitutions.

## 1.7 SUBMISSION PROCEDURES

A. Submit each product substitution as a separate request.

B. The burden of proof of compliance to requirements lies with the proposer.

C. Documentation: Submit supporting documentation indicating compliance with requirements for substitutions and the following:

1. Identify product by specification section and article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and suppliers as appropriate.
2. Include a statement indicating the reason specified product is unavailable.

    a. Contractor’s failure to order specified product in sufficient time for delivery to site is not a valid reason for a substitution.

3. Coordination information, including list of modifications necessary for related work, existing conditions, and to construction performed by Owner and separate contractors necessary to accommodate proposed substitution.
4. Detailed comparison of significant properties of proposed substitution with quality of work specified. Significant properties may include but are not limited to attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated. Identify variations from contract requirements.
5. Detailed comparison of warranties of proposed substitution and specified product note variations.
6. Shop drawings and product data, including drawings and descriptions of products, fabrication and installation procedures, certified test results, and similar data.
7. Samples, where applicable or requested.
8. Indicate availability of product in quantities required and availability of approved/certified, trained, and skilled installers.

9. Indicate availability of maintenance services and replacement materials as applicable.
10. Material test reports from qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
11. ICC-ES Evaluation Reports evidencing compliance with building code.
12. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for work, including effect on overall Contract Time. If specified product or method of construction cannot be provided within Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
13. Cost information, including proposal of change, if any, in Contract Sum.
14. Contractor's certification that proposed substitution complies with requirements of Contract Documents and is appropriate for applications indicated.
15. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
16. Contractor agreement to assume full responsibility for additional costs and time associated with substitution that may become necessary during the work.
17. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

D. Unsigned submittals are considered incomplete and will not be reviewed.

E. For accepted products, submit formal shop drawings, product data, and samples under provisions of Section 01 33 00 and the individual specification section.

## 1.8 ARCHITECT DUTIES

A. Architect will determine acceptability of proposed substitutions.

B. Review Contractor's requests for substitutions with reasonable promptness.

C. Notify Contractor, in writing, of decision to accept or reject requested substitution.

# PART 2 - PRODUCTS

## 2.1 PRODUCT SUBSTITUTIONS

A. Product Properties: Properties of substituted products considered include but are not limited to:

1. Physical dimension requirements to satisfy space limitations.
2. Static and dynamic weight limitations, structural properties.
3. Audible noise levels.
4. Vibration generation.
5. Interchangeability of parts or components.
6. Accessibility for maintenance, possible removal, or replacement.

7. Colors, textures and compatibility with other materials, products, assemblies, and components.
8. Equipment capacities and performance characteristics.
9. Warranty conditions.

## PART 3 - EXECUTION

### 3.1 CONTRACTOR'S REPRESENTATION

A. In making a formal request for substitution Contractor represents that:

1. It has thoroughly investigated proposed product and has determined it is equivalent to or superior in respects to that specified.
2. It will provide same warranties or bonds for substitution as for product specified.
3. It will coordinate installation of accepted substitution into the work and will make necessary changes for the work to be complete.
4. It waives claims for additional costs caused by the requested substitution which may subsequently become apparent.
5. Cost data is complete and includes related costs under the Contract, but not costs under separate contracts.

**END OF SECTION**

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# SUBSTITUTION REQUEST FORM

To Architect: Corgan Associates, Inc.
Project Name: Rockwall-Heath High School Campus Roof Replacement

Specified Item: _____

| Section | Page | Paragraph | Description |
|---|---|---|---|
| | | | |

**The undersigned Contractor requests consideration of the following:**

Proposed Substitution: _____

1. Attached data includes product description, specifications, drawings, photographs, performance, and test data adequate for evaluation of the request; applicable portions of the data are clearly identified, both on the proposed substitution and the original specified product.
2. Attached data includes description of changes to Contract Documents, which proposed Substitution will require for its proper installation.

**The undersigned Contractor states that the following paragraphs, unless modified on attachments, are correct.**

1. The proposed substitution does not affect dimensions on Drawings.
2. The undersigned Contractor agrees to pay for changes to the building design, including architectural or engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution has no adverse effect on other trades, the construction schedule, or specified warranty requirements.
4. Maintenance and service parts are locally available for the proposed substitution.

**The Contractor further states that the function, appearance, and quality of the Proposed Substitution are equivalent or superior to the Specified Item. The Contractor further warrants that the intent of specification Section 01 25 00, Article Contractor's Representation has been met.**

1. Cost Reduction to the Owner: $ _____

**ACCEPTANCES:**

1. Contractor Acceptance: _____ Date: _____ Representing: _____
2. Owner Acceptance: _____ Date: _____ Representing: Rockwall ISD
3. Architect Acceptance: _____ Date: _____ Representing: Corgan Associates, Inc.

_____ Accepted as Noted _____ Received too late

_____ Not Accepted _____ Resubmit with complete documentation

**END OF FORM**

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# SECTION 01 26 00

# CONTRACT MODIFICATION PROCEDURES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for handling and processing Contract modifications.

### 1.2 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710.

### 1.3 PROPOSAL REQUESTS

A. Owner Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the work that require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

    a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
    b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
    c. Include costs of labor and supervision directly attributable to the change.
    d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
    e. Quotation Form: Use forms acceptable to Architect.

B. Contractor Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 01 25 00 "Substitution Procedures" if proposed change requires substitution of one product or system for product or system specified.
7. Proposal Request Form: Use form acceptable to Architect.

## 1.4 ADMINISTRATIVE CHANGE ORDERS

A. Unit Price Adjustment: See Section 01 22 00 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit price work.

## 1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Change Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701 .

## 1.6 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714 . Construction Change Directive instructs Contractor to proceed with a change in the work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

# PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

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# SECTION 01 29 00

# PAYMENT PROCEDURES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements necessary to prepare and process Applications for Payment.

### 1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the work and used as the basis for reviewing Contractor's Applications for Payment.

### 1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction progress schedule.

1. Coordinate line items in the schedule of values with required administrative schedules and forms including:

    a. Construction Progress Schedule, in CPM or bar chart format.
    b. Application for Payment form.
    c. List of subcontractors.
    d. Schedule of alternates.
    e. List of products.
    f. List of principal suppliers and fabricators.
    g. Schedule of submittals.

2. Submit initial Schedule of Values to Architect within 14 days of Notice to Proceed.
3. Submit revised Schedule of Values at earliest possible date, but no later than minimum of 20 days before scheduled date of Initial Application for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Arrange Schedule of Values on 8-1/2 inches by 11 inches (213 mm by 283 mm) tabular form on white paper in format acceptable to Architect.
2. Use bar chart or CPM chart as guide to establish format; compile information based on completed tasks.

3. Project Identification:

    a. Project name and location.
    b. Name of Architect.
    c. Project number.
    d. Contractor's name and address.
    e. Date of submittal.
    f. Owner's contract designation.

4. Provide columns to indicate following for each item listed:

    a. Generic name.
    b. Specific task description.
    c. Change Orders numbers that have affected value.
    d. Dollar value.
    e. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

5. Follow table of contents of Project Manual as format for listing component items; identify each line item with number and title of respective specification section.
6. Provide breakdown of Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports.
7. Break principal subcontract amounts down into multiple line items by completed task in various locations.
8. For each major line item, list subvalues of major products or operations under item.
9. Round amounts off to nearest whole dollar, total of listed values shall equal total Contract Sum.
10. For each part of work where Application for Payment includes materials or equipment purchased, fabricated, and stored, but not yet installed, include separate line items on Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of work.

C. Margins of Cost:

1. Indicate line items for indirect costs, and margins on actual costs, to the extent that each item is listed individually in Applications for Payment.
2. Each item in Schedule of Values and Application for Payment shall be complete, including its total cost and proportionate share of general overhead and profit margin.
3. At Contractor's option, temporary facilities and other major cost items that are not direct costs of actual work in place may be shown as separate line items in Schedule of Values.
4. Furnish line item cost for each of following general cost items:

    a. Bonds.
    b. Insurance.
    c. Field supervision and layout.
    d. Temporary facilities and controls.
    e. Testing.

D. Resubmittal:

1. After review by Architect, revise and resubmit schedule as necessary.
2. Resubmit revised schedule monthly in same manner.

E. Subschedule of Unit Material Values:

1. Submit subschedule of unit costs and quantities for following:

a. Submit subschedule for each separate stage of work specified in Section 01 10 00 "Summary."
b. Products on which progress payments will be requested for stored products.

2. Form and Content:

a. Form of submittal shall parallel that of Schedule of Values, with each item identified same as line item in Schedule of Values.
b. Unit quantity for bulk materials shall include an allowance for normal waste.

3. Unit values for materials shall be broken down as follows:

a. Cost of material, delivered and unloaded at Project Site, with taxes paid.
b. Installation costs, including overhead and profit.

4. Installed unit value multiplied by quantity listed shall equal cost of that item in Schedule of Values.
5. After review by Architect, revise and resubmit subschedules as necessary.
6. Resubmit revised subschedules monthly in same manner.

F. Upon request of Architect, provide support values with data which substantiate correctness.

## 1.4 APPLICATIONS FOR PAYMENT

A. Progress payments shall be made as work proceeds at intervals stated in the Agreement.

B. Work covered by Progress Payments shall, at time of payment, become property of Owner.

C. Form of Application for Payment will be notarized AIA Document G702 Application and Certification for Payment, supported by AIA Document G703 Continuation Sheet, submitted in quadruplicate.

D. Within 15 days of execution of Owner -Contractor Agreement, submit proposed sample of Lien Waiver and Bills Paid Affidavit forms for review and acceptance by Architect.

E. Conditions governing regular schedule for applications, payment, and retainage are stated in Contract.

F. Monthly Applications for Payment include Waivers of Liens for work included in previous months' Application for Payment. Waiver of Liens for subcontractors and materialmen shall be total amount paid prior to previous month's Application for Payment.

G. With each Application for Payment, certify that Application for Payment represents just estimate of cost reimbursable to Contractor under terms of Contract, and shall certify that there are no Mechanics' or Materialmens' Liens outstanding at date of Application for Payment, that due and payable bills with respect to work have been paid to date or shall be paid from proceeds of Application for Payment, and that there is no known basis for filing of Mechanics' or Materialmens' Liens against surety in connection with work, and that Waivers and Bills Paid Affidavit forms from subcontractors and materialmen have been, or will be, obtained in form specified in Contract.

H. Transmittal: Submit signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

I. Preparation of Application:

1. Format and Data Required:

a. Submit itemized applications on AIA Document G702 - Application and Certification for Payment Form, with AIA Document G703 Continuation Forms.
b. Provide itemized data on continuation sheets with format, schedules, line items, and values stipulated in Schedule of Values and acceptable to Architect.

2. Application Form:

a. Fill in required information, including Change Orders executed prior to date of submittal of applications.
b. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
c. Execute certification with signature of responsible officer of Contract firm.

3. Continuation Sheets:

a. Fill in total list of scheduled component items of work with item number and scheduled dollar value for each item.
b. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
c. Round off values to nearest dollar or as specified for Schedule of Values.
d. List each Change Order executed prior to date of submission at end of continuation sheets.
e. List by Change Order number and description as for original component item of work.

4. Initial (First) Application for Payment:

    a. Within 15 days of execution of Owner-Contractor Agreement. submit proposed sample of Lien Waiver and Bills Paid Affidavit forms for review and acceptance by Owner for use.
    b. Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include, but are not limited to, the following:

        1) List of subcontractors, with indications of MBE or WBE Owner firms.
        2) List of principal suppliers and fabricators.
        3) Schedule of Values.
        4) Contractor's Construction Schedule (preliminary if not final).
        5) Submittal Schedule (preliminary if not final).
        6) Copies of building permits.
        7) Copies of authorizations and licenses from governing authorities for performance of Work.
        8) Initial progress report.
        9) Report of Preconstruction meeting.
        10) Certificates of Insurance and insurance policies.
        11) Additional items as required in General Conditions.

J. Typical Monthly Application for Payment:

1. Each Application for Payment shall be consistent with previous Applications for Payments reviewed by Architect and paid by Owner.
2. Review pencil copy of Application for Payment with Architect at last scheduled job meeting each month, or at other agreeable time as can be scheduled.
3. Submit monthly Application for Payment on 15th day of each month.
4. Period of construction work covered by each Application for Payment is period ending 15 days prior to date for each progress payment and starting day following end of proceeding period.
5. Work covered by Progress Payments shall, at time of payment, become property of Owner.
6. Form of Application for Payment will be on specified forms, submitted in quadruplicate.
7. Complete each entry on forms, including notarization and execution by person authorized to sign legal documents on behalf of Contractor.
8. Incomplete Applications for Payment will be returned without action.
9. Entries shall match data of Schedule of Values and Contractor's Construction Schedule.
10. Use updated schedules if revisions have been made.
11. Include amounts of Change Orders and Construction Change Directives issued prior to last day of construction period covered by application.
12. Transmit executed copies of each Application for Payment to Architect by means ensuring receipt within 24 hours.
13. Transmit each copy with complete transmittal form listing attachments, and recording appropriate information related to Application in acceptable manner.
14. Stored Materials: Include amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

a. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.
b. Provide supporting documentation that verifies amount requested, including paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
c. Provide summary documentation for stored materials indicating the following:

1) Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
2) Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
3) Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

15. Waiver of Liens:

a. With each Application for Payment, submit waivers of mechanics liens from each contractor, subcontractor and materialman who may be lawfully entitled to file mechanics lien arising out of Contract, and related to Work covered by payment application.
b. Submit waivers of lien on forms acceptable to Architect.
c. Waiver of liens shall be total paid prior to previous month's Application for Payment.

16. With each Application for Payment, Contractor certifies the following:

a. Application for Payment represents just estimate of cost reimbursable to Contractor under terms of Contract.
b. That there are no Mechanics' or Materialmens' Liens outstanding at date of this Application for Payment.
c. That due and payable bills with respect to the Work have been paid to date or shall be paid from proceeds of that Application for Payment.
d. That there is no known basis for filing of Mechanics' or Materialmens' Liens against surety in connection with Work, and that Waivers and Bills Paid Affidavit forms from subcontractors and materialmen have been, or will be, obtained in form specified in Contract.

17. Progress payments will be made in accordance with General Conditions.

K. Application for Payment at Substantial Completion:

1. Following issuance of Certificate of Substantial Completion, submit Application for Payment with following administrative actions and submittals that must precede or coincide with application:
2. Training of Owner's personnel.
3. Occupancy permits and similar required approvals.
4. Warranties and maintenance agreements.
5. Test, adjust, and balance records.

6. Maintenance instructions.
7. Start-up performance reports.
8. Change-over information related to Owner's occupancy, use, operation, and maintenance.
9. Final cleaning.
10. Application for reduction of retainage, and Consent of Surety.
11. Advise on shifting insurance coverage.
12. Final progress photographs.
13. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
14. Transmittal of required Project construction records to Owner.
15. Removal of temporary facilities and services.
16. Removal of surplus materials, rubbish, and similar elements.
17. Additional items as required by General Conditions.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

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# SECTION 01 31 00

# PROJECT MANAGEMENT AND COORDINATION

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. Request for Information (RFI).
4. Digital project management procedures.
5. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

### 1.2 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1. Typically, a Contractor initiated written instrument relating to the execute of the work for additional information or clarification of the contract documents.

### 1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, in web based Project software directory, and in prominent location in built facility. Keep list current.

## 1.4 COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

## 1.5 COORDINATION DRAWINGS

A. Coordination Drawings: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

    a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    b. Coordinate the addition of trade specific information to coordination drawings in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    f. Indicate required installation sequences.
    g. Indicate dimensions shown on Drawings. Specifically note dimensions that conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate subframing for support of ceiling, wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire protection, fire alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:

    a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
    b. Dimensions of major components, including dampers, valves, diffusers, access doors, cleanouts, and electrical distribution equipment.

c. Fire rated enclosures around ductwork.

7. Electrical Work: Show the following:

   a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
   b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire alarm locations.
   c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
   d. Location of pull boxes and junction boxes, dimensioned from column center lines.

8. Fire Protection System: Show locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Architect will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not prepared in sufficient scope or detail, or are deficient, Architect will inform Contractor, who shall make suitable modifications and resubmit.
10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Section 01 33 00 "Submittal Procedures."

C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

   1. File Submittal Format: Submit or post coordination drawing files using PDF format.

## 1.6 REQUEST FOR INFORMATION (RFI)

A. Upon discovery of the need for additional information, clarification, or interpretation of the Contract Documents, prepare and submit an RFI using the attached form.

   1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
   2. Coordinate and submit RFIs promptly to avoid delays in Contractor's work or work of subcontractors.
   3. Submission of an RFI constitutes representation that the Contractor requires additional information regarding the Contract Documents after having made careful study and comparison of the Contract Documents, field conditions, Owner provided information, Contractor prepared coordination drawings, and prior project correspondence or documentation.

      a. No response will be made to requests where the information is conveyed or contained in the Contract Documents or the Contractor’s own documents.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: AIA Document G716 .

1. Attachments shall be electronic files in PDF format.

D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven workdays for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following workday.

1. The following Contractor generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 01 26 00 "Contract Modification Procedures."

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use software log that is part of web based Project software. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

## 1.7 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Use of Architect's Digital Data Files: Digital data files of Architect's BIM model will be provided by Architect for Contractor's use during construction.

1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Digital Drawing Software Program: Contract Drawings are available in Autodesk Revit.
4. Contractor shall execute a data licensing agreement in the form of AIA Document C106 Digital Data Licensing Agreement.

a. Subcontractors, and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of AIA Document C106.

5. The following digital data files will be furnished for each appropriate discipline:

a. Floor plans.
b. Reflected ceiling plans.

B. Web Based Project Software: Use Architect's web based Project software site for purposes of hosting and managing Project communication and documentation until Final Completion.

C. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

## 1.8 PROJECT MEETINGS

A. Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and parties involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 10 workdays prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

    a. Responsibilities and personnel assignments.
    b. Tentative construction schedule.
    c. Phasing.
    d. Critical work sequencing and long lead items.
    e. Designation of key personnel and their duties.
    f. Lines of communications.
    g. Use of web based Project software.
    h. Procedures for processing field decisions and Change Orders.
    i. Procedures for RFIs.
    j. Procedures for testing and inspecting.
    k. Procedures for processing Applications for Payment.
    l. Distribution of the Contract Documents.
    m. Submittal procedures.

n. Preparation of Record Documents.
o. Use of the premises and existing building.
p. Work restrictions.
q. Working hours.
r. Owner's occupancy requirements.
s. Responsibility for temporary facilities and controls.
t. Procedures for moisture and mold control.
u. Procedures for disruptions and shutdowns.
v. Construction waste management and recycling.
w. Parking availability.
x. Office, work, and storage areas.
y. Equipment deliveries and priorities.
z. First aid.
aa. Security.
bb. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility requirements.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written instructions.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.

v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Procedures for completing and archiving web based Project software site data files.
d. Submittal of written warranties.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
j. Submittal procedures.
k. Coordination of separate contracts.
l. Owner's partial occupancy requirements.
m. Installation of Owner's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Conduct progress meetings at regular intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner and Architect, contractor, subcontractor, supplier, and other entity concerned with current progress or

involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

        1) Review schedule for next period.

    b. Review present and future needs of each entity present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site use.
        8) Temporary facilities and controls.
        9) Progress cleaning.
        10) Quality and work standards.
        11) Status of correction of deficient items.
        12) Field observations.
        13) Status of RFIs.
        14) Status of Proposal Requests.
        15) Pending changes.
        16) Status of Change Orders.
        17) Pending claims and disputes.
        18) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

F. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the work.
2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

    a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    c. Review present and future needs of each contractor present, including the following:

        1) Interface requirements.
        2) Sequence of operations.
        3) Status of submittals.
        4) Deliveries.
        5) Off-site fabrication.
        6) Access.
        7) Site use.
        8) Temporary facilities and controls.
        9) Work hours.
        10) Hazards and risks.
        11) Progress cleaning.
        12) Quality and work standards.
        13) Status of RFIs.
        14) Proposal Requests.
        15) Change Orders.
        16) Pending changes.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

G. Preapplication Roofing Conference: Not less than seven days or more than 21 days prior to scheduled commencement of roofing application, convene a preapplication roofing conference at project site.

1. Attendance is required by Architect, Contractor, roofing installer, roof consultant, and each entity required to coordinate with or to protect work.

2. Minimum Agenda:

    a. Review accepted Submittals.
    b. Review outstanding material problems.
    c. Review minutes of Preliminary Roofing Conference.
    d. Discuss installation schedules and sequence, and revisions that have occurred.
    e. Review equipment set up and on site storage.
    f. Review readiness of deck for application:

        1) Certification in place.
        2) Examination of substrate by those in attendance.
        3) Drains installed.
        4) Curbs, nailers, penetrations, perimeter, equipment.

    g. Review the installation of the roofing system; review requirements.
    h. Review weather and working conditions, and procedures for daily or inclement weather cut-offs.
    i. Review protection requirements after installation.
    j. Review testing requirements and procedures involved.
    k. Discuss requirements for warranties and bonds.
    l. Conduct tour of roof deck to review potential issues and to verify readiness.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

# SECTION 01 32 00

# CONSTRUCTION PROGRESS DOCUMENTATION

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for schedules and reports required for proper performance of the work.

### 1.2 REFERENCES

A. The Associated General Contractors of America (AGC): The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry.

### 1.3 QUALITY ASSURANCE

A. Scheduler: Submit documentation of Contractor's personnel specializing in CPM scheduling with five years minimum experience in scheduling construction work of complexity comparable to Project and having use of computer facilities capable of delivering readout within 24 hours.

B. Contractor's Administrative Personnel: Submit documentation of five years minimum experience in using and monitoring CPM schedules on comparable projects.

### 1.4 DESCRIPTION

A. Provide information and input required for development of Project Schedule in accordance with requirements of this Section. Purpose of schedule is:

1. Assure adequate planning, scheduling, and reporting during execution of work by Contractor.
2. Assure coordination of work of Contractor and various subcontractors and subsubcontractors.
3. Assist Contractor and Owner in monitoring progress of work and evaluating proposed changes to Contract and Project Schedule.
4. Assist Owner and Contractor in preparation and evaluation of Contractor's monthly progress payments.

B. Use Critical Path Method (CPM) for planning, scheduling, and reporting work performed under Contract. Display graphic portions of Project Schedule by Activity-on-Arrow Diagramming Method (ADM).

1. Include Preliminary Network, Detailed Network, and computer produced Schedule and Cost Reports.

C. Provide Preliminary Network to monitor progress of work during development and acceptance of Detailed Network.

D. Contractor and major subcontractors shall meet with Owner within seven calendar days after date of Notice-to-Proceed to conduct joint review of Project Schedule requirements to assure mutual understanding by parties involved.

## 1.5 INITIAL SCHEDULE DEVELOPMENT (FORMAT)

A. Propose Critical Path Method arrow diagram format consisting of project activities, sequences and duration, submittals, procurement, and completion of work.

B. Submit to Architect from each major subcontractor letter confirming work schedule for their individual trade.

C. Submit initial network analysis schedule development within seven days of Notice to Proceed, or at Preconstruction Scheduling Meeting, to Architect for review.

D. Incorporate revisions deemed necessary by Architect and resubmit within additional 7 days.

E. Upon acceptance of network analysis format, begin data input and development of Preliminary Network.

## 1.6 PRELIMINARY NETWORK DEVELOPMENT

A. After acceptance of initial schedule format by Architect, Contractor to submit to Architect Preliminary Network within 14 calendar days of acceptance of schedule format, but not more than 21 days after Notice-to-Proceed. Submit four copies of Preliminary Network neatly organized and drawn non-time scaled from left to right on either 24 inches by 36 inches (610 mm by 915 mm) or 30 inches by 42 inches (563 mm by 1065 mm) standard size sheets with suitable notation relating interface points among sheets. Cover following project phases and activities:

1. Proposed procurement activities, including shop drawings, product data and sample submittals, and fabrication and delivery of critical and long lead time procurements.

    a. Indicate intended submittal dates and realistic delivery dates for fabrication and delivery items.
    b. Incorporated into Detailed Network (described below), including requested revisions.

2. Proposed construction activities to be accomplished during first 90 calendar days of Contract.

    a. Activity durations shall be in units of whole workdays and shall be limited to maximum 15 workdays for each activity.

b. Incorporate proposed 90 calendar day construction activities into Detailed Network, including requested revisions.

3. Include in proposed procurement and construction activities same information required for Detailed Network described below.
4. Summary activities not included above which are necessary to properly indicate following:

a. Approach to scheduling remaining work areas or phases of work. Represent work for each phase or area by at least one summary activity such that they cumulatively indicate entire Project Schedule.
b. Show approximate cost and duration for each summary activity on Preliminary Network and include best estimate of work.

B. Show sequence and interdependence of activities subject to requirements of other provisions of this Section.

C. Preliminary Network shall be basis for progress payments during first 90 calendar days of Contract while Detailed Network (described below) is being developed and accepted.

D. Updated on monthly basis while Detailed Network is being developed. Monthly updating of Preliminary Network shall be consistent with procedures and requirements for Schedule Updating, except computer produced Schedule and Cost Reports shall not become part of Project Schedule until after acceptance of Detailed Network.

E. Use as follows for time extension analysis during first 90 calendar days of Contract:

1. When Change Orders (and Proposed Changes) are initiated, delays are experienced, or Contractor desires to revise Preliminary Network, submit to Architect written Time Impact Analysis as required below, except included activities and event times in Analysis from current Preliminary Network update.
2. Determine final determination with regard to extent of time extension allowed in accordance with requirements for Time Impact Analysis, subsequent to development, review and acceptance of Detailed Network.

F. Within seven calendar days of Architect's receipt of Preliminary Network, Architect shall notify Contractor of concerns in regard to Preliminary Network. Furnish written response to Architect's comments prior to or concurrent with submittal of Detailed Network. Resolve comments and concerns before consideration of Detailed Network can commence.

## 1.7 DETAILED NETWORK DEVELOPMENT

A. Schedule development by Contractor: Within 28 days after Notice-to-Proceed, submit proposed Detailed Network to Architect. Cover entire Contract Time period and incorporate in detail first 90 calendar days of Preliminary Network, including requested revisions. Organize and drawn non-time scaled from left to right on either 24 inches by 36 inches (610 mm by 915 mm) or 30 inches by 42 inches (563 mm by 1065 mm)

standard size sheets with suitable notation relating interface points among sheets. Detailed Network shall include, but not be limited by, following as minimum:

1. Proposed procurement activities, including activities and information used in Preliminary Network. Recommended sequence would be as follows:

| Duration | Description |
|---|---|
| ---- --00 | 0 (restraint from NTP) |
| --00 | --02-SUB |
| --02 | --04-APP |
| --04 | --06-F/D |
| --06 | --081ARR |
| --08 | ----0 (restraint to installation) |

   a. In above sequence, activity --00 --02 is submittal activity which precedes --02 --04, "approval." Activity --04 --06 is fabrication and delivery time which precedes --06 --08, "arrival." Begin each activity description with three character verb abbreviation standard in procurement item scheduling for purposes of computer report selection. Arrival activity, "ARR," is included for purpose of pinpointing cashflow. Load arrival activity with amount due contractor upon delivery of line item in question. Each activity of this type shall have "duration" of one day.

2. Proposed construction activities, including activities and information used in Preliminary Network. Develop construction sequencing separately from procurement. Construction activity sequence shall appear as though it were developed under assumption that materials are immediately available to Project. Link procurement activities grouped together on network diagram (preferably above construction logic), to various installation activities by restraints (dummies) from "J" nodes of "arrival" activities.
3. Proposed durations for construction activities.
4. Proposed sequencing of construction activities.
5. Proposed activity manpower, cost and equipment loading.

B. Depict following for each activity:

1. "I" and "J" (beginning and ending) event nodes and numbers, respectively. Utilize numerical designations to identify each and every event node. Do not utilize alpha-numeric event node numbering. Each "J" node number shall be larger than preceding "I" node numbers.
2. Concise description of Work represented by activity. As requested by Architect, either prior or subsequent to acceptance of Detailed Network, provide graphic explanation of relationship of activities in comparison with work areas identified on prints of Contract Documents, at no additional cost to Owner.
3. Activity duration in whole workdays, with maximum 15 workdays each, unless otherwise directed by Architect, except for nonconstruction activities such as procurement and fabrication of materials, delivery of materials, and curing of concrete. When single activity requires more than 15 days, subdivided into identifiable elements of less than 15 workdays each.

4. Performance responsibility by discipline code: MECH, ELEC, or acceptable abbreviations accepted by Architect.
5. Assigned dollar value (cost loading) of each activity of Detailed Network, which cumulatively equal total Contract Sum. Mobilization, bond and insurance costs may be shown separately. Prorate other General Requirement costs, overhead, and profit throughout activities. For this purpose, assume rate of activity value installation into work as linear with time.
6. Manpower loading of each activity. Prepare and submit (separate) manpower summary analysis in graphic format depicting manpower by principle trades and aggregate. Graph(s) shall show number of man days of effort, by month, over duration of Project Schedule.
7. Assignment to applicable activities of Detailed Network of major construction equipment to be utilized by Contractor, subcontractors, and sub-subcontractors in executing work.

C. Computer Printout:

1. Early Start and Early Finish dates.
2. Late Start and Late Finish dates.
3. Activity Float Time.
4. Actual Start and Finish dates.

D. Clearly identify activities illustrating accomplishment of time(s) for completion of project set forth in Contract. If schedule indicated earlier completion time(s) than that set forth in Contract, show float (or slack) between schedule and Contract dates on computer printout shall be part of total float available.

E. Produce computer printouts sorts and summaries, providing sorts and breakdowns as follows:

1. I-J.
2. Total float.
3. Performing organization.
4. Early start date.
5. Schedule of Values.
6. Monthly cash flow.

F. Develop network diagram logic so that no activity having duration greater than zero shall share I-node or J-node designation with other activities having duration greater than zero. There shall be no converging or diverging logic patterns involving more than one activity of duration greater than zero.

1. Include contractor and subcontractor work at tiers.

G. Show sequence and interdependence of activities required for complete performance of Work in logical sequence and coordinated plan of work.

H. Estimate proposed durations assigned to each activity of time required to complete activity considering scope and resources planned for activity. Upon request by

Architect, furnish written description of determination of each duration of critical activities. Include in request:

1. Explain number of crews, crew composition, number of shifts per day, number of hours in shift, and number of workdays per week.
2. Provide major item list of construction equipment for activity, including types, number of units, unit capacities, and proposed time each piece of equipment will be on job keyed to activities on which equipment will be used.
3. Other pertinent data affecting specific activity duration.

I. Failure by Contractor to include elements of work required for performance of Contract shall not excuse Contractor form completing work within Contract Time, regardless of acceptance of Detailed Network.

J. Unless noted otherwise in the Supplementary General Conditions, account for the following seasonal precipitation days for exterior Work.

1. DFW Region:

| Month | Workdays |
|---|---|
| January | 4 |
| February | 5 |
| March | 5 |
| April | 5 |
| May | 8 |
| June | 5 |
| July | 3 |
| August | 4 |
| September | 4 |
| October | 5 |
| November | 4 |
| December | 4 |
| Total. | 55 |

2. Show that critical activity path has been delayed by loss of days in excess of number indicated above before consideration of extension will be given.
3. In execution of interior work, show to satisfaction of Architect that interior work has been delayed by adverse weather in excess of number of allowable days above.

K. Indicate holidays, vacations and non-workdays applicable to schedule.

L. If Architect questions Contractor's proposed logic, durations, manpower, cost or equipment loading, within seven calendar days of receipt of written request, furnish satisfactory revision or adequate justification.

M. Joint Review, Revision, and Approval of Detailed Network:

1. Within 14 calendar days of receipt of Contractor's proposed Detailed Network, and within seven calendar days of receipt by Architect of Contractor's response, Architect, Contractor, and Owner shall meet for joint review, correction or

adjustment of proposed Detailed Network. Areas which, in opinion of Architect, conflict with timely completion of Project shall be subject to revision by Contractor.

2. If Contractor fails to define element of work, activity or logic, and Architects review does not detect this error or omission, update error or omission, current at next monthly update without change to Contract Time.
3. Within 7 calendar days after joint review, revise Network in accordance with agreements reached during review and submit one reproducible mylar sepia and three prints of revised Network.
4. Within 7 calendar days of receipt by Architect of revised Detailed Network, three copies of each revised Network and computer produced Schedule and furnish Cost Reports to Architect by Contractor. Include computer produced cashflow analysis generated by both early start and late start activity dates.
5. Upon establishment of agreed upon Project Schedule, sign on face of documents (Detailed Network and Schedule and Cost Report), indicating acceptance of Schedule.
6. Upon acceptance of Detailed Network by Owner, cost-loaded values of Network shall become basis for determining progress payments.
7. Acceptance of Project Schedule by Owner does not relieve Contractor of responsibilities for accuracy or feasibility of schedule, or Contractor's ability to meet Contract Completion date, nor does acceptance warrant, acknowledge or admit reasonableness of logic, durations, manpower or equipment loading of Project Schedule.

## 1.8 PROJECT SCHEDULE UPDATING

A. Updated on monthly basis throughout Contract Time and until Substantial Completion. Meet with Owner and Architect each month at Schedule Update meeting to review actual progress made through date of schedule update, including following:

1. Progress made to date, activities started and completed to date, and percentage of Work complete to date on each activity started but not complete.
2. Evaluate percentage of completed work with Contractor prepared estimates and supporting data.
3. Submit contractor prepared estimates of percentage completion of each activity and supporting data on or before 14th day preceding progress payment submittal deadline, including following information:

    a. One marked up copy of previous months Schedule Update Network indicating progress on schedule activities and revised (current) remaining durations. Legibly markup copy with felt-tip markers and red ink.
    b. One original and three reproduced marked up copies of previous months Schedule Update reports coordinated with other requirements above and indicating actual activity start or completion dates, revised current) remaining durations, and percent complete regarding activity cost.
    c. Indicate in writing those activities Contractor plans to work on during following update month and current or anticipated conditions which may delay work.

B. In case of disagreements at Schedule Update meeting concerning actual progress to date, Architect's determination shall govern.

C. Upon completion of Schedule Update meeting, which occurs on or before 7th day preceding progress payment submittal deadline, use input from meeting to revise Network to reflect progress as of date of Schedule Update and agreed revisions. Execute computer produced calculation to determine status of Project Schedule. Use percentage completions as required for preparation of monthly request for progress payment.

D. Forward two copies of each updated Project Schedule to Architect including:

1. Description of activities completed during preceding month.
2. Description of progress made on activities listed as started but not completed.
3. Description of revisions to schedule logic, initial activity durations, or activity costs.
4. Prints of updated Network indicating progress made up to date of Schedule Update and indicating revisions to Network.
5. Following computer produced reports:

    a. I-J.
    b. Total float.
    c. 60-day Early Start by I-J.
    d. 60-day Early Start by Responsibility Code.
    e. Cost report.

6. Include I-J, Total Float, and 60-day Early Start Schedule Reports listed for reach activity listed on Network:

    a. I-J Event Node Number(s).
    b. Activity Description.
    c. Original Destination.
    d. Remaining Duration.
    e. Activity Responsibility Code.
    f. Activity Early Start Date.
    g. Activity Early Finish Date.
    h. Activity Late Start Date.
    i. Activity Late Finish Date.
    j. Total Float.

E. If Contractor does not record exceptions to published Project Schedule Update within 14 calendar days after its issuance, Contract shall be deemed to have accepted revisions.

F. Monthly updating of Project Schedule shall be integral part and basic element of estimate upon which progress payments will be made. If, in opinion of Architect, Contractor fails or refuses to provide information required to accomplish complete Update, Contractor shall be deemed to have not provided required estimate upon which progress payments are based and shall not be entitled to progress payment until completed Update has been provided in accordance with requirements of this Section to satisfaction of Architect.

## 1.9 PROJECT SCHEDULE REVISIONS

A. Updating Project Schedule to reflect actual progress made up to date of Update shall not be considered revisions to Project Schedule.

B. If Project Schedule no longer represents actual progress of work, submit revision to Schedule.

C. If Contractor desires to make changes in Project Schedule to reflect revisions in method of operating and scheduling of work, notify Architect in writing, stating reason for proposed revision.

D. If revision to Schedule is contemplated, Contractor or Owner shall so advise other in writing at least 14 calendar days in advance of next Schedule Update meeting, describing revision and describing reasons for revision.

E. Reasonable requests by Contractor for revisions will be implemented by Owner.

F. Owner directed revisions to Project Schedule will not be incorporated into Schedule without written response from Contractor within 14 calendar days. Contractor's failure to respond within 14 days will be considered acceptance of Owner requested revisions, and such revisions will be incorporated into Schedule.

G. Make requests for revisions of activity manpower, activity costs, or redistribution of activity costs in accordance with requirements.

## 1.10 ADJUSTMENT OF TIME FOR COMPLETION

A. Time for Completion will be adjusted in accordance with requirements.

B. Accompany request for adjustment of time for completion because of changes or alleged delays with complete Time Impact Analysis submitted for within 30 calendar days after initial notice of delay.

C. Furnish information justifying request and stating extent of adjustment requested for each specific change or alleged delay. Each Analysis shall be on form and content acceptable to Architect. Include but do not limit to, general information set forth in this Clause appropriate to type of request (change or alleged delay) plus following:

1. Fragmentary CPM network illustrating how Contractor proposes to have change or alleged delay incorporated into current Update Schedule.
2. Identification of activities in current updated Project Schedule which are proposed to be amended due to change or alleged delay, together with engineering estimates and other appropriate data justifying proposal.
3. Take into account total allowable time of activity float time available for work involved in request.

1.11 TIME IMPACT ANALYSIS

A. When change Orders (including Proposed Change Orders) are initiated, delays are experienced, or Contractor desires to revise Project Schedule, submit to Architect written Time Impact Analysis illustrating influence of each Change Order, delay, or Contractor request on current Contract Completion date.

B. Base Time Impact Analysis on dates when change or changes were issued, or dates when alleged delay or delays began, status of work at that time, and include time computations for affected activities.

C. Activity delays shall not automatically mean that extension of Contract Time is warranted or due Contractor.

D. Float is not for exclusive use or benefit of either Owner or Contractor. Contract Time extensions will be granted only to extent equitable time adjustments to activity or activities affected by Change Order or delay exceeds total (positive or zero) float of critical activity (or path) and extends Contract Date.

E. Submit three copies of each Time Impact Analysis within 14 calendar days after commencement of delay or notice of direction for Change Order is given to Contractor.

F. Upon Architects review of Time Impact Analysis, to extension of time for completion of immediate contract milestone, time(s) for completion of milestone(s) will be adjusted by Architect, whether or not time for completion of overall Project Schedule is changed accordingly.

G. If Architect finds, after review of Time Impact Analysis that Contractor is entitled to extension of time for completion, time for completion will be adjusted by Architect and Owner will allow revision to Project Schedule.

H. Upon failure to submit Time Impact Analysis for change or alleged delay within 14 calendar days, or provide additional information as Architect may require, Architect will determine time impact of change or alleged delay. If this results in determination that adjustments should be made, Architect will issue direction at next Update meeting.

I. Incorporate Time Impact Analysis related to Change Order work or Contract Time extensions, into and attached to applicable Change Order.

1.12 RESPONSIBILITY FOR COMPLETION

A. Furnish sufficient forces. Include offices, facilities and equipment works hours, night shifts and overtime operations, as necessary to ensure execution of Work in accordance with monthly Project Schedule Update.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

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# SECTION 01 32 33

# PHOTOGRAPHIC DOCUMENTATION

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.

### 1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.

1. Submit photos on Project Web site. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Architect.
d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

### 1.3 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

B. Aerial Documentation Qualifications: Firm specializing in aerial documentation, having minimum 10 years documented experience in professional unmanned aerial systems (drone) and having the necessary equipment (remote control quadcopters and hexacopters with gimbal mounted HD cameras, insurance, and FAA approvals for unmanned aerial documentation.

C. Drone Operator Qualifications: FAA Part 107 licensed drone operator, certified as an unmanned aircraft operator with a UAS rating for the operation of a commercial drone (unmanned aerial vehicle) pilot, having minimum 7 years as a drone operator with current certifications and is TSA vetted.

## 1.4 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels, and with vibration reduction technology. Use flash in low light levels or backlit conditions.

B. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image editing software.

C. Metadata: Record accurate date and time and GPS location data from camera.

D. File Names: Name media files with date and sequential numbering suffix.

## 1.5 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.

1. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
2. Take 100 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take 20 photographs coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take 100 photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

F. Additional Photographs: Architect may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:

    a. Special events planned at Project site.
    b. Immediate follow up when on site events result in construction damage or losses.
    c. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
    d. Substantial Completion of a major phase or component of the Work.
    e. Extra record photographs at time of final acceptance.
    f. Owner's request for special publicity photographs.

1.6 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

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# SECTION 01 33 00

# SUBMITTAL PROCEDURES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements including:

1. Submittal schedule.
2. Shop drawings, coordination drawings, product data, and samples.
3. Verification submittals.

### 1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.

### 1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List submittals required to maintain orderly progress of the work and those required early due to long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal Category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled dates for purchasing.
    h. Scheduled date of fabrication.
    i. Scheduled dates for installation.
    j. Activity or event number.

## 1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Architect.
4. Name of Construction Manager, if applicable.
5. Name of Contractor.
6. Name of firm or entity that prepared submittal.
7. Names of subcontractor, manufacturer, and supplier.
8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
9. Category and type of submittal.
10. Submittal purpose and description.
11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
12. Drawing number and detail references, as appropriate.
13. Indication of full or partial submittal.
14. Location(s) where product is to be installed, as appropriate.
15. Other necessary identification.
16. Remarks.
17. Signature of transmitter.

B. Options: Identify options requiring selection by Architect.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Electronic Submittals:

1. All submittals on this Project are intended to be transmitted to the Architect in electronic format. Acceptable format includes PDF files with searchable text

options activated. Files shall be fully coordinated with integrated bookmarks outlining all primary, secondary and tertiary subsections of the document for navigation.

2. All electronic submittals shall be transmitted to the Architect using the identified Web Based Project Software and tracking system.
3. All samples and color selection charts, draw down cards or other such items for selecting colors, finishes and textures shall be provided to the Architect in hard copy form, linked to an electronic submittal file for tracking purposes only.

E. Transmittals:

1. Identification and Information: Identify and incorporate information in each electronic submittal file:

   a. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
   b. Name file with submittal number or other unique identifier, including revision identifier.

      1) File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01. A).

   c. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.

2. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number and date.

   a. Format: Use software generated form from electronic project management software acceptable to Project team, containing the following information:

      1) Project name.
      2) Date.
      3) File name and submittal number.
      4) Name and address of Architect.
      5) Name of Construction Manager. If applicable.
      6) Name of Contractor.
      7) Name of firm or entity that prepared submittal.
      8) Names of subcontractor, manufacturer, and supplier.
      9) Type of submittal.
      10) Specification Section number and title.
      11) Specification paragraph number or drawing designation and generic name for each of multiple items.
      12) Drawing number and detail references, as appropriate.
      13) Location(s) where product is to be installed, as appropriate.
      14) Related physical samples submitted directly.
      15) Indication of full or partial submittal.
      16) Transmittal number, numbered consecutively.

17) Submittal and transmittal distribution record.
18) Remarks.

b. Metadata: Include the following information as keywords in the electronic submittal file metadata:

1) Project name.
2) Number and title of appropriate Specification Section.
3) Manufacturer name.
4) Product name.

## 1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Web Based Project Software: Prepare submittals in PDF form, and upload to web based Project software website. Enter required data in web based software site to fully identify submittal.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit submittal items required for each Specification Section concurrently unless partial submittals for portions of the work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of submittals for related parts of the work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized due to failure to transmit submittals enough in advance of the work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Consulting Engineers: Submit submittals for structural, mechanical, and electrical items directly to consulting engineer with copy of transmittal sent to Architect. Upon completion of review, consulting engineer will send its reviewed submittal to Architect.

3. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
4. Resubmittal Review: Allow 10 days for review of each resubmittal.
5. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 15 days for initial review of each submittal.
6. Submittals received by Architect after 2:00 p.m. Central Time will be considered as received the following workday.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Make revisions in submittals required by Architect, mark number of submission, and resubmit as required until accepted.
4. Shop Drawings and Product Data:

    a. Revise initial drawings or data, and resubmit as specified for initial submittal.
    b. Indicate changes been made other than those requested by Architect.
    c. Mark number of submission and resubmit until accepted.

5. Samples: Submit new samples as required for initial submittal. Remove samples which are rejected or designated as resubmit.
6. Resubmit submittals until marked with approval notation from Architect's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

1. Distribute reproductions of reviewed Shop Drawings and Product Data that do not require revisions to the following:

    a. Job site file.
    b. Project Record Documents file.
    c. Other affected contractors.
    d. Subcontractors.
    e. Supplier or Fabricator.

2. Distribute accepted samples as directed by Architect.

F. Use for Construction: Retain complete copies of submittals on Project site. Use final action submittals marked with approval notation from Architect's action stamp.

## 1.6 SUBMITTAL REQUIREMENTS

A. Make submittals promptly in accordance with approved schedule and in sequence that does not delay the work. Submittals shall be made to Architect by Contractor. Submittals from other entities will be returned unreviewed.

B. Electronic Submittal Requirements:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number, including revision identifier, and other unique identifiers at Contractor's discretion.

    a. File name and submittal number shall use the Specification Section number, with spaces, followed by a dash and then a sequential 3-digit submittal number (e.g., 061053 – 001). File name and submittal shall also include a 2-digit revision identifier suffix after another dash, starting with "00" on the initial submission (e.g., 061053 – 001 – 00).

3. Provide electronic stamp to permanently record Contractor's review and approval markings and space for electronic stamp for action taken by Architect and Consultants as needed.
4. Transmittal Form for Electronic Submittals: Use software generated form from electronic project management software acceptable to Project team, containing the following information:

    a. Project name.
    b. Date.
    c. File name and submittal number.
    d. Name and address of Architect.
    e. Name of Construction Manager.
    f. Name of Contractor.
    g. Name of firm or entity that prepared submittal.
    h. Names of subcontractor, manufacturer, and supplier.
    i. Type of submittal.
    j. Specification Section number and title.
    k. Specification paragraph number or drawing designation and generic name for each of multiple items.
    l. Drawing number and detail references, as appropriate.
    m. Location(s) where product is to be installed, as appropriate.
    n. Related physical samples submitted directly.
    o. Indication of full or partial submittal.
    p. Transmittal number, numbered consecutively.
    q. Submittal and transmittal distribution record.
    r. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:

    a. Project name.

b. Number and title of appropriate Specification Section.
c. Manufacturer name.
d. Product name.

6. Post electronic submittals in PDF format directly to Project Web site.
7. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

C. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.
b. Show performance characteristics and capacities.
c. Show dimensions and clearances required.
d. Manufacturer's technical data.
e. Color charts.
f. Statement of compliance with specified referenced standards.
g. Testing and test results by recognized testing agency.
h. Application of testing agency labels and seals.
i. Notation of coordination requirements.
j. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams that show factory installed wiring.
b. Wiring or piping diagrams and controls.
c. Printed performance curves.
d. Operational range diagrams.
e. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Manufacturer's Schematic Drawings and Diagrams: Modify drawings and diagrams to delete information that is not applicable.

a. Supplement standard information to provide information applicable to work.

6. Submit Product Data before Shop Drawings, and before or concurrent with Samples.

D. Shop Drawings: Prepare Project specific information, drawn accurately to scale, indicating materials (kind, thickness, and finish), dimensions, connections, and details necessary to ensure accurate interpretation of the Contract Documents including attachment to other work, in detail necessary.

1. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
2. Identify details by reference to sheet and detail, schedule or room numbers shown on Contract Drawings.
3. Consecutively number shop drawings for each portion of work. Retain numbering system throughout revisions.
4. Show detail, materials, dimensions, thickness, methods of assembly, attachments, relationship to adjoining work and pertinent data and information.
5. Verify dimensions and field conditions. Clearly indicate field dimensions and field conditions.
6. Verify and coordinate shop drawings for each specification section for each trade with requirements of related specifications and trades and as necessary for proper and complete installation of work.
7. Prepare composite shop drawings and installation layouts when necessary or requested to depict proposed solutions for field conditions. Coordinate in field and with affected subcontractors for proper relationship to work of other trades based on field conditions.
8. Preparation: Fully illustrate specified requirements. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

9. Paper Sheet Size: Except for templates, patterns, and similar full size Drawings, submit Shop Drawings on sheets at least 8-1/2 inches by 11 inches (215 mm by 280 mm), but no larger than 30 inches by 42 inches (750 mm by 1067 mm).

E. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.
    b. Generic description of Sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable Specification Section.
    f. Specification paragraph number and generic name of each item.

3. Web Based Project Software: Prepare submittals in PDF form, and upload to web based Project software website. Enter required data in web based software site to fully identify submittal.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a project record Sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

F. Coordination Drawings: Comply with requirements specified in Section 01 31 00 "Project Management and Coordination" for preparation.

1. Conduct coordination meetings with trades attending to coordinate work of trades for each mechanical or electrical area.
2. Print Coordination Drawings using 1/4 inch (6 mm) minimum scale with congested areas and sections through shafts at 3/8 inch (4.5 mm) minimum scale.
3. Coordinate with architectural ceiling plans exact location and dimensioning of items which occur within hung ceilings. In event of conflict, request clarification from Architect as to correct locations of items in question.
4. Submit Coordination Drawings to Architect for review indicate conflicts that could not be resolved in coordination meeting. Submit total sleeving, piping, ductwork, lighting, sprinkler, and HVAC coordination drawings.
5. After review by Architect, prepare shop drawings for each separate trade.
6. Coordination drawings are for Architect's and Contractor's use during construction and shall not be construed as replacing shop drawings or Record Documents required by Contract Documents.

G. Product Schedule: Where required by the individual Specification Sections, prepare a written summary indicating types of products required for the work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.

H. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

I. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

J. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

K. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

## 1.7 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

    1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file of certificate, signed, and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

    1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

## 1.8 CONTRACTOR'S REVIEW

A. Review of submittals is for compliance with design concept of Project and compliance with information stated in Contract Documents.

1. Contractor is responsible for verifying and correlating dimensions, information that pertains solely to fabrication process or to techniques of construction, and coordination of work of trades. Architect’s acceptance of a submittal does not relieve the Contractor of its responsibility for deviation from requirements of Contract Documents.

B. Action Submittals and Informational Submittals: Review each submittal and verify coordination with other work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

C. Contractor's Action: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval or submittals rejected by Contractor.

## 1.9 ARCHITECT'S REVIEW

A. Architect's review of Submittals is for general design conformance and compliance with information provided in Contract Documents. Contractor is responsible for complying with requirements and characteristics of products and systems specified; dimensions and quantities to be confirmed and correlated at the Project site; and information that pertains solely to fabrication processes, installation techniques, and coordination of work required by other trades. Architect's review and indication of action to be taken shall not relieve Contractor of responsibility for deviation from requirements of Contract Documents.

B. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return it. Architect will indicate, via markup on each submittal, the appropriate action as follows:

1. Final Unrestricted Release: When submittal is marked "No Exception Taken," that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
2. Final But Restricted Release: When submittal is marked "Comments Included," that part of the Work covered by the submittal may proceed provided it complies with both the Architect's notations and comments on the submittal and requirements of the Contract Documents; final acceptance will depend upon that compliance.
3. Returned for Resubmittal: When submittal is marked "Revise and Submit," do not proceed with that part of the Work covered by the submittal, including

purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the Architects notations or corrections; resubmit without delay.

a. Do not permit submittals marked "Revise and Submit" to be used at the Project site or elsewhere where construction is in progress.

4. Rejected: When submittal is marked "Rejected" do not proceed with that part of the work as submission is either incomplete, not coordinated, or does not conform to requirements of Contract Documents. Resubmission of the same submittal will not be considered. Prepare and submit new submittal meeting requirements of Contract Documents.
5. Not Reviewed: When submittal is marked "Not Reviewed. Submittal not required by Contract Documents" it has not been reviewed because the submittal was neither requested nor required by Contract Documents.
6. Close Out Submittal: When submittal is marked "Reviewed for Project Close Out Requirements Only" it has been reviewed only for compliance with close out submission requirements. It has not been reviewed for accuracy or completeness. Burden of accuracy and completeness rests with the Contractor.
7. Substitution Request: When a submittal is marked "Proposed Substitution. Resubmit. Comply with Section 01 25 00 "Substitution Procedures," submission does not comply with requirements of Contract Documents. Contractor may elect to resubmit under the provisions, conditions, and procedures outlined in Section 01 25 00 "Substitution Procedures" or prepare and submit new submittal meeting requirements of Contract Documents.

C. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements.

D. Partial Submittals prepared for a portion of the Work will be reviewed when use of partial Submittals has received prior approval from Architect.

E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

F. Architect will return without review submittals received from sources other than Contractor.

G. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

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# SECTION 01 35 16

# ALTERATION PROJECT PROCEDURES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Special procedures for alteration work.

### 1.2 DEFINITIONS

A. Alteration Work: This term includes remodeling, renovation, repair, and maintenance work performed within existing spaces or on existing surfaces as part of the Project.

B. Consolidate: To strengthen loose or deteriorated materials in place.

C. Design Reference Sample: A sample that represents the Architect's prebid selection of work to be matched; it may be existing work or work specially produced for the Project.

D. Dismantle : To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

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 Architect.

F. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

G. Repair: To correct damage and defects, retaining existing materials, features, and finishes. This includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

H. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

I. Replicate: To reproduce in exact detail, materials, and finish unless otherwise indicated.

J. Reproduce: To fabricate a new item, accurate in detail to the original, and from either the same or a similar material as the original, unless otherwise indicated.

K. Retain: To keep existing items that are not to be removed or dismantled.

L. Strip: To remove existing finish down to base material unless otherwise indicated.

## 1.3 COORDINATION

A. Alteration Work Subschedule: A construction schedule coordinating the sequencing and scheduling of alteration work for entire Project, including each activity to be performed, and based on Contractor's Construction Schedule. Secure time commitments for performing critical construction activities from separate entities responsible for alteration work.

1. Schedule construction operations in sequence required to obtain best Work results.
2. Coordinate sequence of alteration work activities to accommodate the following:

    a. Owner's continuing occupancy of portions of existing building.
    b. Owner's partial occupancy of completed work.
    c. Other known work in progress.
    d. Tests and inspections.

3. Detail sequence of alteration work, with start and end dates.
4. Utility Services: Indicate how long utility services will be interrupted. Coordinate shutoff, capping, and continuation of utility services.
5. Use of elevator and stairs.
6. Equipment Data: List gross loaded weight, axle-load distribution, and wheel-base dimension data for mobile and heavy equipment proposed for use in existing structure. Do not use such equipment without certification from Contractor's professional engineer that the structure can support the imposed loadings without damage.

B. Pedestrian and Vehicular Circulation: Coordinate alteration work with circulation patterns within Project building(s) and site. Some work is near circulation patterns and adjacent to restricted areas. Circulation patterns cannot be closed off entirely and in places can be only temporarily redirected around small areas of work. Access to restricted areas may not be obstructed. Plan and execute the work accordingly.

## 1.4 PROJECT MEETINGS FOR ALTERATION WORK

A. Preliminary Conference for Alteration Work: Before starting alteration work, conduct conference at project site.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, testing service representative, specialists, and chemical cleaner manufacturer(s) shall be represented at the meeting.
2. Agenda: Discuss items of significance that could affect progress of alteration work, including review of the following:

    a. Alteration Work Subschedule: Discuss and finalize; verify availability of materials, specialists' personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Fire prevention plan.
    c. Governing regulations.
    d. Areas where existing construction is to remain and the required protection.

e. Hauling routes.
f. Sequence of alteration work operations.
g. Storage, protection, and accounting for salvaged and specially fabricated items.
h. Existing conditions, staging, and structural loading limitations of areas where materials are stored.
i. Qualifications of personnel assigned to alteration work and assigned duties.
j. Requirements for extent and quality of work, tolerances, and required clearances.
k. Embedded work such as flashings and lintels, special details, collection of waste, protection of occupants and the public, and condition of other construction that affects the Work or will affect the work.

3. Reporting: Record conference results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from conference.

B. Coordination Meetings: Conduct coordination meetings specifically for alteration work at monthly intervals. Coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

1. Attendees: In addition to representatives of Owner, Architect, and Contractor, each specialist, supplier, installer, and other entity concerned with progress or involved in planning, coordination, or performance of alteration work activities shall be represented at these meetings. All participants at conference shall be familiar with Project and authorized to conclude matters relating to alteration work.
2. Agenda: Review and correct or approve minutes of previous coordination meeting. Review other items of significance that could affect progress of alteration work. Include topics for discussion as appropriate to status of Project.

a. Alteration Work Subschedule: Review progress since last coordination meeting. Determine whether each schedule item is on time, ahead of schedule, or behind schedule. Determine how construction behind schedule will be expedited with retention of quality; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities are completed within the Contract Time.
b. Schedule Updating: Revise Contractor's Alteration Work Subschedule after each coordination meeting where revisions to schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
c. Review present and future needs of each entity present, including review items listed in the "Preliminary Conference for Alteration Work" Paragraph in this article and the following:

1) Interface requirements of alteration work with Project Work.
2) Status of submittals for alteration work.
3) Access to alteration work locations.
4) Effectiveness of fire prevention plan.

5) Quality and work standards of alteration work.
6) Change Orders for alteration work.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

## 1.5 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered or uncovered during the work, regardless of whether they were previously documented, remain Owner's property.

1. Carefully dismantle and salvage each item or object in a manner to prevent damage and protect it from damage, then promptly deliver it to Owner where directed at project site.

## 1.6 INFORMATIONAL SUBMITTALS

A. Alteration Work Subschedule:

1. Submit alteration work subschedule within 30 days of date established for commencement of alteration work.

B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements that are to remain, including finish surfaces, that might be misconstrued as damage caused by Contractor's alteration work operations.

C. Alteration Work Program: Submit 30 days before work begins.

D. Fire-Prevention Plan: Submit 30 days before work begins.

## 1.7 QUALITY ASSURANCE

A. Specialist Qualifications: An experienced firm regularly engaged in specialty work similar in nature, materials, design, and extent to alteration work as specified in each Section and that has completed a minimum of five recent projects with a record of successful in-service performance that demonstrates the firm's qualifications to perform this work.

1. Field Supervisor Qualifications: Full time supervisors experienced in specialty work similar in nature, material, design, and extent to that indicated. Supervisors shall be on-site when specialty work begins and during its progress. Supervisors shall not be changed during Project except for causes beyond the control of the specialist firm.

a. Construct new mockups of required work whenever a supervisor is replaced.

B. Title X Requirement: Each firm conducting activities that disturb painted surfaces shall be a "Lead-Safe Certified Firm" according to 40 CFR 745, Subpart E, and use only workers that are trained in lead safe work practices.

C. Alteration Work Program: Prepare a written plan for alteration work for whole Project, including each phase or process and protection of surrounding materials during operations. Show compliance with indicated methods and procedures specified in this and other Sections. Coordinate whole Project alteration work program with specific requirements of programs required in other alteration work.

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.

D. Fire Prevention Plan: Prepare a written plan for preventing fires during the work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire control devices during each phase or process. Coordinate plan with Owner's fire protection equipment and requirements. Include fire watch personnel's training, duties, and authority to enforce fire safety.

E. Safety and Health Standard: Comply with ANSI/ASSE A10.6.

## 1.8 STORAGE AND HANDLING OF SALVAGED MATERIALS

A. Salvaged Materials:

1. Clean loose dirt and debris from salvaged 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. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

B. Salvaged Materials for Reinstallation:

1. Repair and clean items for reuse as indicated.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. 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 items functional for use indicated.

C. Existing Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by Architect, items may be dismantled and taken to a suitable, protected storage location during construction work

and reinstalled in their original locations after alteration and other construction work in the vicinity is complete.

D. Storage: Catalog and store items within a weathertight enclosure where they are protected from moisture, weather, condensation, and freezing temperatures.

1. Identify each item for reinstallation 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.
3. Control humidity so that it does not exceed 85 percent. Maintain temperatures 5 degrees F (3 degrees C) or more above the dew point.

E. Storage Space:

1. Owner will arrange for limited on-site location(s) for free storage of salvaged material. This storage space does not include security and climate control for stored material.
2. Arrange for offsite locations for storage and protection of salvaged material that cannot be stored and protected on site.

1.9 FIELD CONDITIONS

A. Survey of Existing Conditions: Record existing conditions that affect the work by use of preconstruction photographs .

1. Comply with requirements specified in Section 01 32 33 "Photographic Documentation."

B. Discrepancies: Notify Architect of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

C. Owner's Removals: Before beginning alteration work, verify in correspondence with Owner that the following items have been removed.

D. Size Limitations in Existing Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that clear surfaces within existing spaces, areas, rooms, and openings, including temporary protection, by 12 inches (300 mm) or more.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION

## 3.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from alteration work.

1. Use proven protection methods, appropriate to each area and surface being protected.
2. Provide temporary barricades, barriers, and directional signage to exclude the public from areas where alteration work is being performed.
3. Erect temporary barriers to form and maintain fire egress routes.
4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during alteration work.
5. Contain dust and debris generated by alteration work and prevent it from reaching the public or adjacent surfaces.
6. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.
7. Protect floors and other surfaces along hauling routes from damage, wear, and staining.
8. Provide supplemental sound-control treatment to isolate demolition work from other areas of the building.

B. Temporary Protection of Materials to Remain:

1. Protect existing materials with temporary protections and construction. Do not remove existing materials unless otherwise indicated.
2. Do not attach temporary protection to existing surfaces except as indicated as part of the alteration work program.

C. 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.

D. Utility and Communications Services:

1. Notify Owner, Architect, authorities having jurisdiction, and entities owning or controlling wires, conduits, pipes, and other services affected by alteration work before commencing operations.
2. Disconnect and cap pipes and services as required by authorities having jurisdiction, as required for alteration 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.

E. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Architect immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is functioning properly.

1. Prevent solids such as adhesive or mortar residue or other debris from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from alteration work.
2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

## 3.2 PROTECTION FROM FIRE

A. Follow fire prevention plan and the following:

1. Comply with NFPA 241 requirements unless otherwise indicated. Perform duties titled Owner's Responsibility for Fire Protection.
2. Remove and keep area free of combustibles, including rubbish, paper, waste, and chemicals, unless necessary for the immediate work.

    a. If combustible material cannot be removed, provide fire blankets to cover such materials.

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

1. Obtain Owner's approval for operations involving use of welding or other high heat equipment. Use of open flame equipment is not permitted. Notify Owner at least 72 hours before each occurrence, indicating location of such work.
2. As far as practicable, restrict heat generating equipment to shop areas or outside the building.
3. 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.
4. Use fireproof baffles to prevent flames, sparks, hot gases, or other high-temperature material from reaching surrounding combustible material.
5. 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.
6. Fire Watch: Before working with heat generating equipment or 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 personnel perform final fire safety inspection each day beginning no sooner than 30 minutes after conclusion of work in each area

to detect hidden or smoldering fires and to ensure that proper fire prevention is maintained.

C. Fire Control Devices: Provide and 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 personnel are trained in fire-extinguisher and blanket use.

D. Sprinklers: Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to sprinklers, shield them temporarily with guards.

1. Remove temporary guards at the end of work shifts, whenever operations are paused, and when nearby work is complete.

## 3.3 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm or spillage resulting from applications of chemicals and adhesives.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for Project unless chemicals being used will not damage adjacent surfaces as indicated in alteration work program. Use covering materials and masking agents that are waterproof and UV resistant and that will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to manufacturer's written instructions. Do not apply liquid masking agents or adhesives to painted or porous surfaces. When no longer needed, promptly remove protective materials.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

## 3.4 GENERAL ALTERATION WORK

A. Have specialty work performed only by qualified specialists.

B. Ensure that supervisory personnel are present when work begins and during its progress.

C. Record existing work before each procedure (preconstruction), and record progress during the work. Use digital preconstruction documentation photographs . Comply with requirements in Section 01 32 33 "Photographic Documentation."

D. Perform surveys of Project site as the work progresses to detect hazards resulting from alterations.

E. Notify Architect of visible changes in the integrity of material or components whether from environmental causes including biological attack, UV degradation, freezing, or thawing or from structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Architect.

**END OF SECTION**

# SECTION 01 40 00

# QUALITY REQUIREMENTS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality assurance and quality control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality assurance and quality control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality assurance and quality control services required by Architect, Owner, or authorities having jurisdiction are not limited by quality provisions.
4. Specific test and inspection requirements are not specified in this Section.

### 1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, unless otherwise noted, experienced is defined as having a minimum of five years documented experience in work similar in nature, size, and extent to this project; familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality Control Tests: Tests and inspections that are performed on site for installation of the work and for completed work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a specialized construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

D. Mockups: Full size physical assemblies that are constructed onsite either as freestanding temporary built elements or as part of permanent construction. Mockups are constructed to verify selections; to demonstrate aesthetic effects and qualities of materials and execution; to review coordination, testing, or operation; to show interface

between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not samples. Unless otherwise indicated, approved mockups establish the standard by which the work will be judged.

E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the work, to verify performance or compliance with specified criteria.

F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

G. Source Quality Control Tests: Tests and inspections performed at the source; for example, plant, mill, factory, or shop.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

J. Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the work to evaluate that actual products incorporated into the work and completed construction comply with requirements. Contractor's quality control services do not include contract administration activities performed by Architect.

## 1.3 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

## 1.4 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for direction before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

## 1.5 ACTION SUBMITTALS

A. Delegated Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

## 1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Quality Control Plan: Submit plan for quality assurance and quality control activities and responsibilities.

1. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

B. Qualification Data: Submit data for Contractor's quality control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Main wind force resisting system or a wind-resisting component listed in the Statement of Special Inspections.

D. Testing Agency Qualifications: Testing agencies who have demonstrated their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

F. Reports: Prepare and submit certified written reports and documents as specified.

G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the work.

## 1.7 QUALITY CONTROL PLAN

A. Quality Control Plan: Submit quality control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality assurance and quality control responsibilities. Coordinate with Contractor's Construction Schedule.

B. Quality Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality assurance and quality control procedures similar in nature and extent to those required.

1. Project quality control manager **may serve as Project superintendent**.

C. Testing and Inspection: In quality control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor performed tests and inspections including Subcontractor performed tests and inspections. Include required tests and inspections and Contractor elected tests and inspections. Distinguish source quality control tests and inspections from field quality control tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
3. Owner performed tests and inspections indicated in the Contract Documents.

D. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

E. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

## 1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, telephone number, and email address of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory authorized service representative's tests and inspections specified. Include the following:

1. Name, address, telephone number, and email address of factory authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

## 1.9 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm having a minimum of 5 years documented experience in manufacturing products or systems similar to those indicated, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory authorized service representative requirements.

B. Fabricator Qualifications: A firm having minimum 5 years documented experience in producing products similar to those indicated, a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Installer Qualifications: A firm or individual having minimum 5 years documented experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated, whose work has resulted in construction with a record of successful in-service performance.

D. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated.

E. Specialists: Certain Specification Sections require that specific construction activities are performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and be engaged for the activities indicated.

   1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Factory Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

## 1.10 QUALITY CONTROL

A. Owner Responsibilities: Where quality control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
2. Payment for these services will be made from testing and inspection allowances, as authorized by Change Orders.
3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality control activities, regardless if specified, to verify and document that the complies with requirements.

1. Unless otherwise indicated, provide quality control services specified and those required by authorities having jurisdiction. Perform quality control services required of Contractor by authorities having jurisdiction, regardless if specified.
2. Engage a qualified testing agency to perform quality-control services.

    a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when work that requires testing or inspection will be performed.
4. Where quality control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality control services, including retesting and reinspecting, for construction that replaced work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Architectand Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architectand Contractor promptly of irregularities or deficiencies observed in the work during performance of its services.
2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the work.
6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory authorized service representative to inspect field assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the work, and submittal of written reports.

G. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality assurance and quality control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality control services required by the Contract Documents as a component of Contractor's quality control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update as the work progresses.

1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.11 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, indicated in the Statement of Special Inspections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality control procedures and reviewing the completeness and adequacy of those procedures to perform the work.
2. Notifying Architectand Contractor promptly of irregularities and deficiencies observed in the work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

B. Special Tests and Inspections: Conducted by a qualified special inspector as required by authorities having jurisdiction, as indicated in individual Specification Sections and in the Statement of Special Inspections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION

## 3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

## 3.2 REPAIR AND PROTECTION

A. On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 73 00 "Execution."

B. Protect construction exposed by or for quality control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality control services.

## 3.3 SCHEDULE OF SPECIAL INSPECTIONS

A. Testing of Earthwork:

1. Testing Services (As specified or required):

a. References (Applicable for tests required):

1) American Society for Testing and Materials (ASTM)

a) D698, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lb/ft3 (600 kN-m/m3)
b) D2922, Standard Test Method for Density of Soil and Soil-Aggregate In Place By Nuclear Methods (Shallow Depth)
c) D4318, Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

2) American Association of State Highway and Transportation Officials (AASHTO)

a) T89, Determining the Liquid Limit of Soils
b) T90, Determining the Plastic Limit and Plasticity Index of Soils
c) T99, Moisture Density Relations of Soils Using a 2.5 kg (5.5 lb) Rammer and a 305-mm (12-in) Drop
d) T238, Density of Soil and Soil Aggregates In Place By Nuclear Methods (Shallow Depth)

b. Perform sieve analysis to develop grain size distribution curves for materials to be used for subgrade, fill under slab on grade, and backfills.
c. Establish the moisture density relation of soils to be used as fill using the method best suited to the type of fill material.
d. Determine moisture content of all fill materials before placement and advise Contractor when it is or is not suitable to achieve required compaction.
e. Determine Liquid Limit in accordance with ASTM D4318 or AASHTO T89, Plastic Limit in accordance with ASTM D4318, and Plasticity Index in accordance with ASTM D4318 of all fill material,
f. Perform one (1) in place density test for each 2,500 square feet (280 square yards) of existing subgrade material.
g. Perform Moisture Density curve in accordance with ASTM D698 or AASHTO T99 for one (1) type of fill material. If the original choice of material does not meet the specifications, the Contractor shall pay for additional testing.
h. Perform in place density tests of each lift of compacted fill at locations adequate to evaluate the degree of compaction of all fill areas. Conduct one (1) test for each 2,500 square feet (280 square yards) of each lift of compacted fill.
i. Perform testing at a frequency of one in-place density and moisture test for each 75 lineal feet or less of utility trench, with a minimum of three tests per lift

2. Reports: Submit reports with the following information:

a. Type and condition of soil at footing bottoms.
b. Level of water table in the excavated areas.
c. Grain size distribution of fill materials (average of three (3) tests).
d. Moisture density test results.
e. In place density test results with moisture content and relative density of each layer of compacted fill. Include within place density test results, a plan showing location of each test.
f. Notify Architect by telephone within one hour of the discovery of the following conditions and follow up telephone notification with written report.

1) Materials used, or degree of soil compaction not meeting specified requirements.
2) Frost and freeze protection requirements for excavation bottoms not being complied with.

a) Water in excavations which is not being removed prior to work being performed in excavation.

B. Inspection of Piped Site Utilities:

1. Laboratory representative shall observe and report on the following:

a. Proper alignment and grade of trenches.
b. Pipe bedding and supports.
c. Pipe, joints, jointing material, and thrust blocks prior to installation of pipe.
d. Installation of pipe and joints.
e. Testing of piped utilities performed by Contractor.

C. Paving:

1. Testing Services: Perform field tests for moisture density properties:

a. Provide field testing of the subgrade as specified.
b. Paving Subbase: Provide one field test for every 5,000 square feet of area of crushed limestone or caliche subbase.
c. Lime Treated Subgrade: Provide one field test for every 5,000 square feet of area of lime treated subgrade for content of lime and subgrade compaction.
d. Cement Soil Stabilization: Provide one field test for every 5,000 square feet of area of cement stabilized subgrade for content of cement and subgrade compaction.

D. Pier Drilling Operation: Services shall be performed by a representative of a qualified geotechnical laboratory.

1. Laboratory representative shall make continuous inspections to determine that proper bearing stratum is obtained and utilized for bearing and that shafts are properly clean and dry before placing concrete.
2. Laboratory shall furnish complete pier log showing the diameter, top and bottom elevations of each pier, casing required or not required, actual penetration into bearing stratum, elevation of top of bearing stratum, volume of concrete used, and deviations from specified tolerances.
3. Laboratory representative shall make continuous inspections of drilled pier construction to check the following:

a. Verify soundness of bearing stratum and desired penetration.
b. Verify pier dimensions and reinforcing used.
c. Monitor condition of hole and removal of water and loose material from bottom.
d. Monitor placement of concrete and use of tremie or pumps.
e. Monitor the extraction of casing, if used.

4. Request probe holes when deemed necessary to confirm safe bearing capacity.

E. Concrete Reinforcing Steel and Embedded Metal Assemblies:

1. Inspect concrete reinforcing steel prior to placing concrete for compliance with Contract Documents and approved shop drawings. Noncompliance with Contract Documents and approved shop drawings shall be immediately brought to the attention of the Contractor for correction and, if left uncorrected, reported to the Architect.
2. Laboratory representative shall observe and report on the following:

    a. Number and size of bars.
    b. Bending and lengths of bars.
    c. Splicing.
    d. Clearance to forms, including chair heights.
    e. Clearance to sides and bottom of trench if soil formed.
    f. Clearance between bars or spacing.
    g. Rust, form oil, and other contamination.
    h. Grade of steel.
    i. Securing, tying, and chairing of bars.
    j. Excessive congestion of reinforcing steel.
    k. Installation of anchor bolts and placement of concrete around such bolts.
    l. Fabrication and installation of embedded metal assemblies, including visual inspection of all welds.
    m. Visually inspect studs and deformed bar anchors on embedded assemblies for compliance with Contract Documents. Check number, spacing and weld quality. If, after welding, visual inspection reveals that a sound weld or a full 360 degree fillet has not been obtained for a particular stud or bar, such stud or bar shall be struck with a hammer and bent 15 degrees off perpendicular and then bent back into position. Anchors failing this test shall be replaced.

3. Provide a qualified, experienced inspector to inspect reinforcing steel. Inspector shall have a minimum of three years' experience inspecting reinforcing steel in projects of similar size.

F. Concrete Inspecting and Testing: Receive and evaluate proposed concrete mix designs submitted by Contractor. If mix designs comply with Drawings and Specifications, the laboratory shall submit a letter to the Architect certifying compliance. Mix designs not complying with Drawings and Specifications shall be returned by the laboratory as being unacceptable. Check the proposed mixes for proportions, water cement ratio and slump in accordance with ACI 613 and 318.

1. Comply with ACI 311 Guide for Concrete Inspection and ACI Manual of Concrete Inspection (SP-2).
2. Sample and test concrete placed at the site in accordance with ASTM C172. Each sample shall be obtained from a different batch of concrete on a random basis.
3. Test concrete:

    a. Mold and cure five specimens from each sample.

1) For each 50 cubic yards or fraction thereof of structural building concrete; and
2) For each 100 cubic yards or fraction thereof of nonstructural concrete and site work paving and sidewalks.
3) Laboratory cure two cylinders in accordance with ASTM C192.
4) Field cure remaining cylinders in accordance with ASTM C31.

b. Two specimens shall be tested at seven days for information, two shall be tested at 28 days for acceptance.
c. Store one cylinder for testing at 56 days in the event the 28 days strength tests do not meet strength requirements.

4. Deviations from the requirements of ASTM Scifications shall be recorded in the test report. Test concrete specimens in accordance with ASTM C39.
5. Specimens for pumped concrete shall be taken at the discharge end of pumping equipment.
6. Supervise curing and protection provided for test specimens in field, and transportation from the field to laboratory. Test cylinders shall be stored in the field 24 hours and then carefully transported to laboratory and cured in accordance with ASTM C31.
7. Make one strength test (four cylinders) of each mix design of concrete placed in any one day.
8. Make one slump test for each set of cylinders following procedural requirements of ASTM C143 and ASTM C172. Make additional slump tests whenever consistency of concrete appears to vary. Slump tests corresponding to samples from which strength tests are made shall be reported with strength test results. Other slump tests need not be reported.
9. Determine total air content of air entrained normal weight concrete sample for each strength test in accordance with ASTM C231.
10. Determine air content and unit weight of lightweight concrete sample for each strength test in accordance with ASTM C173 and ASTM C567.
11. Determine temperature of concrete sample for each strength test.
12. Inspect each batch of concrete, monitor addition of mixing water to assure uniform consistency from truck to truck. Check mixing form mixers before mix begins to set and within time limits set forth in ASTM C94.

    a. Monitor addition of water and high range water reducer to concrete at job site and length of time concrete is allowed to remain in truck during placement.

13. Testing agency shall furnish and maintain a competent inspector at the mixing plant at the start of each day’s mixing. Inspector shall examine concrete materials for compliance with Specifications and approved mix design, weighing and measuring devices, proportioning and mixing of materials, water and cement content of each batch, general operation of the plant, and transportation of concrete to jobsite. Inspector shall verify that amount of free surface moisture contained in fine and course aggregate has been properly accounted for in the concrete mixing to achieve required consistency and water cement ratio.
14. Testing laboratory shall monitor addition of water to concrete at the jobsite and the length of time concrete remains in the truck before placement. Inspector shall compare mixture with criteria on the approved mix design and report any

significant deviation to the Architect, Contractor and concrete supplier. Do not permit addition of water which will exceed maximum water/cement ratio for the mix as given on the approved mix design.

15. Observe placing of concrete, except nonstructural slabs on grade and site work. Observe and report on placing method, consolidation, cold joints, length of drop, and displacement of reinforcement. Report deficiencies to Contractor immediately for corrective action. Inspections may be reduced to a periodic basis when all procedures have been deemed satisfactory by the laboratory.
16. Test reports shall include but no be limited to the following information: date of concrete placement, concrete mix identification number or proportion of ingredients, truck ticket number, time test was made, time of batching, location of each placement, slump, unit weight, water content (microwave test) and air content of concrete sampled and date and results of strength test.
17. Report promptly to Architect all details of reasons for rejection of any and all quantities of concrete. Give all information concerning locations of the concrete pours, quantities, date of pours, and other pertinent facts concerning concrete represented by the specimens.
18. Testing laboratory shall certify each delivery ticket indicating class of concrete delivered (or placed), amount of water added and time at which cement and aggregate were dispensed into the truck, and time at which concrete was discharged from the truck.
19. Evaluation and Acceptance:

    a. If measured slump, or air content of air entrained concrete, falls outside specified limits, a check test shall be made immediately on another portion of the same sample. In the event of a second failure, concrete shall be considered to have failed to meet the requirements of the specifications and shall not be used in the structure.
    b. Strength level of concrete will be considered satisfactory if the averages of sets of three consecutive strength tests results are equal to, or exceed, specified strength and no individual test result (average of two cylinders) is below specified strength by more than 500 psi.
    c. Completed concrete work will be accepted when requirements of ACI 301 Chapter 18 Specifications for Structural Concrete for Buildings have been met.

20. Concrete Test Reports: Reports shall be made and distributed immediately after respective tests or inspections are made.

    a. Where reports indicate deviations from Contract Documents, they shall also include a determination of the probable cause of deviation and where applicable, a recommendation for corrective action.

21. Furnish a statistical analysis for each class of concrete placed on the project in accordance with ACI 214 and ACI 318. Information shall be updated and distributed once a month as directed by the Architect. Information shall include, but not be limited to, the following:

    a. Strength tests at seven days.
    b. Strength tests at 28 days of two cylinder averages.
    c. 28 day moving average strength tests of last three test groups.

d. Standard deviation and coefficient of variation based on 28 day strength tests.
e. Average strength and number of 28 days tests for most recent month.
f. Strength test one cylinder at 56 days in the event the 28 days strength tests do not meet strength requirements.

22. Test Footings (Shafts) (Piers) (Caissons): Same diameter and type specified for footings, placed in same manner. Accepted test footings may be used in the work.
23. Noncompliant Test Reports: Fax test reports indicating noncompliance immediately to each party on the test report distribution list. Copies shall be on different colored paper.
24. Inspect application of curing compound and monitor curing conditions to assure compliance with specification requirements. Report curing deficiencies to the Contractor immediately and submit a written report to the Architect.

G. Testing of Nonshrink Grout:

1. Make one strength test for all plates grouted and for all grout used in joints between members.
2. Each test shall consist of four cubes, two tested at 7 days and two at 28 days, made and tested in accordance with ASTM C109, with the exception that grout shall be restrained from expansion by a top plate.

H. Structural Steel: Inspect structural steel during and after erection for compliance with Contract Documents and shop drawings. Review and report on fabricator's quality control procedures and capabilities.

1. Field Inspection:

a. Proper erection of pieces.
b. Proper touch up painting of shop primed structural steel exposed to view or in crawl space.
c. Proper installation of bolts.
d. Plumbness of structure and proper bracing.
e. Proper field painting.
f. Initial inspection of welding process and periodically thereafter as necessary.
g. Visual examination of completed welds.
h. Ultrasonic testing of penetration field welds.
i. Installation of field welded shear studs.
j. Inspect shop fabricated members, upon arrival at the site, for defects incurred during transit and handling.
k. Measure and record camber of beams upon arrival and before erection for compliance with specified camber. Measure lying flat with web horizontal. Return members outside specified camber tolerance to shop for correction.

2. Qualifications of Welders: Fabricator and erector shall provide the testing laboratory with names of welders employed on work, along with certification that each welder has passed qualification tests within the past 12 months, using

procedures covered in AWS D1.1 Structural Welding Code - Steel. Verify welder qualifications.

3. Inspection of field welding shall include:

    a. Visually inspect fillet welds for size, soundness, and proper return around ends. Inspect seams, folds, and delaminations.
    b. Visually inspect welds for proper repair of painting.
    c. Ultrasonically test penetration welds in accordance with ASTM E164.
    d. Inspect surfaces to be welded. Note surface preparations, fit up, and cleanliness of surface. Verify electrodes for size, type, and condition.
    e. Welding inspector shall be present during alignment and fit up of members being welded and verify correct surface preparation of root openings, sound weld metal, and proper penetration in the root pass. Where weld has not penetrated completely, inspector shall order the joint to be chipped down to sound metal, or gouged out, and rewelded. Thoroughly inspect root passes for cracks. Gouge out cracks and rewelded to 2 inches (50 mm) beyond each end of crack.
    f. Inspector shall verify that welds have been marked with welder's symbol and shall mark welds requiring repairs and reinspection. Inspector shall maintain a written record of welds. Work completed and inspected shall receive an identification mark by the inspector. Identify unacceptable material and work identified by word reject or repair marked directly on the material.
    g. Testing agency shall advise the Owner and Architect of any shop and/or field conditions which may require further tests and examination by means other than those specified. Additional tests and examinations shall be performed as authorized by the Owner and Architect.
    h. Owner reserves the right to use ultrasonic or radiographic inspection to verify adequacy of welds. Testing procedures and acceptance criteria shall be as specified in AWS D1.1.
    i. Weld quality to comply with the American Institute of Steel Construction (AISC) Manual of Steel Construction.
    j. Determine percentage of weld tested by the number of welds that fail the initial testing.
    k. Reweld and retest welds that fail until the welds pass. Test two additional welds for every weld failure.

4. Inspect bolted construction in accordance with AISC Specification for Structural Steel Buildings:

    a. Visually inspect bolts ensuring that plies have been brought into snug contact.
    b. Inspect high strength bolt in accordance with Section 9 of the Specifications for Structural Joints Using ASTM A325 or A490 Bolts.

5. Inspect stud welding in accordance with Section 7.8, of AWS D1.1 Structural Welding Code:

    a. Weld at least two shear studs at the start of each production period to determine correct generator, control unit, and stud welder setting. The

studs shall be capable of being bent 45 degrees from vertical without weld failure.

b. When the temperature is below 32 degrees F (0 degrees C), test one stud in each 100 after cooling. Do not weld studs at temperatures below 0 degrees F or when surface is wet with rain or snow. If stud fails in the weld, two new studs shall pass the test before resumption of welding.

c. Visually inspect studs for compliance with the requirements of the Contract Documents. Verify number, spacing, and weld quality. If, after welding, visual inspection reveals that a sound weld or a full 360 degree fillet has not been obtained for a particular stud, that stud shall be struck with a hammer and bent 15 degrees off perpendicular in the direction away from the missing weld. Studs failing test shall be replaced.

I. Reinforcing Steel Mechanical Splices:

1. Inspection and Observation Services:

a. Visually inspect and report on completed condition of each mechanical splice of reinforcing steel.

b. Visually inspect each mechanical splice to ensure compliance with the ICC-ES Reports and the manufacturer's published criteria for acceptable completed splices.

c. Place special emphasis on the inspection of the end preparation of each bar to be spliced required by the ICC-ES Report.

2. Reports: Submit reports to Architect:

a. Submit copies of manufacturer's published criteria for acceptable completed splices prior to observing mechanical splices.

b. Reports on each mechanical splice shall indicate location of the splice, size of bars spliced, and acceptability or rejection of splice. Indicate reasons for rejection on each report.

J. Open Web Joists and Joist Girders: Inspect joists at jobsite for compliance with specified fabrication requirements. Verify welded connections between web and chord, splices, and straightness of members.

1. Check connections to supporting members, chord extensions, number of rows of bridging, and bridging connections for compliance with Contract Documents and referenced standards.
2. Verify welder qualification certificates for both shop and field welding operators.

K. Metal Floor Deck:

1. Field inspection shall consist of:

a. Verifying types, gauges and finishes for compliance with Contract Documents and shop drawings.

b. Examine composite floor deck exposed to crawl space for damage to galvanizing due to welding or construction activities. Repair galvanized composite floor deck in accordance with the specifications.

c. Examine the erection of metal deck, fastenings, reinforcing of holes, deck reinforcing, miscellaneous deck supports, hanger tabs, shear studs, deck closures, painting or other coating.
d. Certification of welders.
e. Inspect and test field welded shear studs used to fasten metal floor decking to supporting steel as specified for structural steel.

L. Metal Roof Deck:

1. Field inspection shall consist of:

a. Verify types, gauges and finishes for compliance with Contract Documents and shop drawings.
b. Examine the erection of the metal deck, including fastenings at supports and side laps, reinforcing of holes, and miscellaneous deck supports.
c. Certification of welders.
d. Visual inspection of at least 25 percent of welds.

M. Sprayed Fire Resistant Materials:

1. Verify applied thickness, density, and bond strength of sprayed fireproofing meets fire rating requirements of approved design.
2. Verify installation complies with fire rating requirements of approved design.
3. Inspect and test for thickness:

a. Test 25 percent of structural frame columns and beams in each building level.
b. Test 10 percent of beams other than structural frame in each building level.
c. Test one slab per 5,000 square feet of building area.

4. Inspect and test in accordance procedures of ASTM E605 and ASTM E736.

N. Mastic and Intumescent Fire Resistive Materials:

1. Verify applied fire resistant coatings complies with fire rating requirements of approved design.

O. Fire Resistive Joint System:

1. Verify fire resistant joint systems are tested and listed in accordance with IBC Section 715.3 and Section 715.4 and inspected in accordance with ASTM E2393.

P. Exterior Insulation and Finish System (EIFS).

Q. Smoke Control: Test smoke control system.

R. Water Resistive Barrier Coating: When applied to building sheathing, verify water resistive barrier coating complies with ASTM E2570.

S. Expansion Bolt Installation: Inspect drilling of each hole and installation of each expansion bolt for compliance with Contract Documents and shop drawings.

1. Verify installation torque for each expansion bolt for compliance with manufacturer's installation instructions.

T. Lightweight Insulating Concrete Fill:

1. Inspection and Observation Services (As required):

a. Inspection of roof deck prior to start of work.
b. Inspection during installation of insulation and lightweight insulating concrete fill work to ascertain compliance with Contract Documents.
c. Observation of base ply fastener pull tests performed by Contractor to ascertain minimum withdrawal resistance of 40 pounds per fastener.

2. Testing Services (As required):

a. References (As applicable for tests required):

1) American Society for Testing and Materials (ASTM)

a) C177, Standard Test Method for Steady State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded Hot Plate Apparatus
b) C495, Test Method for Compressive Strength of Lightweight Insulating Concrete
c) C578, Specification for Rigid, Cellular Polystyrene Thermal Insulation

b. Test EPS insulation board for thermal insulation value in accordance with ASTM C177.
c. Test lightweight insulating concrete fill in accordance with ASTM C495 for:

1) Mix design compressive strength.
2) Mix design wet and dry density range.
3) Number of Tests:

a) One per 5,000 square feet
b) Not less than one for each day's work

d. Test EPS insulation board for density in accordance with ASTM C578.

U. Testing of Roofing:

1. Inspection and Observation Services (As required):

a. Inspection of roof deck prior to start of work.
b. Inspect on site condition of stored roofing materials.
c. Inspection during roofing, roof insulation, and sheet metal work to ascertain compliance with Contract Documents.

d. Observation of roof test cuts performed by Contractor to ascertain that they are properly made.
e. Observation of patching of roof test cuts to ascertain that they are properly made.

2. Testing Services (As required):

a. Perform dissection and analysis on cuts provided by Contractor to confirm number of plies, bonding of plies, weight of bitumen and softening temperature to ascertain compliance with specifications.

V. Masonry:

1. Inspection and Observation Services:

a. Inspection of placement of reinforcement including condition, grade, size, location, spacing, and lap splices.
b. Review mortar design mixes.
c. Inspection of laying, mortaring, and grouting of concrete masonry units and elements.

2. Testing Services:

a. References (As applicable for tests required):

1) ASTM International (ASTM)

a) C140, Standard Test Methods of Sampling and Testing Concrete Masonry Units
b) C780, Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
c) C1019, Standard Test Method for Sampling and Testing Grout
d) E447-97, Standard Test Methods for Compressive Strength of Laboratory Constructed Masonry Prisms

b. Testing of Concrete Masonry Units (CMU):

1) Preconstruction: Perform the following tests in accordance with ASTM C140.

a) Compressive Strength
b) Absorption
c) Weight
d) Moisture Content
e) Dimensions

c. Mortar Tests:

1) Preconstruction: Perform the following tests in accordance with ASTM C780 on each type of mortar mix used on the Project.

2) 28 Day Compressive Strength
3) Water Retention
4) Construction: Perform 28 day compressive strength test in accordance with ASTM C780 on each type of mortar mix used on the Project at the rate of one test per 2,000 square feet of masonry.

d. Refer to and include work for reinforcing steel specified.
e. Grout Tests:

1) Preconstruction: Perform the following tests in accordance with ASTM C1019 on each type of grout mix used on the Project.

a) Slump Test
b) 28 Day Compressive Strength
c) Construction: Perform 28 day compressive strength test in accordance with ASTM C1019 on each type of grout mix used on the Project at the rate of one (1) test per 2,000 square feet of masonry.
d) Prism Test: Perform preconstruction 28 day compressive strength test on concrete masonry walls in accordance with ASTM E447-97, Method B.

W. Seismic Resistance Testing and Inspections: In Seismic Design Categories D, E, or F:

1. Structural Observation.
2. Periodic Special Inspection for Architectural Components:

a. Erection and fastening of exterior cladding.
b. Exterior and interior nonloadbearing walls.
c. Exterior and interior veneer.
d. Anchorage of access floors.

3. Plumbing, mechanical, and electrical components:

a. Anchorage of electrical equipment for emergency and standby power systems.
b. Anchorage of electrical equipment.
c. Installation and anchorage of piping systems design to carry hazardous materials.
d. Installation and anchorage of vibration isolation system where there is nominal clearance of 1/4 inch (6 mm) of less between equipment support frame and restraint.

4. Anchorage of storage racks 8 feet (2438 mm) or greater in height.
5. Seismic isolation systems.

X. Structural inspection for wind requirements.

Y. Special inspections and tests for proposed work required by the Building Official, including but not limited to:

1. Construction materials and systems that are alternative to materials and systems prescribed by the Code.
2. Unusual design applications of materials.
3. Materials and systems required to be installed in accordance with additional manufacturer instructions that prescribe requirements not address by code or referenced standards.

**END OF SECTION**

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# SECTION 01 41 00

# REGULATORY REQUIREMENTS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Regulatory requirements.

### 1.2 GOVERNING REQUIREMENTS

A. Governing Law: Applicable governing laws, codes, and regulations of the jurisdiction of the location of the project are found in the Contract Documents.

B. Codes, Regulations, and Standards:

1. Where references are made on Drawings or Specifications to codes, they shall be considered an integral part of the Contract Documents as minimum standards. Nothing contained in Contract Documents shall be construed to conflict with law, bylaws, or regulation of municipal, State, Federal, or authorities having jurisdiction.
2. Perform Work in compliance with the Building and other Codes listed on Drawings as adopted by the City of Heath, Texas.
3. Perform work in compliance with:

    a. The Building Codes listed on Drawings.
    b. National, state, and local barrier free regulations, laws, and ordinances.

### 1.3 FIRE RESISTANCE REQUIREMENTS

A. Fire Resistance Ratings and Fire Tests: Determine fire resistance ratings of building elements, components, and assemblies in accordance with the test procedures set forth in ASTM E119 or UL 263, or by alternative methods approved by applicable authorities having jurisdiction.

1. Determine fire resistance ratings or listing based on fire tests performed by one of the following testing agencies, or an agency acceptable to governing authorities having jurisdiction.

    a. Factory Mutual Laboratories.
    b. Intertek.
    c. Southwest Research Institute.
    d. Underwriters Laboratories, Inc.

2. Where reference is made to one testing authority, equivalent fire ratings determined or listed by another testing agency are acceptable if approved by applicable authorities having jurisdiction.

B. Marking and Identification: Permanently identify fire walls, fire barriers, fire partitions, smoke barriers, and smoke partitions, and other walls or partitions required to have protected openings or penetrations with signage or stenciling. Identification shall be:

1. Located in accessible floor plenums, ceiling plenums, or attic spaces as applicable.
2. Repeated at intervals not exceeding 30 feet (10 m) o.c., measured horizontally along the partition or wall.
3. Of lettering not less than 1/2 inch (13 mm) in height, worded as follows: "FIRE AND/OR SMOKE BARRIER - PROTECT OPENINGS AND PENETRATIONS."

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

# SECTION 01 42 00

# REFERENCES

## PART 1 - GENERAL

### 1.1 DEFINITIONS

A. Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

### 1.2 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are necessary to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities

C. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.

D. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations.

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

# SECTION 01 50 00

# TEMPORARY FACILITIES AND CONTROLS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Requirements for temporary utilities, support facilities, and security and protection facilities.

### 1.2 USE CHARGES

A. Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

### 1.3 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the work, submit schedule indicating implementation and termination dates of each temporary utility.

C. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

D. Erosion and Sedimentation Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

E. Fire Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

F. Moisture and Mold Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.

G. Dust and HVAC Control Plan: Submit coordination drawing and narrative that indicates the dust and HVAC control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:

1. Locations of dust control partitions at each phase of work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air filtration system discharge.
4. Waste handling procedures.
5. Other dust control measures.

## 1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1 and Texas Accessibility Standards (TAS).

## 1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

# PART 2 - PRODUCTS

## 2.1 MATERIALS

A. Portable Chain Link Fencing: Minimum 2-inch (50-mm), 0.148 inch (3.8 mm) thick, galvanized steel, chain link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8 inch (60 mm) OD line posts and 2-7/8 inch (73 mm) OD corner and pull posts, with 1-5/8 inch (42 mm) OD top and bottom rails. Provide galvanized steel bases for supporting posts.

B. Fencing Windscreen Privacy Screen: Polyester fabric scrim with grommets for attachment to chain link fence, sized to height of fence, in color selected by Architect from manufacturer's standard colors.

C. Polyethylene Sheet: Reinforced, fire resistive sheet, 10 mil (0.25 mm) minimum thickness, with flame spread rating of 15 or less per ASTM E84 and passing NFPA 701 Test Method 2.

D. Dust Control Adhesive Surface Walk Off Mats: Provide mats minimum 36 inches by 60 inches (914 mm by 1524 mm).

E. Insulation: Unfaced mineral fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame spread and smoke developed indexes of 25 and 50, respectively.

## 2.2 TEMPORARY FACILITIES

A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 1 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4 foot (1.2 m) square tack and marker boards.
3. Drinking water and private toilet.
4. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 degrees F to 72 degrees F (20 degrees C to 22 degrees C).
5. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

## 2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Use of Owner’s existing permanent HVAC system is permitted to the extent it is available during the work.

1. Use of gasoline burning space heaters, open flame heaters, or salamander type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.
3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with minimum MERV of 8 at each return air grille in system, remove at end of construction, and clean HVAC system as required in Section 01 77 00 "Closeout Procedures."

C. HVAC Equipment: Provide vented, self-contained, liquid propane gas or fuel oil heaters with individual space thermostatic control.

1. Use of gasoline burning space heaters, open flame heaters, or salamander type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction and marked for intended location and application.
3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 01 77 00 "Closeout Procedures."

D. Air Filtration Units: Primary and secondary HEPA filter equipped portable units with four stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

## PART 3 - EXECUTION

### 3.1 TEMPORARY FACILITIES

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

### 3.2 INSTALLATION

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 01 10 00 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

## 3.3 TEMPORARY UTILITY INSTALLATION

A. Connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
2. When tapping into Owner’s existing services, coordinate with Owner’s Representative before tapping into existing utility services available in the facility.

B. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Install electric power service overhead unless otherwise indicated.
2. Provide electric distribution system of sufficient size, capacity, and power characteristics required for construction operations.
3. Connect temporary service to Owner's existing power source as directed by Owner.

C. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

D. Water Service: Install water distribution piping in sizes and pressures adequate for construction.

E. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Toilets: Use of Owner's existing toilet facilities will be permitted, provided facilities are cleaned and maintained in a sanitary condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

    a. Provide toilet paper, paper towels, and related accessories and maintenance items.
    b. Thoroughly clean and disinfect toilet rooms daily.
    c. At the end of the work, thoroughly clean and sanitize, disinfect, and restore toilet rooms to like new condition. Replace plumbing fixtures and toilet accessories broken, damaged, or removed by construction personnel. If necessary, repaint paintable surfaces.

F. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select

equipment that will not have a harmful effect on completed installations or elements being installed.

1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

G. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.

    a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    b. Maintain negative air pressure within work area using HEPA equipped air filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.

2. Maintain dust partitions during the work. Use vacuum collection attachments on dust producing equipment. Isolate limited work within occupied areas using portable dust containment devices.
3. Perform daily construction cleanup and final cleanup using approved, HEPA filter equipped vacuum equipment.

H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

I. Telephone Service: Provide temporary telephone service in common use facilities for use by all construction personnel. Install WiFi cell phone access equipment and at least one land based telephone line(s) for each field office.

1. Provide additional telephone lines as determined by useage.
2. At each telephone, post a list of important telephone numbers.

    a. Police and fire departments.
    b. Ambulance service.
    c. Contractor's home office.
    d. Contractor's emergency afterhours telephone number.
    e. Architect's office.
    f. Engineers' offices.
    g. Owner's office.
    h. Principal subcontractors' field and home offices.

3. Include costs for installation, maintenance and removal, and service charges for local calls. Toll charges shall be paid by party who places call.

J. Electronic Communication Service: Provide a desktop computer in the primary field office adequate for use by Architect and Owner to access Project electronic documents and maintain electronic communications. Equip computer with not less than the following:

1. Processor: Intel Core i5 or i7.
2. Memory: 4 gigabyte.
3. Disk Storage: 500 gigabyte hard disk drive and combination DVD-RW/CD-RW drive.
4. Display: 24 inch (610 mm) LCD monitor with 256-Mb dedicated video RAM.
5. Full size keyboard and mouse.
6. Network Connectivity: 10/100BaseT Ethernet or Gigabit.
7. Operating System: Microsoft Windows 10 Professional.
8. Productivity Software:

    a. Microsoft Office Professional, 2013 or higher, including Word, Excel, and Outlook.
    b. Adobe Reader 11.0 or higher.
    c. WinZip 7.0 or higher.

9. Printer: All in one unit equipped with printer server, combining color printing, photocopying, scanning, and faxing, or separate units for each of these three functions.
10. Internet Service: Broadband modem, router and ISP, equipped with hardware firewall, providing minimum 1.0 Mbps upload and 15 Mbps download speeds at each computer.
11. Internet Security: Integrated software, providing software firewall, virus, spyware, phishing, and spam protection in a combined application.
12. Backup: External hard drive, minimum 2 terabyte, with automated backup software providing daily backups.

## 3.4 SUPPORT FACILITIES INSTALLATION

A. Install and maintain support facilities until Substantial Completion inspection. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Facilities and Services:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

C. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.

1. Provide dust control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

D. Temporary Use of Planned Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Division 31.
3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
4. Delay installation of final course of permanent hot mix asphalt pavement until immediately before Substantial Completion. Repair hot mix asphalt base course pavement before installation of final course according to Division 32.

E. 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 firefighting equipment and access to fire hydrants.

F. Parking: Provide temporary parking areas for construction personnel.

1. Parking is limited. Provide temporary parking unless Owner designates parking areas for construction personnel.

G. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

H. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs indicated and as required to inform public and individuals seeking entrance to Project.

    a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touch up signs so they are legible at all times.

I. 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 Section 01 73 00 "Execution."

J. 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 are not temporary facilities.

## 3.5 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.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with specified work restrictions.

C. Pest Control: Engage pest control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.

D. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

G. 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.

H. Temporary Partitions: Provide floor to ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire retardant treated plywood on construction operations side.
2. Construct dustproof partitions with two layers of 6 mil (0.14 mm) polyethylene sheet on each side. Cover floor with two layers of 6 mil (0.14 mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire retardant treated plywood.

    a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water dampened foot mats in vestibule.

3. Where fire resistance rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
4. Insulate partitions to control noise transmission to occupied areas.
5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
6. Protect air handling equipment.
7. Provide walk off mats at each entrance through temporary partition.

I. Temporary Fire Protection: Install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire prevention and protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

## 3.6 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water damaged materials, protocols for mitigating water intrusion into completed work, and replacing water damaged Work.

2. Indicate sequencing of work that requires water, such as sprayed fire resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry in conditions.
2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

    a. Hygroscopic materials that may support mold growth, including wood and gypsum based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
    b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.

c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

## 3.7 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.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. 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.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements in Section 01 77 00 "Closeout Procedures."

**END OF SECTION**

# SECTION 01 60 00

# PRODUCT REQUIREMENTS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

### 1.2 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved by Architect through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis of Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis of design product," including make or model number or other designation. In addition to the basis of design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. Should a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications. Submit a comparable product request, if applicable.

## 1.3 ACTION SUBMITTALS

A. Comparable Product Request Submittal: Submit request for consideration of each comparable product. Identify basis of design product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with specified requirements.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

    a. Form of Architect's Approval of Submittal: Specified in Section 01 33 00 "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis of Design Product Specification Submittal: Comply with requirements in Section 01 33 00 "Submittal Procedures." Show compliance with requirements.

## 1.4 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service connected or power operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:

    a. Name of product and manufacturer.
    b. Model and serial number.
    c. Capacity.

d. Speed.
e. Ratings.

3. Refer to individual identification sections in Divisions 21, 22, 23, and 26 for additional identification requirements.

## 1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long term storage at site.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and losses.
3. Deliver products to site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials to avoid endangering Project structure and building elements.
3. Store products subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.6 PRODUCT WARRANTIES

A. Warranties specified in the specification sections are in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a product and specifically endorsed by manufacturer to Owner.

2. Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified and coordinated to include Project specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. Refer to the individual specification sections for specific content requirements and requirements for submitting warranties.

C. Submittal Time: Comply with requirements in Section 01 77 00 "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

A. Product Requirements: Provide products complying with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Evaluation of "or equal" product status is by the Architect, whose determination is final.

B. Product Selection Procedures:

1. Sole Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

a. Sole product may be indicated by the phrase: "Subject to compliance with requirements, provide the following: …"

2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

    a. Sole manufacturer/source may be indicated by the phrase: "Subject to compliance with requirements, provide products by the following: …"

3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of products may be indicated by the phrase: "Subject to compliance with requirements, provide one of the following: …"

4. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.

    a. Limited list of manufacturers is indicated by the phrase: "Subject to compliance with requirements, provide products by one of the following: …"

5. Basis of Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

    a. For approval of products by unnamed manufacturers, comply with requirements in Section 01 25 00 "Substitution Procedures" for substitutions for convenience.

C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

    1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 25 00 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 SUSTAINABLE PRODUCTS

A. Where the Specifications include products with sustainable attributes, select products that comply with sustainability requirements.

1. Where there is an option to provide one of the listed products, give preference to products with minimal packaging and easily recyclable packaging.
2. Maximize use of source reduction and recycling procedures.
3. Provide environmentally preferable products (EPP) to the extent possible.

a. Environmentally Preferable Products: Products and materials that have a lesser or reduced effect on the environment considering raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product.

2.3 COMPARABLE PRODUCTS

A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the work. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
2. Evidence that proposed product provides specified warranty.
3. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
4. Samples, if requested.

B. Submittal Requirements: Approval by the Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

# SECTION 01 73 00

# EXECUTION

## PART 1 - GENERAL

### 1.1 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. Coordination of Owner installed products.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.

### 1.2 INFORMATIONAL SUBMITTALS

A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

### 1.3 QUALITY ASSURANCE

A. 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. Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with sustainable design requirements.

B. Existing Materials: Use materials for patching identical to existing materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of existing materials.

C. Progress Cleaning:

1. Provide covered containers for deposit of waste materials, debris and rubbish.
2. Use cleaning materials that do not create hazards to health and property and do not damage surfaces.
3. Use cleaning materials recommended by manufacturer of surface to be cleaned.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not warranted. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water service piping; underground electrical services; and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the work, examine substrates, areas, and conditions for compliance with requirements for installation tolerances and conditions affecting performance. Record observations.

1. Written Report: Where a written report listing conditions detrimental to performance of the work is required, include the following:

a. Description of the work.
b. List of detrimental conditions, including substrates.
c. List of unacceptable installation tolerances.
d. Recommended corrections.

2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation after correcting unsatisfactory conditions. Proceeding with the work constitutes acceptance of surfaces and conditions.

## 3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. 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.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. 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 Architect according to requirements in Section 01 31 00 "Project Management and Coordination."

## 3.3 INSTALLATION

A. 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.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

F. Sequence the work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. 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.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. 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.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

K. Repair or remove and replace damaged, defective, or nonconforming work.

1. Comply with Section 01 77 00 "Closeout Procedures" for repairing or removing and replacing defective work.

## 3.4 OWNER INSTALLED PRODUCTS

A. Site Access: Provide access to the site for Owner's construction personnel.

B. Coordination: Coordinate construction and operations of the work with work performed by Owner's construction personnel.

1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

## 3.5 PROGRESS CLEANING

A. 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 degrees F (27 degrees C).
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 contractors are working concurrently.
5. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate conditions that could affect final finishing.

B. Site: Maintain Project 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 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. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal:

1. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 degrees F (27 degrees C).
2. Provide onsite dumpsters and containers for collection of waste materials, rubbish, and debris.

3. Do not allow waste materials, rubbish, and debris to accumulate and become an unsightly and hazardous condition. Provide additional collection and dispose of debris when scheduled removal is inadequate to prevent accumulation.
4. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to EPA and local regulations.

    a. Utilize containers intended for holding hazardous waste to be stored.

5. Terminate closed chutes into appropriate containers with lids. Open free fall chutes are not permitted.
6. Do not overload trucks to prevent spillage on access and haul routes. Examine traffic areas and maintain clear routes.
7. Clean site and work areas daily, including common areas. Enforce requirements strictly. Legally dispose of waste materials, rubbish, and debris away from site.

    a. Do not bury or burn waste materials onsite. Do not wash waste materials down sewers or into waterways.
    b. Legally dispose of waste materials and comply with disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

H. 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.

I. 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.

J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

## 3.6 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements.

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Section 01 40 00 "Quality Requirements."

## 3.7 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. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

## 3.8 CORRECTION OF THE WORK

A. Repair or remove and replace defective construction. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Restore permanent facilities used during construction to their specified condition.

C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

**END OF SECTION**

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# SECTION 01 77 00

# CLOSEOUT PROCEDURES

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Closeout submittals and warranties.
4. Payment and release of liens.
5. Final cleaning.
6. Repair of the work.

### 1.2 ACTION SUBMITTALS

A. Product Data: Technical data for each type of cleaning agent.

B. Contractor's List of Incomplete Items (Punchlist): Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at final completion.

### 1.3 CLOSEOUT SUBMITTALS

A. Submit the following:

1. Final application for payment.
2. Certificate of Occupancy.
3. Certificate of inspections for mechanical and electric systems.
4. Certificates of Release: Certificates from authorities having jurisdiction.
5. Certificate of Insurance: Certificates for continuing coverage.
6. Certificate of Insurance for Products and Completed Operations.
7. Project record documents.
8. Operation and maintenance data.
9. Warranties and bonds.
10. Evidence of payments and release of liens.
11. Final adjustment of accounts.
12. Spare parts, maintenance materials, and extra materials.
13. Field Report: Report of pest control inspection.

## 1.4 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: Submit extra materials as specified in the individual specification sections.

## 1.5 SUBSTANTIAL COMPLETION PROCEDURES

A. Upon determination that the work is substantially complete, notify Architect and submit written certification that the Work is complete.

B. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

1. Contractor’s failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

C. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit specified closeout submittals, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit extra materials specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of extra material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.

5. Submit testing, adjusting, and balancing records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

D. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified.
6. Advise Owner of changeover in utility services.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements.
10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

E. Substantial Completion Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 7 days prior to date the work will be completed and ready for inspection and tests accompanied by the list of incomplete items.

1. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements.
2. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents, the Architect will supplement the Contractor’s list with such items.

    a. Architect’s failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

3. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
4. Reinspection: Upon correction of deficiencies, notify Architect requesting a reinspection accompanied by the list of items to be complete or corrected and date of anticipated completion.

F. Substantial Completion: Upon concurrence that the project is substantially complete, the Architect will prepare a Certificate of Substantial Completion on AIA Form G704 accompanied by the Constructor’s List of Incomplete Items that has been verified and amended by Architect.

1. The Architect will submit the Certificate of Substantial Completion to the Owner and Contractor for written acceptance of the responsibilities assigned in the Certificate.

G. Contractor Activities: Upon receipt of the certification of Substantial Completion, perform the following activities:

1. Allow Owner occupancy of the project as stated in the Certification of Substantial Completion provisions.
2. Obtain and submit the Certificate of Occupancy, operating certificates, and similar releases enabling the Owner unrestricted use of the work.
3. Complete work listed for completion or correction within designated form.
4. Advise Owner of pending insurance change over requirements.
5. Perform final cleaning.
6. Make final changeover of permanent locks and transmit keys to Owner.
7. Advise Owner of change over in security provisions.

## 1.6 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit final Application for Payment in accordance with Section 01 29 00 "Payment Procedures." and the Agreement.
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items for completion or correction (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Equipment Testing: Submit certified list of completed testing of installed equipment and system stating that testing was performed in the presence of the Owner’s representative and are operational.
4. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
5. Submit pest control final inspection report.
6. Submit final completion photographic documentation.

B. Final Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests.

1. Inspection: On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
2. Reinspection: Request reinspection when the work identified in previous inspections as incomplete is completed or corrected with written certification that:

    a. The Contract Documents have been reviewed and the work has been examined for compliance and completed in accordance with Contract Documents.
    b. Equipment and systems have been tested in presence of Owner's representative and are operational.
    c. The work is completed and ready for final examination.

C. Determination of Final Completion: Architect will inspect the work to verify status of completion within seven calendar days after receipt of certification.

1. Should Architect deem the work is incomplete or defective, the Architect will notify Contractor in writing, itemizing the work that is incomplete or defective.
2. Take immediate action to finish incomplete work and remedy deficiencies before requesting a second inspection accompanied by a second written certification that work is complete.
3. Architect will reinspect the work.

    a. If the work is found complete, Architect will request submission of closeout submittals.
    b. If the work is again found incomplete, complete the work and request a reinspection accompanied by a third written certification that work is complete.

## 1.7 REINSPECTION FEES

A. In the event the Architect is required to perform reinspections due to the failure of the work to comply with claims of completion certified by Contractor:

1. The Owner will compensate Architect for additional services.
2. The Owner will deduct amount of compensation from final payment to Contractor.

## 1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following formats:

    a. MS Excel electronic file. Architect will return annotated file.
    b. PDF electronic file. Architect will return annotated file.

## 1.9 CLOSEOUT SUBMITTALS

A. Upon request of Architect after a successful Final Completion Inspection, submit the following documents for closeout:

1. Evidence of compliance with requirements of governing authorities:

    a. Certificate of Occupancy.
    b. Certificate of Inspection: Mechanical and electrical systems.

2. Project Record Documents: Refer to Section 01 78 39 "Project Record Documents."
3. Operating and Maintenance Data: Refer to Section 01 78 23 "Operation and Maintenance Data."
4. Warranties and bonds.
5. Spare Parts and Maintenance Materials: Provide products, spare parts, and maintenance materials in quantities specified in each specification section in addition to that required for completion of work.

    a. Coordinate delivery with Owner; deliver to site, store properly, and obtain receipt prior to final payment.

6. Certificates of Insurance:

    a. Certificates for products and completed operations.
    b. Certificate for continuing coverage.

7. Field Report: Submit report for pest control inspection.

## 1.10 PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents in an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit by uploading to web based project software site.

E. Warranties in Paper Form:

1. Bind warranties and bonds in heavy duty, three ring, vinyl covered, loose leaf binders, thickness necessary to accommodate contents, and sized to receive 8-1/2 inch by 11 inch (215 mm by 280 mm) paper.
2. Provide heavy paper dividers with plastic covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

F. Provide additional copies of each warranty to include in operation and maintenance manuals.

## 1.11 PAYMENT AND RELEASE OF LIENS

A. Evidence of Payment:

1. Contractor's Affidavit of Payment of Debts and Claims: AIA G706.
2. Contractor's Affidavit of Release of Liens: AIA G706A.
3. Attachment to Contractor's Affidavit of Release of Liens:

a. Consent of Surety to Final Payment: AIA G707.
b. Contractor's Release or Waiver of Liens.
c. Separate releases of waivers of liens from subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.

4. Submittals shall be duly executed before delivery to Owner.

B. Adjustments of Accounts: Submit final statement of accounting to Architect.

1. Statement shall reflect adjustments to Contract Sum: Include the following data:

a. Original Contract Sum.
b. Additions and deductions resulting from:

1) Previous Change Orders.
2) Allowances.
3) Unit Prices.
4) Deductions for uncorrected work.
5) Penalties and bonuses.
6) Deductions for liquidated damages.
7) Deductions for reinspection payments.
8) Other adjustments.

c. Total Contract Sum, as adjusted.
d. Previous payments.
e. Sum remaining due.

C. Upon receipt and review, Architect will prepare final Change Order, reflecting approved adjustments to Contract Sum that were not previously made by Change Orders.

D. Final Application for Payment: Refer to Section 01 29 00 "Payment Procedures."

E. Adjustment: No adjustments to Contract requested by Contractor will be allowed if asserted after execution of Final Payment of Contract.

## 1.12 CONTRACTOR CORRECTION PERIOD

A. Prior to expiration of the Contractor’s Correction Period prior to the one year anniversary of the Date of Substantial Completion, Owner and Contractor will make visual inspection of the project to determine whether further correction of work is required in accordance with provisions of Contract Documents.

B. During the Correction Period, the Owner will promptly notify the Contractor in writing of observed deficiencies. Schedule a time and establish a schedule for correction of deficiencies.

# PART 2 - PRODUCTS

## 2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

# PART 3 - EXECUTION

## 3.1 FINAL CLEANING

A. Perform final cleaning. Conduct cleaning and waste removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete cleaning operations before requesting inspection for certification of Substantial Completion for entire project or for a designated portion of project:

    a. Clean site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard surfaced finishes to a dirt free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and noticeable, vision obscuring materials. Replace chipped or broken glass and damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
p. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
q. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 01 50 00 "Temporary Facilities and Controls." Prepare written report.

D. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 50 00 "Temporary Facilities and Controls."

E. Testing and Inspections: Comply with Section 01 40 00 "Quality Requirements" and the individual specification sections for required testing and inspections.

1. Submit a schedule of tests and inspections and indicate the date results of inspections and testing.

## 3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

**END OF SECTION**

# SECTION 01 78 23

# OPERATION AND MAINTENANCE DATA

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

### 1.2 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

### 1.3 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit by uploading to web-based project software site. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

E. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

## 1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

## 1.5 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Construction Manager.
7. Name and contact information for Architect.
8. Name and contact information for Commissioning Authority.

9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
10. Cross reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4 "Preparation of Operating and Maintenance Documentation for Building Systems."

## 1.6 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY MANUAL

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. List items and their location to facilitate ready access to desired information. Include the following:

1. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
2. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
3. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

## 1.7 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

## 1.8 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.

8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

## 1.9 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties: Submit copies of warranties and lists of circumstances and conditions that would affect validity of warranties or bonds. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of maintenance manuals.

## 1.10 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Submit manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Submit lists of materials and local sources of materials and related services.

G. Warranties: Include copies of warranties and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS
Not used.

PART 3 - EXECUTION
Not used.

**END OF SECTION**

# SECTION 01 78 39

# PROJECT RECORD DOCUMENTS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

### 1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit clean set(s) of marked up record prints.

a. Initial Submittal:

1) Submit one paper copy set of marked up record prints.
2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

1) Submit one clean paper copy set(s) of marked up record prints.
2) Submit PDF electronic files of scanned record prints.
3) Print and PDF each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit one annotated paper copy and an annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy and an annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked up Product Data as a component of manual.

D. Miscellaneous Record Submittals: Refer to the individual Specification Sections for miscellaneous recordkeeping requirements and submittals in connection with various

construction activities. Submit one paper copy and an annotated PDF electronic files and directories of each submittal.

E. Reports: Submit written report monthly indicating items incorporated into project record documents concurrent with progress of the work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

## 1.3 BURDEN OF ACCURACY

A. The burden of accuracy is the responsibility of the Contractor who shall bear costs of damages incurred by Owner due to inaccuracies or incompleteness of submitted Record Documents for the period of time following Substantial Completion defined by Agreement and the Conditions of the Contract.

## 1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

    a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    b. Accurately record information in an acceptable drawing technique.
    c. Record data as soon as possible after obtaining it.
    d. Record and check the markup before enclosing concealed installations.
    e. Cross reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

    a. Dimensional changes to Drawings.
    b. Revisions to details shown on Drawings.
    c. Depths of foundations.
    d. Locations and depths of underground utilities.
    e. Revisions to routing of piping and conduits.
    f. Revisions to electrical circuitry.
    g. Actual equipment locations.
    h. Duct size and routing.
    i. Locations of concealed internal utilities.
    j. Changes made by Change Order or Construction Change Directive.
    k. Changes made following Architect's written orders.
    l. Details not on the original Contract Drawings.
    m. Field records for variable and concealed conditions.

n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red colored pencil. Use other colors to distinguish between changes for different categories of the work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings:

1. Format: Annotated PDF electronic file with comment function enabled.
2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
3. Refer instances of uncertainty to Architect for resolution.
4. Architect will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

a. See Section 01 31 00 "Project Management and Coordination" for requirements related to use of Architect's digital data files.
b. Architect will provide data file layer information. Record markups in separate layers.

C. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.

1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
2. Consult Architect for scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared record Drawings into record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.

D. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.

4. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

## 1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

    1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
    2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
    3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
    4. Note related Change Orders, record Product Data, and record Drawings where applicable.

B. Format: Submit record Specifications as annotated PDF electronic file and an annotated paper copy of the project manual.

## 1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

    1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
    2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
    3. Note related Change Orders, record Specifications, and record Drawings where applicable.

C. Format: Submit record Product Data as annotated PDF electronic file and a paper copy.

    1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

## 1.7 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the work. Bind or file miscellaneous records and identify each, ready for continued use and reference. Miscellaneous record submittals include but are not limited to:

1. Reviewed shop drawings, product data, and samples.
2. Field test reports.
3. Inspection certificates.
4. Manufacturer's certificates.
5. Inspections by authorities having jurisdiction.
6. Documentation of foundation depths.
7. Special measurements or adjustments.
8. Tests and inspections.
9. Surveys.
10. Design mixes.

B. Format: Submit miscellaneous record submittals as PDF electronic file and a paper copy.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

# PART 2 - PRODUCTS

Not used.

# PART 3 - EXECUTION

## 3.1 RECORD DOCUMENTS

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and modifications to the Documents as they occur. Do not wait until the end of the project. Architect will periodically review record documents to assure compliance.

B. Maintenance of Record Documents: Store record documents in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

**END OF SECTION**

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# SECTION 07 27 26

# FLUID-APPLIED MEMBRANE AIR BARRIERS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section includes fluid-applied, vapor-permeable membrane air barriers.

### 1.2 REFERENCES

A. References, General: Versions of the standards current as of the date of issue of the project apply to the Work of this Section.

B. ASTM International (ASTM): www.astm.org:

1. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
2. ASTM C 1193 - Guide for Use of Joint Sealants
3. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension
4. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
5. ASTM E 96/E 96M - Standard Test Methods for Water Vapor Transmission of Materials
6. ASTM E 162 - Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source
7. ASTM E 783 - Standard Test Method for Field Measurement of Air Leakage through Installed Exterior Windows and Doors
8. ASTM E 1186 - Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems
9. ASTM E 2178 - Standard Test Method for Air Permeance of Building Materials
10. ASTM E 2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies

C. National Fire Protection Association (NFPA): www.nfpa.org:

1. NFPA 285 - Standard Fire Test Method For Evaluation Of Fire Propagation Characteristics Of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components

### 1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate installation of joint sealants with cleaning of joint sealant substrates and other operations that may impact installation or finished joint sealant work.

B. Preinstallation Conference: Conduct conference at Project Site.

1. Review requirements for air barrier products and installation, project and manufacturer's details, mockups, testing and inspection requirements, and coordination and sequencing of air barrier work with work of other Sections.
2. Review manufacturer's instructions for air barrier application meeting Project requirements for substrates specified, including three-dimensional video model demonstrating proper application of components at wall openings.

## 1.4 ACTION SUBMITTALS

A. Product Data: For each type of air barrier product specified, including:

1. Technical data indicating compliance with requirements.
2. Substrate preparation instructions and recommendations.

B. Shop Drawings: Show locations for air barrier. Show details for each type of substrate, joints, and edge conditions, including flashings, counterflashings, penetrations, transitions, and terminations.

1. Show location of transition and accessory materials providing connectivity throughout the assemblies.

## 1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, manufacturer[, and Air Barrier Inspector].

1. Certification of manufacturer's approval of Installer.

B. Manufacturer's Product Compatibility Certificate: Certify compatibility of air barrier products with adjacent materials.

C. Low-Emitting Product Certificate: For air barrier products specified to meet volatile organic emissions standards, submit Greenguard Children and Schools Certification or comparable certification acceptable to Architect.

D. Fire Propagation Characteristics Certificate: From a qualified testing agency, documentation that air barrier system as a component of a wall assembly has been tested and passed NFPA 285. Include system classification number of testing agency on shop drawings.

E. Product Test Reports: Test data for air barrier products and air barrier assembly, by qualified testing agency, indicating proposed membrane air barrier meets performance requirements, when requested by Architect.

F. Warranty: Sample of unexecuted manufacturer and installer special warranties.

G. Field quality control reports.

## 1.6 QUALITY ASSURANCE

A. Installer Qualifications: A firm with minimum three years’ experience in installation of specified products in successful use on similar projects, employing workers trained by manufacturer, including a full-time on-site supervisor with a minimum of three years’ experience installing similar work, able to communicate verbally with Contractor, Architect, and employees.

B. Manufacturer Qualifications: A qualified manufacturer listed in this Section with minimum five years’ experience in manufacture of air barrier membrane as one of its principal products.

1. Manufacturer's product submitted has been in satisfactory operation on five similar installations for at least five years.
2. Manufacturer is accredited by the Air Barrier Association of America.

C. Air Barrier Inspector Qualifications: A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified air barrier system, qualified to perform observation and inspection specified in Field Quality Control

Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Inspector shall be one of the following:

1. An authorized full-time technical employee of the manufacturer.
2. A independent party certified as an air barrier inspector by the ABAA or other certifying organization acceptable to Architect, retained by the Contractor.

D. Mockups: Provide air barrier mockup application within mockups required in other sections, or if not specified, in an area of not less than 150 sq. ft. (14 sq. m) of wall surface where directed by Architect for each type of backup wall construction. Include examples of surface preparation, crack and joint treatment, air barrier application, and flashing, transition, and termination conditions, to set quality standards for execution.

1. Include intersection of wall air barrier with roof air barrier and with foundation wall intersection.

## 1.7 DELIVERY, STORAGE AND HANDLING

A. Accept materials on site in manufacturer's unopened original packaging.

B. Store products in weather protected environment, clear of ground and moisture, within temperature ranges recommended by air barrier manufacturer.

## 1.8 ENVIRONMENTAL REQUIREMENTS

A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended by air-barrier manufacturer.

1. Protect substrates from environmental conditions that affect air-barrier performance.
2. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

## 1.9 SCHEDULING

A. Coordinate installation of membrane air barrier with completion of roofing and other work requiring interface with air barrier.

B. Schedule work so air barrier applications may be inspected prior to concealment.

C. Ensure air barrier materials are cured before covering with other materials.

## 1.10 WARRANTY

A. Special Manufacturer's Warranty: Manufacturer's standard form in which air barrier manufacturer agrees to furnish and install air barrier material to repair or replace those materials installed according to manufacturer's written instructions that exhibit material defects or otherwise fail to perform as specified under normal use within warranty period specified.

1. Access for Repair: Owner shall provide unimpeded access to the Project and the air barrier system for purposes of testing, leak investigation, and repair, and shall reinstall removed cladding materials upon completion of repair.
2. Cost Limitation: Manufacturer's obligation for repair or replacement shall be limited to the original installed cost of the work.
3. Warranty Period: 20 years from date of Substantial Completion.

B. Special warranties specified in this article exclude deterioration or failure of air barrier materials from the following:

1. Movement of the structure caused by structural settlement or stresses on the air barrier exceeding manufacturer's written specifications for elongation.
2. Mechanical damage caused by outside agents.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. Basis-of-Design Products: Provide air barrier products manufactured by Tremco, Inc., Commercial Sealants and Waterproofing Division, An RPM Company.

1. Other Acceptable Products:
   a. Air-Bloc 17MR by Henry, a Carlisle Company, and all related products.
   b. Air-Shield LMP by W R Meadows and all related products.

### 2.2 MATERIALS, GENERAL

A. Source Limitations: Obtain air-barrier materials from single source from single manufacturer.

B. Compatibility: Provide membrane air barrier materials that are compatible with one another and with adjacent materials under conditions of service and application required, as demonstrated by membrane air barrier manufacturer based on testing and field experience.

### 2.3 PERFORMANCE REQUIREMENTS

A. General: Membrane air barrier shall be capable of performing as a continuous vapor- permeable air barrier and as a moisture drainage plane transitioned to adjacent flashings and discharging water to the building exterior. Membrane air barriers shall accommodate substrate movement and seal expansion and control joints, construction material transitions, opening transitions, penetrations, and perimeter conditions without moisture deterioration and air leakage exceeding performance requirements.

B. Air-Barrier Assembly Air Leakage: Maximum 0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft., when tested according to ASTM E 2357.

C. Fire Propagation Characteristics: Provide air barrier system qualified as a component of a comparable wall assembly that has been tested and passed NFPA 285.

### 2.4 MEMBRANE AIR BARRIER

A. Fluid-Applied, Vapor-Permeable Membrane Air Barrier: Elastomeric, UV-resistant, synthetic membrane, formulated for application in a range of 48 - 70 mils (wet), 25 - 35 mils (dry).

1. Basis of Design Product: Tremco, Inc., ExoAir 230.
2. Air Permeance, ASTM E 2178: 0.004 cfm/sq. ft of surface area at 1.57-lbf/sq. ft. (0.02 L/s x sq. m of surface area at 75-Pa) pressure difference, maximum.
3. Vapor Permeance, ASTM E 96/E96M: Minimum 12 perms (690 ng/Pa x s x sq. m).
4. Elongation, Ultimate, ASTM D 412, Die C: 600 percent, minimum.
5. Combustion Characteristics: Class A, flame spread, not greater than 25; smoke developed, not greater than 450, per ASTM E 84.
6. UV Resistance, QUV-B: Over 160 cycles of UV and water spray with no observable deterioration.

7. VOC Content: Less than 50 g/L.

## 2.5 ACCESSORY MATERIALS

A. General: Accessory materials as described in manufacturer's written installation instructions, recommended to produce complete air barrier assembly meeting performance requirements, and compatible with air barrier membrane material and adjacent materials.

B. Primer: Liquid primer meeting VOC limitations, recommended for substrate by membrane air barrier manufacturer, when installing modified bituminous self-adhered membranes.

1. Basis of Design Product: Tremco, Inc., ExoAir Primer

C. Transitions:

1. High Temperature Flashing Strip and Underlayment: Butyl, 18 mil thick self-adhering composite sheet consisting of 12 mils of butyl laminated to 6 mil polyethylene film; thermally stable under intermittent, non-continuous exposure up to 240 deg F (115 deg C). Fixed EA 110AT to show once at the proper mils.
   a. Basis of Design Product: Tremco, Inc., ExoAir 110AT.
2. Opening Transition Assembly: Cured low-modulus silicone extrusion, with reinforcing ribs, sized to fit opening widths, with the following characteristics:
   a. Basis of Design Product: Tremco, Inc., Proglaze ETA Engineered Transition Assembly. Tear Strength: 110 lb/in (19.3 kN/m)

D. Reinforcing Fabric: High strength mesh fabric consisting of open-weave glass fiber saturated with synthetic resins formulated for high moisture resistance, for reinforcing of liquid applications; not less than 2.5 oz/sq. yd (85 g/sq. m).

1. Basis of Design Product: Tremco, Inc., Tremco 2011.

E. Liquid Joint Sealants:
1. ASTM C 920, single-component polyurethane, approved by air barrier manufacturer for adhesion and compatibility with membrane air barrier and accessories.
   a. Basis of Design Product: Tremco, Inc., Dymonic 100.

F. Sprayed Polyurethane Foam Sealant: Sprayed Polyurethane Foam Sealant: Foamed-in-place, 1.5- to 2.0-lb/cu. ft. (24- to 32-kg/cu. m) density, with flame-spread index of 25 or less per ASTM E 162, for filling of gaps at openings and penetrations.

1. Basis of Design; Tremco Inc., Flexible Low Expanding Foam (LEF)

# PART 3 - EXECUTION

## 3.1 EXAMINATION

A. Surface Condition: Before applying air barrier materials, examine substrate and conditions to ensure substrates are fully cured, smooth, clean, dry, and free from high spots, depressions, loose and foreign particles and other deterrents to adhesion, and conditions comply with manufacturer's written recommendations.

1. Verify concrete and masonry surfaces are visibly dry, have cured for time period recommended by membrane air barrier manufacturer, and are free from release agents, curing agents, and other contaminates.

2. Test for capillary moisture by method recommended in writing by air barrier manufacturer.
3. Verify masonry joints are filled with mortar and struck flush.

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

## 3.2 INTERFACE WITH OTHER WORK

A. Commencement of Work: Commence work once air barrier substrates are adequately protected from weather and will remain protected during remainder of construction.

B. Sequencing of Work: Coordinate sequencing of air barrier work with work of other sections that form portions of building envelope air barrier to ensure that flashings and transition materials can be properly installed and inspected. Roofing systems shall be capped and sealed, or top of walls protected, in such a way as to eliminate the ability of water to saturate the wall or interior space, both before and after, air barrier system installation. Coordinate installation of EXOAIR® 230 with the roofing trade to ensure compatibility and continuity with the roofing system.

C. Subsequent Work: Coordinate air barrier work with work of other sections installed subsequent to air barrier to ensure complete inspection of installed air barrier and sealing of air barrier penetrations necessitated by subsequent work.

## 3.3 PREPARATION

A. Clean, prepare, and treat substrate in accordance with air barrier manufacturer's written instructions.

1. Mask adjacent finished surfaces.
2. Remove contaminants and film-forming coatings from substrates.
3. Remove projections and excess materials and fill voids with substrate patching material.
4. Prepare and treat joints and cracks in substrate per ASTM C 1193 and membrane air barrier manufacturer's written instructions.

## 3.4 APPLICATION OF ACCESSORY MATERIALS

A. General: Install strips, transition strips, and accessory materials according to air-barrier manufacturer's written instructions. Install transition materials and other accessories to form connect and seal membrane air barrier material to adjacent components of building air barrier system, including, but not limited to, roofing system air barrier, exterior fenestration systems, door framing, and other openings. All exposed gypsum and wood blocking shall be covered with system manufacturer’s self-adhered membrane.

B. Primer: Apply primer to substrates when recommended by air barrier manufacturer at required rate for those substrates that will be receiving a modified bituminous self-adhered membrane. Reprime areas not covered within 24 hours.

C. Assembly Transitions: Connect and seal exterior wall air barrier material continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.

1. Opening Transitions: Fill gaps at perimeter of openings with foam sealant and apply approved transition or accessory material

2. Penetrations: Fill gaps at perimeter of penetrations with foam sealant and level with approved sealant. or seal transition strips around penetrating objects and terminate with approved sealant.
3. Joints: Bridge and cover isolation joints, expansion joints, and discontinuous joints between separate assemblies utilizing approved transition or accessory materials.
4. Changes in Plane: Apply approved sealant beads at corners and edges to form smooth transition.
5. Substrate Gaps: Cover gaps with stainless steel sheet mechanically attached to substrate and providing continuous support for air barrier.

D. Flashings: Seal top of through-wall flashings to membrane air barrier with a continuous bead of approved sealant recommended by air barrier manufacturer.

E. Seal punctures, voids, and seams. Patch with approved transition and accessory materials following air barrier manufacturer’s recommendations and extend repair beyond repaired areas to maintain continuity.

## 3.5 FLUID AIR-BARRIER MEMBRANE INSTALLATION

A. General: Apply fluid air-barrier material to form a seal with transition materials and accessories to achieve a continuous air barrier according to air-barrier manufacturer's written instructions. Apply fluid air-barrier material within manufacturer's recommended application temperature ranges.

B. Membrane Air Barrier: Apply fluid air barrier material in full contact with substrate to produce a continuous seal according to membrane air barrier manufacturers written instructions.

1. Vapor-Permeable Membrane Air Barrier: Total dry film thickness as recommended in writing by manufacturer to meet performance requirements, with a minimum of 35 mils (1.0-mm) dry film thickness depending on substrate, applied in one or more equal coats, roller- or spray- applied.

C. Connect and seal exterior wall air-barrier membrane continuously to subsequently-installed roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, wall openings, and other construction used in exterior wall openings, using approved transitions and accessory materials.

D. Wall Openings: All exposed gypsum and wood blocking shall be covered with system manufacturer’s self-adhered membrane turning into rough opening 3 inches minimum. Apply approved sealant to adhere silicone extrusion to perimeter of windows, curtain walls, storefronts, doors, and louvers. Apply opening transition assembly according to air barrier transition manufacturer’s written instructions.

E. Seal punctures, voids, and seams. Patch with approved transition and accessory materials following air barrier manufacturer’s recommendations and extend repair beyond repaired areas to maintain continuity.

F. Connect to existing air barrier system to form a continuous envelope.

G. Do not cover air barrier until it has been tested and inspected by Owner's testing agency.

H. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.

## 3.6 FIELD QUALITY CONTROL

A. Testing Agency: Owner may engage a qualified testing agency to perform tests and inspections.

B. Coordination of Testing: Cooperate with testing agency. Allow access to work areas and staging. Notify testing agency in writing of schedule for Work of this Section to allow sufficient time for testing and inspection.

1. Do not cover Work until testing and inspection is completed and accepted.

C. Reporting: Forward written inspection reports to the Architect within 10 working days of the inspection and test being performed.

D. Correction: Correct deficient applications not passing tests and inspections, make necessary repairs, and retest as required to demonstrate compliance with requirements.

## 3.7 CLEANING AND PROTECTING

A. Clean spills, stains, and overspray resulting application utilizing cleaning agents recommended by manufacturers of affected construction. Remove masking materials.

B. Protect membrane air barrier from damage from subsequent work. Protect membrane materials from exposure to UV light for period in excess of that acceptable to membrane air barrier manufacturer; replace overexposed materials and retest.

**END OF SECTION**

## SECTION 07 56 50

## MINOR ROOF RENOVATION WORK

### PART 1 - GENERAL

### 1.01 SECTION INCLUDES:

A. Required minor demolition for reroofing work.

B. Required minor renovation for reroofing work.

### 1.02 RELATED SECTIONS:

A. Section 01 10 00 – Summary.

B. Section 01 27 00 - Unit Pricing.

C. Section 07 52 00 - Modified Bituminous Membrane Roofing.

D. Section 07 72 00 - Roof Accessories.

E. Section 07 92 00 - Joint Sealants.

### 1.03 REFERENCES:

A. ASTM A653 - Steel Sheet, Zinc-Coated (Galvanized), or Zinc-Iron Alloy Coated (Galvannealed) by Hot Dip Process.

### 1.04 SUBMITTALS:

A. Product Data: Submit manufacturer's product data sheets for each product in accordance with Section 01 33 00.

### 1.05 PROTECTIONS:

A. Prior to starting minor demolition operations, provide necessary protections as specified in Section 01 50 00.

### 1.06 COORDINATION:

A. Sequence minor demolition and renovation with work sequence of reroofing work.

B. Coordinate with reroofing work so that no more existing items are removed in one day than can be replaced along with new roofing work in same day.

### PART 2 - PRODUCTS

### 2.01 MATERIALS:

A. Steel Plate: Flat plate, rolled from ASTM A36 steel, Grade A, 1/4 inch thickness.

B. Metal Paint:
   1. Galvanized Metal:
      a. 1st Coat: Sherwin Williams S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 1.9 mils dry).
      b. 2nd and 3rd Coats: Sherwin Williams S-W Emerald Urethane Trim Enamel Semi-Gloss, K38-750 Series (4.0 mils wet, 1.4 mils dry per coat).
   2. Ferrous Metal:
      a. 1st Coat: Sherwin Williams S-W Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series (5.0 mils wet, 1.9 mils dry).
      b. 2nd and 3rd Coats: Sherwin Williams S-W Solo Acrylic Semi-Gloss, A76 Series (4.0 mils wet, 1.5 mils dry per coat).

3. Rust-Inhibitive Paint:
   a. 1st and 2nd Coats: Sherwin Williams Macropoxy 646 Fast Cure (Minimum 10 mils wet, 5 mils dry per coat).

C. Wood Nailers and Blocking:
   1. No. 2 or better Southern Yellow Pine.
   2. Fire-retardant treated with Osmose Flame Proof LHC, bearing UL Label FR-S.

H. Plywood Sheathing: Fir or Southern Yellow Pine plywood, C-C plugged, EXT-APA Grade, fire-retardant treated with Osmose Flame Proof or Koppers NCX, bearing UL Label FR-S. Thickness as scheduled.

I. Thermoplastic Polyolefin Roofing (TPO)
   1. TPO membrane from the same manufacturer as the existing membrane.
   1. Membrane Attachment: Fully adhered.
   2. Substrate: Fiberglass faced gypsum coverboard, approved by membrane manufacturer, adhered over rigid insulation with manufacturer's low-rise foam adhesive.
   3. Insulation: Polyisocyanurate insulation board to match existing mechanically attached to existing metal deck with joints to existing rigid insulation offset 6 inches minimum.

J. Fasteners:
   1. Screws: Hot-dip galvanized wood screws.
   2. Nails: Non-ferrous, cement-coated, or hot-dip galvanized nails. Use finish nails for attaching wood trim and wood-fiber cement board.
   3. Concrete and Masonry: Stainless steel or galvanized screws with lead expansion anchor, Rawlplug by The Rawlplug Co.

## PART 3 - EXECUTION

### 3.01 PREPARATION:

A. Verify that required barricades and other protective measures are in place.

### 3.02 MINOR DEMOLITION OPERATIONS:

A. General:
   1. Comply with precautions and procedures specified in Section 01 35 16.
   2. Cut and remove materials as designated on Drawings.
   3. Execute demolition in a careful and orderly manner with least possible disturbance or damage to adjoining surfaces and structure.
   4. Avoid excessive vibrations in demolition procedures that would be transmitted through existing structure and finish materials.

### 3.03 DISPOSAL:

A. Materials, equipment and debris resulting from demolition operations shall become property of Contractor. Remove demolition debris in accordance with applicable City, State and Federal Laws.

B. Legally dispose of demolition debris.

### 3.04 MINOR RENOVATION WORK:

A. New wood nailers and curbs:
   1. Clean and prepare existing surfaces to receive wood nailers.
   2. Install wood nailers as indicated.
   3. Install wood nailers continuously without gaps and plumb, level and true with joints flush. Securely fasten to structure with fasteners suited for specific installation. Use of powder-actuated fasteners is prohibited.

B. Plywood Sheathing:
   1. Install plywood sheathing where shown utilizing fasteners suited for specific installation.

C. Equipment Removal and Reinstallation to Accommodate New Roof System: Refer to notes on plans.

D. Roof Drains:
1. Confirm that roof drains and overflow roof drains are free flowing. Report any clogged drains to Architect.
2. Replace any broken or missing drain bowls, bolts, clamping rings or roof drain strainers.
3. Adjust roof drains as required to accommodate the additional insulation. Ensure overflow drains are not sumped.

E. Metal Painting – Existing Gas Piping and Other Ferrous Metals Located on or Above Roofing:
1. Completely remove rust down to bare metal.
2. Prime bare metal with ferrous metal primer.
3. Apply 2 coats of specified exterior metal paint.
4. Spray application not permitted.

Note: All painting shall be completed by skilled craftsman.

F. TPO Membrane:
1. Remove damaged roof assembly to metal deck, continuing until all materials showing evidence of exposure to moisture have been removed. Remove upper layer of insulation as required to provide a 6 inch offset from the base layer of insulation.
2. Mechanically attach the rigid insulation of thickness required to match existing roof system.
3. Adhered gypsum cover board in low-rise foam adhesive.
4. Adhered TPO roof membrane over coverboard, lapping existing membrane 6 inches and weld as required by the manufacturer.
5. Spot weld walk-pads to match existing walkway over new membrane.

**3.05 EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) REPAIRS:**

A. Repair of Damaged EIFS Copings:
1. Remove damaged portions of EIFS.
2. Apply manufacturer's approved gel paint stripper to 4 inches of EIFS system adjacent to sections being repaired.
3. Scrape finish from EIFS system base coat.
4. Grind the edge surface of the base coat away from the cut edge exposing the reinforcing mesh.
5. Install expanded polystyrene insulation at locations where damaged insulation was removed.
6. Install base coat over new insulation.
7. Embed mesh in base coat, extending mesh so as to overlap the exposed mesh on the existing EIFS to remain. Base coat to be even with the existing base coat.
8. Trowel apply wet base coat to the exposed mesh.
9. Install finish over replacement area and blend the new finish into the existing.
10. Protect the new finish until dry.
11. Install an additional layer of mesh and textured acrylic coating over new and existing EIFS system with the color and texture to match existing to provide uniform and overall appearance.

**3.06 PATCHING ABANDONED DECK PENETRATIONS:**

A. Patch abandoned deck penetrations where existing equipment and penetrations have been removed.
1. Set 24 ga. sheet metal cover plate over small openings 12 x 12 in. size or smaller. Secure to metal decking with two sheet metal screws per side.
2. Cover larger openings in metal decking with new metal decking to match existing. Fasten as noted in paragraph 3.07.

B. Completely cover openings in existing decks resulting from abandonment of penetration item regardless of size or shape of opening.

C. Complete patching of penetrations prior to installation of insulation.

**3.07 METAL ROOF DECK RENOVATION:**

A. Examine metal roof decking for rust and deterioration at locations where existing roofing is being removed down to metal decking.
   1. Coat areas of metal roof decking that have surface rust with specified rust-inhibitive paint coating.
   2. Remove areas of metal roof decking that are severely rusted, damaged or deteriorated beyond use.

B. Replace removed areas with new metal deck to match existing.
   1. Place metal deck units on supporting steel and adjust to final position, with ends bearing minimum 3 inch.
   2. Place metal deck units end-to-end before permanently fastening.
   3. Align cells over entire length of run. Do not stretch or contract side lap interlocks.
   4. Secure metal deck units to supports with minimum No. 12 TEK screws in 36/3 fastener pattern.
   5. Lock side laps between adjacent units at maximum intervals of 2'-0" o.c. between supports using No. 10 TEK screw fasteners (minimum 2 fasteners between each support).

C. Include in the Contract Amount 100 s.f. for metal deck renovation (coating of metal roof decking with a rust-inhibitive paint coating). Variations in quantities between the scheduled allowance and that amount actually used will be adjusted by Change Order on Unit Price basis.

D. Include in the Contract Amount 10 s.f. for removal and replacement of metal roof decking. Variations in quantities between the scheduled allowance and that amount actually replaced will be adjusted by Change Order on Unit Price basis.

E. Patch minor voids and damages in existing metal deck from removal of existing penetrations under the base bid. (Patching minor damage and patching abandoned penetrations are not included in the replacement allowance.)

**END OF SECTION**

**SECTION 07 60 00**

**SHEET METAL WORK**

## PART 1 GENERAL

### 1.01 SECTION INCLUDES:

A. Shop or field-formed sheet metal work for moisture protection

B. Accessories.

### 1.02 RELATED SECTIONS:

A. Section 07 54 19 – Polyvinyl-Chloride (PVC) Roofing

B. Section 07 92 00 - Joint Sealants.

### 1.03 REFERENCES:

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 1998.

B. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2000.

C. FS FF-S-325 - Shield Expansion; Nail, Expansion; and Nail, Drive-Screw.

D. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association; 2012.

### 1.04 SUBMITTALS:

A. Procedures for Submittals: Section 01 33 00.

B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

C. Samples: Submit two samples 6 x 6 inch in size illustrating metal finish color.

### 1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience.

C. Pre-Installation Conference:
1. Attend roofing pre-installation conference at the project site.
2. Attendance: Owner, Contractor, project superintendent, sheet metal fabricator and applicator.
3. Agenda: As specified in Section 07 52 00.

### 1.06 DELIVERY, STORAGE, AND HANDLING:

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials which may cause discoloration or staining.

### 1.07 WARRANTY:

A. Provide Owner a written warranty which shall warrant sheet metal work to be free of leaks and defects in materials and workmanship for 5 years after date of Substantial Completion.

## PART 2 PRODUCTS

### 2.01 SHEET MATERIALS:

A. Galvanized Steel: ASTM A 653/A 653M, with G90/Z275 zinc coating; thickness as scheduled, minimum 24 gage base metal.

B. Pre-Finished Galvanized Steel: ASTM A 653/A 653M, with G90/Z275 zinc coating; shop pre-coated with PVDF coating, color as selected.
   1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as selected by Owner from manufacturer's standard colors.

### 2.02 ACCESSORIES:

A. Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
   1. Nails: Flathead, wire, barbed, slating type.
   2. Screws: Self-tapping sheet metal type with rubber washer made of EPDM.
   3. Rivets: Type and size as recommended by sheet metal manufacturer.
   4. Concrete Fasteners: Round-head stainless steel screw and neoprene washer with lead expansion anchor, FS FF-S-325, Group IV, Type 2. Powers Rawl Screw Type Nailins.

### 2.03 FABRICATION:

A. Form sections as detailed; true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate cleats of same material as sheet, minimum 3 inches wide, interlocking with sheet.

C. Form pieces in longest possible lengths.

D. Make angle bends and folds for interlocking metal with full regard for expansion and contraction to avoid buckling or fullness in metal after installation.

E. Hem exposed edges on underside 1/2 inch; miter and seam corners.

F. Form material with scheduled or specified seams. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

G. Fabricate vertical faces with bottom edge formed outward 1/2 inch and hemmed to form drip.

H. Fabricate sheet metal items out of sheet metal and gauge as noted on plans.

### 2.04 FABRICATED ITEMS:

A. Counter Flashings:
   1. Two piece system as detailed.
   2. Fabricated as shown similar to SMACNA Figure 4-4D.

B. Copings: Refer to Section 07 71 00 – Manufactured Roof Specialties.

C. Edge Metal: Refer to Section 07 71 00 – Manufactured Roof Specialties.

D. Downspouts:
   1. Prefinished sheet metal with upper sections telescoped into lower sections 1-1/2 inch and riveted and sealed fabricated similar to SMACNA Figure 1-32B.
   2. Provide 3 evenly spaced 2-inch-wide hemmed prefinished sheet metal wall brackets for each downspout.

E. Parapet Liner Panel:
   1. Prefinished, 24 gauge sheet metal panel with 7/8 inch corrugations and related trim components as detailed.
   2. Screws: Self-tapping sheet metal type with rubber washer made of EPDM of adequate length to penetrate metal studs 3/4 inch.

## PART 3 EXECUTION

### 3.01 EXAMINATION:

A. Verify roofing termination and base flashings are in place, sealed, and secure.

B. Verify that substrates are smooth and clean to extent needed for sheet metal work.

C. Do not start sheet metal work until conditions are satisfactory.

### 3.02 INSTALLATION - GENERAL

A. Install work watertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction.

B. Install fabricated sheet metal items as detailed and in general accordance with SMACNA Architectural Sheet Metal Manual.

C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

D. Drive screws straight, perpendicular to the material being secured to ensure EPDM washers achieve even compression all around.

### 3.03 INSTALLATION - FABRICATED ITEMS:

A. Counter Flashings:
   1. Install where shown with fasteners installed as indicated.
   2. Overlap counter flashing 4 inches over base flashing, lap ends of sheets 3 inches.
   3. Solder joints in galvanized sheet metal counter flashings.

B. Multiple Pipe Penetration Flashing:
   1. Install over base ply of modified bitumen roof membrane setting flanges in roofing cement.
   2. Install where indicated with soldered joints.
   3. Solder all joints.
   4. Seal openings in metal decking with non-combustible material prior to installing non-shrink grout.
   5. Install non-shrink grout in bottom of penetration dam.
   6. Install pourable sealer over non-shrink grout after the non-shrink grout has fully cured.
   7. Install flashing hood as detailed, securing such in place with sheet metal fasteners.

C. Cleats:
   1. Install as required to allow for the bottom edge of the exterior side of the coping to match the existing elevation.
   2. Anchor to suitable substrate.

D. Hung Gutters:
   1. Install plumb and level, attached to substrate with nails installed at 6 inches on center.
   2. Install butt type expansion joints where indicated.
   3. Install outlet thimbles at downspouts.

E. Downspouts:
   1. Install plumb and level, attached to wall with gutter brackets anchored to substrate with expansion anchors.
   2. Provide 3 evenly spaced 2-inch-wide hemmed prefinished sheet metal wall brackets for each downspout.

F. Parapet Liner Panels:
   1. Install plumb and level, attached to studs with fasteners at 12 inches on center vertically and 8 inches on center horizontally. Minimum 2 fasteners vertically, 2 inches from the top and bottom of the panel.

2. Lap adjacent panels 1 full corrugation with a continuous bead of sealant and stitched together with fasteners at 6 inches on center in the laps.
3. Install accessories as detailed and as otherwise required to make the entire assembly watertight.
4. Lap the top of all J-Trim and other accessories with air/weather barrier self-adhered membrane.

**3.04 CLEANING:**

A. Leave work clean and free of stains, scrap, and debris.

**3.05 MOUNTING OF WARRANTY:**

A. Mount professionally framed in close proximity to the door providing access to the roof a copy of the specified warranty.

**END OF SECTION**

# SECTION 07 6140

# STANDING SEAM METAL ROOFING

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

A. Non-structural, standing seam metal roof system over composite deck assembly, with all necessary flashing and trim to produce a complete and watertight installation.

### 1.2 REFERENCES

A. American Society for Testing and Materials:
   1. ASTM A 153 - Zinc Coating (Hot Dip) or Iron and Steel Hardware.
   2. ASTM A 446 - Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Structural (Physical) Quality.
   3. ASTM B 209 - Aluminum Alloy, Sheet and Plate
   4. ASTM E 84 - Surface Burning Characteristics of Building Materials

B. American Institute of Steel Construction
   1. Code of Standards

C. Underwriters Laboratories: UL 580 - Roof uplift testing protocol.

D. Underwriters Laboratories: - UL Class A Fire Rated Assembly.

### 1.3 DEFINITIONS

A. UL 580 - All insulation and metal roofing components are to be secured in accordance with system that has been tested and found passing 90 psf wind uplift resistance according to UL 580- testing protocol.

### 1.4 SYSTEM DESCRIPTION

A. Pre-formed standing seam metal roofing system with mechanically seamed ribs applied over self-adhered underlayment over nailbase with compatible/matching closures, fittings and trim components. Roofing system components shall be as follows:
   1. Pre-formed Standing Seam Metal Roof:
   2. Nailbase and underlayment over existing structural metal deck.

B. Performance Requirements: Roofing System shall prevent water migration into the building through the metal roof system or its flashing and shall resist the force of wind at a design speed of 90 mph in accordance with the requirements of ASCE-7-10, utilizing a Building Occupancy Category of III.

### 1.5 PERFORMANCE REQUIREMENTS

A. General Performance: Metal roof panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Air Infiltration: Air leakage through assembly of not more than 0.06 cfm/sq. ft. of roof area when tested according to ASTM E 1680 at Negative 1.57 lbf/sq. ft. test-pressure difference.

C. Water Penetration: No water penetration when tested according to ASTM E 1646 at 2.86 lbf/sq.ft. test-pressure difference.

D. Hydrostatic-Head Resistance: No water penetration when tested according to ASTM E 2140.

E. Wind-Uplift Resistance: Provide metal roof panel assembly that will resist wind loads as calculated according to ASCE 7-10 as follows:
   1. Design Windspeed: 90 miles-per-hour (3 second gust).
   2. Exposure Category: C
   3. Occupancy Class: III
   4. Safety Factor: 1.67

## 1.6 SUBMITTALS

A. Product Data: Provide data describing physical and performance characteristics and limitations including span tables; component profiles, fastening methods, joint detailing, and accessories; standard sizes, surface.

B. Shop Drawings: Provide complete system drawings, including fully dimensioned panel layout, construction details, means of anchorage, method and sequence of installation, locations and size of shop cut openings, and type of closures, trim and fittings.

C. Samples:
   1. Submit color chart of all pre-finished and/or galvalume metal to be used.
   2. Submit 12" x 12" sized sample illustrating selected profile, surface texture and color.

D. Installers Certificate: Certifying that products and systems have been installed according to manufacturer's installation instructions and applicable codes and ordinances.

E. Manufacturer's Installation Instructions: Include installation sequence, special instructions and Material Safety Data Sheets.

F. Manufacturer's Certificate: Certificate stating products meet or exceed all specified requirements and that systems have been designed according to applicable codes and ordinances.
   1. Certification from manufacturer indicating the proposed roof system has been tested according to UL 580 protocol and found passing the specified uplift criteria.

G. Maintenance Data: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

H. Contract Closeout Submittals:
   1. Project Record Documents.
   2. Contractors Five Year Labor and Material Warranty.
   3. Manufacturers Twenty Year System Warranty.
   4. Manufacturer’s Twenty-Year Metal Finish Warranty

## 1.7 QUALITY CONTROL

A. Work of this Section shall conform to these specifications and the detail drawings provided, in conjunction with the approved Manufacturer's written instructions.

B. Qualifications for Work of this Section:
   1. Manufacturer specializing in the manufacturer of products in this Section with a minimum ten years documented experience of those products being used.
   2. Applicator specializing in the Work and Products of this Section with a minimum of five years documented experience and approved by the Manufacturer to install the approved roof system.

C. Regulatory Requirements:
   1. Conform to all applicable local codes for roof assembly fire hazard and wind up-lift resistance.

2. Provide certification of inspection confirming approval of design and installation by authority having jurisdiction.

D. Pre-Installation Conference:
1. Convene a roofing pre-installation conference two weeks prior to commencing work of this Section, under provisions of applicable Section.
2. Require attendance of parties directly affecting Work of this Section.
3. Review conditions of demolition, if applicable, installation, installation procedures and coordination with related Work.

## 1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver products to the site and store/protect on site under provisions of applicable Section.

B. Deliver products in manufacturer's original containers, dry, undamaged, with seal and labels intact. Include test report data.

C. Store products in weather protected environment clear of ground moisture.

D. Cut plastic wrapping materials to encourage ventilation.

E. Do not store more materials on the roof than can be installed within two days.

## 1.9 PROJECT CONDITIONS

A. Do not apply roofing underlayment during inclement weather.

B. Do not apply roofing system to deformed or misaligned deck or substrate.

## 1.10 SEQUENCING AND SCHEDULING

A. Coordinate work under provisions of applicable Section.

B. Coordinate work with other trades and work to ensure sufficient materials and manpower are available to completely install and make water-tight all roofing installed on a daily basis.

C. Coordinate installation of metal flashing and roof related items as Work of this Section proceeds.

## 1.11 WARRANTY

A. Contractor Warranty: Warranty form in which Installer agrees to repair or replace components of sheet metal roofing that fail in materials or workmanship within the stated warranty period.
1. Failures include, but are not limited to, the following:
a. Structural failures, including but not limited to rupturing, cracking, or puncturing.
b. Wrinkling or buckling.
c. Loose parts.
d. Failure to remain weather tight, including uncontrolled water leakage.
e. Deterioration of metals, metal finishes, and other materials beyond normal weathering, including non-uniformity of color or finish.
f. Galvanic action between sheet metal roofing and dissimilar materials.
2. Warranty Period: Five (5) years from date of Substantial Completion.

B. Weather Tightness Warranty
1. Weathertightness Warranty: Manufacturers Single Source weathertightness warranty.
2. Warranty Term: 20 years commencing on Date of Substantial Completion.
3. Total Manufacturers Liability: NRL (No Repair Limit) /sq. ft.

4. Warranty must cover pipe and curb penetrations, winds up to 85 mph
   a. Pipes must be centered in the panel or a pipe curb must be used, Curbs must be all welded (0.0630 minimum) aluminum or 18ga. Stainless Steel.
   b. Manufacturer must supply engineered installation shop drawings, signed and sealed by an Engineer registered in the state in which the project is located.
   c. Structural failures, including but not limited to displacement owing to wind speeds not greater than 85 mph.
   d. Wrinkling or buckling resulting from wind speeds not greater than 85 mph.
   e. Failure to remain weather tight, including uncontrolled water leakage.
   f. Deterioration of metals, metal finishes, and other materials beyond normal weathering, including non-uniformity of color or finish.

C. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal roofing that shows evidence of deterioration of factory-applied finishes within specified warranty period.
   1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
      a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
      b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
      c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
   2. Finish Warranty Period: Twenty (20) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. Roof System: Basis of design
   1. McElroy, Inc. T-238 Panel.
   2. Other acceptable manufacturers:
      a. Pac-Clad, T-250.
   3. Substitutions: Not permitted.

### 2.2 MATERIALS

A. Standing Seam Roof System: Basis of Design; McElroy Metal, Inc. - Maxima Panel, mechanically seamed, metal panel roof system.
   1. Roof Panels: Shall be pre-finished, Metallic-Coated Steel Sheet: Restricted flatness steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
      a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653, G90 coating designation; structural quality.
      b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792, Class AZ50 coating designation, Grade 40; structural quality.
      c. Surface: Smooth, with striations.
      d. Exposed Coil-Coated Finish: 2-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
      e. Color: As selected from manufacturer’s standard colors.

   NOTE: All materials used in this Section shall match those accessory flashing components specified in Section 07 62 00 – Sheet Metal Flashing & Trim.

B. Nail Base Rigid Insulation: Basis of Design; AC Foam to provide R-25.
   1. Other approved manufacturers:
      a. Atlas.
      b. GAF.
      c. Hunter.

C. Accessories
   1. Internal and External Corners: Matching metal as standing seam roof system.
   1. Mechanical Fasteners for Nailers and Insulation to Steel Deck: #14 screws with corrosive resistant coating (able to pass 30 K cycles) and compatible metal plates; sufficient screw shank length to penetrate steel deck in accordance with manufacturer's instructions.
   3. Sealants and Gaskets: Manufacturer's standard type suitable for use with installation of metal roof system; non-staining; skinning; non-shrinking; non-sagging; ultra-violet resistant for exterior applications; color as selected.
   4. Contour Closures: Waterproof, all weather type, cured resilient without final set.
   5. Fasteners - Metal Roof Clip/Cleat Use: Stainless steel, and as tested, and approved by metal panel manufacturer.
   6. Touch-Up Paint: As supplied from and by the manufacturer to match finish.
   7. Bituminous Paint: As approved by manufacturer, in writing.
   8. Underlayment:
      a. Basis of Design: Grace Ice & Water Shield HT.
      b. Other acceptable manufacturer: Carlisle WIP 300 HT.
   9. Concealed Panel Clips:
      a. Articulating and rigid stainless-steel clips as supplied by metal roof manufacturer for the tested roof system meeting these specifications.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Remove existing standing seam metal roof, taking care to not damage the existing plywood deck.

B. Verify that surfaces and site conditions are ready to receive work. Verify that existing plywood deck has not been damaged and remains in usable condition. Replace any deck which has been damaged or otherwise deteriorated with like material.

C. Verify that there are no roof openings, nor any pipes, sleeves, nor vents through the roof. Any openings or penetrations through the pre-formed metal roof system are to be brought to the attention of the Architect.

D. Verify that structural framing members are sufficiently sound to receive and hold deck and associated members; ensure all structure and deck is aligned within tolerances in the AISC Code of Standards.

E. Take site dimensions affecting Work of this Section.

F. Report any discrepancies to the Owner and Architect in writing.

G. Beginning of installation means installer accepts existing surfaces.

### 3.2 INSULATION INSTALLATION

A. Insulation Panels: Install nail-base insulation panels in accordance with manufacturer's written instructions, and as follows.
   1. Neatly cut and fit nail-base around penetrations and at roof perimeters. Any gaps in insulation exceeding 1/4 inch in width shall be filled with insulation.
   2. Secure nail-base with fasteners and pattern as required to resist wind uplift.
   3. Install no more nail-base at one time than can be covered with self-adhering underlayment in the same day. Any nail-base left exposed at the end of the workday, or which is exposed to water, shall be removed and discarded with no exceptions.
   4. Install temporary water cut-offs at completion of each day's work and remove upon resumption of work.

### 3.3 UNDERLAYMENT

A. Self-Adhering Underlayment: Clean nail-base of all debris, including sawdust. Ensure deck is dry. Prime deck as recommended by the underlayment membrane manufacturer. Install self-adhering underlayment in strict accordance with the manufacturer's written instructions. Shingling in the direction of waterflow, lapping 3 inches minimum at side laps and 4 inches minimum at end laps, with no wrinkles, unadhered areas, fish-mouths, or tears. Underlayment to provide 100% coverage.

### 3.4 FABRICATION

A. Roof Panels: Minimum .024 steel sheet stock (heavier gages as necessary for span and conditions encountered); continuous panels to eliminate horizontal joints. Ensure product and system choice will conform to slopes and wind speed specified.

B. Internal and External Corners: Same matching sheet materials; thickness and finish to match roof panel; profile to suit system and seams as encountered; brake formed, shop cut and factory mitered to required edges, angles and tolerances.

C. Expansion and Control Joints: Same materials and finish as panels; manufacturer's standard, shop-formed to profiles detailed.

D. Trim, Closure Pieces, Caps and Fascia: Same material, thickness and finish as sheet and panel stock; brake formed to required profiles.

E. Anchorage and Support Members: As dictated by manufacturer for system being installed.

F. Fabrication of component profiles, corner trim, or closures on the job site is prohibited.

G. Ridge, curb, or other prefabricated accessory shall be by metal panel manufacturer only and shall match profile of standing seam panel to which it shall nest and joint to.

### 3.5 METAL ROOF SYSTEM APPLICATION

A. Clips:
   1. Install metal panel concealed articulating and rigid cleats in proper spacing so as to achieve specified wind up-lift resistance. Use not less than two (2) fasteners per clip.
   2. Fasten clips completely through existing purlins.

B. Install continuous metal roof panels working from eaves edge to ridge with no seams.
   1. At All Roofs: Panels are to be fixed at the eave and allowed to expand and contract at the Ridge or high point.
   2. Manufacturer's written instructions are to be observed and followed throughout installation of metal roof system.

C. Install sealant at all side laps prior to engaging adjoining panels. Adjoining panels are to be joined by a proprietary mechanical seaming machine.

D. Install closures, trim, and accessories meeting all manufacturer's specifications and requirements to achieve complete water-tight metal roof assembly.

E. Protect surfaces in contact with cementitious materials and dissimilar metal with bituminous paint. Allow to dry prior to installation.

F. Fastening of roof system, cleats, accessories and the like shall be aligned with structure, level and plumb within specified tolerances. Provide expansion and control joints where required and to reduce oil canning or stress.

G. Remove site cuttings promptly from finish surfaces, and at the end of each day's work.

H. Prohibit foot and cart traffic over newly applied roof system.

**3.6 FIELD QUALITY CONTROL**

A. Field inspection and testing will be performed under provisions of applicable Section.

B. Correct identified defects or irregularities. Cut out and replace defective panels before end of each day or as dictated by Owner's Representative.

**3.7 MANUFACTURERS FIELD SERVICES**

A. Require site attendance of roofing materials manufacturers during installation of the Work. Panel manufacturer's representative will be on site to observe initial application of the roofing system.

**3.8 CLEANING**

A. Remove visible markings from finished areas and surfaces leaving all exposed surfaces smooth and free of imperfections.

B. In areas where finished surfaces are soiled by Work of this Section, consult manufacturer of soiled surface(s) for cleaning advice and conform to their documented instructions.

C. Repair or replace defaced or disfigured finishes caused by Work of this Section.

**3.9 PROTECTION**

A. Protect finished Work under applicable Section.

END OF SECTION 07 61 40

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**SECTION 07 7100**

**ROOF SPECIALITIES**

## PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Manufactured copings.

1.2 RELATED REQUIREMENTS

A. Section 07 6000 - Sheet Metal Work.

B. Section 07 7200 - Roof Accessories.

1.3 REFERENCE STANDARDS

A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 2005.

B. ANSI/SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems, American National Standards Institute/Single-ply Roofing Institute.

C. FM DS 1-49 - Perimeter Flashing; Factory Mutual Research Corporation.

D. (SMACNA) - Architectural Sheet Metal Manual, 7th Edition, 2012.

1.4 SUBMITTALS

A. Procedures for Submittals: Section 01 3300.

B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.

C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.

D. Samples: Submit one appropriately sized sample of each coping profile. Submit verification sample of pre-finished metal color.

E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual details, FM DS 1-49 and ANSI/SPRI ES-1.

1.6 WARRANTY

A. Provide Owner a written warranty which shall warrant metal coping system to be free of leaks and defects in materials and workmanship for 5 years after date of Substantial Completion.

B. Provide finish warranty for 20 years against defects in finish including fading, chipping and chalking.

## PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Copings:
1. Viridian Systems; Product Permasnap Coping.
2. Metal Era; Perma-Tite Coping.

B. Edge Metal:
   1. Metal Era; Anchor-Tite.

2.2 COMPONENTS

A. Copings: Formed 24-gauge prefinished galvanized steel, custom shaped as indicated, including special supports spaced at 60 inches on center. Include cover plates to conceal and weather seal joints and attachment flanges. Copings tested to meet requirements of ANSI/SPRI ES-1
   1. Internal Splice Plates: Concealed with matching finish to maintain outside face continuity.
   2. Coping Finish: Fluoropolymer coating (High Performance).
   3. Color: To match existing.

B. Contractor's Option: Shop fabricated copings may be substituted for manufactured copings providing that independent testing of fabricated copings is performed in accordance with ANSI/SPRI ES-1, refer to Section 07 6000.

2.3 ACCESSORIES

A. Anchor Cleats: Formed anchor cleat with integral drainable gutter, 20 ga. galvanized steel.

B. Sealant: Type silicone sealant as specified in Section 07 5900.

2.4 FINISHES

A. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604; multiple coats, thermally cured fluoropolymer finish system; color to match existing.

**PART 3 - EXECUTION**

3.1 EXAMINATION

A. Verify that walls, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.2 INSTALLATION

A. Install components in accordance with manufacturer's instructions and in accordance with SMACNA Architectural Sheet Metal Manual, FM DS 1-49 and ANSI/SPRI ES-1.

B. Install work watertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction.

C. Securely fasten copings with concealed fasteners, anchors and cleats.
   1. Cleats: Secure with fasteners spaced at 12-inch centers maximum.
   2. Copings: Secure at exterior face to continuous cleat and at interior face with neoprene gasketed fasteners at 12-inch centers maximum through slotted holes.
   3. Double fasteners (decrease spacing by 1/2) at corners in accordance with ANSI/SPRI ES-.

D. Install copings plumb and level, and in true alignment.

**END OF SECTION**

# SECTION 07 72 00

# ROOF ACCESSORIES

## PART 1 - GENERAL

### 1.01 SECTION INCLUDES

A. Molded pipe supports.

B. Prefabricated roof curbs.

C. Multiple pipe penetration housings.

### 1.02 RELATED SECTIONS

A. Section 07 52 00 - Modified Bituminous Membrane Roofing.

B. Section 07 60 00 - Sheet Metal Work.

### 1.03 REFERENCES

A. ASTM D4586 - Fibrated Asphalt Roof Cement.

B. FS FF-S-325 - Shield Expansion; Nail, Expansion; and Nail, Drive-Screw.

C. FS TT-C-494A - Coating Compound, Bituminous, Solvent Type, Acid Resistant.

### 1.04 SUBMITTALS

A. Procedures for Submittals: Section 01 34 00.

B. Product Data: Provide manufacturer's product data sheets, including installation instructions.

C. Shop Drawings: Indicate following.
   1. Prefabricated Roof Curbs: Indicate inside and outside dimensions of curbs, height of curbs (at high side and at low side), weights of units being supported, gauge of metal selected to support scheduled load, location and size of fasteners and correlation to adjacent construction.

## PART 2 - PRODUCTS

### 2.01 PIPE/DUCT SUPPORTS:

A. Type 1:
   1. Qualities: Base 100% recycled rubber, UV resistant, 4” Height X 6” Width X 9.6” Length (Over all Height 8” or 12”). 14 gage galvanized steel Channel Strut designed to support conduit and condensate pipes above roof. Two ½” electro zinc plated all thread rod risers.
   2. Source: Mifab CE10-8.

B. Type 2:
   1. Base 100% recycled rubber, UV resistant, 6” Length of X 9.6”. Roller width – 3”, 4’ or 6” with total height 6” or 7”.
   2. Source: Mifab CR10-4.

C. Type 3:
   1. Base 100% recycled rubber, UV resistant, 4” Height X 6” Width X 9.6” Length (Over all Height 8” or 12”). 12 gage galvanized steel telescoping crossbeams and hot-roiled, zinc plated carbon steel vari-angle brackets.
   2. Source: Mifab DSA10.

**2.02 PREFABRICATED ROOF CURB:**

A. Qualities: Prefabricated insulated curb for mechanical equipment support fabricated from galvanized sheet steel, 18 ga. minimum, welded construction designed to support weight of unit being supported. Provide with preservative treated wood nailer.
   1. Fabricate curbs to compensate for roof slope at location of each curb unit.
   2. Fabricate curbs as required to provide 12” minimum clear flashing height above finished roof surface unless otherwise detailed.
   3. Fabricate curbs to width and length of unit being supported, less 1-1/2 in. overall to allow for membrane flashing installation.

B. Source:
   1. Model CRC-3 by Custom Curb, Inc.
   2. Model TC-3 by ThyCurb.

**2.03 PIPE PENETRATION HOUSING – THE VAULT:**

A. Product: The Vault by Roof Penetration Housings

B. Construction:
   1. 0.080 inch (2mm) thick aluminum housing and curb
   2. UV protected powder coated finish (2 mil (.05 mm) thick)
   3. Stainless Steel. V.P. fasteners
   4. Gasketed lid to housing and housing to curb connection joints to ensure compliance to ICC 2015 Air Permeance Levels
   5. Standard Color: Beige – To meet an initial SRI of 85 (White available for SRI 100)
   6. Seismic Available upon request. Seismic calculations, conditions to be furnished to RPH by engineer
   7. Constructed to withstand wind to 225+ MPH, third party tested.

C. Style & Sizes TWO MODELS AW SERIES AND THE AWI SERIES
   1. Series AW Vault – All Aluminum Construction, Zero Plastic, Wind rated to +225 mph and pre-insulated (R-2 for Condensate) V.P./S.S. Fasteners meets ICC 2015 Energy Code for Air Permeance Levels. The curb is not insulated.
      a. Mini-Tower Vault Model: AW-121022 - L- 12” W- 10” H-22”.
      b. Small Vault Model: AW-161010 - L- 16 ½” W- 9 ¾” H- 10”.
      c. Medium Vault Model: AW-201412 - L- 20 ½” W- 14 ½” H – 12”.
      d. Mega Vault Model: AW-343424 - L – 34” W – 34” H – 24”.
      e. Custom – Consult Factory – 1-800-994-0945
   2. Series AWI – Same as AW Series w/Pre-Insulated curb, 6” Thick, R-40 Factor, to meet ICC – 2015 Energy Code.
      a. Small Vault Model: AWI-161010 - L – 16 ½” W – 9 ¾” H – 10”
      b. Medium Vault Model: AWI-201412 - L – 20 ½” W – 14 ½” H – 12”
      c. Mega Vault Model: AWI-343424 - L – 34” W – 34” H – 24”

**2.04 RELATED MATERIALS**

A. Concrete and Masonry Fasteners: Round-head stainless steel screw and neoprene washer with lead expansion anchor, FS FF-S-325, Group IV, Type 2, Powers Rawl Screw Type Nailins.

B. Nails: Stainless steel material, flathead, wire, barbed, slating, type. For washers use lead or neoprene.

C. Flashing Cement: ASTM D4586, Type I; asbestos free.

D. Asphaltic Coating Compound: FS TT-C-494A, Type II.

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

A. Verify that substrates are smooth and clean to extent needed for roof accessories work.

B. Do not start work until conditions are satisfactory.

## 3.02 INSTALLATION

A. General:
1. Install work watertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction.
2. Coat contact surfaces of dissimilar metals with asphalt coating compound or zinc chromate paint.
3. Install curbs in accordance with manufacturer's instructions.

B. Pipe/Duct Supports:
1. Install Pipe Support - Type 1 under single small piping and conduit, other than gas piping.
2. Install Pipe Support - Type 2 under gas piping and piping and conduit 2 to 4 inch in diameter.
3. Install scheduled pipe supports at 8 ft. o.c. and within 2 ft. of each change of direction.
4. Secure pipe and conduit loosely in pipe support using metal strap fastened with two 1/2 in. No. 10 screws and provide pipe sleeves to prevent contact with dissimilar metals.
5. Install Duct Supports – Type 3 at ductwork at 4’-0” on center in linear direction and within 2’-0” of each in change of direction.

C. Prefabricated Roof Curbs:
1. Install prefabricated roof curb where shown
2. Set level and square on roof deck; securely fasten curb flanges to roof deck with appropriate fasteners for type of deck material. Seal bolt heads with flashing cement.

D. Pipe Penetration Housing:
1. Install prefabricated pipe penetration housing in accordance with manufacturer’s written instructions and approved shop drawings.

## 3.03 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

## 3.04 CLEANING

A. Leave work clean and free of stains, scrap, and debris.

**END OF SECTION**

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**SECTION 09 24 00**
**PORTLAND CEMENT PLASTERING**

## PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Exterior cement plasterwork (stucco) on metal lath.

B. Related Sections:
1. Section 07 27 26 "Fluid Applied Membrane Air Barrier" for air / water-resistant barrier included in cement plaster assemblies.
2. Section 07 92 00 "Joint Sealants" for joint sealants included in cement plaster assemblies.

1.2 ACTION SUBMITTALS

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

B. Shop Drawings: Show locations and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other work.

C. Samples for Initial Selection: For each type of factory-prepared finish coat indicated.

D. Samples for Verification: For each type of factory-prepared colored and textured finish coat indicated; 12 by 12 inches (305 by 305 mm), and prepared on rigid backing.

1.3 QUALITY ASSURANCE

A. Mockups: Before plastering, install mockups of at least 100 sq. ft. (9.3 sq. m) in surface area to demonstrate aesthetic effects and set quality standards for materials and execution. Construct mockup following construction assemblies as indicated (match wall construction from sheathing out).
1. Locate exterior mockups at location as directed by Architect.
2. Install mockups for each type of finish indicated.
3. Notify Architect 7 days in advance of the dates and times when mockups will be constructed.
4. Retain and maintain exterior mockups during construction in an undisturbed condition as a standard for judging the completed cement plaster Work.
a. Mockup may remain if undisturbed at the completion of the project.

B. Preinstallation Conference: Conduct conference at Project site.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.5 PROJECT CONDITIONS

A. Comply with ASTM C 1063 and ASTM C 926 requirements.

B. Exterior Plasterwork:

1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
2. Apply plaster when the ambient and surface temperature of the substrate does not exceed 120 deg F (49 deg C) during and 24 hours after application and not less than 50 deg F (10 deg C). Avoid applications in direct sunlight in hot weather.
3. Protect plaster coats from freezing for not less than 5-days after set of plaster coat has occurred.

C. Factory-Prepared Finish Coatings: Comply with manufacturer's written recommendations for environmental conditions for applying finishes.

D. Protect contiguous work from soiling and moisture deterioration caused by plastering. Provide temporary covering and other provisions necessary to minimize harmful spattering of plaster on other work.

## PART 2 - PRODUCTS

### 2.1 METAL LATH

A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60 (Z180), hot-dip galvanized zinc coating.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Alabama Metal Industries Corporation; a Gibraltar Industries company.
   b. CEMCO.
   c. Clark Western Building Systems.
   d. Dietrich Metal Framing; a Worthington Industries company.
   e. MarinoWARE.
   f. Phillips Manufacturing Co.
2. Diamond-Mesh Lath for Wall Substrates: Self-furring, 3.4 lb/sq. yd. (1.8 kg/sq. m).

### 2.2 BUILDING PAPER

A. Vapor Permeable Weather-Resistive Barrier: Two-ply asphalt saturated kraft Grade D breather type sheathing paper.
1. Reference Standard; Federal Specification UU-B-790a, Type 1, Grade D, Style 2.
2. Moisture Vapor Transmission: 35 grams minimum; ASTM F 1249.
3. Water Resistance: 60 minutes minimum; ASTM D 779.

### 2.3 ACCESSORIES

A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

B. Metal Accessories:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Alabama Metal Industries Corporation; a Gibraltar Industries company.
   b. CEMCO.
   c. Clark Western Building Systems.
   d. Dietrich Metal Framing; a Worthington Industries company.
   e. MarinoWARE.
   f. Phillips Manufacturing Co.
   g. Stockton Products.

2. Foundation Weep Screed: Fabricated from zinc alloy: Minimum 0.0207 inch (0.53 mm) thick.
3. Cornerite: Fabricated from metal lath from zinc alloy: Minimum 0.0207 inch (0.53 mm) thick.
4. External-Corner Reinforcement: Corneraid fabricated from metal lath of hot-dip galvanized zinc coating conforming to ASTM A 653/A 653M, G60 (Z180): Minimum 0.058 inch (1.48 mm) thick.
   a. Bull nose cornerbead, radius 3/4 inch (19.1 mm) minimum, with expanded flanges; use at locations indicated on Drawings.
5. Cornerbeads: Fabricated from zinc.
   a. Small nose cornerbead with expanded flanges; use unless otherwise indicated.
   b. Small nose cornerbead with perforated flanges; use on curved corners.
   c. Small nose cornerbead with expanded flanges reinforced by perforated stiffening rib; use on columns and for finishing masonry corners.
6. Casing Beads: Fabricated from zinc; square-edged style; with expanded flanges. [Provide custom casing beads to encapsulate the ridge insulation where indicated on Drawings.]
7. Control Joints: Fabricated from zinc; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
8. Two-Piece Expansion Joints: Fabricated from zinc; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4 to 5/8 inch (6.34 to 16 mm) wide; with perforated flanges.

## 2.4 MISCELLANEOUS MATERIALS

A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch (13 mm) long, free of contaminants, manufactured for use in cement plaster.

C. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with wafer head that is suitable for application; in lengths required to achieve penetration through joined materials of no fewer than three exposed threads.

D. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063 and ASTM C 954.

E. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch (1.21-mm) diameter, unless otherwise indicated.

F. Soffit Vented Reveal Drip Screed: Extruded aluminum, alloy 6063 T5, with clear anodized finish, 7/8 inch soffit support flange, 7/8-inch reveal width.
   1. Basis of Design: Fry Reglet; DS-875-V-875.

## 2.5 PLASTER MATERIALS

A. Portland Cement: ASTM C 150, Type I.
   1. Color for Finish Coats: White.

B. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

C. Sand Aggregate: ASTM C 897.
   1. Color for Job-Mixed Finish Coats: White.

D. Lamina Coat Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other Plaster materials, made from continuous multiend strands with retained mesh tensile strength of not less than 120 lbf/in. (21 dN/cm) per ASTM E 2098; complying with ASTM D 578 and the following:
   1. Reinforcing Mesh: Not less than 4.0 oz./sq. yd. (136 g/sq. m).

E. Acrylic-Based Finish Coatings: Factory-mixed acrylic-emulsion coating systems, formulated with colorfast mineral pigments and fine aggregates; for use over cement plaster base coats. Include manufacturer's recommended primers and sealing topcoats for acrylic-based finishes.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Acrocrete, BASF Wall Systems, Inc.; Acrotex.
      b. Dryvit Systems, Inc.; Dryvit TAFS.
      c. El Rey Stucco Company, Inc., a brand of ParexUSA, Inc.; Prema-Flex.
      d. Finestone, BASF Wall Systems, Inc.; PebbleTex.
      e. ParexUSA, Inc., DPR Finish.
      f. Senergy, BASF Wall Systems, Inc.; Senerflex.
      g. Sto Corp.; Powerwall Finish.
      h. BASF Wall Systems, Inc.; StuccoTex Finish.
   2. Color: Match existing. Where color does not match, coat from corner to corner.

2.6 PLASTER MIXES

A. General: Comply with ASTM C 926 for applications indicated.
   1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. yd. (0.6 kg of fiber/cu. m) of cementitious materials.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
   1. Portland Cement Mixes:
      a. Scratch Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
      b. Brown Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 3 to 5 parts aggregate per part of cementitious material, but not less than volume of aggregate used in scratch coat.
      c. Skim Coat: 100% acrylic polymer based, requiring the addition of Portland cement.

C. Factory-Prepared Finish-Coat Mixes: For acrylic-based finish coatings, comply with manufacturer's written instructions.

**PART 3 - EXECUTION**

3.1 EXAMINATION

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

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

3.2 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare solid substrates for plaster that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

3.3 INSTALLING BUILDING PAPER

A. Do not apply building paper until air-barrier work is complete and inspected by manufacturer.

B. Building Paper: Apply horizontally with a 2-inch (50-mm) overlap and a 6-inch (150-mm) end lap; fasten to sheathing with galvanized staples or roofing nails.

3.4 INSTALLING METAL LATH

A. Expanded-Metal Lath: Install according to ASTM C 1063.
   1. Partition Framing and Vertical Furring: Install self-furring diamond-mesh lath.
      a. Provide anchors at 6-inches on center, centered along framing supports spaced no greater than 16-inches on center.
   2. Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh lath.
      a. Provide attachment at 4-inches on center along framing supports spaced no greater than 24-inches on center.

3.5 INSTALLING ACCESSORIES

A. Install according to ASTM C 1063 and at locations indicated on Drawings.

B. Reinforcement for External Corners:
   1. Install lath-type, external-corner reinforcement at exterior locations.
   2. Install corneraid or cornerbead at interior locations.

C. Control Joints: Install control joints at locations indicated on Drawings or, if not indicated, at specific locations approved by Architect for visual effect as follows:
   1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
      a. Vertical Surfaces: 144 sq. ft. (13.38 sq. m).
      b. Horizontal and other Nonvertical Surfaces: 100 sq. ft. (9.3 sq. m).
   2. At distances between control joints of not greater than 18 feet (5.5 m) o.c.
   3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.
   4. Where control joints occur in surface of construction directly behind plaster.
   5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.
   6. Wire tie control joints continuously to metal lath on both sides of joint.

D. Sealant: Apply sealant bead to all control joints after plaster installation is complete.

3.6 PLASTER APPLICATION

A. General: Comply with ASTM C 926.
   1. Do not deviate more than plus or minus 1/4 inch in 10 feet (6.4 mm in 3 m) from a true plane in finished plaster surfaces, as measured by a 10-foot (3-m) straightedge placed on surface.

2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

B. Metal Framed Substrates:
1. Walls: Apply scratch and brown coats for three-coat plasterwork to 3/4-inch (19-mm) thickness.
a. Allow brown coat to set for 5-days before installing lamina coat.
b. Apply lamina skim-coat to brown coat and embed reinforcing mesh in wet skim coat plaster to produce wrinkle-free installation with mesh continuous at corners and overlapped not less than 2-1/2 inches (64 mm). Do not lap reinforcing mesh within 8 inches (204 mm) of corners. Completely embed mesh, applying additional skim-coat material if necessary, so reinforcing-mesh color and pattern are not visible.

C. Acrylic-Based Finish Coatings: Apply coating system, including primers, finish coats, and sealing topcoats, according to manufacturer's written instructions. Finish coat to provide texture to match existing.

## 3.7 PLASTER REPAIRS

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

## 3.8 PROTECTION

A. Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

**END OF SECTION**

# SECTION 09 96 53

# ELASTOMERIC COATINGS

## PART 1 - GENERAL

### 1.1 SUMMARY

A. Section Includes: Surface preparation and application of elastomeric coatings to the following exterior substrates:

1. Stucco.

### 1.2 ACTION SUBMITTALS

A. Product Data: Technical data and product information for block fillers, primers, paints, and coatings, including label analysis and instructions for handling, storing, surface preparation, and application for each paint and coating system.

1. For field painting of factory primed metal products and fabrications, submit technical data for each type of paint product, surface preparation requirements, and application instructions.
2. Indicate manufacturer's instructions for special surface preparation procedures and substrate conditions requiring special attention.
3. Product List: Provide inclusive list of required coating systems and materials. Indicate each material and cross reference specific coatings, finish system, and application. Identify each material by manufacturer's catalog number, series, and general classification. Use same designations indicated in Finish Schedules.

B. Samples: Submit for each type of elastomeric coating indicated and each color and gloss.

1. Submit Samples on same type of substrate as that to receive application, 8 inches (200 mm) square.
2. Apply coats on Samples in steps to show each separate coat, including primers and block fillers as applicable.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

C. Product List: Cross reference to paint and coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

### 1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For applicator.

B. Sample Warranty: For special warranty.

## 1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with Federal and local toxicity and air quality regulations and with Federal requirements on content of for heavy metals including but not limited to lead and mercury. Do not use solvents in paint products that contribute to air pollution.

B. Applicator Qualifications: Entity having minimum 5 years documented experience in applying elastomeric coatings similar in material, design, and extent to those indicated.

C. Source Limitations: Obtain cementitious coating materials from single source and from single manufacturer.

D. The Contractor shall coordinate the Project Schedule to allow compliance with the required application temperatures for the specific products specified, without substitution. Unspecified products that do not meet all criteria of this Section are subject to rejection.

1. Lower Temperature Application Option: Refer to Part 2.

E. 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. Architect will select one surface to represent surfaces and conditions for application of each paint system.

    a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft (9 sq. m).
    b. Other Items: Architect will designate items or areas required.

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 Architect 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.

## 1.5 COORDINATION

A. Coordination of Work: Coordinate field finishing of shop primed metals are provided to ensure compatibility of total systems for various substrates.

## 1.6 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 degrees F (7 degrees C).

1. Protect elastomeric coating materials from freezing or becoming hot.
2. Maintain containers in clean condition, free of foreign materials and residue.

## 1.7 FIELD CONDITIONS

A. Do not thin or add water to waterbased paints, including waterbased alkyds.

B. Weather Conditions:

1. Apply coatings when temperature of surfaces to be painted and ambient air temperatures are between 50 and 90 degrees F (10 degrees C and 32 degrees C).
2. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F (3 degrees C) above the dew point; or to damp or wet surfaces.
3. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (35 degrees C) for exterior, unless otherwise indicated by manufacturer’s Product Data Sheet.

C. Lower Temperature Option: Refer to Part 2 for an option for lower temperature application. Installation shall be by a single product for the entire Project.

D. Coating application may continue during inclement weather if surfaces and areas to receive paint and coatings are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

E. Provide lighting level of 80 foot candles (860 lx) measured midheight at substrate surface.

F. Labels: Do not paint over Underwriters Laboratories, Factory Mutual, other code required labels, or equipment name, identification, performance rating, or nomenclature plates.

## 1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace elastomeric coatings that fail within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Water penetration through the coating.
b. Deterioration of coating beyond normal weathering.

2. Warranty Period: 10 years from date of Substantial Completion.

## 1.9 EXTRA MATERIALS

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. Quantity: Furnish an additional 5 percent but not less than 1 gal. (3.8 L) of each material, color, and texture applied.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

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

1. BASF Corporation.
2. Kelly-Moore Paint Company Inc.
3. PPG Paints.
4. Pratt & Lambert.
5. Sherwin-Williams Company (The).

B. Source Limitations: Obtain elastomeric coating materials from single source and from single manufacturer.

## 2.2 PERFORMANCE REQUIREMENTS

A. Performance and Durability:

1. ASTM D16 Standard Test Method for Load Testing Refractory Shapes at High Temperatures.
2. ASTM D412 Rubber Properties in Tension.
3. ASTM D16 53 Test Methods for Water Vapor Transmission of Organic Coating Films.
4. ASTM D2486 Standard Test Method for Scrub Resistance of Interior Wall Paint.
5. ASTM D2805 Standard Test Method for Hiding Power of Paints by Reflectometry.
6. ASTM D4828 Standard Test Method for Practical Washability of Organic Coatings.

B. Material Compatibility:

1. Materials for use within each coating system shall be 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 coating system, products shall be recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

## 2.3 MATERIALS

A. Products: Subject to compliance with requirements, provide one of the following:

1. BASF Building Systems: MasterProtect EL 750.
2. Kelly-Moore: Kelly-Moore Premium; Kel-Seal Urethane Modified Acrylic Elastomeric Coating DU0080920.
3. PPG: Perma-Crete Pitt-Flex Elastomeric Coating 4-110.
4. Pratt & Lambert: Pro-Hide Gold; Exterior Elastomeric Coating Z6000.
5. Sto: StoSilco Lastic; StoSilco Lastic 80222.
6. Sherwin Williams; Conflex ConFlex XL Smooth Elastomeric High Build Coating A5-800 Series.

B. Elastomeric Paint Coating: Factory formulated, 100 percent acrylic or silicone emulsion finish coating materials, compatible with substrate, filler, and primer required.

1. Physical Properties:

a. Elongation at Break: Not less than 240 percent when tested according to ASTM D412 or ASTM D2370.
b. Low Temperature Flexibility: Passes 1/8 inch, 180 degree mandrel bend at minus 10 degrees F at 20 mil dry film thickness when tested according to ASTM D552.
c. Tensile Strength: Not less than 220 psi when tested according to ASTM D412 or ASTM D2370.
d. Water Vapor Permeability: Not less than 10 perms when tested according to ASTM D1653 or ASTM E96.
e. Wind Driven Rain Test: No water penetration when tested according to ASTM D6904.
f. Minimum Dry Film Thickness per Coat: Not less than 10 mils.
g. Minimum Solids Content by Volume: Not less than 45 percent.

C. Moisture Vapor Transmission: Minimum 34.4 perms, based on testing according to ASTM D1653.

D. Texture: Light, unless otherwise indicated.

E. Colors: As selected by Architect from manufacturer’s full range.

F. Crack Fillers: Elastomeric coating manufacturer's recommended, factory formulated crack fillers or sealants, including crack filler primers, compatible with substrate and other materials indicated.

G. Primer: Elastomeric coating manufacturer's recommended, factory formulated, alkali resistant primer compatible with substrate and other materials indicated.

## 2.4 LOWER APPLICATION TEMPERATURE OPTION

A. The Basis of Design and other listed products are susceptible to freezing and shall not be applied outside the indicated temperature conditions. The only acceptable option for

lower application temperatures is as included in this Article. Installation shall be by a single product for the entire Project; exercising this option requires the same material to be applied for all elastomeric coating areas of the Project.

1. Silicone Elastomeric Coating: Single component pigmented silicone elastomer.
2. Coating properties meeting the following:

    a. Solids Content: 58.6 percent by weight; 50.1 percent by volume when tested in accordance with ASTM D2369.
    b. Specific Gravity: 9.64 lb / gallon when tested in accordance with ASTM D1475.
    c. Durometer Hardness, Shore A: 38 points when tested in accordance with ASTM D2240.
    d. Tensile Strength: Less than 145 psi when tested in accordance with ASTM D412.
    e. Elongation: 600 Percent when tested in accordance with ASTM D412.
    f. Permeance: 43.2 English Perms per ASTM D1653.
    g. Fungus Resistance: No growth when tested in accordance with ASTM D3274.
    h. Wind Driven Rain: Pass when tested in accordance with ASTM D6904.
    i. Freeze/Thaw Resistance: No change when tested in accordance with ASTM D2243.

3. Basis of Design: DOWSIL AllGuard Silicone Elastomeric Coating. May be applied only within the temperature limitations indicated in the manufacturer’s published literature.

## 2.5 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to project site, samples may be taken at project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine substrates and conditions for compliance with manufacturer's requirements for maximum moisture content, alkalinity, and conditions affecting performance of work.

B. Test substrates for moisture and alkalinity after repairing and cleaning substrates but prior to application of paint and coatings.

1. Commence coating when moisture content of substrate is 12 percent or less when measured with an electronic moisture meter.

C. Begin coating no sooner than 28 days after substrate is constructed and is visually dry on both sides.

D. Verify that substrate is within the range of alkalinity recommended by manufacturer.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

F. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

1. Verify previously painted surfaces can be stripped to bare substrate, repaired if necessary, and prepared to receive new paint or coating system consisting of primer and two top coats at a minimum.

a. Where previously painted surfaces failed to accept new paint systems, determine cause of failure and take corrective measures to ensure each surface accepts new paint or coating system. Failure of new paint system is not permitted.

G. Commence coating application after correcting unsatisfactory conditions and surfaces are dry.

### 3.2 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.

B. Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.

1. After completing coating operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface applied protection if any.

C. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, and incompatible paints, coatings, and encapsulants. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

1. Remove incompatible primers and reprime substrate with compatible primers as required to produce coating systems indicated.
2. Perform cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.
3. Cementitious Surfaces: Prepare surfaces of concrete, concrete masonry, and similar surfaces to receive elastomeric coatings by removing efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar conditions by water blasting followed by a clear water rinse.
4. Remove mildew and neutralize surfaces according to manufacturer's recommendations before materials are applied.
5. Determine alkalinity and moisture content of surfaces to be coated by testing. Do not apply coatings over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

D. Crack Repair: Fill cracks according to manufacturer's written instructions before coating surfaces.

## 3.3 APPLICATION

A. Apply elastomeric coatings according to manufacturer's written instructions.

1. Use equipment and techniques best suited for substrate and type of material being applied.
2. Coat surfaces behind movable items the same as similar exposed surfaces.
3. Apply each coat separately according to manufacturer's written instructions.

B. Primers: Apply at a rate to ensure complete coverage.

C. Elastomeric Finish Coat(s): Minimum two coats with a total dry film thickness of 16 to 18 mils (0.41 to 0.45 mm).

D. Where tinting, tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats similar to color of topcoat but provide sufficient difference in shade of undercoats to distinguish each separate coat.

E. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform finish, color, and appearance.

F. Apply coatings 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.

G. Apply coatings to prepared surfaces as soon as practicable after preparation and before subsequent surface soiling or deterioration.

H. Spray Application: Use spray equipment for application when permitted by authorities having jurisdiction. Wherever spray application is used, do not double back with spray equipment to build up film thickness of two coats in one pass.

## 3.4 FIELD QUALITY CONTROL

A. Testing of Paint and Coating Materials: Owner reserves the right to invoke the following testing procedures:

1. Owner will engage the services of a qualified testing agency to sample materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
2. Testing agency will perform the following tests for compliance of materials with product requirements.

    a. Quantitative materials analysis.
    b. Elongation at break.
    c. Tensile strength.
    d. Percent of recovery.
    e. Resistance to wind driven rain.
    f. Water vapor transmission.

3. Owner may direct Contractor to stop coating application if test results show materials being used do not comply with requirements. Remove noncomplying materials from Project site, pay for testing, and recoat surfaces that were coated with rejected materials. Remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

B. Field Testing and Inspection: Owner reserves the right to engage the services of a qualified testing agency to verify installed thickness of elastomeric coatings.

## 3.5 CLEANING AND PROTECTION

A. At end of each day, remove rubbish, empty cans, rags, and discarded materials from project site.

B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from coating 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, touch up and restore damaged or defaced coated surfaces.

## 3.6 EXTERIOR COATING SCHEDULE

A. Stucco: Two finish coats over primer with a total dry film thickness not less than 20 mils.

1. Primer: Manufacturer's recommended primer.
2. First Coat: Elastomeric coating.
3. Second Coat: Elastomeric coating.

**END OF SECTION**

# ROCKWALL ISD
# ROCKWALL HEATH HS ROOF REPLACEMENT
## ISSUE FOR CONSTRUCTION

Deadline: April 2, 2026 - 2PM

## SHEET LIST

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| | |
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| RD1.01 | DEMOLITION ROOF PLAN - AREA A & B |
| RD1.02 | DEMOLITION ROOF PLAN - AREA C |
| RD1.03 | DEMOLITION ROOF PLAN - AREAS D1 AND E1 |
| RD1.04 | DEMOLITION ROOF PLAN - AREAS A2, C4 AND F1 |
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| R2.01 | ROOF DETAILS |
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| R3.01 | ISOMETRIC ROOF DETAILS |
| R4.00 | WINDOW ELEVATION AND DETAILS |

## CODE INFORMATION

**PROJECT DATA AND CODE INFORMATION**

| | |
|---|---|
| **PROJECT DATA** | |
| PROJECT NAME: | ROCKWALL HEATH HS ROOF REPLACEMENT |
| PROJECT ADDRESS: | 801 Laurence Dr, Heath, TX 75032 |
| | |
| OWNER: | ROCKWALL ISD |
| **APPLICABLE CODES** | |
| | |
| BUILDING CODE: | IBC 2021 |
| ACCESSIBILITY CODE: | 2012 Texas Accessibility Standards |
| ELECTRICAL CODE: | NEC 2020 |
| ENERGY CODE: | ICC 2021 |
| FIRE CODE: | IFC 2021 |
| MECHANICAL CODE: | IMC 2021 |
| PLUMBING CODE: | IPC 2021 |
| REGIONAL OR MUNICIPAL CODE: | ENTER REGIONAL CODE |
| STORM SHELTER CODE: | ICC-500 2020 |

## PROJECT TEAM


### ARCHITECT

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214.748.2000
Paige Russell
paige.russell@corgan.com

### ROOFING

DRYTEC
8750 N. Central Expressway, Suite 725 Dallas, TX 75231
T: 214.363.2192

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214.748.2000


ISSUANCES

| | |
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| 02/26/2026 | ISSUE FOR CONSTRUCTION |

REGISTERED ARCHITECT
HANSBERGER, GEORGE SMITH
16318
STATE OF TEXAS

Date of issue:
02/26/2026

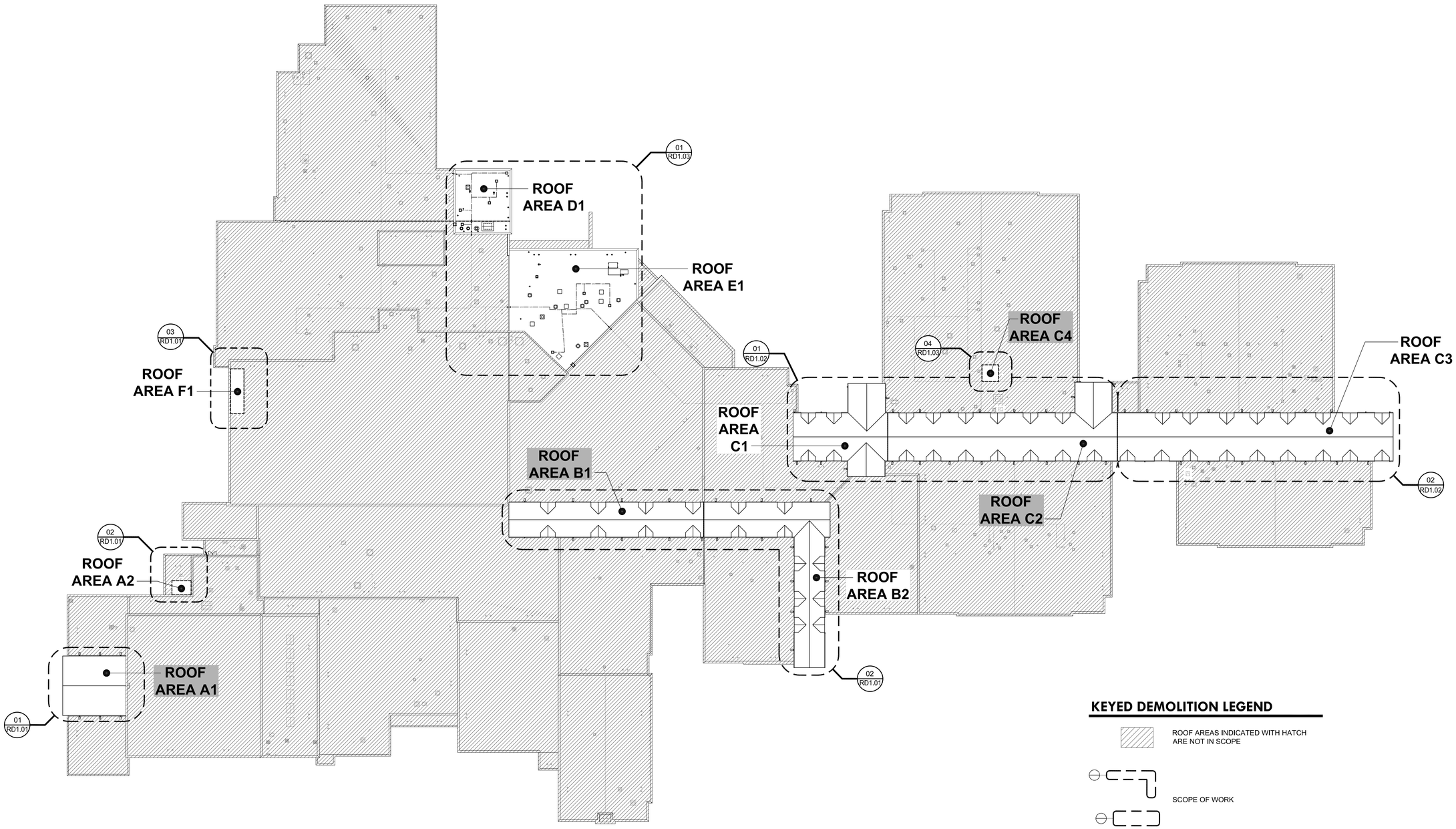
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ROCKWALL HEATH HS ROOF REPLACEMENT
801 Laurence Dr, Heath, TX 75032

| | |
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| **JOB** | 26004.0000 |
| **DATE** | 02/26/2026 |

COVER SHEET

COVER




## KEYED DEMOLITION LEGEND

ROOF AREAS INDICATED WITH HATCH ARE NOT IN SCOPE

SCOPE OF WORK

PLAN NORTH N

TRUE NORTH

## 01 OVERALL KEYED DEMOLITION ROOF PLAN

1/32" = 1'-0"

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection
Technology Consultants

| | ISSUANCES | |
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REGISTERED ARCHITECT DANIEL T. DeMERCHANT 14151 STATE OF TEXAS

Date of signing: 02-26-26

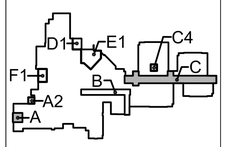
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

**JOB** 00000.0000
**DATE** 02/26/2026

**KEYPLAN**




OVERALL DEMOLITION ROOF PLAN

RD1.00

## EXISTING ROOF SYSTEMS

(BASED ON ORIGINAL CONSTRUCTION DOCUMENTS. COMPOSITION HAS NOT BEEN VERIFIED.)

ROOF AREA A1, B1, B2, C1, C2, AND C3:

- SLATE TILE ROOFING OVER
- 40 MIL, HIGH TEMP, SELF ADHERING ICE AND WATER SHIELD UNDERLAYMENT OVER
- 3/4" EXTERIOR GRADE F.R.T. WOOD OVER
- 1" INSULATION BOARD OVER
- 3" RIGID INSULATION OVER
- SLOPED METAL DECK

ROOF AREA A2, C4, D1, F1, AND E1:

- THERMOPLASTIC POLYOLEFIN (TPO)
- INSULATION BOARD OVER
- RIGID INSULATION OVER
- SLOPED METAL DECK

DEMOLITION SCOPE AT SLATE TILE SYSTEM:

- REMOVE EXISTING SLATE TILE ROOFING
- INSPECT SUBSTRATE AND REMOVE PLYWOOD AND INSULATION WHICH HAS BEEN WET. INSPECT ALL METAL DECK WHERE PLYWOOD AND INSULATION IS REMOVED.

DEMOLITION SCOPE AT TPO ROOF SYSTEM:

- REMOVE EXISTING TPO ROOFING SYSTEM DOWN TO DECK
- INSPECT ALL METAL DECK WHERE WET INSULATION IS REMOVED

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

## DEMOLITION LEGEND

EJ — ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED.

DS / GUT / SB — EXISTING DOWNSPOUT AND EXISTING GUTTER TO BE REPLACED TO ACCOMMODATE NEW FINISHED ROOF SYSTEM. SPLASH BLOCK TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED.

ROOF AREA NOT IN SCOPE

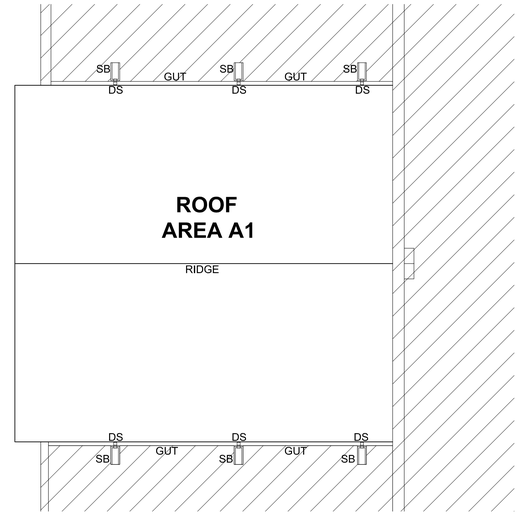
## GENERAL ROOF DEMOLITION NOTES

1. REMOVE EXISTING ROOFING RELATED SHEET METAL TO INCLUDE COUNTER FLASHING, MISC. FLASHING, EXPANSION JOINTS, VALLEYS, METAL ROOF EDGE, GUTTERS, AND DOWNSPOUTS.
2. EXAMINE AND PREPARE THE EXISTING DECK TO MEET THE ROOF MANUFACTURERS REQUIREMENTS AS A SUBSTRATE FOR THE NEW ROOF ASSEMBLY. LIGHTLY RUSTED METAL DECK IS TO BE WIRE BRUSHED AND PAINTED WITH A RUST INHIBITIVE PRIMER. ANY SEVERELY RUSTED METAL DECK IS TO BE REPLACED WITH MATCHING PROFILE, 22GA METAL DECK.
3. REPLACE GUTTERS AND DOWNSPOUTS TO ACCOMMODATE NEW ROOF SYSTEM.
4. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES FOUND BETWEEN DRAWINGS AND EXISTING CONDITIONS TO BE REPORTED IMMEDIATELY TO ARCHITECT. CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES THAT ARE NOT PREVIOUSLY DOCUMENTED AS EXISTING CONDITIONS.
5. ALL CAST IRON DOWNSPOUT BOOTS TO BE SALVAGED FOR REINSTALLATION WITH NEW DOWNSPOUT.
6. CONTRACTOR TO PROVIDE OWNER FIRST RIGHT OF REFUSAL FOR IF ANY EQUIPMENT IS TO BE REMOVED.
7. GENERAL CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL ROOF RELATED MEP WORK BETWEEN ROOFER AND RELEVANT MEP TRADE.
8. AREAS INDICATED BY INFRARED SCAN TO POTENTIALLY BE WET TO BE INSPECTED TO AND REPAIRED TO ENSURE IT MEETS MANUFACTURER'S REQUIREMENTS FOR NEW ROOF SYSTEM.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.
NO STAGING OF MECHANICAL OR ELECTRICAL WORK IS TO TAKE PLACE DIRECTLY ON EXISTING ROOF SYSTEMS.

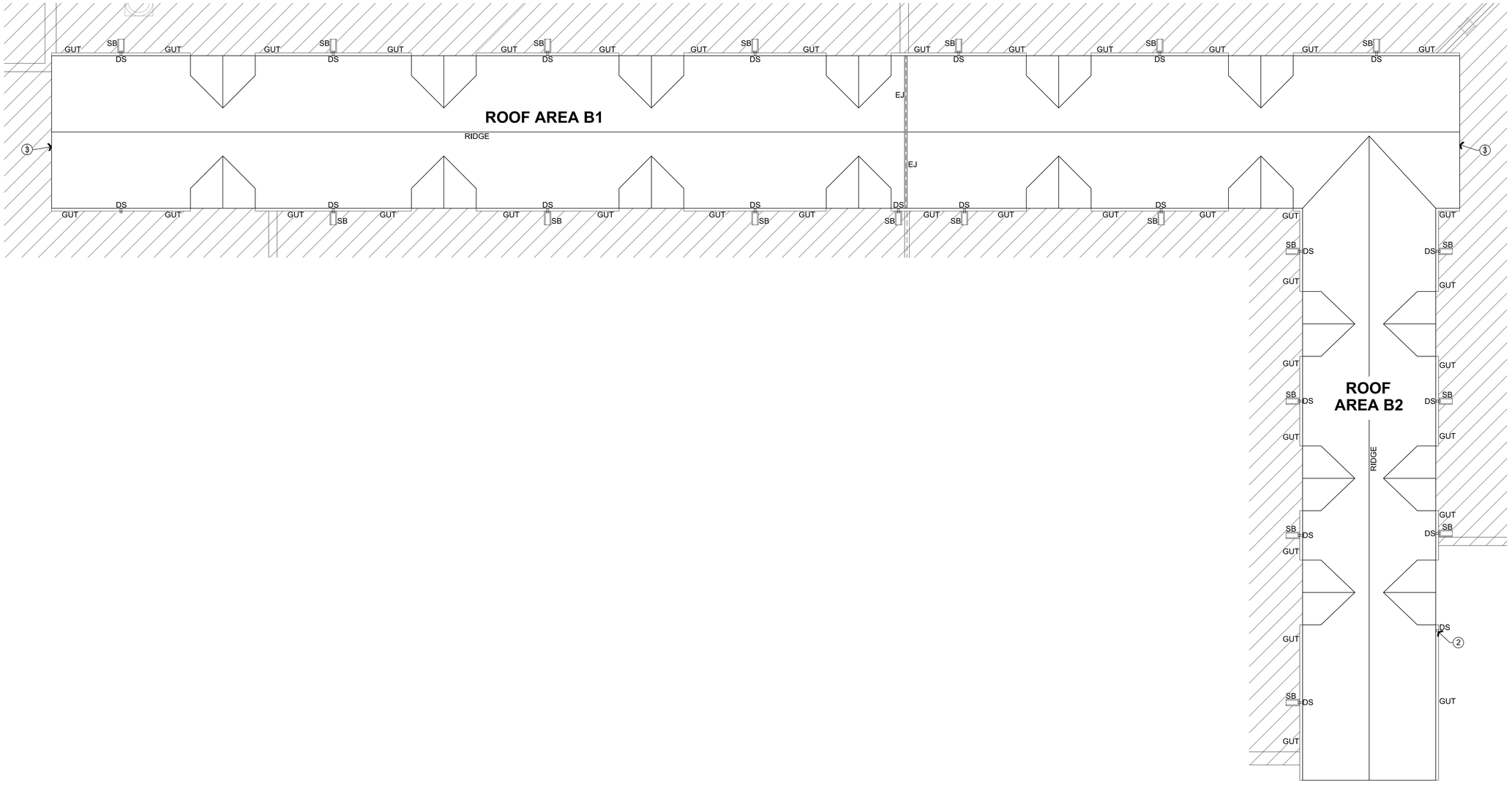
## KEYED DEMOLITION NOTES

1. EXISTING CONCEALED SEGMENT OF DOWNSPOUT WITHIN WALL AND ALL ASSOCIATED FLASHING TO BE REMOVED.
2. EXISTING CAST IRON DOWNSPOUT BOOT TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED.
3. STUCCO AT EXISTING ROUND WINDOW TO BE DEMOLISHED 1FT OUT FROM EDGE OF WINDOW. WINDOW SYSTEM IS TO REMAIN. SEE ELEVATION SHEETS FOR DETAILS.




PLAN NORTH N TRUE NORTH

02 **DEMOLITION ROOF PLAN - AREA A**
1/8" = 1'-0"




PLAN NORTH N TRUE NORTH

01 **DEMOLITION ROOF PLAN - AREA B**
1/8" = 1'-0"

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection Technology Consultants

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REGISTERED ARCHITECT DANIEL T. DeMERCHANT 24151 STATE OF TEXAS

Date of signing: 02-26-26

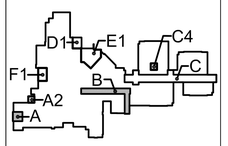
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

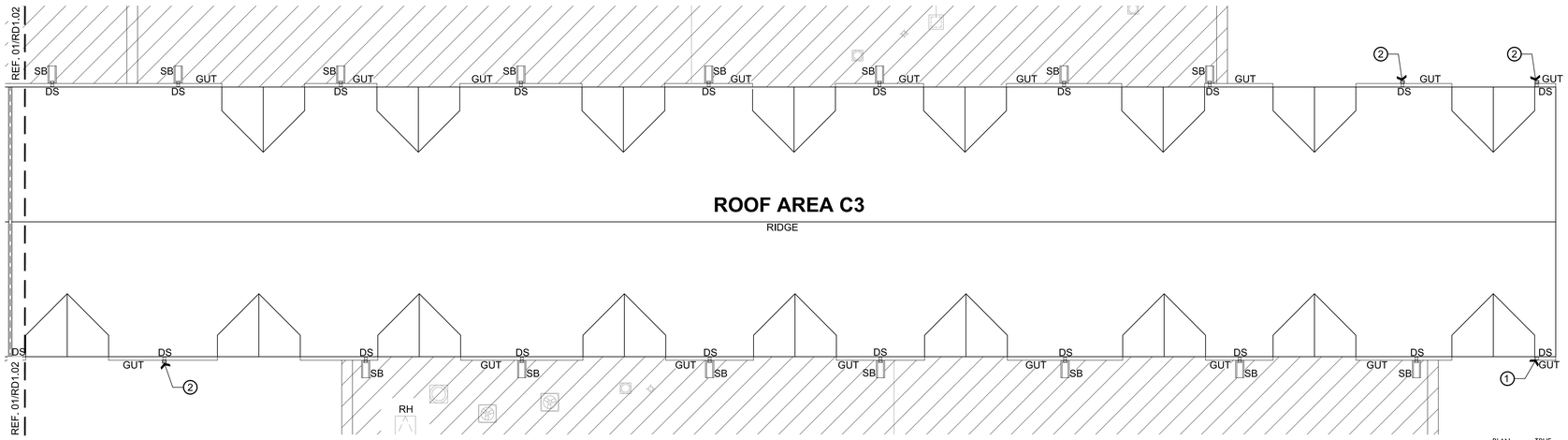
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**DATE** 02/26/2026

**KEYPLAN**



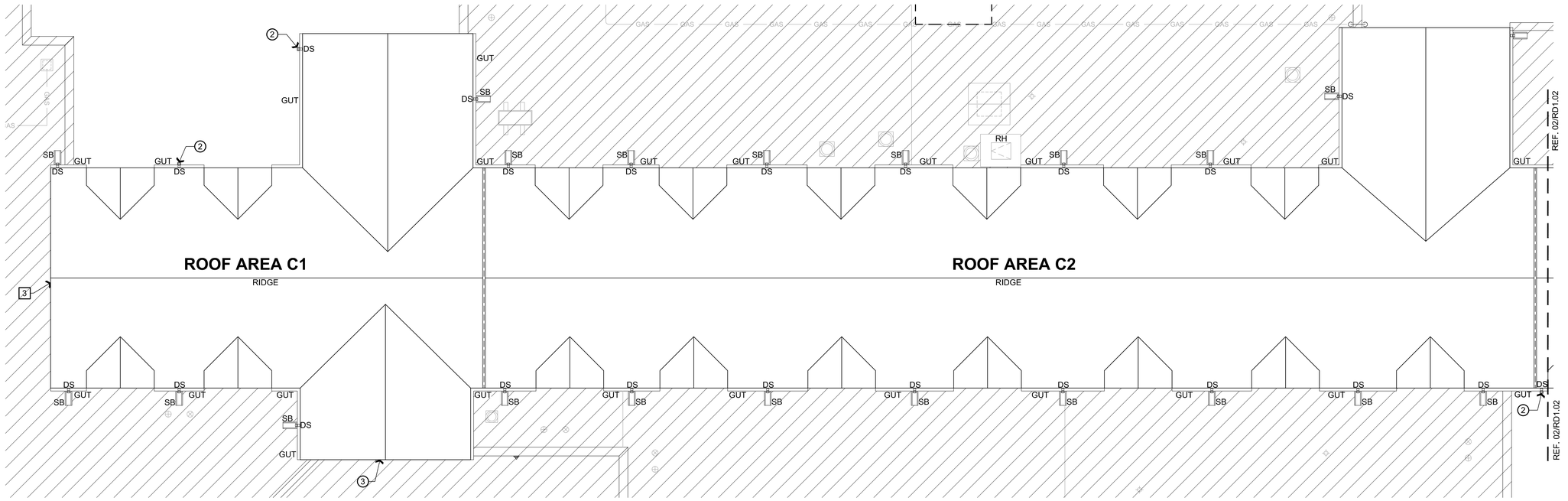

DEMOLITION ROOF PLAN - AREA A & B

RD1.01




## 02 DEMOLITION ROOF PLAN - AREA C

1/8" = 1'-0"




## 01 DEMOLITION ROOF PLAN - AREA C

1/8" = 1'-0"

### DEMOLITION LEGEND

- EJ — ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED.
- DS / GUT / SB — EXISTING DOWNSPOUT AND EXISTING GUTTER TO BE REPLACED TO ACCOMMODATE NEW FINISHED ROOF SYSTEM. SPLASH BLOCK AND TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED.
- ROOF AREA NOT IN SCOPE
- RH — REPAIR OF ALL ROOF HATCH FLASHING AND WALKWAY PADS ARE BASE BID ITEMS. CONTRACTOR TO VERIFY EXTENT OF DAMAGE FROM WALKWAY PAD SHRINKAGE AND PROVIDE A UNIT PRICE FOR THE OWNER TO REVIEW.

### KEYED DEMOLITION NOTES

1. EXISTING CONCEALED SEGMENT OF DOWNSPOUT WITHIN WALL AND ALL ASSOCIATED FLASHING TO BE REMOVED.
2. EXISTING DOWNSPOUT BOOT TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED.
3. STUCCO AT EXISTING ROUND WINDOW TO BE DEMOLISHED 1FT OUT FROM EDGE OF WINDOW. WINDOW SYSTEM IS TO REMAIN. SEE ELEVATION SHEETS FOR DETAILS.

### EXISTING ROOF SYSTEMS

(BASED ON ORIGINAL CONSTRUCTION DOCUMENTS. COMPOSITION HAS NOT BEEN VERIFIED.)

ROOF AREA A1, B1, B2, C1, C2, AND C3:
- SLATE TILE ROOFING OVER
- 40 MIL, HIGH TEMP, SELF ADHERING ICE AND WATER SHIELD UNDERLAYMENT OVER
- 3/4" EXTERIOR GRADE F.R.T. WOOD OVER
- 1" INSULATION BOARD OVER
- 3" RIGID INSULATION OVER
- SLOPED METAL DECK

ROOF AREA A2, C4, D1, F1, AND E1:
- THERMOPLASTIC POLYOLEFIN (TPO)
- INSULATION BOARD OVER
- RIGID INSULATION OVER
- SLOPED METAL DECK

DEMOLITION SCOPE AT SLATE TILE SYSTEM:
- REMOVE EXISTING SLATE TILE ROOFING
- INSPECT SUBSTRATE AND REMOVE PLYWOOD AND INSULATION WHICH HAS BEEN WET. INSPECT ALL METAL DECK WHERE PLYWOOD AND INSULATION IS REMOVED.

DEMOLITION SCOPE AT TPO ROOF SYSTEM:
- REMOVE EXISTING TPO ROOFING SYSTEM DOWN TO DECK
- INSPECT ALL METAL DECK WHERE WET INSULATION IS REMOVED.

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

### GENERAL ROOF DEMOLITION NOTES

1. REMOVE EXISTING ROOFING RELATED SHEET METAL TO INCLUDE COUNTER FLASHING, MISC. FLASHING, EXPANSION JOINTS, VALLEYS, METAL ROOF EDGE, GUTTERS, AND DOWNSPOUTS.
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3. REPLACE GUTTERS AND DOWNSPOUTS TO ACCOMMODATE NEW ROOF SYSTEM.
4. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES FOUND BETWEEN DRAWINGS AND EXISTING CONDITIONS TO BE REPORTED IMMEDIATELY TO ARCHITECT. CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES THAT ARE NOT PREVIOUSLY DOCUMENTED AS EXISTING CONDITIONS.
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6. CONTRACTOR TO PROVIDE OWNER FIRST RIGHT OF REFUSAL FOR IF ANY EQUIPMENT IS TO BE REMOVED.
7. GENERAL CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL ROOF RELATED MEP WORK BETWEEN ROOFER AND RELEVANT MEP TRADE.
8. AREAS INDICATED BY INFRARED SCAN TO POTENTIALLY BE WET TO BE INSPECTED TO AND REPAIRED TO ENSURE IT MEETS MANUFACTURER'S REQUIREMENTS FOR NEW ROOF SYSTEM.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.
NO STAGING OF MECHANICAL OR ELECTRICAL WORK IS TO TAKE PLACE DIRECTLY ON EXISTING ROOF SYSTEMS.



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection Technology Consultants

ISSUANCES

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| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
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REGISTERED ARCHITECT DANIEL T. DeMERS 14151 STATE OF TEXAS

Date of signing: 02-26-26

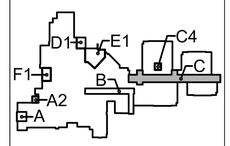
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

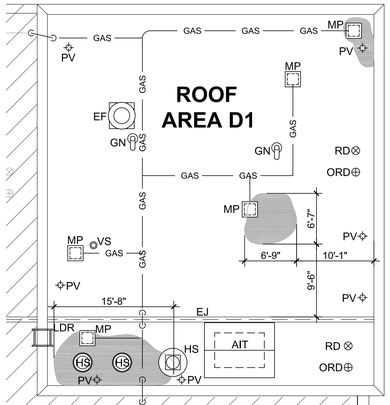
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**DATE** 02/26/2026

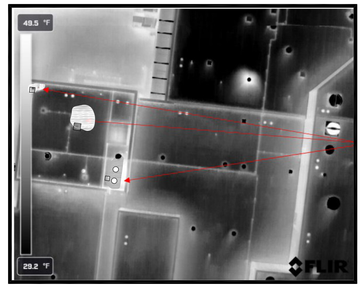
**KEYPLAN**



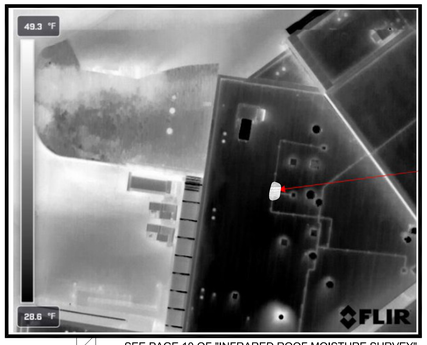

DEMOLITION ROOF PLAN - AREA C

RD1.02

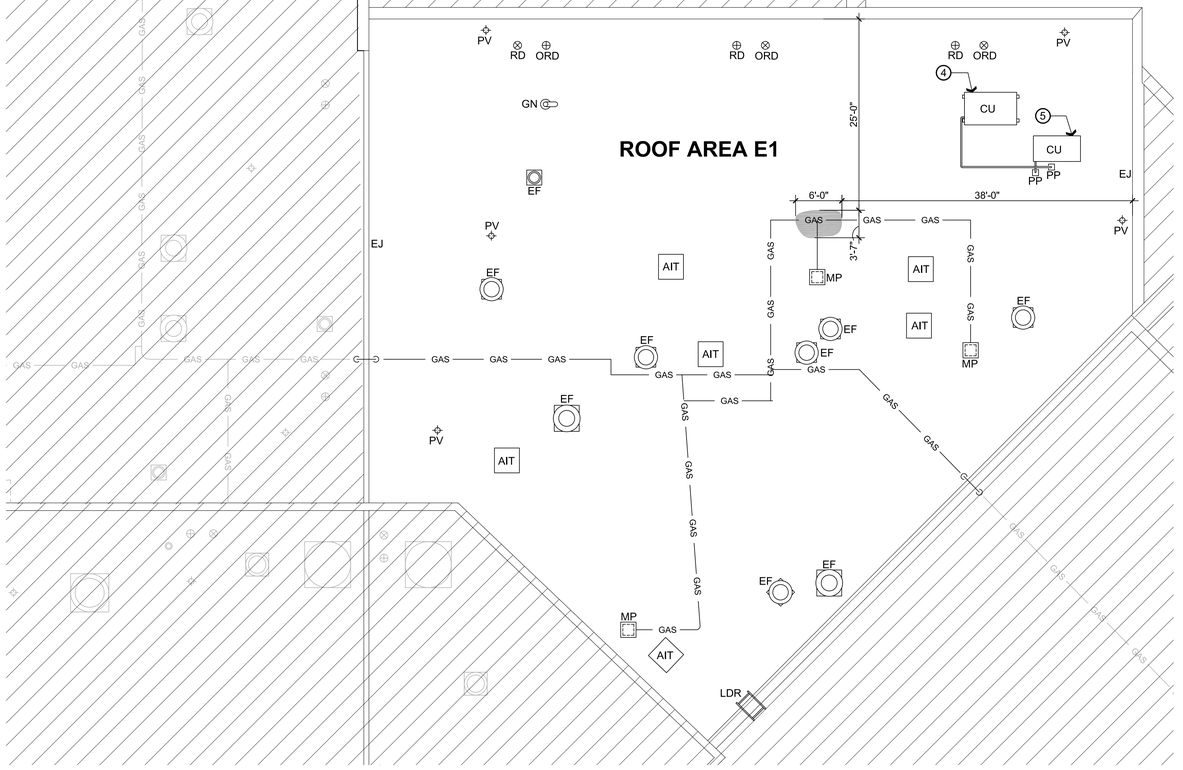



SEE PAGE 11 OF "INFRARED ROOF MOISTURE SURVEY"
FOR AREAS INDICATED AS WET AREA D1.




SEE PAGE 10 OF "INFRARED ROOF MOISTURE SURVEY"
FOR AREAS INDICATED AS WET AREA E1.




## 01 DEMOLITION ROOF PLAN - AREA D1 AND E1

1/8" = 1'-0"

## KEYED DEMOLITION NOTES

4. VERIFY WITH OWNER IF EQUIPMENT IS ABANDONED AND TO BE REMOVED. IF EQUIPMENT IS TO REMAIN, PREPARE DECK TO RECEIVE NEW EQUIPMENT CURB.
5. DECK TO BE PREPARED TO RECEIVE NEW EQUIPMENT CURB.

## DEMOLITION LEGEND

- EJ — ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED.
- DS / SB / GUT — EXISTING DOWNSPOUT AND EXISTING GUTTER TO BE REPLACED TO ACCOMMODATE NEW FINISHED ROOF SYSTEM. SPLASH BLOCK AND TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED.
- MP — MULTI-PIPE PENETRATION CHASE HOUSING TO REMAIN. FLASHING TO BE REWORKED TO MEET REQUIRED 8" FLASHING HT.
- AREA OF MOISTURE SATURATION
- ROOF AREA NOT IN SCOPE
- GN — GOOSE NECK VENT TO REMAIN. FLASHING TO BE REWORKED TO MEET REQUIRED 8" FLASHING HT.
- PV — PLUMBING VENT TO REMAIN. FLASHING TO BE REWORKED TO MEET REQUIRED 8" FLASHING HT.
- GAS — EXISTING GAS LINE TO REMAIN AND RAISED AS REQUIRED TO ACCOMMODATE NEW ROOF SYSTEM HT.
- RD / OD — EXISTING ROOF DRAIN AND OVERFLOW ROOF DRAIN TO BE REMOVED AND REPLACED WITH NEW AND RAISED TO ACCOMMODATE THE NEW ROOF SYSTEM HT. CONTRACTOR TO VERIFY ROOF DRAIN AND PIPING ARE OPEN, CLEAR, AND IN WORKING ORDER. NEW ROOF STRAINERS ARE TO BE CAST IRON FASTENED TO BOWL.
- CU — EXISTING CONDENSING UNIT TO BE RAISED AND CURBS TO BE REWORKED AS REQUIRED TO ACCOMMODATE NEW ROOF SYSTEM HT. TO ALLOW FOR MIN. 8" FLASHING HT. ABOVE NEW ROOF SURFACE.
- AIT — EXISTING AIR INTAKE UNIT TO BE RAISED AND CURBS TO BE REWORKED AS REQUIRED TO ACCOMMODATE NEW ROOF SYSTEM HT. TO ALLOW FOR MIN. 8" FLASHING HT. ABOVE NEW ROOF SURFACE. SEE KEYNOTE 5.
- EF — EXISTING EXHAUST FAN TO BE RAISED AND CURBS TO BE REWORKED AS REQUIRED TO ACCOMMODATE NEW FAN AND ROOF SYSTEM HT. TO ALLOW FOR MIN. 8" FLASHING HT. ABOVE NEW ROOF SURFACE.
- RH — REPAIR OF ALL ROOF HATCH FLASHING AND WALKWAY PADS ARE BASE BID ITEMS. CONTRACTOR TO VERIFY EXTENT OF DAMAGE FROM WALKWAY PAD SHRINKAGE AND PROVIDE A UNIT PRICE FOR THE OWNER TO REVIEW.

## EXISTING ROOF SYSTEMS

(BASED ON ORIGINAL CONSTRUCTION DOCUMENTS. COMPOSITION HAS NOT BEEN VERIFIED.)

ROOF AREA A1, B1, B2, C1, C2, AND C3:
- SLATE TILE ROOFING OVER
- 40 MIL, HIGH TEMP, SELF ADHERING ICE AND WATER SHIELD UNDERLAYMENT OVER
- 3/4" EXTERIOR GRADE F.R.T. WOOD OVER
- 1" INSULATION BOARD OVER
- 3" RIGID INSULATION OVER
- SLOPED METAL DECK

ROOF AREA A2, C4, D1, F1, AND E1:
- THERMOPLASTIC POLYOLEFIN (TPO)
- INSULATION BOARD OVER
- RIGID INSULATION OVER
- SLOPED METAL DECK

DEMOLITION SCOPE AT SLATE TILE SYSTEM:
- REMOVE EXISTING SLATE TILE ROOFING
- INSPECT SUBSTRATE AND REMOVE PLYWOOD AND INSULATION WHICH HAS BEEN WET. INSPECT ALL METAL DECK WHERE PLYWOOD AND INSULATION IS REMOVED.

DEMOLITION SCOPE AT TPO ROOF SYSTEM:
- REMOVE EXISTING TPO ROOFING SYSTEM DOWN TO DECK
- INSPECT ALL METAL DECK WHERE WET INSULATION IS REMOVED.

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

## GENERAL ROOF DEMOLITION NOTES

1. REMOVE EXISTING ROOFING RELATED SHEET METAL TO INCLUDE COUNTER FLASHING, MISC. FLASHING, EXPANSION JOINTS, VALLEYS, METAL ROOF EDGE, GUTTERS, AND DOWNSPOUTS.
2. EXAMINE AND PREPARE THE EXISTING DECK TO MEET THE ROOF MANUFACTURERS REQUIREMENTS AS A SUBSTRATE FOR THE NEW ROOF ASSEMBLY. LIGHTLY RUSTED METAL DECK IS TO BE WIRE BRUSHED AND PAINTED WITH A RUST INHIBITIVE PRIMER. ANY SEVERELY RUSTED METAL DECK IS TO BE REPLACED WITH MATCHING PROFILE, 22GA METAL DECK.
3. REPLACE GUTTERS AND DOWNSPOUTS TO ACCOMMODATE NEW ROOF SYSTEM.
4. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES FOUND BETWEEN DRAWINGS AND EXISTING CONDITIONS TO BE REPORTED IMMEDIATELY TO ARCHITECT. CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES THAT ARE NOT PREVIOUSLY DOCUMENTED AS EXISTING CONDITIONS.
5. ALL CAST IRON DOWNSPOUT BOOTS TO BE SALVAGED FOR REINSTALLATION WITH NEW DOWNSPOUT.
6. CONTRACTOR TO PROVIDE OWNER FIRST RIGHT OF REFUSAL FOR IF ANY EQUIPMENT IS TO BE REMOVED.
7. GENERAL CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL ROOF RELATED MEP WORK BETWEEN ROOFER AND RELEVANT MEP TRADE.
8. AREAS INDICATED BY INFRARED SCAN TO POTENTIALLY BE WET TO BE VERIFIED AND IF INSULATION IS WET REMOVE WET INSULATION, AND REMOVE UNTIL DRY IS FOUND PLUS 1'-0". REPAIR ANY DAMAGED METAL DECK.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.
NO STAGING OF MECHANICAL OR ELECTRICAL WORK IS TO TAKE PLACE DIRECTLY ON EXISTING ROOF SYSTEMS.



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT DANIEL T. DeMENT 14151 STATE OF TEXAS

Date of signing: 02-26-26

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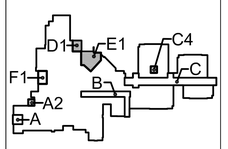
# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

**JOB** 00000.0000

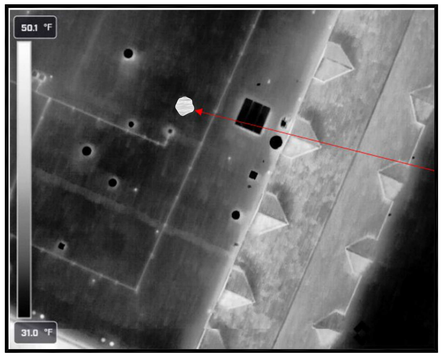
**DATE** 02/26/2026

**KEYPLAN**

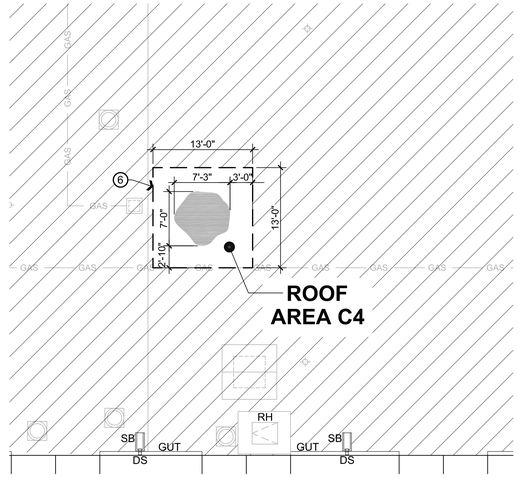



DEMOLITION ROOF PLAN - AREAS D1 AND E1

RD1.03



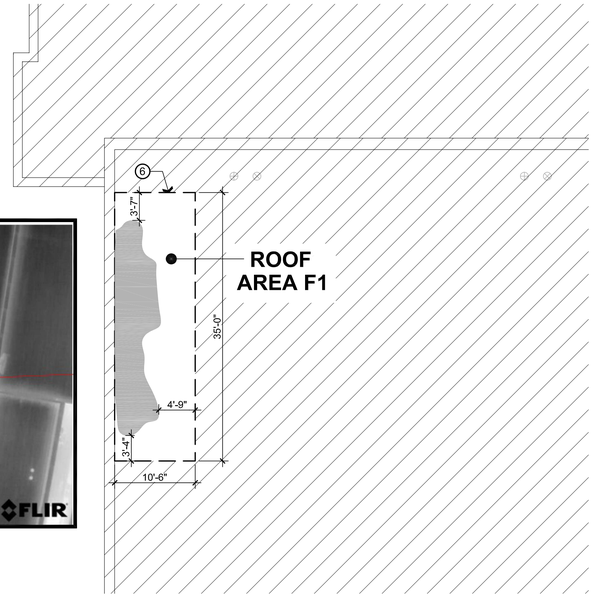

SEE PAGE 9 OF "INFRARED ROOF MOISTURE SURVEY"
FOR AREAS INDICATED AS WET AREA C3.

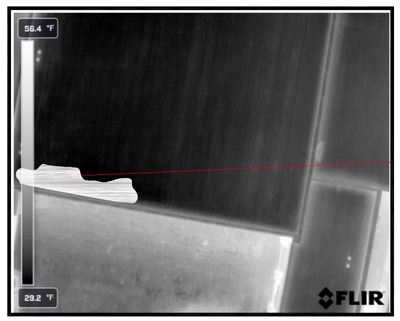



## 03 PARTIAL DEMOLITION ROOF PLAN - AREA C4

1/8" = 1'-0"

PLAN NORTH N | TRUE NORTH



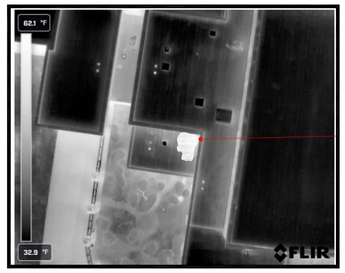




SEE PAGE 12 OF "INFRARED ROOF MOISTURE SURVEY"
FOR AREAS INDICATED AS WET AREA F1.

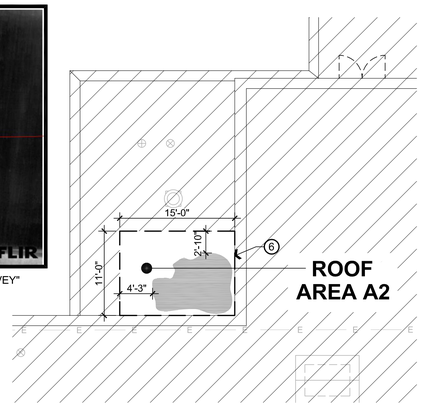
## 02 PARTIAL DEMOLITION ROOF PLAN - AREA F1

1/8" = 1'-0"

PLAN NORTH N | TRUE NORTH




SEE PAGE 13 OF "INFRARED ROOF MOISTURE SURVEY"
FOR AREAS INDICATED AS WET AREA A2.




## 01 PARTIAL DEMOLITION ROOF PLAN - AREA A2

1/8" = 1'-0"

PLAN NORTH N | TRUE NORTH

## KEYED DEMOLITION NOTES

(6) AREA INDICATED IS A MINIMUM. REMOVE WET INSULATION DOWN TO DECK UNTIL DRY IS FOUND PLUS 1FT. PREPARE DECK TO RECEIVE ROOF SYSTEM TO MATCH EXISTING. SEE TIE IN DETAIL.

## DEMOLITION LEGEND

| | |
|---|---|
| EJ | ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED. |
| | AREA OF MOISTURE SATURATION |
| | ROOF AREA NOT IN SCOPE |
| RH | REPAIR OF ALL ROOF HATCH FLASHING AND WALKWAY PADS ARE BASE BID ITEMS. CONTRACTOR TO VERIFY EXTENT OF DAMAGE FROM WALKWAY PAD SHRINKAGE AND PROVIDE A UNIT PRICE FOR THE OWNER TO REVIEW. |
| DS / SB / GUT | EXISTING DOWNSPOUT AND EXISTING GUTTER TO BE REPLACED TO ACCOMMODATE NEW FINISHED ROOF SYSTEM. SPLASH BLOCK TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED. |

## EXISTING ROOF SYSTEMS

(BASED ON ORIGINAL CONSTRUCTION DOCUMENTS. COMPOSITION HAS NOT BEEN VERIFIED.)

ROOF AREA A1, B1, B2, C1, C2, AND C3:
- SLATE TILE ROOFING OVER
- 40 MIL, HIGH TEMP, SELF ADHERING ICE AND WATER SHIELD UNDERLAYMENT OVER
- 3/4" EXTERIOR GRADE F.R.T. WOOD OVER
- 1" INSULATION BOARD OVER
- 3" RIGID INSULATION OVER
- SLOPED METAL DECK

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

ROOF AREA A2, C4, D1, F1, AND E1:
- THERMOPLASTIC POLYOLEFIN (TPO)
- INSULATION BOARD OVER
- RIGID INSULATION OVER
- SLOPED METAL DECK

DEMOLITION SCOPE AT SLATE TILE SYSTEM:
- REMOVE EXISTING SLATE TILE ROOFING
- INSPECT SUBSTRATE AND REMOVE PLYWOOD AND INSULATION WHICH HAS BEEN WET. INSPECT ALL METAL DECK WHERE PLYWOOD AND INSULATION IS REMOVED.

DEMOLITION SCOPE AT TPO ROOF SYSTEM:
- REMOVE EXISTING TPO ROOFING SYSTEM DOWN TO DECK
- INSPECT ALL METAL DECK WHERE WET INSULATION IS REMOVED.

## GENERAL ROOF DEMOLITION NOTES

1. REMOVE EXISTING ROOFING RELATED SHEET METAL TO INCLUDE COUNTER FLASHING, MISC. FLASHING, EXPANSION JOINTS, VALLEYS, METAL ROOF EDGE, GUTTERS, AND DOWNSPOUTS.
2. EXAMINE AND PREPARE THE EXISTING DECK TO MEET THE ROOF MANUFACTURERS REQUIREMENTS AS A SUBSTRATE FOR THE NEW ROOF ASSEMBLY. LIGHTLY RUSTED METAL DECK IS TO BE WIRE BRUSHED AND PAINTED WITH A RUST INHIBITIVE PRIMER. ANY SEVERELY RUSTED METAL DECK IS TO BE REPLACED WITH MATCHING PROFILE, 22GA METAL DECK.
3. REPLACE GUTTERS AND DOWNSPOUTS TO ACCOMMODATE NEW ROOF SYSTEM.
4. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES FOUND BETWEEN DRAWINGS AND EXISTING CONDITIONS TO BE REPORTED IMMEDIATELY TO ARCHITECT. CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES THAT ARE NOT PREVIOUSLY DOCUMENTED AS EXISTING CONDITIONS.
5. ALL CAST IRON DOWNSPOUT BOOTS TO BE SALVAGED FOR REINSTALLATION WITH NEW DOWNSPOUT.
6. CONTRACTOR TO PROVIDE OWNER FIRST RIGHT OF REFUSAL FOR IF ANY EQUIPMENT IS TO BE REMOVED.
7. GENERAL CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL ROOF RELATED MEP WORK BETWEEN ROOFER AND RELEVANT MEP TRADE.
8. AREAS INDICATED BY INFRARED SCAN TO POTENTIALLY BE WET TO BE VERIFIED AND IF INSULATION IS WET REMOVE WET INSULATION, AND REMOVE UNTIL DRY IS FOUND PLUS 1'-0". REPAIR ANY DAMAGED METAL DECK.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.
NO STAGING OF MECHANICAL OR ELECTRICAL WORK IS TO TAKE PLACE DIRECTLY ON EXISTING ROOF SYSTEMS.



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection Technology Consultants

| | ISSUANCES | |
|---|---|---|
| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
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REGISTERED ARCHITECT DANIEL T. DeMERCHANT 41151 STATE OF TEXAS

Date of signing: 02-26-26

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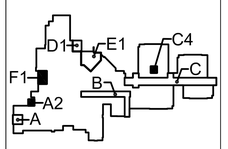
# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

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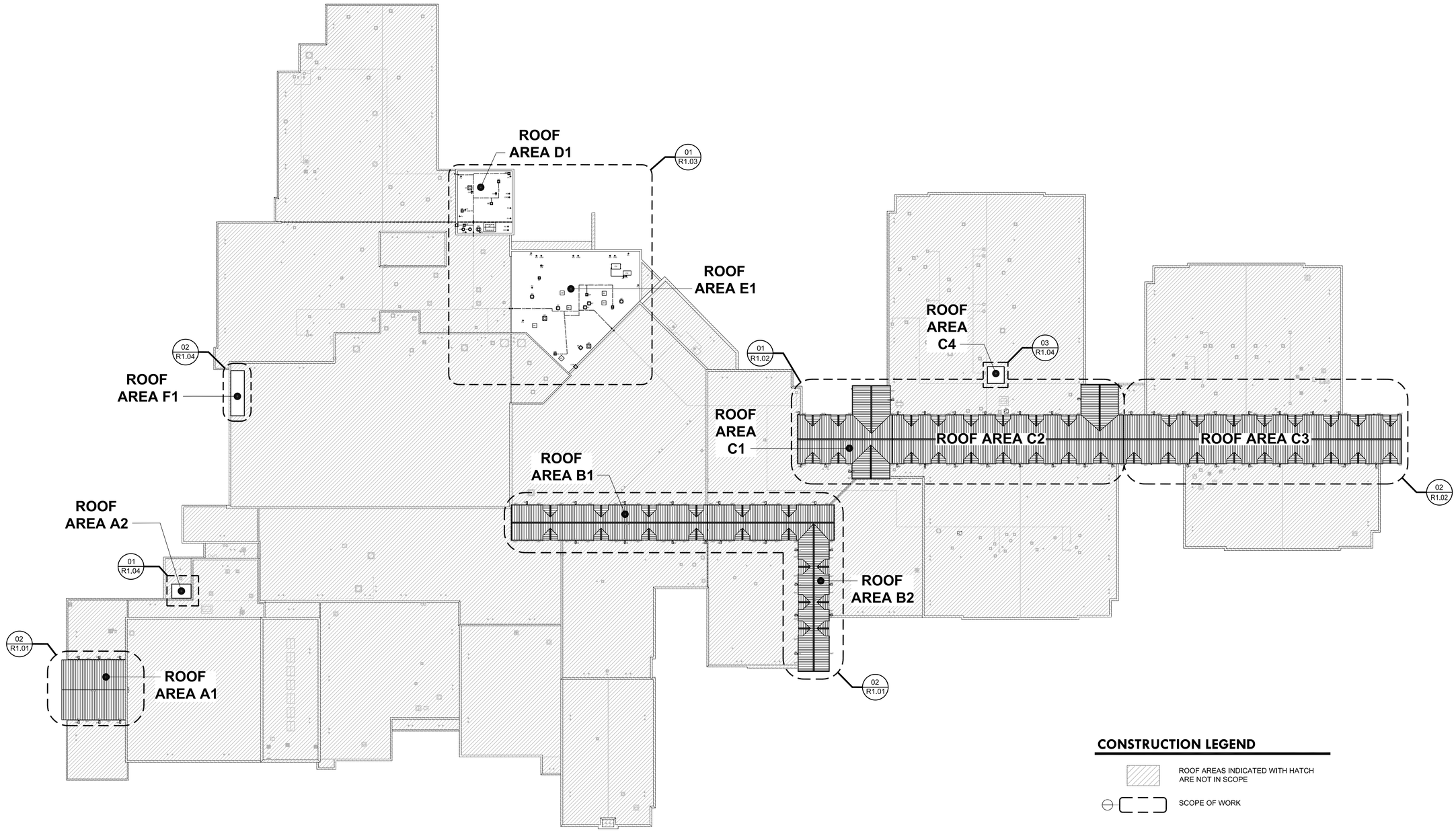
**DATE** 02/26/2026

**KEYPLAN**




DEMOLITION ROOF PLAN - AREAS A2, C4, AND F1

RD1.04




## CONSTRUCTION LEGEND

ROOF AREAS INDICATED WITH HATCH ARE NOT IN SCOPE

SCOPE OF WORK

PLAN NORTH N

TRUE NORTH

## 01 OVERALL KEYED CONSTRUCTION ROOF PLAN

1/32" = 1'-0"



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT DANIEL T. DeMERCHANT 14151 STATE OF TEXAS

Date of signing: 02-26-26

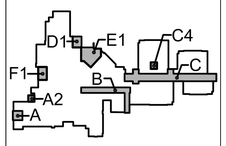
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

**JOB** 00000.0000
**DATE** 02/26/2026

**KEYPLAN**




OVERALL CONSTRUCTION ROOF PLAN

R1.00

## CONSTRUCTION LEGEND

EJ — ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED. REF. DETAILS 01/R2.00

DS / SB / GUT — EXISTING DOWNSPOUT AND EXISTING GUTTER TO BE REPLACED TO ACCOMMODATE NEW FINISHED ROOF SYSTEM. SPLASH BLOCKS ARE TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED. PROVIDE NEW FOR ANY MISSING OR DAMAGED SPLASH BLOCKS. REF. DETAILS 02/R2.00, 06/R2.00, 08/R2.00, AND 09/R2.00.

ROOF AREA NOT IN CONTRACT.

XX / X-XXX — SECTION CUT DETAIL

SPECIFIED DETAIL CALLOUT — XX/R3.XX

## CONSTRUCTION ROOF ASSEMBLIES

ROOF AREA A1, B1, B2, C1, C2 AND C3:

- PRE-FINISHED STANDING SEAM METAL ROOF SYSTEM OVER
- HIGH TEMPERATURE SELF-ADHERING RUBBERIZED ASPHALT UNDERLAYMENT INSTALLED OVER
- EXISTING 3/4" PRESSURE TREATED PLYWOOD W/ 1" OF RIGID INSULATION OVER
- EXISTING POLYISOCYANURATE INSULATION OVER
- EXISTING SLOPPED METAL DECKING

ROOF AREA E1 AND F1:

- POLYVINYL CHLORIDE (PVC) ROOF SYSTEM FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- 2" POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- 2.5" POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

ROOF AREA A2, C4, AND F1: (INSULATION AND COVER BOARD THICKNESS TO MATCH EXISTING)

- THERMOPLASTIC POLYOLEFIN (TPO) FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

## GENERAL CONSTRUCTION ROOF NOTES

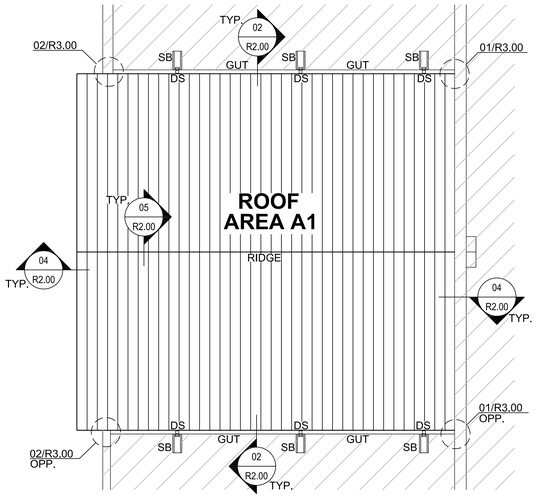
1. ALL SIGHT EXPOSED ROOFING RELATED SHEET METAL VISIBLE FROM GROUND LEVEL TO BE FORMED OUT OF PRE-FINSHED SHEET METAL
2. ALL NON SIGHT EXPOSED ROOFING RELATED SHEET METAL NOT VISIBLE FROM GROUND LEVEL TO BE FORMED OUT OF GALVANIZED SHEET METAL.
3. COORDINATE INSTALLATION OF NEW ROOFING WITH OTHER TRADES. REPORT ANY CONFLICTS WITH ITEMS INSTALLED BY OTHER TRADES TO ARCHITECT.
4. TRAFFIC OVER THE SURFACE OF THE COMPLETED AND EXISTING ROOF SYSTEM IS NOT DESIRABLE. WHERE ROOF TRAFFIC OVER COMPLETED AND EXISTING ROOF AREAS OCCURS, PROVIDE PLYWOOD SHEATHING INSTALLED OVER 1" MINIMUM THICKNESS RIGID INSULATION BALLASTED IN PLACE TO PREVENT DISPLACEMENT BY WINDS OR MOISTURE.
5. INSTALL PRECAST CONCRETE SPLASH BLOCKS AT THE OUTFALL OF ALL DOWNSPOUTS. INSTALL A PROTECTION PAD BENEATH EACH SPLASH BLOCK WHERE WATER IS DISCHARGED ONTO ANOTHER ROOF AREA. VERIFY PROTECTION PAD IS COMPATIBLE WITH EXISTING ROOF SYSTEM AND IS INSTALLED PER MANUFACTURER'S REQUIREMENTS.
6. PROVIDE PROTECTION OF ALL ROOF AREAS WHERE WORK IS TO BE PERFORMED. DO NOT STORE ROOFING MATERIALS ON THE ROOF.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.

## KEYED CONSTRUCTION NOTES

1 REPLACE EXISTING DOWNSPOUT INCLUDING CONCEALED SEGMENTS WITHIN WALL AND ALL ASSOCIATED FLASHING. REPAIR OR REPLACE ANY SURROUNDING MATERIAL DAMAGED AS A RESULT OF INSTALLATION.

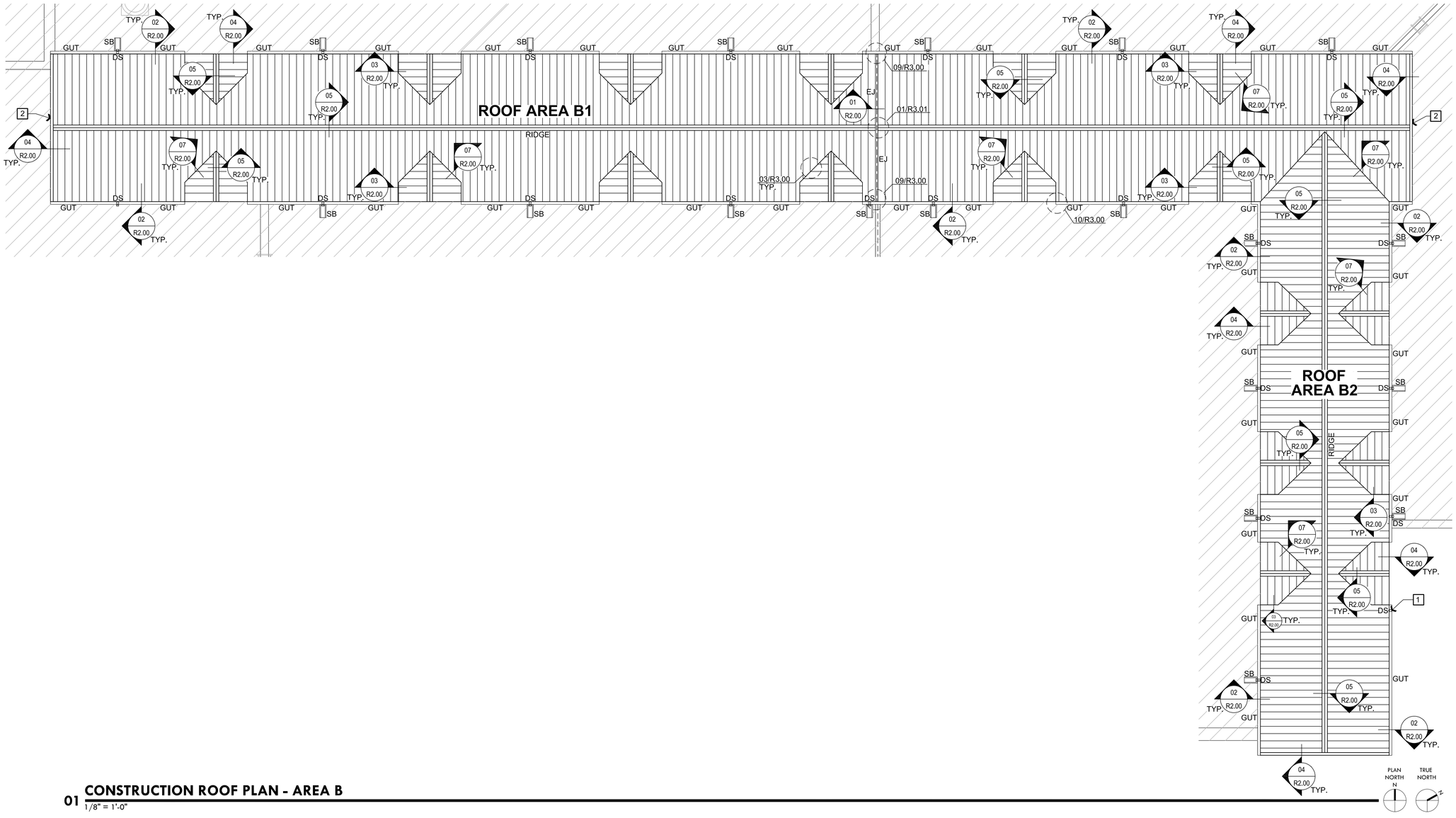
2 STUCCO AND WATERPROOFING TO BE REPLACED IN BASE BID. REFER TO WINDOW AND ELEVATION SHEET R4.00 FOR CONSTRUCTION.




## 02 CONSTRUCTION ROOF PLAN - AREA A

1/8" = 1'-0"

PLAN NORTH N — TRUE NORTH




## 01 CONSTRUCTION ROOF PLAN - AREA B

1/8" = 1'-0"

PLAN NORTH N — TRUE NORTH

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

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| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
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REGISTERED ARCHITECT — DANIEL L. DeMERCHANT — 24155 — STATE OF TEXAS

Date of signing: 02-26-26

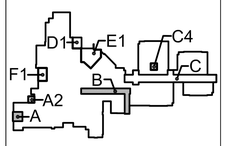
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# ROCKWALL HEATH HS ROOF REPLACEMENT

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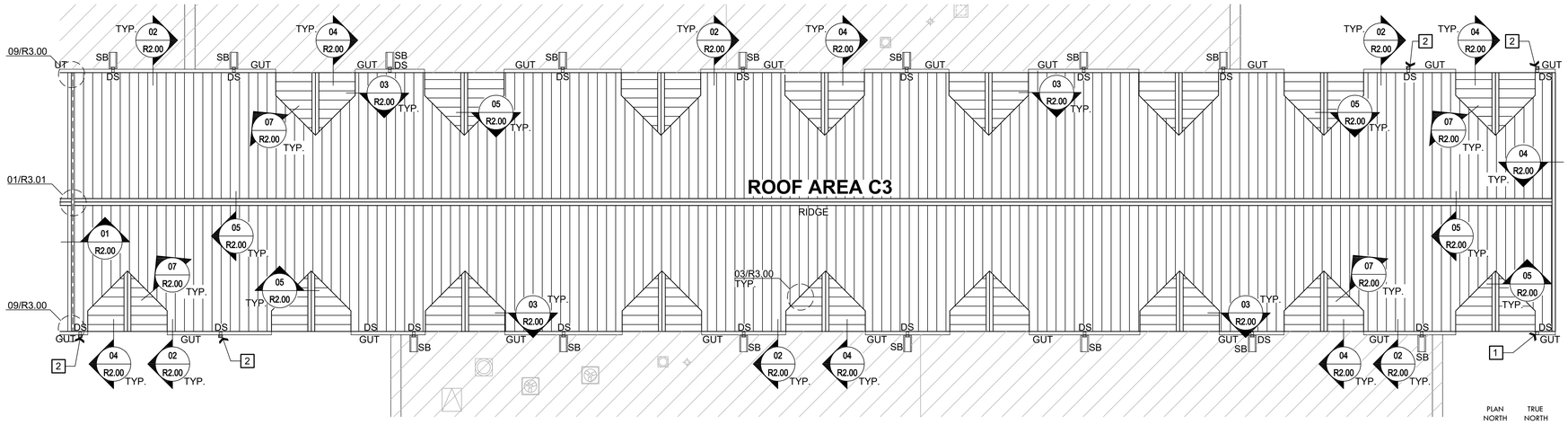
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**DATE** 02/26/2026

**KEYPLAN**



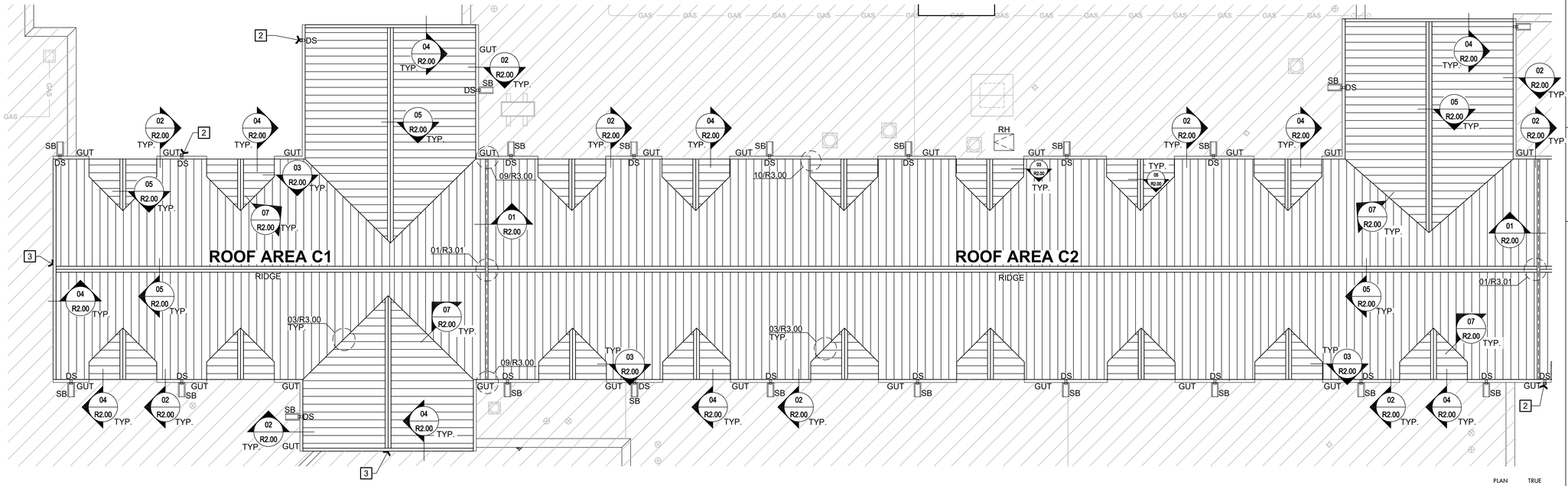

CONSTRUCTION ROOF PLAN - AREA A & B

R1.01




## 02 CONSTRUCTION ROOF PLAN - AREA C

1/8" = 1'-0"




## 01 CONSTRUCTION ROOF PLAN - AREA C

1/8" = 1'-0"

## CONSTRUCTION LEGEND

- EJ — ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED. REF. DETAILS 01/R2.00
- DS / SB / GUT — EXISTING DOWNSPOUT AND EXISTING GUTTER TO BE REPLACED TO ACCOMMODATE NEW FINISHED ROOF SYSTEM. SPLASH BLOCKS ARE TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED. PROVIDE NEW FOR ANY MISSING OR DAMAGED SPLASH BLOCKS. REF. DETAILS 02/R2.00, 06/R2.00, 08/R2.00, AND 09/R2.00.
- RH — TIE IN NEW TPO SYSTEM AROUND HATCHES AS DIRECTED. REF. DETAIL 08/R2.02.
- ROOF AREA NOT IN CONTRACT.
- XX / X-XXX — SECTION CUT DETAIL
- SPECIFIED DETAIL CALLOUT — XX/R3.XX

## KEYED CONSTRUCTION NOTES

1. REPLACE EXISTING DOWNSPOUT INCLUDING CONCEALED SEGMENTS WITHIN WALL AND ALL ASSOCIATED FLASHING. REPAIR OR REPLACE ANY SURROUNDING MATERIAL DAMAGED AS A RESULT OF INSTALLATION.
2. EXISTING DOWNSPOUT BOOTS ARE TO BE SALVAGED FOR REUSE ONCE NEW DOWNSPOUTS ARE INSTALLED. PROVIDE NEW FOR ANY MISSING OR DAMAGED DOWNSPOUT BOOTS MATCHING EXISTING.
3. STUCCO AND WATERPROOFING TO BE REPLACED IN BASE BID. REFER TO WINDOW AND ELEVATION SHEET R4.00 FOR CONSTRUCTION.

## CONSTRUCTION ROOF ASSEMBLIES

ROOF AREA A1, B1, B2, C1, C2 AND C3:

- PRE-FINISHED STANDING SEAM METAL ROOF SYSTEM OVER
- HIGH TEMPERATURE SELF-ADHERING RUBBERIZED ASPHALT UNDERLAYMENT INSTALLED OVER
- EXISTING 3/4" PRESSURE TREATED PLYWOOD W/ 1" OF RIGID INSULATION OVER
- EXISTING POLYISOCYANURATE INSULATION OVER
- EXISTING SLOPPED METAL DECKING

ROOF AREA E1 AND F1:

- POLYVINYL CHLORIDE (PVC) ROOF SYSTEM FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- 2" POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- 2.5" POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

ROOF AREA A2, C4, AND F1: (INSULATION AND COVER BOARD THICKNESS TO MATCH EXISTING)

- THERMOPLASTIC POLYOLEFIN (TPO) FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

## GENERAL CONSTRUCTION ROOF NOTES

1. ALL SIGHT EXPOSED ROOFING RELATED SHEET METAL VISIBLE FROM GROUND LEVEL TO BE FORMED OUT OF PRE-FINSHED SHEET METAL
2. ALL NON SIGHT EXPOSED ROOFING RELATED SHEET METAL NOT VISIBLE FROM GROUND LEVEL TO BE FORMED OUT OF GALVANIZED SHEET METAL.
3. COORDINATE INSTALLATION OF NEW ROOFING WITH OTHER TRADES. REPORT ANY CONFLICTS WITH ITEMS INSTALLED BY OTHER TRADES TO ARCHITECT.
4. TRAFFIC OVER THE SURFACE OF THE COMPLETED AND EXISTING ROOF SYSTEM IS NOT DESIRABLE. WHERE ROOF TRAFFIC OVER COMPLETED AND EXISTING ROOF AREAS OCCURS, PROVIDE PLYWOOD SHEATHING INSTALLED OVER 1" MINIMUM THICKNESS RIGID INSULATION BALLASTED IN PLACE TO PREVENT DISPLACEMENT BY WINDS OR MOISTURE.
5. INSTALL PRECAST CONCRETE SPLASH BLOCKS AT THE OUTFALL OF ALL DOWNSPOUTS. INSTALL A PROTECTION PAD BENEATH EACH SPLASH BLOCK WHERE WATER IS DISCHARGED ONTO ANOTHER ROOF AREA. VERIFY PROTECTION PAD IS COMPATIBLE WITH EXISTING ROOF SYSTEM AND IS INSTALLED PER MANUFACTURER'S REQUIREMENTS.
6. PROVIDE PROTECTION OF ALL ROOF AREAS WHERE WORK IS TO BE PERFORMED. DO NOT STORE ROOFING MATERIALS ON THE ROOF.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT — DANIEL T. DeMARCUS — 14155 — STATE OF TEXAS

Date of signing: 02-26-26

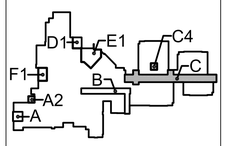
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

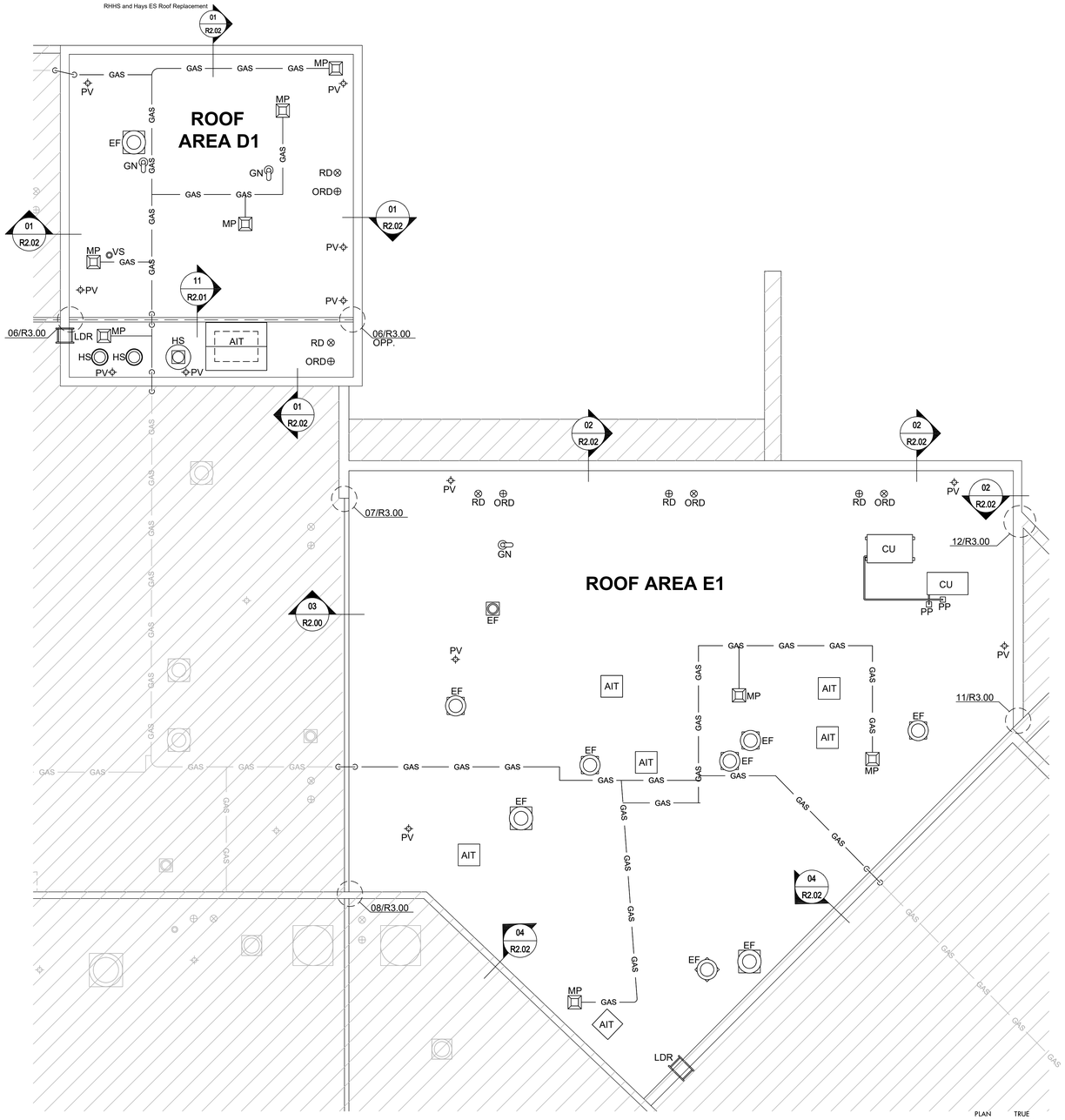
**JOB** 00000.0000
**DATE** 02/26/2026

**KEYPLAN**




CONSTRUCTION ROOF PLAN - AREA C

R1.02




## 01 CONSTRUCTION ROOF PLAN - AREA D1 AND E1

1/8" = 1'-0"

PLAN NORTH N

TRUE NORTH

## CONSTRUCTION LEGEND

| | |
|---|---|
| RD ORD | ROOF DRAINS AND OVERFLOW ROOF DRAINS, REF. DETAIL 01/R2.01 AND 02/R2.01 |
| VS PV | VENT STACK AND PLUMBING VENT, REF. DETAIL 03/R2.01 |
| GAS | GAS PIPING LINE, REF. DETAIL 09/R2.01 |
| CD | CONDENSATE LINE, REF. DETAIL 13/R2.01 |
| EF EF | EXHAUST FANS, REF. DETAIL 04/R2.01 |
| HS HS | HOT STACK VENT, REF. DETAIL 06/R2.01 |
| EJ | ALL EXISTING EXPANSION JOINTS TO REMAIN. FLASHINGS TO BE REMOVED AND REWORKED. REF. DETAILS 01/R2.00 |
| | ROOF AREA NOT IN CONTRACT. |
| RH | TIE IN NEW TPO SYSTEM AROUND HATCHES AS DIRECTED. REF. DETAIL 08/R2.02. |
| CU | CONDENSING UNIT, REF. DETAIL 07/R2.01 |
| PP | PIPING PENETRATIONS, REF. DETAIL 10/R2.01 |
| AIT | AIR INTAKE VENT, REF. DETAIL 05/R2.01 |
| MP | MULTI-PIPE PENETRATION CHASE HOUSING, REF. DETAIL 08/R2.01 |
| GN | GOOSENICK VENT, REF. DETAIL 12/R2.01 |
| LDR | ROOF ACCESS LADDER TO REMAIN AND BE FLASHED A MINIMUM OF 8". REF. DETAILS 05/R2.02 AND 06/R2.02. |
| XX X-XXX | SECTION CUT DETAIL |
| XX/R3.XX | SPECIFIED DETAIL CALLOUT |

## CONSTRUCTION ROOF ASSEMBLIES

ROOF AREA A1, B1, B2, C1, C2 AND C3:

- PRE-FINISHED STANDING SEAM METAL ROOF SYSTEM OVER
- HIGH TEMPERATURE SELF-ADHERING RUBBERIZED ASPHALT UNDERLAYMENT INSTALLED OVER
- EXISTING 3/4" PRESSURE TREATED PLYWOOD W/ 1" OF RIGID INSULATION OVER
- EXISTING POLYISOCYANURATE INSULATION OVER
- EXISTING SLOPPED METAL DECKING

ROOF AREA E1 AND F1:

- POLYVINYL CHLORIDE (PVC) ROOF SYSTEM FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- 2" POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- 2.5" POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

ROOF AREA A2, C4, AND F1: (INSULATION AND COVER BOARD THICKNESS TO MATCH EXISTING)

- THERMOPLASTIC POLYOLEFIN (TPO) FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

GENERAL NOTE:
CONRACTOR TO VERIFY ALL EXISTING CONDITIONS

## GENERAL CONSTRUCTION ROOF NOTES

1. ALL SIGHT EXPOSED ROOFING RELATED SHEET METAL VISIBLE FROM GROUND LEVEL TO BE FORMED OUT OF PRE-FINSHED SHEET METAL
2. ALL NON SIGHT EXPOSED ROOFING RELATED SHEET METAL NOT VISIBLE FROM GROUND LEVEL TO BE FORMED OUT OF GALVANIZED SHEET METAL.
3. COORDINATE INSTALLATION OF NEW ROOFING WITH OTHER TRADES. REPORT ANY CONFLICTS WITH ITEMS INSTALLED BY OTHER TRADES TO ARCHITECT.
4. TRAFFIC OVER THE SURFACE OF THE COMPLETED AND EXISTING ROOF SYSTEM IS NOT DESIRABLE. WHERE ROOF TRAFFIC OVER COMPLETED AND EXISTING ROOF AREAS OCCURS, PROVIDE PLYWOOD SHEATHING INSTALLED OVER 1" MINIMUM THICKNESS RIGID INSULATION BALLASTED IN PLACE TO PREVENT DISPLACEMENT BY WINDS OR MOISTURE.
5. INSTALL PRECAST CONCRETE SPLASH BLOCKS AT THE OUTFALL OF ALL DOWNSPOUTS. INSTALL A PROTECTION PAD BENEATH EACH SPLASH BLOCK WHERE WATER IS DISCHARGED ONTO ANOTHER ROOF AREA. VERIFY PROTECTION PAD IS COMPATIBLE WITH EXISTING ROOF SYSTEM AND IS INSTALLED PER MANUFACTURER'S REQUIREMENTS.
6. PROVIDE PROTECTION OF ALL ROOF AREAS WHERE WORK IS TO BE PERFORMED. DO NOT STORE ROOFING MATERIALS DIRECTLY ON THE ROOF.
7. INSTALL INSULATION CRICKETS AT THE HIGH SIDE OF ALL ROOF CURBS.
8. CONDENSATE COPPER PIPING TO BE PAINTED WITH BLACK UV RESISTANT PAINT. ALL CONDENSATE PIPING TO BE PROPERLY SUPPORTED.
9. CLEAN, PRIME, AND PAINT ALL EXPOSED GAS PIPING. PAINT TO BE YELLOW UV RESISTANT PAINT. ALL GAS PIPING IS TO BE PROPERLY SUPPORTED.
10. ALL ROOFTOP EQUIPMENT CURBS WILL NEED TO MEET 8 INCH MINIMUM FLASHING HEIGHT.
11. INSTALL PIPE SUPPORTS UNDER ALL PIPING, SPACED AT 8'-0" ON CENTER IN LINEAR DIRECTION AND AT 2'-0" AT CHANGE IN DIRECTION. INSTALL PROTECTION PADS AT ALL PIPE SUPPORTS.
12. INSTALL MULTI-PIPE PENETRATIONS IN LIEU OF PITCH POCKETS.

NOTE TO CONTRACTOR:
CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.



Deadline: April 2, 2026 - 2PM

Rockwall INDEPENDENT SCHOOL DISTRICT

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection Technology Consultants

| | ISSUANCES | |
|---|---|---|
| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
| 2 | | |
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REGISTERED ARCHITECT DANIEL T. DeMERS 14150 STATE OF TEXAS

Date of signing: 02-26-26

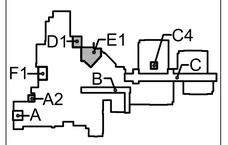
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

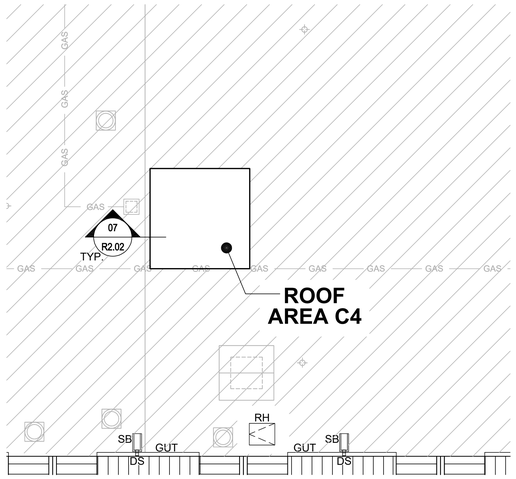
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**DATE** 02/26/2026

**KEYPLAN**

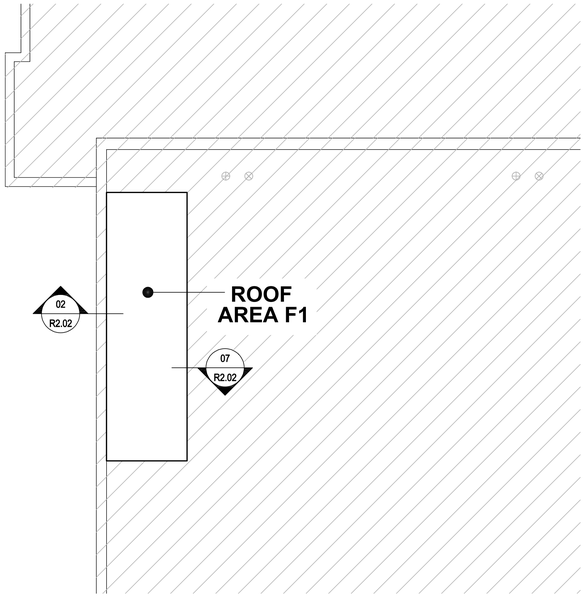



CONSTRUCTION ROOF PLAN - AREA D1 AND E1

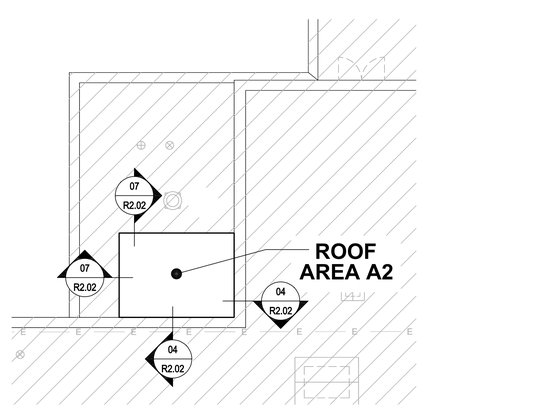
R1.03




03 **PARTIAL CONSTRUCTION ROOF PLAN - AREA C4**
1/8" = 1'-0"




02 **PARTIAL CONSTRUCTION ROOF PLAN - AREA F1**
1/8" = 1'-0"




01 **PARTIAL CONSTRUCTION ROOF PLAN - AREA A2**
1/8" = 1'-0"

## CONSTRUCTION LEGEND

ROOF AREA NOT IN CONTRACT.

SECTION CUT DETAIL

TIE IN NEW TPO SYSTEM AROUND HATCHES AS DIRECTED. REF. DETAIL 08/R2.02.

## CONSTRUCTION ROOF ASSEMBLIES

ROOF AREA A1, B1, B2, C1, C2 AND C3:

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- HIGH TEMPERATURE SELF-ADHERING RUBBERIZED ASPHALT UNDERLAYMENT INSTALLED OVER
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- EXISTING POLYISOCYANURATE INSULATION OVER
- EXISTING SLOPPED METAL DECKING

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- 2" POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- 2.5" POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
- EXISTING SLOPED METAL DECK

ROOF AREA A2, C4, AND F1: (INSULATION AND COVER BOARD THICKNESS TO MATCH EXISTING)

- THERMOPLASTIC POLYOLEFIN (TPO) FULLY ADHERED OVER
- COVER BOARD FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION FULLY ADHERED OVER
- POLYISOCYANURATE INSULATION MECHANICALLY FASTENED OVER
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GENERAL NOTE:
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CONTRACTOR TO PROVIDE 1" POLYISOCYANURATE INSULATION AND 3/4" PLYWOOD TEMPORARY PROTECTION UNDER ALL MATERIALS STORED ON EXISTING ROOF SURFACES.

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection
Technology Consultants

| | ISSUANCES | |
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| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
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REGISTERED ARCHITECT
DANIEL T. DeMERRITT
14150
STATE OF TEXAS

Date of signing: 02-26-26

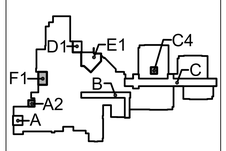
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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

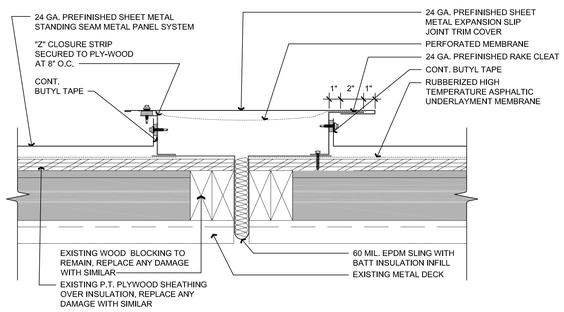
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**DATE** 02/26/2026

**KEYPLAN**



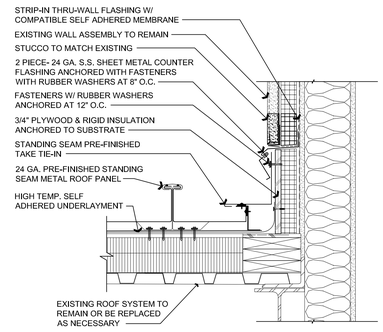

CONSTRUCTION ROOF PLAN - AREA A2, C4, AND F1

R1.04



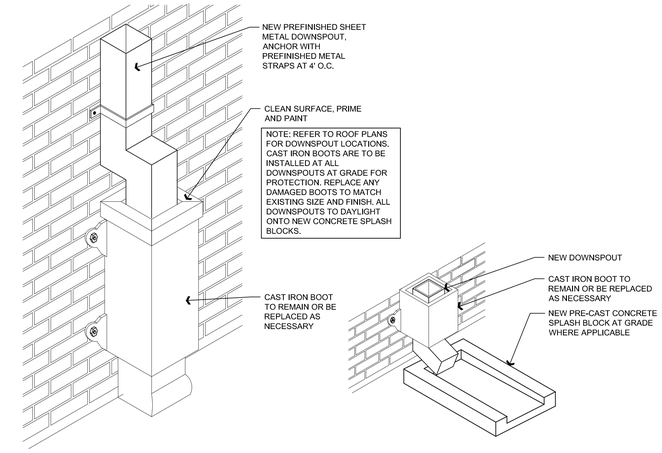

## 11 Standing Seam Expansion Joint Detail

Scale: 3" = 1'-0"



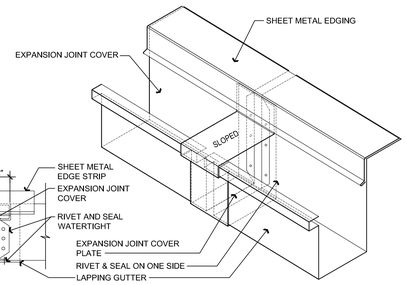

## 10 Rise Wall Tie in Detail at Stucco

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



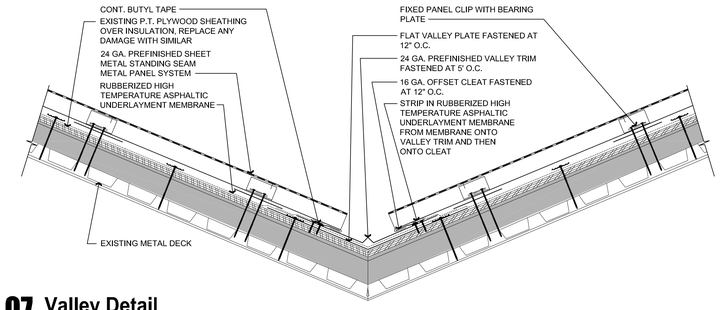

## 09 Downspout to Boot Detail

Scale: N.T.S.



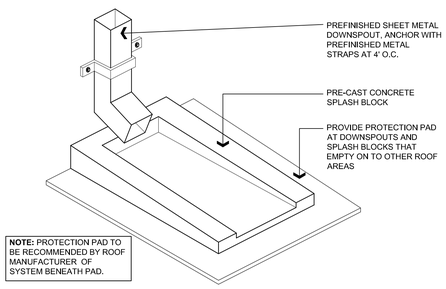

## 08 Gutter Expansion Joint

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



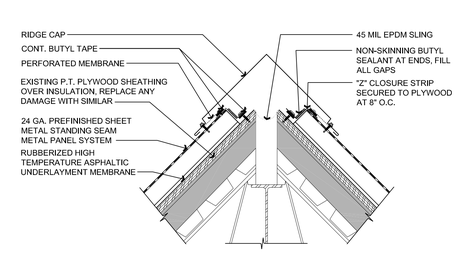

## 07 Valley Detail

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



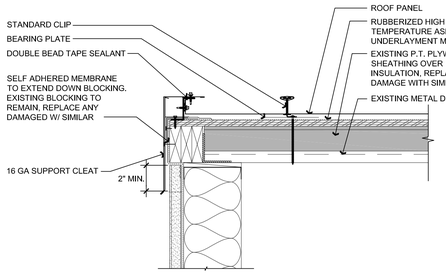

## 06 Downspout and Splashblock Detail

Scale: None



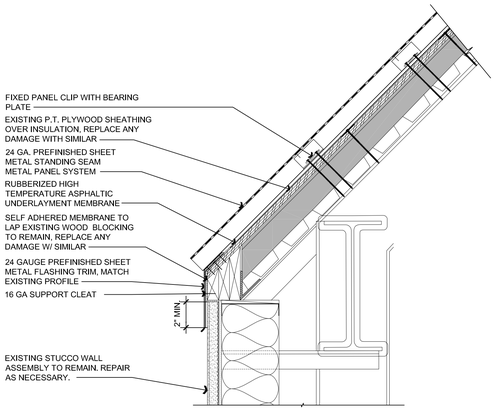

## 05 Ridge Detail

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



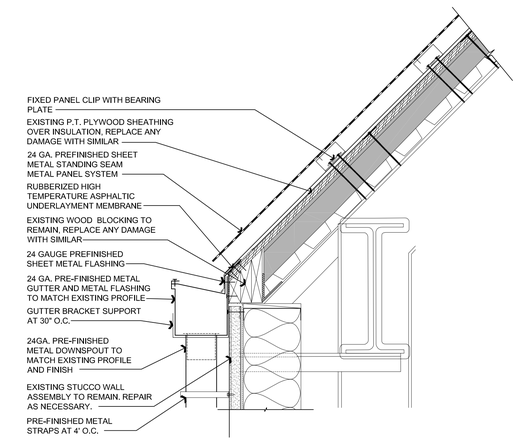

## 04 Rake Detail

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



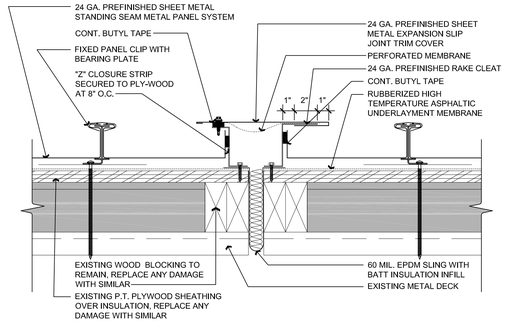

## 03 Low Eave Detail

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




## 02 Low Eave Detail With Gutter

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




## 01 Standing Seam Expansion Joint Detail

Scale: 3" = 1'-0"

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection Technology Consultants

ISSUANCES

| | | |
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| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
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REGISTERED ARCHITECT DANIEL T. DeWITT 14151 STATE OF TEXAS

Date of signing: 02-26-26

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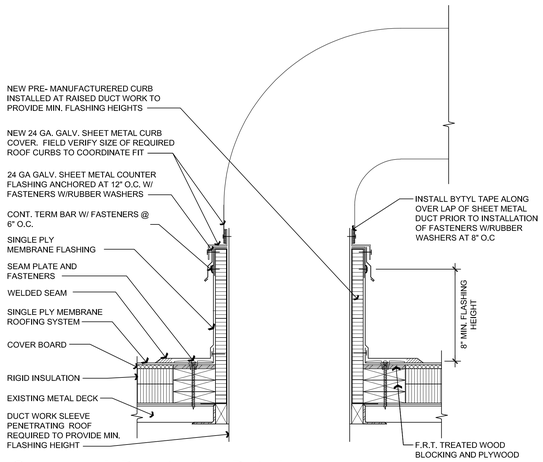
# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

**JOB** 00000.0000
**DATE** 02/26/2026

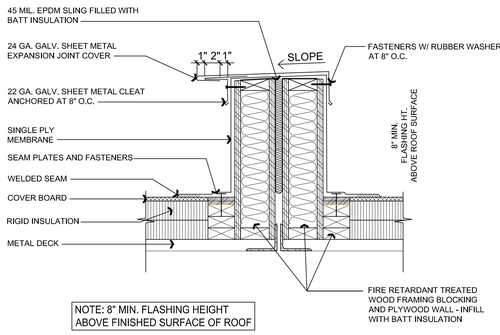
ROOF DETAILS

R2.00



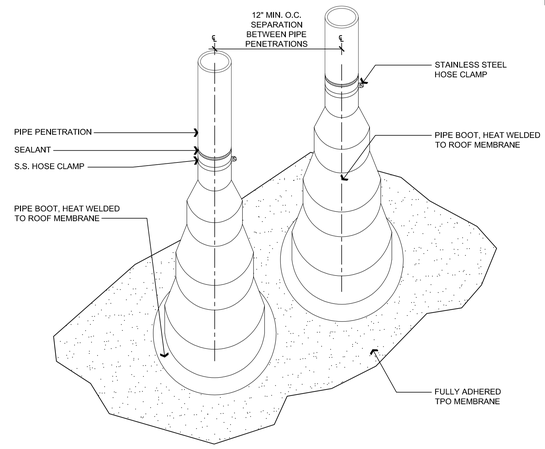

## 12 Gooseneck Penetration Detail

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



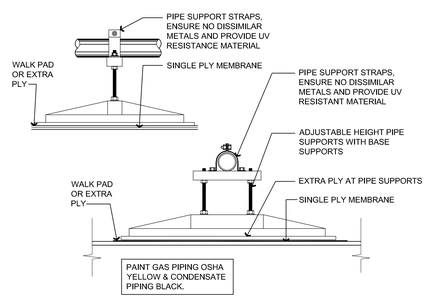

## 11 Expansion Joint Detail

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



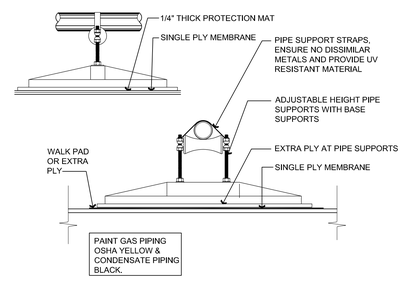

## 10 Pipe Penetration Detail

Scale: None



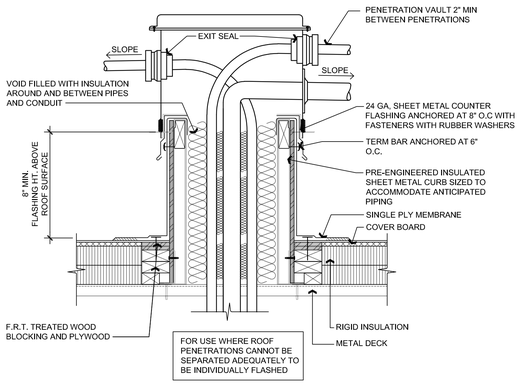

## 13 Conduit Support Detail

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



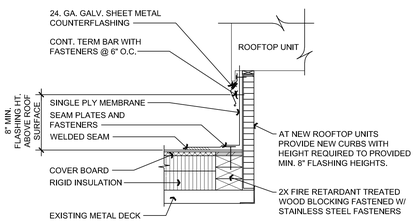

## 09 Gas Pipe Support Detail

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



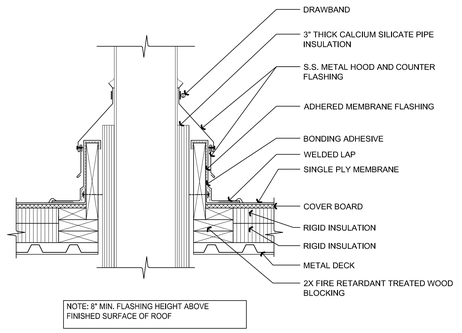

## 08 Multiple Pipe Penetration Detail

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



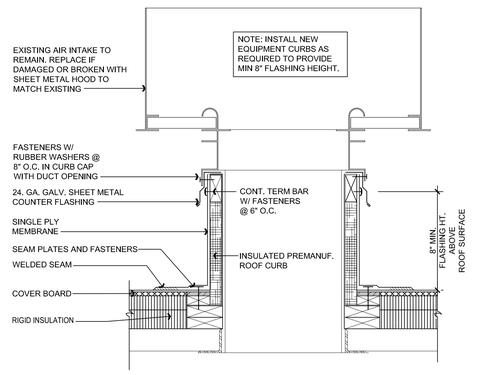

## 07 Equipment Curb Detail

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



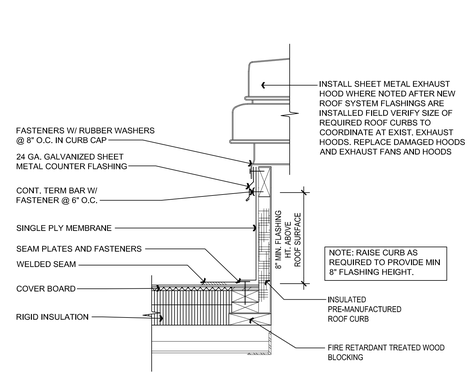

## 06 Hot Stack Detail

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



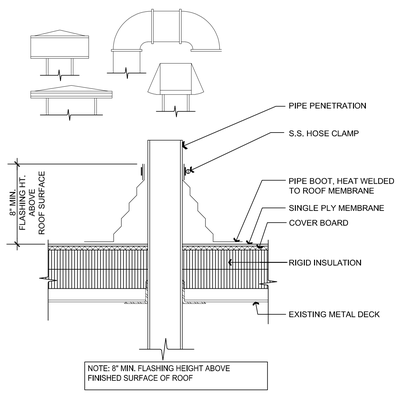

## 05 Outside Air Intake Detail

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



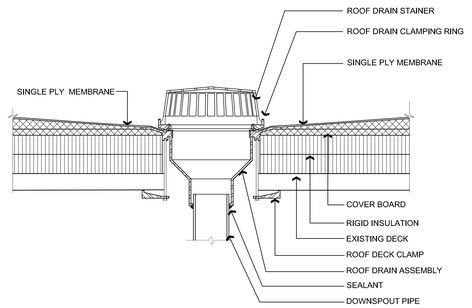

## 04 Exhaust Fan Detail

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



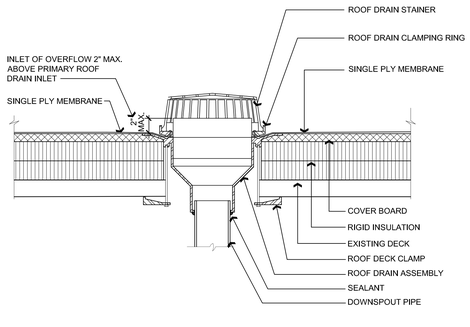

## 03 Pipe Penetration Detail

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




## 02 Primary Roof Drain

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




## 01 Overflow Roof Drain

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

Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT DANIEL T. DeMERCHANT 14155 STATE OF TEXAS

Date of signing: 02-26-26

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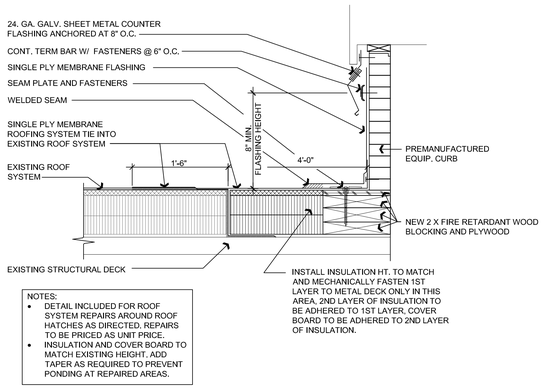
ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

| | |
|---|---|
| JOB | 00000.0000 |
| DATE | 02/26/2026 |

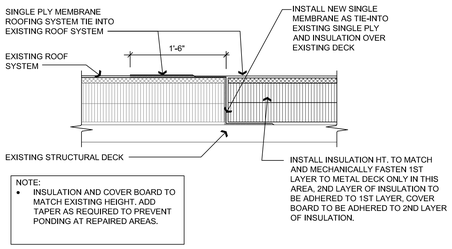
ROOF DETAILS

R2.01



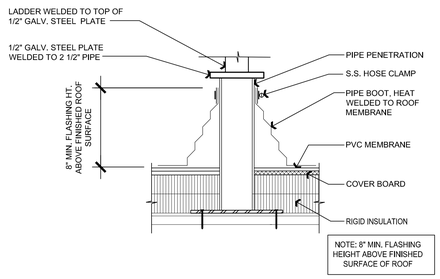

NOTES:
- DETAIL INCLUDED FOR ROOF SYSTEM REPAIRS AROUND ROOF HATCHES AS DIRECTED, REPAIRS TO BE PRICED AS UNIT PRICE.
- INSULATION AND COVER BOARD TO MATCH EXISTING HEIGHT, ADD TAPER AS REQUIRED TO PREVENT PONDING AT REPAIRED AREAS.

## 08 Roof Repair / Base Flashing @ Existing Curbs
Scale: 1 1/2"=1'-0"

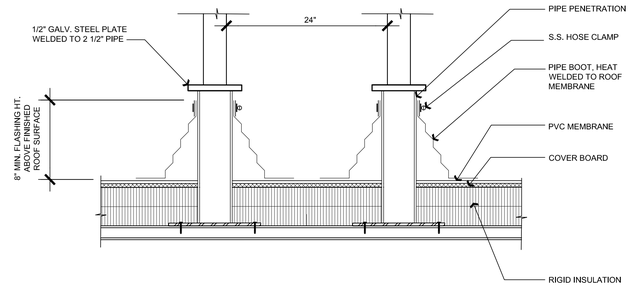



NOTE:
- INSULATION AND COVER BOARD TO MATCH EXISTING HEIGHT. ADD TAPER AS REQUIRED TO PREVENT PONDING AT REPAIRED AREAS.

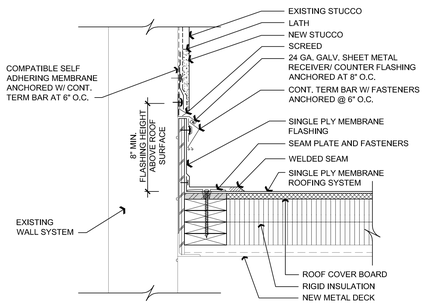
## 07 Roof Repair / Base Flashing @ Existing Curbs
Scale: 1 1/2"=1'-0"



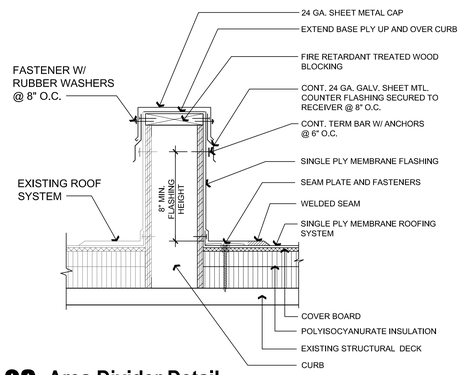

## 06 Ladder Support Flashing Detail
Scale: 1 1/2" = 1'-0"



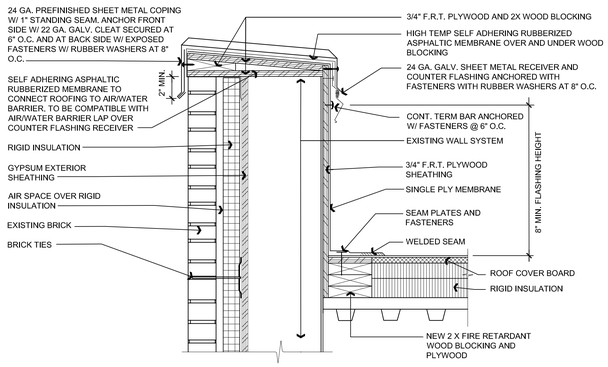

## 05 Ladder Support Flashing Detail
Scale: 1 1/2" = 1'-0"



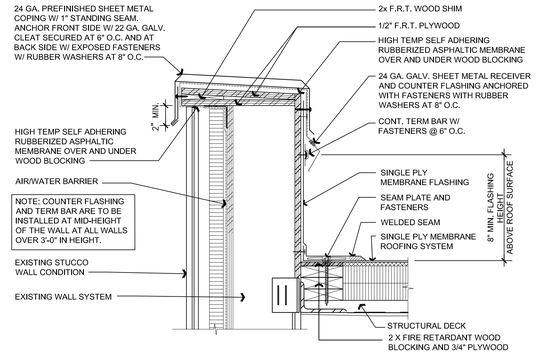

## 04 Wall Section
Scale: 1 1/2" = 1' - 0"




## 03 Area Divider Detail
Scale: 1 1/2" = 1' - 0"




## 02 Parapet Detail
Scale: 1 1/2" = 1'-0"




## 01 Parapet Detail
Scale: 1 1/2" = 1'-0"



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT DANIEL T. DeWEESE 14151 STATE OF TEXAS

Date of signing: 02-26-26

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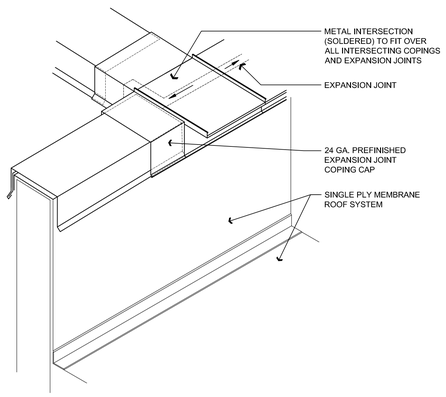
# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

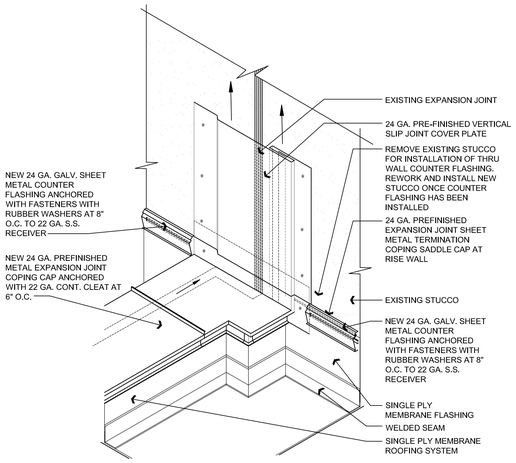
**JOB** 00000.0000
**DATE** 02/26/2026

ROOF DETAILS

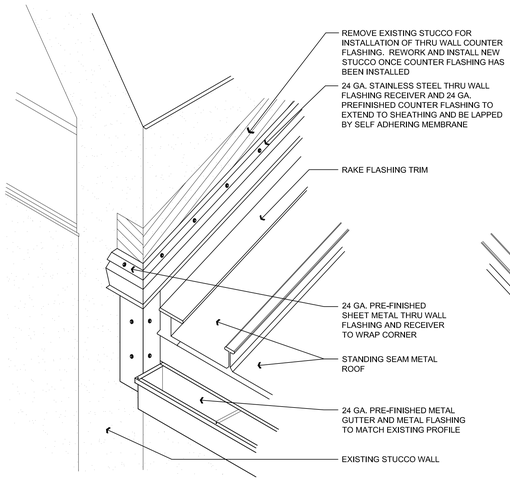
R2.02



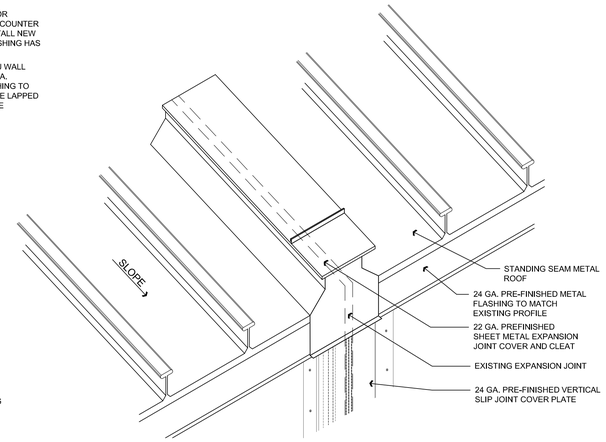

## 12 Exp. Jt. Intersection at Rise Wall Detail
Scale: N.T.S.



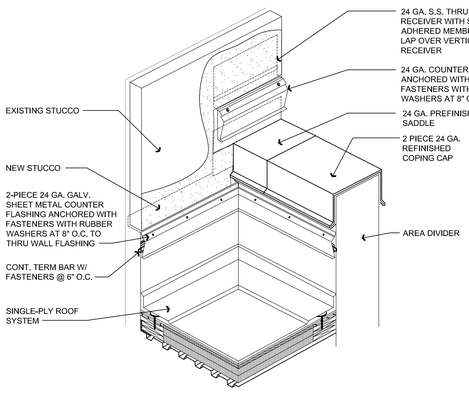

## 11 Parapet Termination at Rise Wall
Scale: N.T.S.



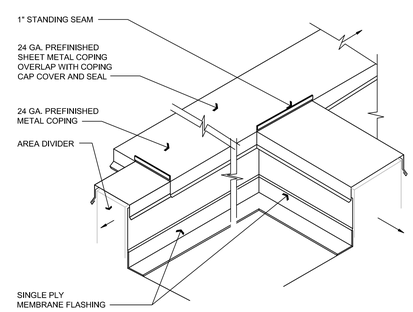

## 10 Standing Seam Rise Wall at Gutter Detail
Scale: NTS



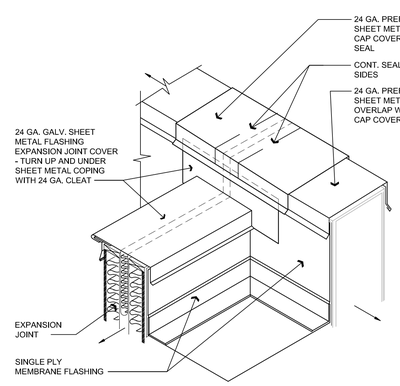

## 09 Standing Seam at Expansion Joint Cover Detail
Scale: NTS



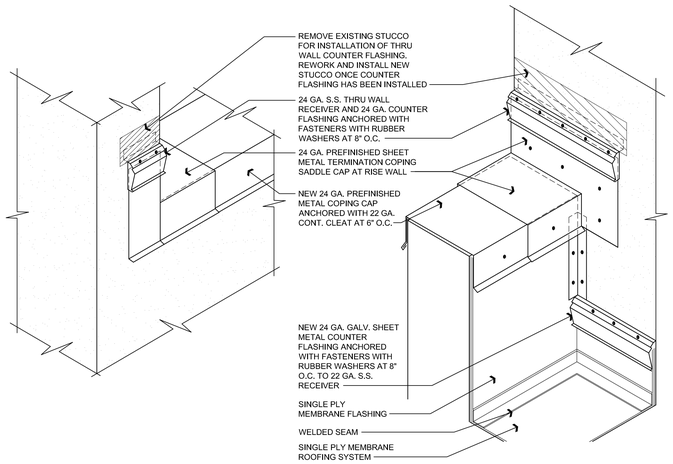

## 08 Area Divider Termination at Rise Wall
Scale: N.T.S.



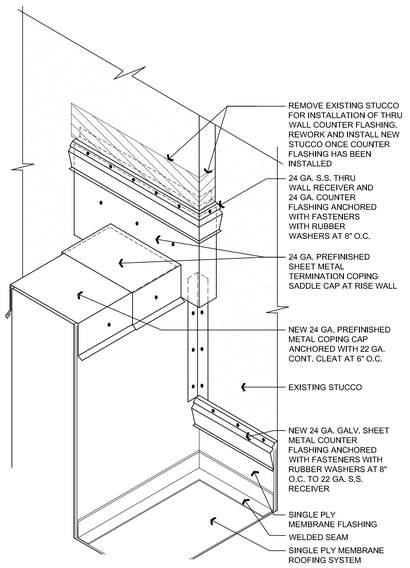

## 07 Area Divider Parapet Detail
Scale: N.T.S.



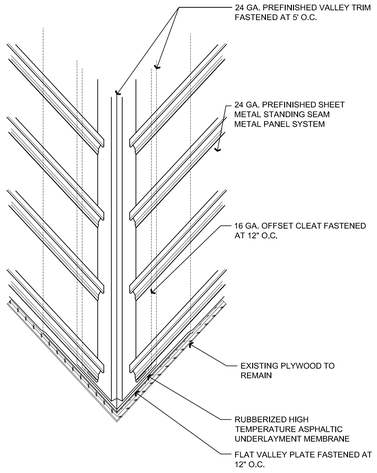

## 06 Parapet Detail
Scale: N.T.S.



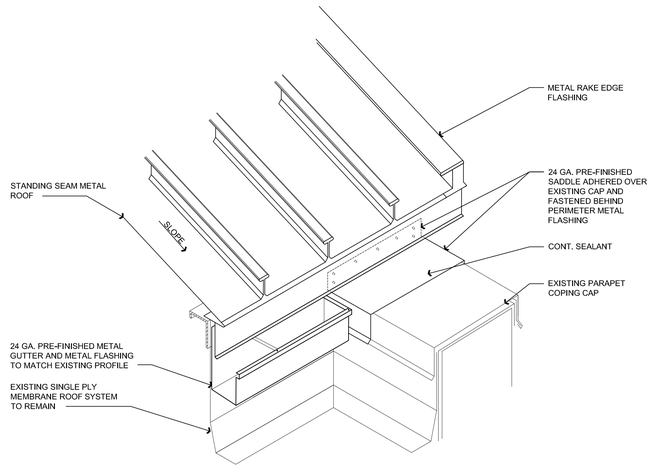

## 05 Parapet Termination at Rise Wall
Scale: N.T.S.



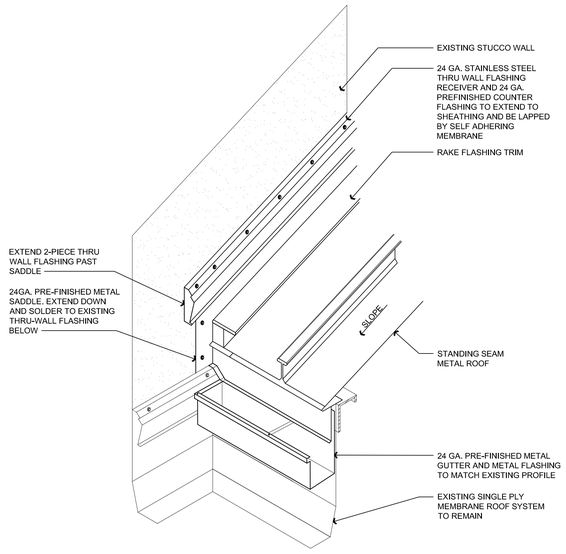

## 04 Parapet Termination at Rise Wall
Scale: N.T.S.




## 03 Standing Seam Valley Detail
Scale: NTS




## 02 Standing Seam at Existing Coping Detail
Scale: NTS




## 01 Standing Seam Rise Wall at Gutter Detail
Scale: NTS



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT DANIEL T. DeMARCUS 14155 STATE OF TEXAS

Date of signing: 02-26-26

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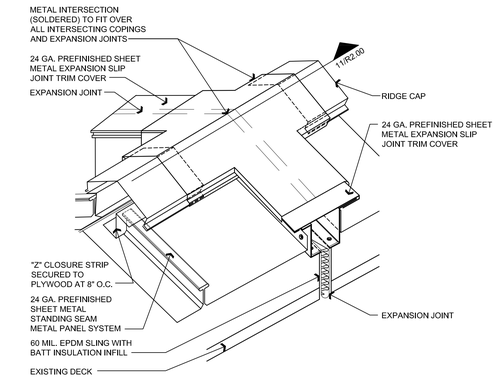
# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

**JOB** 00000.0000
**DATE** 02/26/2026

ISOMETRIC ROOF DETAILS

R3.00




**01 Expansion Joint at Ridge Detail**
Scale: NTS



Deadline: April 2, 2026 - 2PM

Rockwall Independent School District

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REGISTERED ARCHITECT
DANIEL T. DeWEESE
14151
STATE OF TEXAS

Date of signing: 02-26-26

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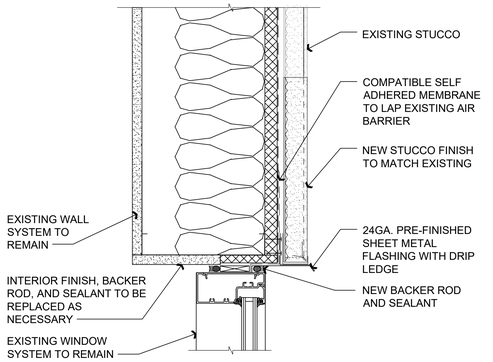
# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

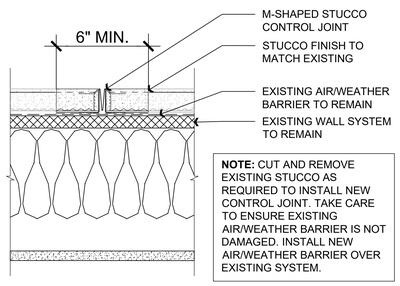
**JOB** 00000.0000
**DATE** 02/26/2026

ISOMETRIC
ROOF DETAILS

R3.01

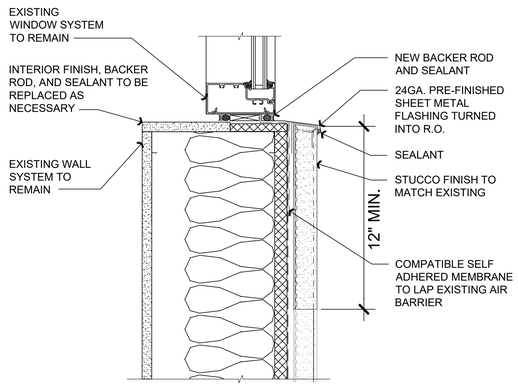



## 08 Header Section Detail at Stucco
Scale: 3" = 1'-0"

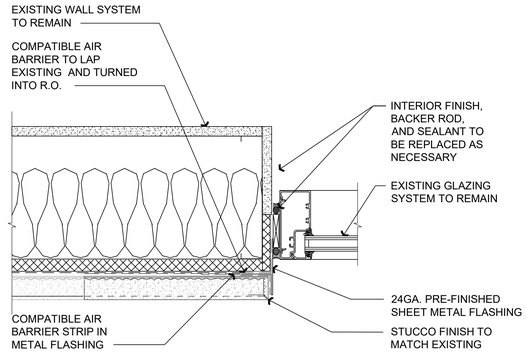



**NOTE:** CUT AND REMOVE EXISTING STUCCO AS REQUIRED TO INSTALL NEW CONTROL JOINT. TAKE CARE TO ENSURE EXISTING AIR/WEATHER BARRIER IS NOT DAMAGED. INSTALL NEW AIR/WEATHER BARRIER OVER EXISTING SYSTEM.

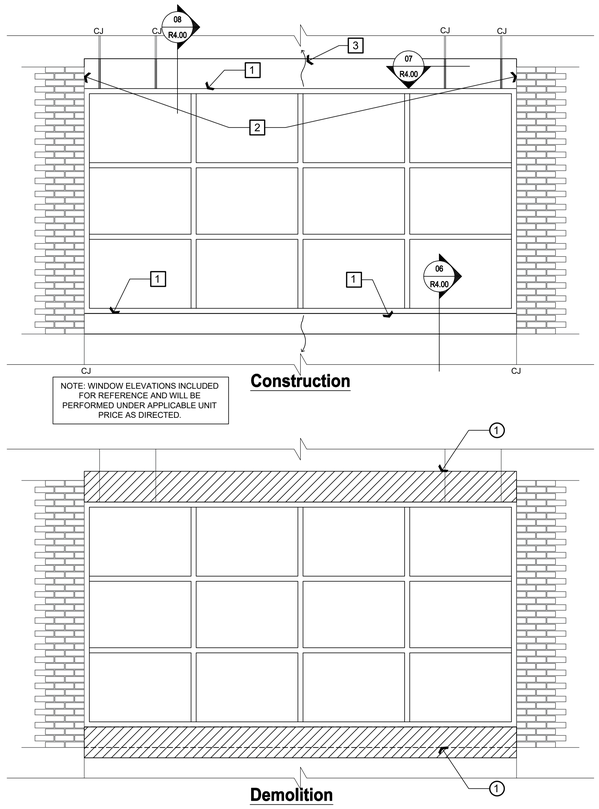
## 07 Control Joint Detail at Stucco
Scale: 3" = 1'-0"




## 06 Sill Section Detail at Stucco
Scale: 3" = 1'-0"




## 05 Jamb Section Detail at Stucco
Scale: 3" = 1'-0"



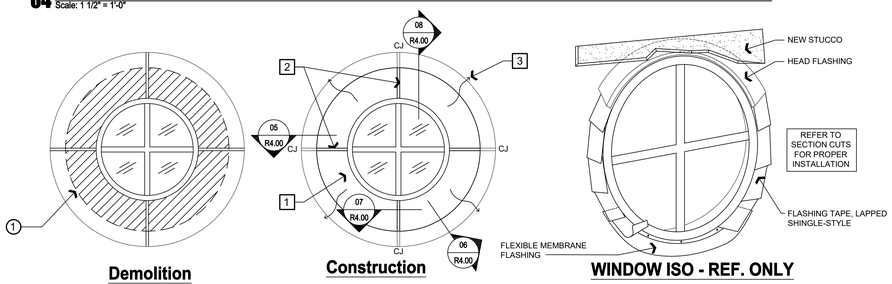

NOTE: WINDOW ELEVATIONS INCLUDED FOR REFERENCE AND WILL BE PERFORMED UNDER APPLICABLE UNIT PRICE AS DIRECTED.

**Construction**




**Demolition**

## 04 Window Elevation - Construction and Demolition
Scale: 1 1/2" = 1'-0"




**Demolition** **Construction** **WINDOW ISO - REF. ONLY**

## 03 Window Elevation - Construction and Demolition
Scale: 1 1/2" = 1'-0"

### LEGEND

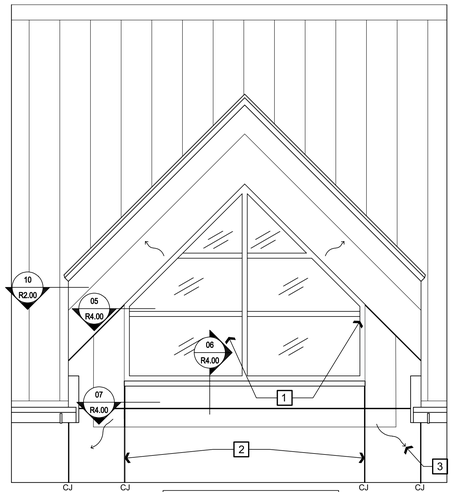
XX / XXXX — SECTION DETAIL

### GENERAL WINDOW CONSTRUCTION NOTES

1. WINDOWS TO HAVE BACKER ROD, AND SEALANT REPLACED WITH NEW.
2. PATCH AND REPAIR EXISTING CONDITIONS AFFECTED BY INSTALLATION OF NEW FLASHING AND FINISH SYSTEM.
3. ENSURE NEW PRE-FINISHED SUBSILL TO HAVE POSITIVE SLOPE AWAY FROM OPENING.
4. REPLACE STUCCO SURROUNDING ALL OPENINGS.

### KEYED CONSTRUCTION NOTES

1. INSTALL NEW FLASHING SYSTEM AROUND WINDOW INSTALL NEW STUCCO SYSTEM TO MATCH SURROUNDING EXISTING FINISH.
2. INSTALL NEW STUCCO CONTROL JOINTS.
3. NEW STUCCO TO BE PAINTED TO MATCH EXISTING. PAINT APPLICATION TO BEGIN AT THE WINDOW AND CONTINUE AWAY TO THE NEXT CONTROL JOINT.




NOTE: WINDOW ELEVATIONS INCLUDED FOR REFERENCE AND WILL BE PERFORMED UNDER APPLICABLE UNIT PRICE AS DIRECTED.

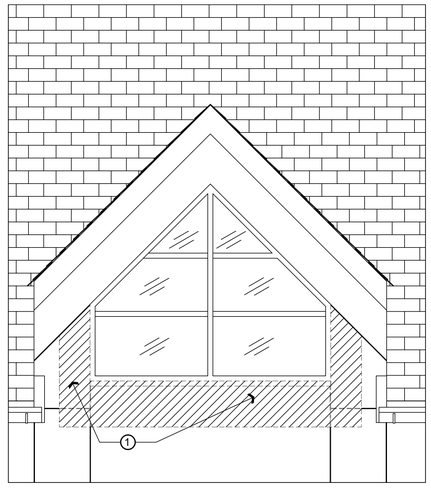
## 02 Window Elevation - Construction
Scale: 1 1/2" = 1'-0"

### GENERAL DEMOLITION NOTES

1. DOCUMENT ALL EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK - CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING ANY DAMAGES THAT ARE NOT PREVIOUSLY DOCUMENTED.
2. ANY AREAS WHERE THE EXISTING SUBSTRATE IS FOUND TO BE WET IS TO BE REMOVED TO EXTENT OF WET AREA UNTIL DRY SUBSTRATE IS FOUND.
3. CLEAN AND PREPARE EXISTING WINDOW FRAME TO RECEIVE NEW FLASHING AND FINISH MATERIAL.
4. INSPECT ALL CONTROL JOINTS FOR DETERIORATION. CUT OUT AND REPLACE ALL DETERIORATED CONTROL JOINTS.

### KEYED DEMOLITION NOTES

1. REMOVE 12 INCH WIDE STRIP OF STUCCO DOWN TO THE EXTERIOR SHEATHING AT WINDOW JAMBS AND SILL. USE CARE TO NOT DAMAGE EXISTING AIR/WEATHER BARRIER AND PROVIDE 6IN OVERLAP OF AIR/WEATHER BARRIER TO BE STRIPPED INTO NEW AIR/WEATHER BARRIER SYSTEM. PREPARE SUBSTRATE AND INSTALL NEW FLASHING AND STUCCO.




NOTE: WINDOW ELEVATIONS INCLUDED FOR REFERENCE AND WILL BE PERFORMED UNDER APPLICABLE UNIT PRICE AS DIRECTED.

## 01 Window Elevation - Demolition
Scale: 1 1/2" = 1'-0"

Rockwall Independent School District

CORGAN

CORGAN
401 N. Houston St, Dallas, TX 75202
T: 214-748-2000

DRYTEC
Moisture Protection Technology Consultants

| | ISSUANCES | |
|---|---|---|
| 1 | 02/26/2026 | ISSUE FOR CONSTRUCTION |
| 2 | | |
| 3 | | |
| 4 | | |
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REGISTERED ARCHITECT — Daniel T. DeMarco — 14150 — STATE OF TEXAS

Date of signing: 02-26-26

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# ROCKWALL HEATH HS ROOF REPLACEMENT

801 Laurence Dr. Heath, TX 75032

**JOB** 00000.0000
**DATE** 02/26/2026

WINDOW ELEVATION AND DETAILS

R4.00

# REQUEST FOR PROPOSALS

# PARTIAL ROOFING REPLACEMENT PROJECT

# CELIA HAYS ELEMENTARY SCHOOL

# ROCKWALL, TX

# PROJECT NO. 25-1270-56

STATE OF TEXAS
DEAN D. BROWN
117508
LICENSED
PROFESSIONAL ENGINEER

03/02/26

Armko
Texas Registered Engineering Firm
F-006498

ARMKO

1320 SPINKS ROAD
FLOWER MOUND, TX 75028
972.874.1388 / FAX
972.874.1391

**ROCKWALL INDEPENDENT SCHOOL DISTRICT** **PROJECT NO. 25-1270-56**
**PARTIAL ROOF REPLACEMENT FOR CELIA HAYS ELEMENTARY SCHOOL**
**ROCKWALL, TX**

| | |
|---|---|
| CSP Bid Release | March 2, 2026 |
| CSP Public Notice and Release | 1st Ad: March 6, 2026<br>2nd Ad: March 13, 2026 |
| Pre-Proposal Conference starting at Admin Building | March 12, 2026, at **10:00 A.M.** |
| **Deadline for Questions/Request for Interpretations from Offerors** | March 24, 2026, **at 12:00 P.M.** |
| Addendum Issued with Responses to Offeror Questions/Request for Interpretations (if applicable) | **March 25, 2026** |
| **Proposal Due Date** | **April 2, 2026, at 2:00 P.M.** |
| Evaluation Period | April 3, 2026 |
| Board of Trustees Meeting - Recommendation of Contract Award | April 20, 2026 |
| Board Award<br><br>Approximate Construction Start Date | April 22, 2026<br><br>May 23, 2026 |
| **Substantial Completion Date** | **August 4, 2026 (NO EXCEPTIONS)** |

# 00 01 10
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- **01 10** Table of Contents
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- **33 00** Submittals and Substitutions
- **50 00** Temporary Facilities
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**DIVISION 04 MASONRY**
- **05 23** Through-Wall Flashing System

**DIVISION 06 CARPENTRY**
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# LIST OF DRAWINGS

## ROOF PLANS

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| GS1.00 | COVER PAGE |
| GS2.00 | WIND UPLIFT PRESSURE PLAN |
| GS2.01 | WIND UPLIFT PRESSURE PLAN – ENLARGED |
| R1.01 | OVERALL ROOF PLAN |

## DETAILS

| | |
|---|---|
| R2.01 | ROOF DETAILS |

**END OF SECTION 00 01 15**

# SECTION 01 10 00
# GENERAL REQUIREMENTS

## 1.01 DESCRIPTION OF WORK

A. It is the intent of the specification that the new work will provide a watertight facility. These specifications describe the minimum acceptable standards of construction and finish.

B. Tear off and replace existing shingles roof system with new prefinished standing seam roof system with associated trim accessories, gutters and downspouts.

## 1.02 INSURANCE

A. The Contractor shall maintain insurance of the kinds and in the amounts specified below and furnish Rockwall Independent School District with Certificates of Insurance as evidence thereof in the prescribed form. If any work provided for or to be performed under any Specifications is sub-let (as otherwise permitted by the terms of such Specifications), the Contractor shall require the Subcontractor to maintain and furnish him with satisfactory evidence of Workmen's Compensation, Employer's Liability and such other forms and amounts of insurance which the Contractor deems reasonably adequate.

B. The Contractor will provide and maintain standard fire, extended coverage perils, vandalism and malicious mischief insurance to protect the interest of both the Contractor and the Owner for materials brought into the job or stored on the premises. Such insurance shall be for one hundred percent (100%) of the insurable value of the work to be performed including all items of labor and materials incorporated therein, materials stored at the job-site to be used in completing the work, and such other supplies and equipment incidental to the work as are not owned or rented by the Contractor, the costs of which are included in the direct cost of the work.

C. This insurance shall not cover any tools, derricks, machinery, tar buckets, ladders, engines, workmen's quarters, boilers, pumps, wagons, scaffolds, forms, compressors, shanties, or other items owned or rented by the Contractor, the cost of which is not included in the direct cost of the work.

D. In accordance with above items, the Contractor shall maintain the following insurance:

Contractor shall carry throughout the life of this Contract, at his expense, with insurers satisfactory to Rockwall ISD, insurance of not less than the following limits:

| Coverage | Minimum Limit |
|---|---|
| Workmen's Compensation | Statutory |
| Employer's Liability | $100,000 |

| | |
|---|---|
| Comprehensive General Liability | |
| Bodily Injury | |
| Each Occurrence Each Person | $500,000 |
| Property Damage | |
| Each Occurrence | $100,000 |
| Annual Aggregate | $300,000 |
| Comprehensive Automobile Liability | |
| Bodily Injury | |
| Each Person | $300,000 |
| Each Occurrence | $500,000 |
| Property Damage | |
| Each Occurrence | $100,000 |
| Owner's Protective Liability | |
| Bodily Injury | |
| Each Occurrence | $500,000 |
| Property Damage | |
| Each Occurrence | $100,000 |
| Annual Aggregate | $300,000 |
| Builder's Risk | Fully Insurable Value of the Work |
| "Umbrella" Liability<br>Contract Value up to $3,000,000 | $1,000,000 |

E. This Insurance shall:
1. include coverage for the liability assumed by the Contractor;
2. include completed operation coverage which is to be kept in force by the Contractor for a period of not less than one year after completion of the work provided for or performed under these specifications;
3. not be subject to any of the special property damage liability exclusions commonly referred to as the XCU exclusions pertaining to blasting or explosion, collapse or structural damage and underground property;
4. not be subject to any exclusion of property used by the insured or property in the case, custody or control of the insured or property as to which the insured for any purpose is exercising physical control; and
5. the Certificates of Insurance furnished by the Contractor shall show by specific reference that each of the foregoing items have been provided for.

F. The Certificates of Insurance furnished by the Contractor as evidence of the insurance maintained by him shall include a clause obligating the Insurer to give Rockwall Independent School District ten (10) days prior written notice of cancellation or any material change in the insurance.

1.03 TAXES

A. Except as otherwise provided in the Contract Documents the Contract Price includes all applicable federal, state and local taxes. The purchase, lease, rental, storage, use or other consumption of tangible personal property, for the performance of this Contract by the Contractor, is exempted from state and local sales tax pursuant to the provisions of Article 20.04 (Y) of the Texas Limited Sales Excise and Use Tax Act. To claim the benefit of this exemption, the Contractor must comply with such procedures as may be prescribed by the State Comptroller of Public Accounts.

1.04 INDEMNITY

A. The contractor shall indemnify the Owner and hold Owner harmless from and against any and all loss, cost, damage or expense of every kind and nature (including, without limitation, court costs, expenses and reasonable attorney's fees) arising out of injuries to or death of persons (including, without limitation, the Owner, the contractor and any Subcontractor and their respective employees, agents, licensees and representatives) or damage to or destruction of property (including, without limitations, property of the Owner, the contractor and any Subcontractor and property of their respective employees, agents, licensees and representatives) in any manner except as stated in Insurance sections below, caused by, resulting from, incident to, connected with or growing out of performance of the agreement, unless caused solely by the negligent acts or omissions of the Owner, or its employees, agents, licensees or representatives.

B. Contractor shall give prompt notice to Owner's representative of all losses, damages or injuries to person or property of Owner, contractor or third person in any way related to this agreement or for which a claim might be made against Owner and shall promptly report to Owner's representative all such claims of which contractor has notice, whether relating to matters insured or uninsured.

C. No settlement of payment of any claim for loss, injury or damage or other matter as to which Owner may be charged with obligation to make any payment or reimbursement shall be made by contractor without the written approval of Owner.

1.05 LIENS

A. Neither the final payment nor the remaining retained percentage shall 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, if any, to final payment;
   3. if required by the Owner, other data establishing payment or satisfaction of all such obligations, 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.

B. If any Subcontractor refuses to furnish a release or waiver required by the Owner, the contractor may furnish a bond satisfactory to the Owner to indemnify him against any such lien.

C. If any such lien remains unsatisfied after all payments are made, the contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

1.06 ADDENDA

A. Any verbal statement or inference prior to the proposal opening regarding modification of specifications is invalid unless so stated on an officially issued addendum.

1.07 REJECTION OF PROPOSALS

A. The Owner reserves the right to reject any one or all proposals, to waive any formalities or irregularities, and to award the contract in the best interest of the School District

1.08 ASSIGNMENT

A. The contractor shall not assign this agreement, or any part thereof, without approval in writing of the Owner.

1.09 RELATIONSHIP

A. The relationship of the contractor to the Owner shall be that of an independent contractor, and the contractor shall have no power to bind the Owner.

1.10 TERMINATION

A. If the contractor shall default in performance of any terms or provisions of this agreement, then the Owner may, upon seven (7) days prior written notice and without prejudice to any other right or remedy, terminate the employment of the contractor and take possession of the premises and all materials and appliances thereon and finish the work by whatever method the Owner may deem expedient. In such event the contractor shall not be entitled to receive any further payment hereunder until the work is finished. The total cost to the Owner of finishing the work shall be paid to Owner or may be deducted from any balance due the contractor under this agreement.

1.11 CANCELLATION

A. In the event the Owner decides not to proceed with the work, though the contractor is not at fault and subject to provisions of Liens paragraph above, the Owner may terminate this agreement at any time upon written notice to the contractor, thereupon the Owner's only liability shall be to pay to the contractor all costs for labor and materials incorporated in the work prior to termination and all costs incurred in discharging outstanding obligations of the contractor at the request of the Owner, and a reasonable overhead and profit, less any previous payments made hereunder or amount of claims of Owner against contractor.

1.12 ACCESS TO RECORDS

A. The parties to this Agreement agree that the Controller General of the United States, Secretary of the HHS and their duly authorized representative, may, upon written request, have access to those books, documents, and records relating to the services provided under this contract, for a period of four (4) years after the furnishing of such services in accordance with the applicable regulations issued pursuant to 42 CFR, Part 420, Regulation 420.300. Any Subcontractor or related party to the contract shall also be deemed to have agreed to these terms and conditions.

1.13 PERMITS

A. The Contractor shall obtain and pay for all permits required, give all legal notices and pay all fees required for the work. Contractor shall comply with all ordinances and laws. Any and all work done which does not meet requirements of any local authorities must be properly redone, and incidental work replaced by the Contractor, without cost to the Owner.

1.14 CONTRACT DOCUMENTS

A. In the event of a conflict between the reroofing specifications and the Owner's contract documents, the (MORE STRINGENT) or Owner's contract documents shall take precedence.

1.15 CONTRACT CONDITIONS

A. The contractor agrees that he is familiar with the premises, drawings and specifications, accepts the conditions that will exist in performing the work and the price for this agreement was established with full consideration of such acceptance. Contractor shall perform the work under the direction and to the satisfaction of the Owner's representative designated by the Owner. The contractor shall cooperate with Owner's representative and other contractors on the premises and shall carry on the work as to not hinder, delay, or interfere with the operations of the Owner or other contractors.

B. This roof system shall only be applied by a roofing Contractor previously certified by the roof system manufacturer. Contractor must be able to furnish evidence of this certification.

C. Installer must be an experienced single firm specializing in the type of removal and replacement work required, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Owner's representative.

D. These roof repairs shall only be performed by a roofing contractor previously certified by the roof system manufacturer. Contractor must be able to furnish evidence of this certification.

E. Installer must be an experienced single firm specializing in the type of roofing repair required, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Owner's representative.

F. Waterproofing system shall only be applied by a waterproofing contractor previously certified or approved by the waterproofing system manufacturer. Contractor shall furnish evidence of this certification with bid.

G. Installer must be an experienced single firm specializing in the type of waterproofing required, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Owner's representative.

1.16 CHANGES FOR EXTRA WORK

A. No change or addition to specifications and drawings shall be made except upon receipt by the Contractor of a signed order from the Owner authorizing such a change. No claims for an extra to the contract price shall be valid unless so authorized.

1.17 PRE-CONSTRUCTION CONFERENCE

A. A conference shall be scheduled by the Owner's representative and conducted at the work site prior to start of work. The Contractor's project supervisor or foreman and the Owner's representative shall attend. Job schedule, submittals, existing conditions, and specifications shall be reviewed and any questions arising shall be resolved to the satisfaction of all parties prior to start of work. Contractor shall begin work within five (5) calendar days following Owner's signing of contract and/or issuance of the written notice to proceed with work, weather permitting.

1.18 WORKING TIME

A. A working day is defined as a calendar day, not including Saturdays, Sundays, or legal holidays, in which weather or other conditions not under the control of the company will permit the performance of the principal units of work underway for a continuous period of not less than seven (7) hours between 7:00 A.M. and 6:00 P.M. For every Saturday on which the company chooses to work, one day will be charged against the working time when weather conditions will permit seven (7) hours of work as delineated above. A principal unit of work shall be that unit which controls the completion time of the agreement. Nothing in this item shall be construed as prohibiting the company from working on Saturdays if it so desires. If Sunday work is permitted by the Owner, working time will be charged on the same basis as weekdays.

1.19 QUALITY ASSURANCE

A. All work and materials hereinafter specified shall be best of kind described and, unless specified otherwise, shall be new and of best quality. The specified roofing system shall have been used successfully in the United States for a minimum of ten (10) years.

B. All materials will be securely fastened in place in a watertight, neat and workmanlike manner.

C. All workmen shall be thoroughly experienced in the particular class of work for which they are employed.

D. All work shall be done in accordance with these specifications and shall meet the approval in the field of the Owner's representative. Contractor's representative and/or job supervisor shall have a complete copy of specifications and drawings on job site at all times.

E. Contractor shall plan and conduct the operations of the work so that each section started on one day is complete, details installed and thoroughly protected before the close of work for that day.

F. Application of materials shall be in strict accordance with the manufacturer's recommendations. In the instance of a conflict between these specifications and those of the manufacturer, the most stringent shall take precedence.

G. Roofing system manufacturer shall have approval for FM Global wind uplift requirements and shall meet Underwriter's Laboratory fire rating.

H. Roof system shall be installed in accordance with FM Global requirements.

1.20 EXAMINATION OF PREMISES

A. Before submitting proposals for his work, each contractor shall be held to have examined the premises and satisfied himself as to the existing conditions under which he will be obliged to work.

1.21 PROTECTION OF PERSONS AND PROPERTY

A. Work: The contractor shall maintain adequate protection of all his work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. He shall provide and maintain at all times any OSHA required danger signs, guards, and/or obstructions necessary to protect the public and his workmen from any dangers inherent with or created by the work in progress. All federal, state, and city rules and requirements pertaining to safety and all EPA standards, OSHA standards, NESHAP regulations pertaining to asbestos as required shall be fulfilled by the contractor as part of his bid.

B. The contractor shall erect and maintain, as required by existing conditions and performance of the contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

C. The contractor shall repair, refinish, and make good any damage to the building or landscaping resulting from any of his operation. This shall include, but is not limited to, any damage to plaster, tile work, wall covering, paint, ceilings, floors, or any other finished work. Damage done to the building, equipment, or grounds must be repaired at the successful contractor's expense holding the Owner harmless from any other claims for property damage and/or personal injury.

D. Property: Protect existing planting and landscaping as necessary or required to provide and maintain clearance and access to the work of this contract. Examples of two categories or degrees of protection are generally as follows:

1. Removal, protection, preservation, or replacement and replanting of plant materials.
2. Protection of plant materials in place, and replacement of any damage resulting from the contractor's operations.

E. Safety Precautions and Programs: The contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

F. Safety of Persons and Property: The contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:
1. Employees on the work and other persons who may be affected thereby.
2. The work, materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the contractor or the contractor's Subcontractors or Sub-subcontractors.
3. Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

G. The contractor shall give notices and comply in all respects with provisions and regulations of any laws, acts, codes, ordinances, rules, regulations, and lawful orders of public authorities that may be applicable to the performance of the work called for herein, and that have bearing on the safety of persons or property, or their protection from damage, injury, or loss.

H. Fire Safety: The contractor and all Subcontractors shall take all necessary precautions to keep the premises free of fire and safety hazards. The contractor shall prevent all agents, employees, licensees and invitees of the contractor from smoking on the Owner's premises and from operating or using any flame, spark or explosion hazard producing devices anywhere on or about the premises without the written approval of the Owner's representative.

I. The contractor shall designate a responsible member of the contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the contractor's superintendent unless otherwise designated by the contractor in writing to the Owner's representative.

J. The contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

1.22 EMERGENCY CALL

A. Twenty-four Hour Call: The contractor shall have personnel on call twenty-four (24) hours per day, seven (7) days per week for emergencies during the course of a job. The Owner's project manager is to have the twenty-four (24) hour numbers for the contact. Contractor must be able to respond to any emergency call and have personnel on-site within two (2) hours after contact. Numbers available to the Owner's project manager are to be mobile, home and office numbers for:
1. Job Foreman
2. Job Superintendent
3. Owner or Company Officer

## 1.23 USE OF PREMISES

A. The Contractor is advised that the Owner will occupy the building at all times, and the Contractor must provide all safeguards required to protect personnel and to keep noise levels as low as reasonably possible for each operation.

B. The Contractor shall:
   1. Coordinate work in such a manner as to not interfere with the normal operation of the building.
   2. Assume full responsibility for protection and safekeeping of products stored on premises.
   3. Agree to hold the Owner harmless in any and all liability of every nature and description that may be suffered through bodily injuries, including death of any persons by reason of negligence of the Contractor, agents, employees, or Subcontractors.
   4. The Contractor and all Subcontractors shall take all necessary precautions to prevent the use of alcoholic beverages on the Owner’s premises.

C. Temporary Sanitary Facilities:
   1. The contractor shall furnish and maintain temporary sanitary facilities for employees use during this project, including temporary toilets, wash facilities, and drinking water fixtures.
   2. Toilet units shall be self-contained, single-occupant, of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
   3. Facilities shall be installed where they will best service the project's needs, with Owner's/Owner's Representative's approval.
   4. Contractor shall provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
   5. All portable facilities shall comply with local laws, codes, and regulations.
   6. Contractor shall be responsible to see that the units are removed in a timely manner after the completion of the project.

## 1.24 DEMOLITION

A. All abandoned pitch pans, equipment, vents, curbs, and other such debris shall be removed by the Contractor. Abandoned items that require deck placement shall be marked by the Owner prior to proposal due date and/or the commencement of work. Contractor shall install new decking of like dimensions to provide a suitable substrate in areas where penetrations through the deck are removed.

1.25 JOB CONDITIONS

A. Coordinate the work of the contractor with the work to be performed by the Owner's personnel, to ensure proper sequencing of the entire work. The Owner's personnel will be erecting interior protection for equipment, if required. The contractor is to schedule his work so that adequate time is allowed for the Owner's personnel to perform this work. No roof work shall be performed until the Owner's personnel have completed erection of the interior protection in that area.

B. Proceed with roofing work only when weather conditions are in compliance with manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with specifications.

C. Schedule the work so the building will be left watertight at the end of each day. Do not remove more roofing material than can be reinstalled in any working day.

D. All surfaces to receive new roofing shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Owner. Load placed on the roof at any point shall not exceed the safe load for which the roof is designed.

E. The contractor shall take all necessary precautions to protect the roof mat and deck from damage. The contractor shall be responsible for repairing all new areas of damage caused by the negligence of the contractor, at the contractor's expense. The Owner's on-site representative shall determine damage caused by contractor negligence.

F. The contractor shall follow local, state, and federal regulations, safety standards, and codes for the removal, handling, and disposal of asbestos containing materials, if present. When a conflict exists, use the stricter document.

G. Follow insurance underwriter's requirements acceptable for use with specified products or systems.

H. Due caution should be exercised so as not to alter the structural integrity of the deck. When cutting through any deck, care should be taken so as not to damage the deck or any part of the deck, such as post tension cables, etc.

I. All kettles shall have an automatic thermostat control, and temperature gauge, all in working order.

J. A temperature recording device, twenty-four (24) hour type, shall also be used. Daily records will be delivered to the Owner's representative or designated person, at the end of each twenty-four (24) hour recording. Calibrate all temperature controls.

K. For further information regarding roofing material manufacturer's recommendations for project conditions, refer to the manufacturer's published application manual.

L. The contractor is to be aware of the potential for roof leaks on the existing roof as a result of ruptured blisters and/or roof mat damage caused by the vacuum process, foot traffic, or material and equipment storage. The contractor is to take all necessary precautions to prevent damage to the existing roof. All damage to the existing roof that could result in roof leaks is to be repaired on a daily basis by the roofing contractor.

M. The contractor is to verify the location of all interior ducts, electrical lines, piping, conduit, and/or similar obstructions. The contractor is to perform all work in such a manner as to avoid contact with the above mentioned items.

N. Surface and air temperatures should be a minimum 45° F during applications of cleaner and waterproof coating and remain above 45□ F for a minimum of four (4) hours following applications. Verify compatibility of cleaner with coatings, paints, primers and joint sealers specified. Advise Owner's representative of any problems in this regard prior to commencing cleaning operations.

O. Temporary Sanitary Facilities: The contractor shall furnish and maintain temporary sanitary facilities for employees use during this project. These will be removed after the completion of the project. All portable facilities shall comply with local laws, codes, and regulations.

1.26 CREWS AND EQUIPMENT

A. Contractor shall provide sufficient crews and equipment so that the project may progress without interruption or unnecessary delay.

1.27 SUBCONTRACTING OF WORK

A. The Owner shall have the right to accept or reject the use of any subcontractor. The Contractor shall submit a list of proposed Subcontractors with his proposal.

1.28 ON-SITE SUPERVISION

A. The Contractor is responsible for the management and control of the work. He shall give his personal superintendence of the work or have a competent resident manager or superintendent satisfactory to the Owner on the job site at all times while work is in progress, with full authority to act for the Contractor as his agent.

1.29 INSPECTION OF WORK IN PROGRESS

A. The Owner's representative will require the material manufacturer's representative to periodically examine the work in progress, as well as on completion, in order to assist in ascertaining the extent the materials and labor procedures conform to the requirements of the specifications.

B. The authorized material manufacturer's field representative shall be responsible for:
1. Keeping the Owner's representative informed after periodic inspections as to the progress and quality of the work observed.
2. Calling to the attention of the Contractor those matters observed which are considered to be in violation of the contract requirements.

3. Reporting to the Owner's representative, in writing, any failure or refusal of the Contractor to correct unacceptable practices called to his attention.
4. Confirming, after completion of the work and based on his observation and test, that he has observed no application procedures in conflict with these specifications. Final payment will not be released until all specified warranties have been received by the Owner.

1.30 FIELD INSPECTION AND CONTRACTOR RESPONSIBILITY

A. The Owner's representative shall at all times have access to the job site and work areas. The Contractor will provide proper and safe facilities for such access and inspection.

B. Any time during the course of the project, an observation may be deemed necessary by the Owner/Owner's representative to have one or all of the following members of the Contractor's organization present in person to inspect the work along with the Owner/Owner's representative: Owner, a Majority Stockholder, President and/or Chief Executive Officer of the contracting firm.

C. The Owner/Owner's representative, if deemed necessary, will notify in writing who in the Contractor's organization they want to inspect the work on the roof in addition to the Contractor's normal inspection. If the designated person or persons requested by the Owner/Owner's representative fails to respond within forty-eight (48) hours to the request, the work may be suspended, payment withheld and/or liquidated damages outlined in the specifications assessed until such time the individual(s) inspect(s) the work with the Owner/Owner's representative.

D. Neither the presence nor absence of the Owner's representative nor the manufacturer's representative, nor an inspection by the manufacturer of the work or operation of the Contractor, nor any failure by the manufacturer to detect, pinpoint, or object to any defect in the work completed, nor any deviation from these specifications, nor the acceptance by the manufacturer of any such defect or the approval of the manufacturer of any such deviation shall relieve the Contractor, or reduce, or in any way limit or divide, his full responsibility for the full performance of the work required of him under these specifications.

E. It shall be understood that such field observation as the Owner's representative may cause to be performed by the material manufacturer will be performed by the material manufacturer solely for the benefit of the Owner and in an attempt to assist with the requirements of this specification. These requirements bind the Contractor even without such inspection.

F. No observation or any act or omission of either the Owner's representative or the manufacturer's representative in connection with such observation shall prejudice the Owner's right to strict conformance, or under any circumstances be construed to excuse or mitigate any mistake or non-conformance by the Contractor.

1.31 MANUFACTURER'S INSPECTION

A. An inspection shall be made by a representative of the material manufacturer of the completed project to ensure that said project was installed in accordance with the manufacturer's specifications and illustrated details. Upon this approval of the project, the specified warranty or warranties shall be written.

1.32 FINAL INSPECTION

A. Upon job completion, a final observation will be made by Owner's representative. Final payment will not be authorized for the work done until such inspection has been made and all work is found to have been performed in accordance with the specifications and to the satisfaction of the building Owner, and the specified warranties are issued.

B. The Contractor shall promptly remove any work that does not meet the requirements of the plans and specifications or is incorrectly installed or otherwise disapproved by the Owner as failing to meet with the plans and specifications. The Contractor shall promptly replace any such work without expense to the Owner and shall bear the cost of making good all work of other contractors or the Owner, destroyed or damaged by such removal or replacement.

1.33 ROOFTOP EQUIPMENT

A. All air conditioning units and other rooftop equipment shall be moved by the roofing Contractor as required to install roofing materials complete and in accordance with the plans and specifications. When units or equipment are to be moved, they shall be disconnected and moved by the roofing Contractor to a protected area so as not to damage any part or component thereof, and shall be reset by the roofing Contractor and reconnected at the Contractor's expense, all according to local building codes. All disconnection and reconnection shall be performed by a mechanical and/or electrical company licensed to perform such work and approved by the Owner's representative.

B. Where mechanical items, conduits, cables, raceways, piping or any other roof-top mounted item must be moved in any manner, or disconnected and reconnected as made necessary by the reroofing of the specified areas at the facility, all roof-top equipment, piping, insulation, wires, fiber optic cable, any information systems components, conduits, panels, motor starters, raceways, switches, antennas, satellite components, etc. shall be replaced or renewed to match existing if damaged by Contractor. NOTE: <u>It is the responsibility of the Contractor</u> to review the condition of any and all of the above noted, or similar, items with authorized Owner personnel to determine condition of said items <u>PRIOR TO START OF WORK</u>. If this review is not completed as prescribed, any and all damage found at the end of the work will be repaired solely at the contractor’s expense.

C. Any action by roofing contractor personnel which causes interruption of the ongoing works of the Owner’s facility will be repaired at the sole expense of the roofing contractor. Upon interruption of the Owner’s ability to meet required tasks, Owner may immediately, and without the contractor’s permission, take such action as necessary to repair said damage so that the Owner’s work may be resumed. The Owner has the obligation to notify the contractor of such action as soon as possible, but in all cases must notify the contractor in writing within 48 hours of the occurrence of the incident.

D. All gas piping to be removed, raised and reconnected shall be retested by a certified **Master** Plumber and documented to comply with the State of Texas Railroad Commission.

1.34 NAILERS AND ROOF DECK

A. Contractor shall notify the Owner's representative of unforeseen areas of damaged decking, wet insulation / fill material or deteriorated nailers. Where the damage is serious and extensive, it will be the Owner's prerogative to authorize removal and replacement.

B. Any areas of unusual deck deflection noticed by the Contractor during the course of the job that will cause an area of ponding water should be brought to the attention of the Owner's representative by the Contractor.

C. The Contractor shall furnish the Owner with a unit price for removal and replacement of the damaged decking, wet insulation / fill material or deteriorated nailers. All nailers required for the new roofing application shall be provided by the roofing Contractor, and included in the proposal amount. Unit cost for nailers applies only to existing deteriorated nailers. If lumber is required to make "flush" interior parapet wall, cost shall be included in Base Proposal.

1.35 CLEANING AND DISPOSAL OF MATERIALS

A. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean and shall allow no roofing materials to remain on the outside walls.

B. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust. A suitable scrap chute or hoist must be used to lower any debris. At completion, all work areas shall be left broom clean and all contractor's equipment and materials removed from the site.

C. All bituminous or roofing related materials shall be removed from ladders, stairs, railings, and similar parts of the building.

D. Debris shall be deposited at an approved disposal site.

1.36 FUTURE REPAIRS

A. Contractor certifies by acceptance of this project that any future repairs or alterations he might be called upon to execute after the project is complete, will be performed in accordance with the manufacturer's recommended procedures so as to not void the warranty.

**END OF SECTION 01 10 00**

# SECTION 01 21 13
# CONTINGENCY ALLOWANCES

## PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included: To provide adequate budget and bonding to cover items not precisely determined prior to bidding, allow within the proposed Contract Sum the amounts described below.

B. Related Work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 01 of these Specifications.
2. Other provisions concerning Cash Allowances also may be stated in other Sections of these Specifications.

C. All work to be performed from any contingency fund must be approved in writing from Owner/Project Manager prior to work commencing.

1.02 SPECIFIC CASH ALLOWANCES

A. Allow the sum of $50,000.00 for General Contingency, as dictated by the Consultant and Owner.

**END OF SECTION 01 21 13**

# SECTION 01 26 63
# CHANGE ORDER PROCEDURES

## PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Procedures for processing Change Orders.

1.02 SUBMITTALS

A. Submit name of the individual authorized to accept changes, and to be responsible for informing others in contractor's employ of changes in the work.

B. Change Order Forms: AIA G701

1.03 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND CONTRACT TIME

A. Maintain detailed records of work done on a time and material basis.
   1. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the work.

B. Document each quotation for a change in costs or time with sufficient data to allow evaluation of the quotation.

C. Provide data necessary to support computations:
   1. Quantities of products, labor, and equipment.
   2. Insurance and bonds.
   3. Labor burden for labor on a change will be established at 46% maximum allowed of labor cost. Labor burden is to include the cost FICA, workers compensation, state and federal unemployment, and health insurance.
   4. Justification for any change in contract time.
   5. Credit for deletions from contract, similarly documented.

D. Support each claim for additional costs, and for work done on a time and material basis with additional information:
   1. Origin and date of claim. Note: Claims for additional cost must be submitted within 10 days of claim to be considered.
   2. Dates and times work was performed, and by whom.
   3. Time records and wage rates paid.
   4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.04 CONSTRUCTION CHANGE AUTHORIZATION

A. Consultant/Owner may issue a directive, signed by the Owner, instructing contractor to proceed with a change in the work, for subsequent inclusion in a Change Order.

B. Directive will describe changes in the work, and will designate method of determining any change in contract sum or contract time.

C. Promptly execute the change in work.

1.05 LUMP SUM CHANGE ORDER

A. Will be based on proposal request and contractor's sum quotation, or contractor's request for Change Order as approved by Consultant/Owner.

B. Contractor's overhead and profit shall not exceed 10% of the lump sum cost including bonds and insurance.

1.06 UNIT PRICE CHANGE ORDER

A. For predetermined unit prices and quantities, Change Order will be executed on a lump sum basis.

B. For unit costs or quantities of units of work that are not predetermined, execute work under a construction change authorization.
1. Changes in contract sum or contract time will be computed as specified for time and material Change Order.

C. Contractor's overhead and profit shall not exceed 10% of the unit price cost including bonds and insurance.

1.07 TIME AND MATERIAL CHANGE ORDER

A. Submit itemized account and supporting data after completion of change.

B. Consultant/Owner will determine the change allowable in contract sum and contract time.

C. Contractor's overhead and profit shall not exceed 10% of the total of the time and material cost including bonds and insurance.

1.08 EXECUTION OF CHANGE ORDERS

A. Consultant/Owner will issue Change Orders for signatures of parties.

1.09 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise schedule of values and application for payment forms to record each authorized Change Order as a separate line time and adjust the contract sum as shown on the Change Order.

B. Promptly revise progress schedules to reflect any change in contract time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

**END OF SECTION 01 26 63**

# SECTION 01 33 00
# SUBMITTALS AND SUBSTITUTIONS

## PART 1 – GENERAL

1.01 DESCRIPTION

A. Work includes: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

1.02 QUALITY ASSURANCE

A. Coordination of submittals:
   1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
   2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
   3. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.

B. Substitutions
   1. The contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when listed at time of bidding, on the form provided in the bidding documents, and when substantiated by the Contractor's submittal of required data within fifteen (15) calendar days after award of the Contract.
   2. The following products do not require further approval except for interface within the work:
      a. Products specified by reference to standard specifications such as ASTM and similar standards.
      b. Products specified by manufacturer's name and catalog model number.
   3. Where any material is specified by proprietary name, trade name, name of manufacturer, generic name, or catalog number with the addition of such expressions as "or equal"/"or approved equal", it is understood that the material named is intended and no substitution will be allowed without written approval by the Owner's representative three (3) calendar days prior to proposal due date.
   4. Should a specified material not be available, a substitution shall require approval (in writing) of the Owner's representative and the roof system manufacturer issuing the warranty before being utilized on this project.
   5. Unless otherwise indicated, the materials to be used in this specification are those specified and denote the type, quality, performance, etc. required. All proposals shall be based upon the use of specified material.
   6. Do not substitute materials, equipment, or methods unless substitution has been specifically approved in writing for this work by the Architect/Project Manager.

C. "Or equal"
1. Where the phrase "or equal", or "or equal as approved by the Architect/Project Manager", occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this work by the Architect/Project Manager.
2. A Contractor who proposes to quote on the basis of an "or equal"/"or approved equal" alternate material or system shall submit to the Owner's representative the following information, at least five (5) calendar days prior to scheduled proposal opening. Only one request for substitution will be considered for each material or system. When substitution is not accepted, specified product or system shall be used.
   a) A five (5) gallon sample of any adhesive, coating, mastic, or sealant and a three foot by five foot (3' x 5') sample of any sheeting or rolled goods as may be specified.
   b) A certificate from an accredited testing laboratory comparing the physical and performance attributes of the proposed material with those of the specified materials.
   c) A list of at least three (3) local jobs where the proposed alternate material was used under similar conditions and written documentation showing successful installation in the United States of similar size and scope for a minimum of ten (10) years. These jobs must be available for inspection by the Owner's representative.
   d) In the event a substitution is acceptable by the Owner, all contractors shall be notified of the acceptable alternate within three (3) calendar days prior to proposal opening.
   e) During the course of work, the Owner's representative may secure from the containers at the job site, samples of the materials being used and submit the samples to an independent testing laboratory for comparison. If the results of the independent testing laboratory prove that the materials are not comparable and equal to the specified materials, the Contractor shall pay for the testing and the Owner reserves the right to reduce the amount of the proposal by twenty percent (20%) if all work has already been completed before the test results become known. If the contract work is not completed when the test results become known, the Owner shall impose a penalty in proportion to the amount of work already completed, and all remaining work shall be completed with the specified materials.

D. Procedure for Use of Substitution Request Form
1. Substitution request **including all required documentation** must be delivered to the Owner's Representative's office no later than the date indicated in the specifications. Requests submitted late will not be considered.
2. The Individual or Firm requesting a substitution must document that the requested substitution is equal or superior to the specified product. Failure to provide clear, accurate, and adequate documentation will be grounds for rejection.
3. Required documentation shall consist of applicable information which would aid the Architect in making an informed decision. Include **side by side product comparisons**, technical data, laboratory test results, product drawings, etc.

4. If use of the proposed product would result in changes to the design of the building, the submittal shall describe fully the changes required to the drawings or specifications. Any cost differences resulting from modifications to the drawings and specifications and the cost of making the changes shall be borne by the Product Supplier.
5. **No** product will be considered "as equal" to the product specified until it has been included as an allowable substitution, in a written Addendum to the project.

1.03 SUBMITTALS

A. Make submittals of Shop drawings, samples, Substitution Requests, and other items in accordance with the provisions of this section.

B. Upon receipt of Notice of Acceptance of this proposal, the Contractor shall submit the following items. All submittals shall be submitted to the Owner/Owner's representative within five (5) calendar days of the date on the Notice of Acceptance and prior to the award of contract.
1. Contractor's executed insurance certificate.
2. Material manufacturer's approval/acceptance of the specifications and details as written or noted for this project, fastener pattern layout, insulation, fasteners and all related materials.
3. Contractor's executed payment and performance bonds as required.
4. Shop drawings of all perimeter and projection details, and sheet metal details approved by manufacturer, for Owner's approval if proposed details differ from those included with this proposal package. These drawings shall be approved by the membrane manufacturer and submitted at the preconstruction conference for Owner review and approval prior to work start.
5. Approved applicator must submit a roof drawing which will be employed in the project if proposed drawing differs from that included with this proposal package.
6. Detailed project sequencing, staging, material loading, manpower plans, and detailed project construction schedule for approval.
7. Copy of warranty application that has been sent to manufacturer.
8. Sample of warranty that is to be issued upon project completion.
9. Submit list of all mechanical, electrical, rigging, sheet metal, and other Subcontractors with evidence of Subcontractor's insurance coverage in compliance with contract requirements.
10. Project superintendent's resume and project experience list for proposed system.
11. Contractor shall submit written statement that their company or any Subcontractor they may use is not employing workers classified as undocumented workers on this project.
12. Samples of all materials not supplied or prior approved by the roofing membrane manufacturer shall be submitted to the manufacturer for written approval prior to installation start.
13. Submit waterproofing product data, including detailed test results of material applied to surfaces similar to requirements of this Section. Submit manufacturer's instructions for methods and application procedures.

C. Samples and Manufacturer's Submittals: Submit prior to delivery or installation.
1. Samples of all roofing system components including all specified accessories.

2. Submit samples of proposed warranty complete with any addenda necessary to meet the warranty requirements as specified.
3. Submit latest edition of manufacturer's specifications and installation procedures. Submit only those items applicable to this project.
4. A written statement from the roofing materials manufacturer approving the installer, specifications and drawings as described and/or shown for this project and stating the intent to guarantee the completed project.
5. Manufacturer's Equiviscous Temperatures (EVT) for the specified bitumens.
6. Submit shop drawings, product data and mockups of all sheet metal.

D. Samples and Manufacturer's Submittals for Sheet Metal and Miscellaneous Accessories: Submit prior to deliver or installation.
1. Submit shop drawings, product data and mockups of all sheet metal.

## PART 2 – PRODUCTS

2.01 SHOP DRAWINGS

A. Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.

B. Shop Drawings: Provide manufacturer's approved details of all perimeter conditions, projection conditions, and any additional special job conditions which require details other than indicated in the drawings.

C. Shop Drawings and Product Data:
1. Manufacturer's Details: All termination details and other details normally required by the membrane manufacturer's Technical Specifications, including both standard details and special details, shall be furnished by the Contractor and shall be approved in writing by the manufacturer, the company project manager, and the Owner's representative prior to final installation.
2. As-built Drawings: Contractor shall supply the Owner with a full set of "as-built" drawings depicting location, size, nomenclature and manufacturer of all replaced roof slabs. One set of reproducible drawings, twenty-four inches by thirty-six inches (24" x 36"), shall be supplied along with one set of copies. Contractor shall also supply Owner with "as-built" roofing details as approved by the appropriate manufacturer with original manufacturer's seals and signatures thereon. Owner must have "as-built" drawings in hand prior to release of final payment to the Contractor.
3. Initially submit three prints of each drawing or digital plans of each drawing, including fabrication, erection, layout and setting drawings, and other such drawings as required under various sections of the specifications until final approval is obtained.
4. Date and mark shop drawings to show name of project, Owner, Contractor, origination Subcontractor, manufacturer or supplier, and separate details as pertinent.
5. Shop drawings shall completely identify specification sections and locations at which materials or equipment are to be installed.
6. Minimum drawing size shall be eight and one-half inches by eleven inches (8-1/2" x 11").

7. Submit sufficient copies of manufacturer's descriptive data including catalog sheets for materials, equipment and fixtures, showing dimensions, performance characteristics and capacities, diagrams and controls, schedules, and other pertinent information required.
8. Submit brochures and other submittal data that cannot be reproduced economically, in such quantities to allow the Owner to retain one copy of each after review. Mark product data to show the name of project, Owner, Contractor, originating Subcontractor, manufacturer or supplier, and separate details if pertinent.
9. Product data shall completely identify specification sections and locations at which materials or equipment are to be installed.
10. Accompany each submittal with a separate transmittal letter in duplicate, containing date, project title and number, Contractor's name and address, number of each shop drawing, product data and samples submitted, and notification of deviations from Contract Documents.
11. One (1) set of prints or a digital marked up copy of the submittals will be returned to the Owner for record. The cost of all printing is the responsibility of the Contractor.

D. Provide manufacturer's approved details, or all perimeter conditions, project conditions, and any additional special job conditions which require details other than indicated in the drawings.

E. Types of prints required: Submit Shop Drawings in the form of six (6) bond prints of each sheet or via digital media as selected by Architect/Project Manager

F. Review comments of the Architect/Project Manager will be shown on the copies when it is returned to the Contractor. The Contractor may make and distribute marked copies as are required for his purposes.

G. Fax submittals **are not acceptable**.

2.02 MANUFACTURER'S LITERATURE

A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.

B. Submit the number of copies which are required to be returned, plus one copy which will be retained by the Architect/Project Manager.

2.03 MAINTENANCE PROCEDURES

A. Maintenance Procedures: Within ten days of the date of Substantial Completion of the project, deliver to the Owner three copies of the manufacturer's printed instructions regarding care and maintenance of the roof.

2.04 SAMPLES

A. Provide sample or samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.

B. Number of samples required:

1. Unless otherwise specified, submit samples in the quantity which is required to be returned, plus one which will be retained by the Architect/Project Manager.
2. By pre-arrangement in specific cases, a single sample may be submitted for review and, when approved, be installed in the work at a location agreed upon by the Architect/Project Manager.

2.05 COLORS AND PATTERNS

A. Unless the precise color and pattern are specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect/Project Manager for selection.

B. Contractor shall hold **ALL** color samples until all items requiring color selections are received. **Only** then should the actual color samples be submitted for selections. Each sample shall be properly labeled with the name of the project, contractor, manufacturer, and date of submission. Incomplete color submittal **will be** returned to the Contractor.

C. The Contractor shall allow four weeks **after all** colors are submitted for final Owner approval.

## PART 3 – EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

A. Consecutively number all submittals.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.
1. When material is re-submitted for any reason, transmit under a new letter of transmittal and with a new transmittal number.
2. On re-submittals, cite the original submittal number for reference.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

D. Maintain an accurate submittal log for the duration of the work, showing current status of all submittals at all times. Make the submittal log available to the Architect/Project Manager for his review upon request.

3.02 TIMING OF SUBMITTALS

A. Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.

B. Revisions:
   1. Make revisions required by the Architect/Project Manager.
   2. If the Contractor considers any required revision to be a change, They shall so notify the Architect/Project Manager.
   3. Make only those revisions directed or approved by the Architect/Project Manager.

**END OF SECTION 01 33 00**

# SECTION 01 50 00
# TEMPORARY FACILITIES

## PART 1 - GENERAL

### 1.01 SUMMARY

A. This section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.

B. Temporary utilities which may be required include but are not limited to:
   1. Water service and distribution
   2. Temporary electric power and light
   3. Telephone service

C. Temporary construction and support facilities which may be required include but are not limited to:
   1. Temporary heat
   2. Storage sheds
   3. Sanitary facilities
   4. Temporary enclosures
   5. Hoists and temporary elevator use
   6. Temporary Project identification signs and bulletin boards
   7. Waste disposal services
   8. Construction aids and miscellaneous services and facilities

D. Security and protection facilities which may be required include but are not limited to:
   1. Temporary fire protection
   2. Barricades, warning signs, lights
   3. Sidewalk bridge or enclosure fence for the site
   4. Environmental protection

### 1.02 SUBMITTALS

A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen (15) days of the date established for commencement of the work.

### 1.03 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
   1. Building Code requirements
   2. Health and safety regulations
   3. Utility company regulations
   4. Police, Fire Department and Rescue Squad rules
   5. Environmental protection requirements

B. Standards: Comply with NFPA Code 241, "Building Construction and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library, "Temporary Electrical Facilities."
   1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by ABG and ASC, for industry recommendations.

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.04 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site.

**PART 2 - PRODUCTS**

2.01 MATERIALS

A. General: Provide new materials. If acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

B. Lumber and Plywood: Comply with requirements in Division 6 – Rough Carpentry section.
   1. For job-built temporary offices, shops and sheds within the construction areas, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
   2. For signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1, of sizes and thickness indicated.
   3. For fences and vision barriers, provide exterior type, minimum three-eighths inch (3/8") thick plywood.
   4. For safety barriers, sidewalk bridges and similar uses, provide minimum five-eighths inch ((5/8") thick exterior plywood.

2.02 EQUIPMENT

A. General: Provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.

B. Water Hoses: Provide three-fourths inch (3/4") heavy-duty, abrasion-resistant, flexible rubber hoses one hundred feet (100') long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shut-off nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords. Use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach area where construction activities are in progress.

E. Temporary Storage Sheds: Provide fabricated or mobile units with lockable entrances. Provide heated units on foundations adequate for normal loading.

F. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.

G. First Aid Supplies: Comply with governing regulations.

H. Fire Extinguishers: Provide hand-carried, portable UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, Class ABC dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
   1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the work. Relocate and modify facilities as required.

B. Provided each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

### 3.02 TEMPORARY UTILITY INSTALLATION

A. Use Charges: Cost or use changes for temporary facilities are not chargeable to the Owner or Architect and will not be accepted as a basis of claims for a Change Order.

B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.
   1. Sterilization: Sterilize temporary water piping prior to use.

C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
   1. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, AC 20 ampere rating, and lightning circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

## 3.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access.
   1. Maintain temporary construction and support facilities until Final Completion. Remove prior to final application for payment. Where temporary construction or facilities interfere with the Owner's use or occupation of the work after Substantial Completion, remove, relocate or modify temporary construction and facilities as required to permit Owner's use and occupancy.
   2. Provide insulated, weathertight offices of sufficient size to accommodate required office personnel at the Project Site.

B. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service.

C. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best service the Project's needs.
   1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
   2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
   3. Wash Facilities: Install wash facilities supplied with portable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

D. Drinking Water Fixtures: Provide drinking water fountains where required for compliance with regulations and health codes, including paper supply.

E. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities.

1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosure where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of twenty-five (25) square feet or less with plywood or similar materials.
3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
4. Where temporary wood or plywood enclosure exceeds one hundred (100) square feet in area, use UL-labeled fire-retardant treated material for framing and main sheathing.

F. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

G. Project Identification and Temporary Signs: Display no signs without approval of the Architect. Do not permit installation of unauthorized signs.

H. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with the following drawings, attached herein.

I. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80° F. Handle hazardous, dangerous or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

## 3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alternations and Demolition Operations."

B. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

C. Enclosure Fence: When excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs and other animals from easily entering the site, except by the entrance gates.
1. Provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth.

D. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.

E. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of materials to minimize the opportunity for theft and vandalism.

F. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.05 OPERATION, TERMINATION AND REMOVAL

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

B. Termination and Removal: Unless the Architect requires that it be maintained longer, remove each temporary facility when the need has ended, or when 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 the temporary facility. Repair damaged work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constituted temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.
   2. At substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
      a) Replace air filters and clean inside of ductwork and housings.
      b) Replace significantly worn parts and parts that have been subject to unusual operating conditions.
      c) Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

**END OF SECTION 01 50 00**

# SECTION 01 77 00
# PROJECT CLOSEOUT

## PART 1 - GENERAL

1.01 SUMMARY

A. This section specifies administrative and procedural requirements for project closeout, including but not limited to:
   1. Observation procedures
   2. Project record document submittal
   3. Operating and maintenance manual submittal
   4. Submittal of warranties
   5. Final cleaning

1.02 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting observation for certification of Substantial Completion, complete the following. List exceptions in the request.
   1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show one hundred percent (100%) completion for the portion of the work claimed as substantially complete. Include supporting documents for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
   2. If one hundred percent (100%) completion cannot be shown, include a list of incomplete items, the value of incomplete construction and reasons the work is not complete.
   3. Advise Owner of pending insurance change-over requirements.
   4. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
   5. Obtain and submit releases enabling the Owner unrestricted use of the work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
   6. Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey and similar final record information.
   7. Deliver tools, spare parts, extra materials and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable. Extra materials include but are not necessarily limited to those listed in the "Summary of Extra Materials" following this section.
   8. Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.
   9. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups and similar elements.

B. Observation Procedures: On receipt of a request for observation, the Architect/Project Manager will either proceed with observation or advise the Contractor of unfilled requirements. The Architect/Project Manager will prepare the Certificate of Substantial Completion following observation, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
   1. The Architect/Project Manager will repeat observation when requested, and be assured by the Contractor in writing, that the work has been substantially completed.
   2. Results of the completed observation will form the basis of requirements for final acceptance.

1.03 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final observation for certification of final acceptance and final payment, complete the following. List exceptions in the request.
   1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
   2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
   3. Submit a certified copy of the Architect/Project Manager's final observation list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect/Project Manager.
   4. Submit consent of surety to final payment.
   5. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
   6. Complete final clean up requirements, including touchup painting. Touchup and otherwise repair and restore marred exposed finishes.

B. Re-observation Procedure: The Architect/Project Manager will re-observe the work upon receipt of notice that the work, including observation list items from earlier observations, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect/Project Manager.
   1. Upon completion of re-observation, the Architect/Project Manager will prepare a certificate of final acceptance or advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
   2. If necessary, re-observation will be repeated.
   3. Should the Architect/Project Manager perform re-observations, due to failure of the work to comply with the claims of status of completion made by the Contractor, the Owner shall compensate the Architect/Project Manager for additional services; and the Owner shall deduct the amount of the compensation from the final payment to the Contractor.

1.04 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect/Project Manager's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of black line white-prints of Contract Drawings and Shop Drawings in hard copy of in digital format. Mark the set to show the actual installation where the installation varies substantially from the work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
   1. Mark record sets with colored erasable pencil, and use other colors to distinguish between variations in separate categories of the work. Use the following color code:
      a) Red for Architectural work
      b) Blue for Structural work
      c) Green for Plumbing work
      d) Orange for HVAC work
      e) Brown for Electrical work
      f) Black for other written notations
   2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
   3. Note related Change Order numbers where applicable.
   4. At completion of project, transfer all Project Record Data to one complete set of mylar sepias using mylar compatible colored pencils or ink. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set. Deliver one complete set of mylar sepias of all drawings to the Architect/Project Manager for the Owner's records. The cost of printing the mylar sepias shall be paid by the Contractor.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
   1. Upon completion of the work, submit record Specifications to the Architect/Project Manager for the Owner's records.

D. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in the actual work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.
   1. Upon completion of mark-up, submit complete set of record Product Data to the Architect/Project Manager for the Owner's records.

E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Architect/Project Manager and the Owner's personnel to determine which of the submitted Samples that have been maintained during progress of the work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.

F. Miscellaneous Record Submittals: Refer to other Specification sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect/Project Manager for the Owner's records.

G. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty two inch (2"), three-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
   1. Emergency instructions
   2. Spare parts list
   3. Copies of warranties
   4. Wiring diagrams
   5. Recommended "turn around" cycles
   6. Observation procedures
   7. Shop Drawings and Product Data
   8. Fixture lamping schedule

## PART 2 - PRODUCTS

2.01 CLEANING AGENTS

A. Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.

## PART 3 - EXECUTION

3.01 CLOSEOUT PROCEDURES

A. Operating and Maintenance Instructions: Arrange for each installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. If installers are not experienced in procedures, provide instruction by manufacturer's representatives. Include a detailed review of the following items:
   1. Maintenance manuals
   2. Record documents
   3. Spare parts and materials
   4. Hazards

5. Cleaning
6. Warranties and bonds
7. Maintenance agreements and similar continuing commitments

3.02 FINAL CLEANING

A. General: General cleaning during construction is required by the General Conditions and included in "Temporary Facilities" section.

B. Cleaning: Employ experienced cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
   1. Complete the following cleaning operations before requesting Certification of Substantial Completion.
   2. Remove labels that are not permanent labels.
   3. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
   4. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
   5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
   6. Clean the site, including landscape development areas, of rubbish, litter and foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

C. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.

D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials to the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
   1. Where extra materials of value remaining after completion of associated work have become the Owner's property, arrange for disposition of these materials as directed.

**END OF SECTION 01 77 00**

# SECTION 04 05 23
# THROUGH-WALL AND WALL SUBSTRATE FLASHING SYSTEM

## PART 1 - GENERAL

1.01 GENERAL

A. Contractor shall review American Concrete Institute 530.1 mandatory specification checklist for additional requirements necessary for specific project.

B. Flashing system shall be provided and installed by a qualified waterproofing contractor.

C. It is the intent of this specification that the new work will provide a watertight facility (restricted to the location where work is to be performed). The attached specifications describe the minimum acceptable standards of construction and finish.

D. Contractor shall water test all through-wall flashings once veneer is twelve inches (12”) above installed flashing. Coordinate test with Architect and Consultant.

E. Manufacturer of cloak flashing shall have a representative inspect the installed work a minimum of two times per week. The representative shall not be the installer.

F. All vertical flashing to be installed full height of the vertical surface in shingle fashion.

1.02 QUALITY ASSURANCE

A. At a scheduled pre-construction meeting with all trades, contractor shall review flashing for the project and how the flashing shall be sequenced with the following: below grade waterproofing, air and vapor system, window installation, sealant installation, relief angles and roofing.

B. Material Manufacturer's Inspection Paid for By Contractor: Minimum of one inspection per week during installation, shall be made during Project schedule by authorized representative of product system manufacturer to ensure that said Project is installed in accordance with manufacturer's requirements. Manufacturer shall provide a written report to the Owner's representative within five days of each inspection stating acceptance of Contractor procedures and outlining items of non-compliance with manufacturer's requirements.

C. Contractor shall provide a photo manifest of through-wall installation, including all starts, stops, and transitions in plane. Photos shall be documented and located on a floor plan for reference.

1.03 SUBMITTALS

A. Shop Drawings: Contractor shall provide from the manufacturer a review of the flashing design for the project and location of preformed shapes on reduced floor plan.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers and rolls with all labels intact and legible including labels indicating appropriate warnings, storage conditions, lot numbers, and usage instructions. Materials damaged in shipping or storage shall not be used.

B. Manufacturer's packaging and/or roll plastic is not acceptable for exterior storage. Tarpaulin with grommets shall be minimum acceptable for exterior coverings. All materials stored as above shall be a minimum of four inches (4") off the substrate, and the tarpaulin tied off with rope.

C. Deliver materials in sufficient quantity to allow continuity of work.

D. Handle and store material in such a manner as to avoid damage.

E. Protect materials against damage by construction traffic.

F. Storage: All materials should be stored under cover to avoid site damage. During cool weather construction, store materials inside at 50º F or higher.

G. The proper storage of materials is the sole responsibility of the contractor and damaged materials shall be discarded, removed from the project site, and replaced prior to application.

1.05 SITE CONDITIONS

A. Job Condition Requirements: Coordinate the work of the contractor with the work to be performed by the Owner's personnel, to ensure proper sequencing of the entire work. The contractor shall follow local, state, and federal regulations, safety standards, and codes. When a conflict exists, use the stricter document.

B. Protection of Work and Property:
   1. Work: The contractor shall maintain adequate protection of all his work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. He shall provide and maintain at all times any OSHA required danger signs, guards, and/or obstructions necessary to protect the public and his workmen from any dangers inherent with or created by the work in progress. All federal, state, and city rules and requirements pertaining to safety and all EPA standards, OSHA standards, NESHAP regulations shall be fulfilled by the contractor as part of his proposal.
   2. Property: Protect existing planting and landscaping as necessary or required to provide and maintain clearance and access to the work of this contract. Examples of two categories or degrees of protection are generally as follows: a) removal, protection, preservation, or replacement and replanting of plant materials; b) protection of plant materials in place, and replacement of any damage resulting from the contractor's operations.

C. Damage to Work of Others: The contractor shall repair, refinish, and make good any damage to the building or landscaping resulting from any of his operation. This shall include, but is not limited to, any damage to plaster, tile work, wall covering, paint, ceilings, floors, or any other finished work. Damage done to the building, equipment, or grounds shall be repaired at the successful contractor's expense holding the Owner harmless from any other claims for property damage and/or personal injury.

D. Measurements: It will be the contractor's responsibility to obtain and/or verify any necessary dimensions by visiting the job site, and the contractor shall be responsible for the correctness of same. Any drawings supplied are for reference only.

E. Cleaning and Disposal of Materials:
1. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean.
2. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust. At completion, all work areas shall be left clean and all contractor's equipment and materials removed from the site.
3. Debris shall be deposited at an approved disposal site.

1.06 WARRANTY

A. Flashing Manufacturer: Project shall be installed in such a manner that the flashing material manufacturer will furnish a written ten (10) year materials warranty from the date of substantial completion of the completed project.

## PART 2 – PRODUCTS

2.01 BUILT-IN FLASHING MEMBRANE

A. The built-in flashing membrane shall be 40 mil flexible sheet material, consisting of a blend of elastomeric and thermal plastic polymers~~,~~ The membrane shall be reinforced with synthetic fibers, calendered into sheet form, rolled and cut to width.

B. Flashing Cloaks shall be pre-formed, three-dimensional flexible units used for detail corners, level changes, stop ends, and special applications.

Physical Properties

| | | |
|---|---|---|
| Elongation | 175% | ASTM D412 |
| Tensile Strength | 650 psi | ASTM D412 |
| Tear Strength | 280 psi | ASTM D624 |
| Low Temperature Flexibility | -25º F Pass | ASTM D146 |
| Water Absorption | Less than 0.1% | ASTM D471 |

C. Flashing color shall be as selected by Architect and/or shall match mortar color. Reference manufacturer's list of colors for selection.

2.02 RELATED MATERIALS FOR BUILT-IN FLASHING MEMBRANE

A. Flashing Membrane Adhesive: Flashing adhesive exceeds the requirements of TTS00230C Type II, Class B, ASTM C 92094. The product shall be terra cotta (dull red) in color.

Physical Properties

| | | |
|---|---|---|
| Hardness Shore A | 24 ± 3 | ASTM C 661 |
| Shear Strength | 75 psi | ASTM D 1002 |
| Tack Free Time | 25 minutes | ASTM C 679 |
| Slump (sag) | Zero slump | ASTM C 697 |
| Shrinkage | No measurable shrinkage after 14 days | |
| Low Temperature Flexibility | -20° F pass 1/4 inch mandrel | |
| Service Temperature | -40° F to 200° F continuous service | |
| Shelf Life One year | | |

2.03 RELATED MATERIALS FOR SURFACE ADHERED FLASHING MEMBRANE

A. Asphalt Primer: Shall be a two-sided, self-adhering tape used to seal the top of cloaks against the back-up wythe. Adhesive may be used as an alternative.

B. Substrate Primer:

Physical Properties

| | | |
|---|---|---|
| Solids by Weight | 68% | |
| Viscosity | 758 cps | |
| Weight per Gallon | 9.3 lbs. | |
| Elongation | >656% no Breakage, Exceeded Travel of Instron | ASTM D 2370 |
| Tensile Strength | 85.1 psi | ASTM D 2370 |
| pH 10 | | |
| Hardness Shore A | 59 | |
| Peel Strength | Aluminum No Fail at 4.60 pli | |
| Concrete No Fail at 3.86 pli | | |

C. Mastic: Shall be used at all laps and joints, and top terminations.

**PART 3 - EXECUTION**

3.01 EXAMINATION

A. Examine conditions for compliance with requirements for installation tolerances and other specific conditions.

3.02 GENERAL

A. Laying Masonry Walls: Use an inverted lintel CMU or fully grouted hollow CMU as a base for flashing at sills, floor joints, and other similar conditions.

B. Preparation: All sharp protrusions and mortar droppings must be removed from the substrate, and the surface must be clean and dry.

C. Priming: All flashing substrates shall be primed. Flashing primer shall be applied with a brush, roller or sprayed. Coverage is approximately 400 square feet per U.S. gallon (3.78L). Drying time may vary depending on temperature, humidity, and air movement; drying time should be approximately 45 minutes.

D. Flashing System Installation: Starting at a corner, mount cloak to substrate flashing adhesive. Cut surface adhered membrane into workable sections (8'-10'). Remove the release sheet and adhere the membrane to the inner leaf of construction lapping the membrane onto the cloak four inches (4"). Use firm hand pressure and a steel roller to totally adhere membrane in place.

E. Where brick work occurs above the roof elevation, provide solid protection of the existing roof system until work is complete.

F. Flashing shall be fully supported when crossing the cavity except at sill and coping locations.

G. Flashing shall be fully adhered around all wall penetrations prior to veneer installation.

H. Grout Cant strip shall be installed at back of brick ledge to provide positive slope for new membrane flashing.

I. Taper Cant down where pre-formed pieces (P.F.P) are to be installed. Or install P.F.P. first and extend new mortar cant over P.F.P.

## 3.03 INSTALLATION OF THROUGH-WALL FLASHING IN EXISTING WALLS

A. To install continuous flashing in existing walls, remove alternate sections of masonry in two to five feet (2-5') lengths. The flashing shall be installed in these sections and the masonry replaced. Alternately temporary braces may be installed as longer sections of brickwork are removed. The flashing shall then be installed in these sections. The lengths of flashing shall be lapped a minimum of six inches (6") with an end dam at each joint, and be completely sealed to function properly. The opening shall then be filled as described in Brick Replacement. The replaced masonry shall be properly cured (five to seven days) before the intermediate masonry sections or supports are removed.

## 3.04 BRICK REMOVAL

A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
   1. When removing single bricks, remove material from center of brick and work toward outside edges.

B. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

C. Notify Structural Engineer and/or Project Manager of unforeseen detrimental conditions including voids, cracks, bulges, and loose masonry units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.

D. Remove in an undamaged condition as many whole bricks as possible.
   1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
   2. Store brick for reuse, as indicated.
   3. Deliver cleaned brick not required for reuse to Owner's Agent, unless otherwise directed.

E. Clean bricks surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.

3.05 INSTALLATION OF BUILT-IN FLASHING MEMBRANE

A. Flashing membrane and flashing cloaks shall be installed in a bed of fresh mortar and should stop three eights of an inch from front face of masonry.

B. Weep holes shall be provided immediately above all flashing at 24-inch centers. A minimum of two weeps shall be installed above any wall opening. Weeps shall be seated on flashing, NOT on mortar bed.

C. All joints in the flashing membrane shall be lapped a minimum of four inches (4") using flashing membrane adhesive.

D. Flashing membrane shall be installed eight inches (8") above finished grade level.

E. Flashing Cloaks and end dams shall be installed at all window and door heads and sills and at all elevation transitions.

F. Vertical flashing at wall openings shall extend into the wall opening four inches (4"). The door/window frame shall be installed with the flashing extending onto the back of the frame a minimum of two inches (2”).

G. Vertical flashing shall be installed at all abutments of dissimilar exterior wall treatments and at inside and outside corners.

H. Cleaning: Flashing membrane shall not be damaged by cavity cleaning after installation. Precautions to be taken during subsequent work are:
   1. Use of cavity battens to prevent mortar droppings;
   2. Removal of droppings before they harden;
   3. Never use implements such as steel rods for cleaning the cavity; and
   4. Inspection of cavity flashing for damage as the work proceeds.

3.06 INSTALLATION OF WALL DRAINAGE SYSTEM INTO EXISTING WALL CAVITY

A. Collection device shall be placed vertically on top of the flashing inside the wall cavity where it shall catch and permanently suspend mortar droppings above the level of the weep holes and flashing. The dovetail shape shall prevent mortar droppings from forming a continuous dam and shall allow water and air to rapidly and easily move through the material to the weeps.

3.07 BRICK REPLACEMENT

A. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.

B. Lay replacement brick with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C 67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. Use wetting methods that ensure that units are nearly saturated but surface is dry when laid. Maintain joint width for replacement units to match existing joints.
   1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.

3.07 FLASHING MEMBRANE ADHESIVE

A. Application:
   1. Flashing adhesive shall be applied to clean, dry and relatively smooth surfaces.
   2. When joint two (2) pieces of flashing membrane, or joining flashing membrane to Cloaks:
      a) Apply two (2) one-fourth inch (1/4") beads of adhesive approximately one-half inch (1/2") and one and one-half inch (1-1/2"), respectively, from the edge of the bottom membrane along the entire width of the bottom membrane. Overlap the top membrane over the bottom membrane two inches (2") and roll lap with steel hand roller, causing excess to extrude the entire length of the overlap.
   3. Do not remove excess adhesive.

B. Safety, Storage and Handling: Keep container tightly closed when not in use. Store at room temperature. Clean up tools and hands with waterless hand cleaner.

3.08 SUBSTRATE PRIMER

A. Surface Preparation: Areas to be primed should be dry.

B. Application: Substrate primer may be applied using a soft roller or brush. It can be removed from masonry with soapy water while wet and a solvent-based cleaner if dry (mineral spirits or citrus cleaner).

C. Coverage: Depending on the condition of the surface, coverage may vary from as little as 150 square feet to 200 square feet per gallon.

D. Caution:
   1. Substrate primer should not be applied when temperatures are below 40° F or when rain is imminent.
   2. Keep substrate primer from freezing.
   3. During hot weather, the product should be stored in a cool shaded area.
   4. Do not thin this product.
   5. Curing rates will vary depending on the ambient temperature relative humidity, wind speed, sky condition and the proper rate of application. Generally speaking, Substrate primer will dry within 15 to 30 minutes when applied at 70° F or above. At 50° F, on a cloudy day, cure time may be extended to as much as one hour.
   6. Check several places on primed area for dryness prior to proceeding with the flashing application.

**END OF SECTION 04 05 23**

# SECTION 06 10 53
# MISCELLANEOUS CARPENTRY

## PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the following:
1. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking, cants, and nailers.
4. Wood furring.
5. Sheathing.
6. Subflooring and underlayment.
7. Interior wood trim.
8. Plywood backing panels.
9. Removal and replacement of damaged, deteriorated or non-compliant plywood sheathing for roof substrate, as required.
10. Expansion Joints

1.02 GENERAL INFORMATION

A. Nailers shall be installed according to NRCA, Underwriters Laboratory, and IBC guidelines.

B. Wooden nailers shall be installed at gravel stops, drip edges, expansion joints, and on outside perimeter of building.

C. Gravel stop and drip edge nailers shall be the same height as the new insulation being installed where required.

D. Nailers shall be raised if necessary by anchoring an additional nailer of appropriate height to the existing nailer if the existing nailer is not to be replaced.

E. Expansion joint nailers shall extend upward a minimum of eight inches (8") above finish roof height.

F. Where parapet wall exists, specified vertical wall shimming material shall be installed beginning at roof height up to a minimum of twelve inches (12”) above finished roof surface, or as detailed, to provide substrate for horizontal termination of roof to wall flashing system.

G. Any lumber or shimming required for attachment, or to make material flashing flush or level with offsets and/or transitions, shall be incorporated in these specifications.

1.03 DEFINITIONS

A. 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. SPIB - Southern Pine Inspection Bureau.
4. WCLIB - West Coast Lumber Inspection Bureau.
5. WWPA - Western Wood Products Association.

1.04 SUBMITTALS

A. Refer to Specification Section 01 33 00 for Submittal requirements.

B. Shop Drawings: Provide manufacturer's approved details of all perimeter conditions, projection conditions, and any additional special job conditions which require details other than indicated in the drawings.

C. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions 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, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

D. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
1. Preservative-treated wood.
2. Fire-retardant-treated wood.
3. Power-driven fasteners.
4. Powder-actuated fasteners.
5. Expansion anchors.
6. Metal framing anchors.

1.05 QUALITY ASSURANCE

A. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria":
1. Dimension lumber.
2. Miscellaneous lumber.
3. Interior wood trim.
4. Plywood.
5. Hardboard underlayment.

B. Testing Agency Qualifications: To qualify for approval, an independent testing agency must demonstrate to Structural Engineer 's and/or Project Manager's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

2.01 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
   3. 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 lumber.
   4. Provide dressed lumber, S4S, unless otherwise indicated.
   5. Provide dry lumber with nineteen percent (19%) maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.
   6. Provide dry lumber with fifteen percent (15%) maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.

B. Wood Structural Panels:
   1. Plywood
   2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
   3. Comply with "Code Plus" provisions in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."
   4. Factory mark panels according to indicated standard.

2.02 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) / AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
   1. Preservative Chemicals: Acceptable to authorities having jurisdiction and one of the following:
      a) Chromated copper arsenate (CCA).

b) Ammoniacal copper zinc arsenate (ACZA).
c) Ammoniacal, or amine, copper quat (ACQ).
d) Copper bis (dimethyldithiocarbamate) (CDDC).
e) Ammoniacal copper citrate (CC).
f) Copper azole, Type A (CBA-A).
g) Oxine copper (copper-8-quinolinolate) in a light petroleum solvent.

2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry material after treatment to a maximum moisture content of nineteen percent (19%) for lumber or fifteen percent (15%) for plywood. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.

D. Application: Treat items indicated on Drawings, and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing members less than eighteen inches (18") above grade.
4. Wood floor plates that are installed over concrete slabs directly in contact with earth.

## 2.03 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in AWPA C20 (lumber) or AWPA C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664 for lumber or ASTM D 5516 for plywood.
2. Use treatment that does not promote corrosion of metal fasteners.
3. Use Exterior type for exterior locations and where indicated.
4. Use Interior Type A High Temperature (HT), unless otherwise indicated.

B. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.

## 2.04 DIMENSION LUMBER

A. General: Provide dimension lumber of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.

B. Non-Load-Bearing Interior Partitions: Construction, Stud, or No. 2 grade and any of the following species:
   1. Mixed southern pine; SPIB.
   2. Hem-fir or Hem-fir (north); NLGA, WCLIB, or WWPA.
   3. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.
   4. Eastern softwoods; NELMA.
   5. Northern species; NLGA.
   6. Western woods; WCLIB or WWPA.

C. Other Framing: Construction, Stud, or No. 2 grade and any of the following species:
   1. Douglas fir-larch; WCLIB or WWPA.
   2. Douglas fir-south; WWPA.
   3. Douglas fir-larch (north); NLGA.
   4. Hem-fir; WCLIB or WWPA.
   5. Hem-fir (north); NLGA.
   6. Southern pine; SPIB.
   7. Mixed southern pine; SPIB.
   8. Spruce-pine-fir (south); NELMA, WCLIB, or WWPA.
   9. Spruce-pine-fir; NLGA.

## 2.05 MISCELLANEOUS LUMBER

A. General: Provide lumber for support or attachment of other construction, including the following:
   1. Rooftop equipment bases and support curbs.
   2. Blocking.
   3. Cants.
   4. Nailers.
   5. Furring.
   6. Grounds.

B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with fifteen percent (15%) maximum moisture content and any of the following species:
   1. Mixed southern pine; SPIB.
   2. Hem-fir or Hem-fir (north); NLGA, WCLIB, or WWPA.
   3. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.
   4. Eastern softwoods; NELMA.
   5. Northern species; NLGA.
   6. Western woods; WCLIB or WWPA.

C. For exposed boards, provide lumber with fifteen percent (15%) maximum moisture content and any of the following species and grades:
   1. Eastern white pine, Idaho white, lodgepole, ponderosa, or sugar pine Premium or 2 Common (Sterling) grade; NELMA, NLGA, WCLIB, or WWPA.
   2. Mixed southern pine, B & B Finish No. 1 grade; SPIB.

3. Hem-fir or Hem-fir (north), Superior or C & Btr Finish grade; NLGA, WCLIB, or WWPA.
4. Spruce-pine-fir (south) or Spruce-pine-fir, grade; NELMA, NLGA, WCLIB, or WWPA.
5. Western red cedar, A grade; NLGA or WWPA.

D. For concealed boards, provide lumber with fifteen percent (15%) maximum moisture content and any of the following species and grades:
1. Mixed southern pine, No. 2 grade; SPIB.
2. Hem-fir or Hem-fir (north), Construction or 2 Common grade; NLGA, WCLIB, or WWPA.
3. Spruce-pine-fir (south) or Spruce-pine-fir, Construction or 2 Common grade; NELMA, NLGA, WCLIB, or WWPA.
4. Eastern softwoods, No. 2 Common grade; NELMA.
5. Northern species, No. 2 Common grade; NLGA.
6. Western woods, Construction or No. 2 Common grade; WCLIB or WWPA.

## 2.06 PANEL PRODUCTS

A. Miscellaneous Concealed Plywood: Exterior sheathing, span rating to suit framing in each location, and thickness as indicated but not less than three-fourths inch (3/4").

B. Plywood Underlayment: DOC PS 1, Exterior A-C with fully sanded face, thickness as indicated but not less than three-fourths inch (3/4").

C. Hardboard Underlayment: AHA A135.4, Class 4 (Service), Surface S1S; with back side sanded.

D. Miscellaneous Exposed Plywood: DOC PS 1, A-D Interior, thickness as indicated but not less than three-fourths inch (3/4").

## 2.07 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
1. Where carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Wire, Brads, and Staples: FS FF-N-105.

C. Power-Driven Fasteners: CABO NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).

G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

2.08 METAL FRAMING ANCHORS

A. General: Provide galvanized steel framing anchors of structural capacity, type, and size indicated and acceptable to authorities having jurisdiction.

B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

2.09 EXPANSION JOINTS

A. General: Provide field fabricated wood expansion joints where shown on the drawings in size as indicated and acceptable to authorities having jurisdiction.

B. Expansion joint nailers shall extend upward a minimum of eight inches (8") above finish roof height.

C. Existing expansion joints shall be replaced with curbed expansion joints which extend a minimum of eight inches (8") above the finished roof surface. New expansion joint cover shall be fabricated of sheet metal in accordance with NRCA and/or SMACNA details and flashed in accordance with roofing material manufacturer's recommended procedures.

D. Provide structural expansion joint in the field of the roof where the roof span exceeds 200’-0” in any direction.

**PART 3 - EXECUTION**

3.01 INSTALLATION, GENERAL

A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, / nailers, blocking, / grounds, and similar supports to comply with requirements for attaching other construction.

C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

E. Countersink fastener heads on exposed carpentry work and fill holes with wood filler.

F. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.

3.02 WOOD GROUND / SLEEPER, BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

C. Install permanent grounds of dressed, preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required

3.03 WOOD FURRING INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
   1. Fire block furred spaces of walls, at each floor level and at ceiling, with wood blocking or noncombustible materials accurately fitted to close furred spaces.

B. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal furring vertically at sixteen inches (16") o.c.

C. Furring to Receive Plaster Lath: Install 1-by-2-inch nominal size furring vertically at sixteen inches (16") o.c.

3.04 PANEL PRODUCT INSTALLATION

A. Wood Structural Panels: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
Comply with "Code Plus" provisions in above-referenced guide.

3.05 ROUGH CARPENTRY

A. Nailers shall be installed according to NRCA, Underwriters Laboratory, and IBC guidelines.

B. Wooden nailers shall be installed at gravel stops, drip edges, expansion joints, and on outside perimeter of building.

C. Gravel stop and drip edge nailers shall be the same height as the new insulation being installed where required.

D. Nailers shall be raised if necessary by anchoring an additional nailer of appropriate height to the existing nailer if the existing nailer is not to be replaced.

E. Expansion joint nailers shall extend upward a minimum of eight inches (8") above finish roof height.

F. Where parapet wall exists, specified vertical wall shimming material shall be installed beginning at roof height up to a minimum of twelve inches (12”) above finished roof surface, or as detailed, to provide substrate for horizontal termination of roof to wall flashing system.

G. Any lumber or shimming required for attachment, or to make material flashing flush or level with offsets and/or terminations, shall be incorporated in these specifications.

3.06 NAILERS

A. Wooden nailers shall be installed at gravel stops, drip edges, and expansion joints on outside perimeter of building according to NRCA, Underwriters Laboratory and IBC guidelines.

B. All Construction: Nailers shall be the same height as the new cover board being installed where required. Nailers shall be raised if necessary by anchoring an additional nailer of appropriate height to the existing nailer if the existing nailer is not to be replaced. Nailers shall be anchored to resist a pull-out force of one hundred seventy-five pounds (175#) per foot. Fasteners shall be no less than two (2) per nailer, and be spaced at three feet (3') on center maximum.

C. Expansion joint nailers shall extend upward a minimum of eight inches (8") above finish roof height.

D. Where parapet wall exists, fire treated plywood lumber must be installed a minimum of twelve inches (12”) above finished roof surface to provide substrate for horizontal termination of roof to wall flashing system.

3.07 STRUCTURAL WOOD CANTS

A. Toe of cant shall be level with the surface to receive new roof membrane and in all cases anchored according to NRCA, Underwriters Laboratory, and IBC guidelines.

B. Provide full 45 degree cant strips (no partials) at all intersections of vertical and horizontal surfaces, such as walls, parapet walls, curbs, expansion joints, etc., and as recommended by membrane manufacturer.

C. Cants shall provide a four inch (4") rise above the roof's surface and extend a minimum of four inches (4") horizontally.

D. Toe of cant shall be level with the surface to receive new roof membrane and in all cases anchored according to NRCA, Underwriters Laboratory, and IBC guidelines.

E. Cant strips shall be installed at the intersection of the deck and all vertical surfaces.

F. If a wood cant is used where insulation exists, cant shall be toe nailed into treated wood nailer under cant the same height as insulation.

3.08 EXPANSION JOINTS

A. Expansion material shall be formed and centered over the roof to roof structural EJ locations as shown on the drawings.

B. Coordinate the location of the expansion joint framing with Structural, Architectural and Roof drawings.

C. Framing of the expansion shall be in accordance with the details and as field conditions dictate.

D. Expansion material shall be formed and located adjacent to roof to rise wall structural EJ locations as shown on the drawings.

E. Wood Cants shall provide a four inch (4") rise above the roof's surface and extend a minimum of four inches (4") horizontally.

F. Vertical wood framing shall be attached over horizontal wood blocking as shown and detailed.

G. Taper the top of the expansion join as required at tapered roof areas to maintain a minimum height of 8" above finished roof surface.

3.09 WOOD FRAMING, GENERAL

A. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.

B. Install framing members of size and at spacing indicated.

C. Do not splice structural members between supports.

D. Firestop concealed spaces of wood-framed walls and partitions at each floor level and at ceiling line of top story. Where firestopping is not inherent in framing system used, provide closely fitted wood blocks of 2-inch nominal- thickness lumber of same width as framing members.

**END OF SECTION 06 10 53**

# SECTION 07 22 16
# ROOF BOARD INSULATION

## PART 1 – GENERAL

1.01 REFERENCES (INCLUDING LATEST REVISIONS)

A. Comply with governing local, state, and federal regulations, safety standards, and codes.

B. Testing Laboratory Services: Test results shall meet or exceed established standards.

C. Underwriters Laboratories, Inc. (Roofing Covering): Class A fire hazard classification.

D. American Society of Testing Materials (ASTM)
1. C 177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
2. C 209 Methods of Testing Insulating Board (Cellulosic Fiber), Structural and Decorative
3. C 728 Perlite Thermal Insulation Board
4. C 1289 Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
5. D 41 Asphalt Primer Used in Roofing and Waterproofing
6. D 312 Asphalt Used in Roofing
7. D 1621 Test Method for Compressive Properties of Rigid Cellular Plastics
8. D 4601 Asphalt Coated Glass Fiber Base Sheet Used in Roofing

E. The National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual

F. American National Standards Institute/Single Ply Roofing Industry (ANSI/SPRI)

G. American Society of Civil Engineers - ASCE 7 Minimum Design Loads for Buildings and Other Structures (for wind uplift criteria)

1.02 QUALITY ASSURANCE

A. Regulatory Requirements
1. Classified by Underwriter's Laboratories (UL) as Class A roof covering.
2. Follow local, state, and federal regulations, safety standards, and codes.

B. Installation
1. Installation shall be in accordance with manufacturer's current published application procedures, NRCA general recommendations, and ASCE 7 wind uplift criteria.
2. Roof system manufacturer's technical specifications shall be considered part of this specification and shall be used as reference for specific application procedures.

C. Contract Documents
1. In the case of an inconsistency between the drawings and specifications or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Project Manager's/Architect's interpretation.

1.03 SUBMITTALS

A. Product Data: Submit Manufacturer's product data sheets for each product. Indicate each item or component to be used on project to include thicknesses, sizes, profiles, etc.

B. Shop Drawings: Layout of roof plan showing crickets, tapered design, tapered insulation pattern, direction of slope, amount of slope, spot elevations indicating thicknesses at high and low points.
1. Submit fastening requirements from manufacturer for each roof zone as per applicable building code.
2. Submit manufacturer’s recommended fastener layout/placement pattern for each roof zone. Refer to Factory Mutual Loos Prevention Data Sheet (LPDS) 1-29 for more information.

C. Certification: Submit roof manufacturer's certification in writing that insulation is acceptable as substrate for application of specified roof system.

D. Pullout Tests in accordance to ANSI/SPRI FX-1.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store materials in accordance with manufacturer's recommendations.

B. When stored outdoors:
1. Tarp and shield insulation from moisture and ultraviolet rays.
2. Elevate insulation above substrate four inches minimum.
3. Secure insulation to resist high winds.
4. Distribute insulation stored on roof deck to prevent concentrated loads that would impose excessive stress or stain on deck or structural members. Verify that structure can accommodate additional loading.
5. Wet insulation, or insulation that has been wet but which has dried, may not be used and shall be removed completely and immediately from the job site.
6. Do not double stack bundles of insulation on the roof top.

1.05 SEQUENCING AND SCHEDULING

A. Substrate Acceptance: Roof system manufacturer's representative shall inspect roof deck and associated substrates and provide written acceptance of conditions.

B. Manufacturer's approved roofing contractor shall inspect and approve deck and substrates.

C. Plan roof layout with respect to roof deck slope to prevent rainwater drainage into completed roofing.

D. Do not install more insulation than can be covered with complete roof system in same day.

1.06 PRODUCT CONDITIONS

A. Environmental Requirements:
   1. Apply roofing and insulation in dry weather.
   2. Do not proceed with roof construction during inclement weather or when precipitation is predicted 40% or more possibility.
   3. Do not apply insulation over wet or moist deck or in foggy conditions.
   4. Days with wind speeds of 30 mph or greater shall be considered "Bad Weather" days.

B. Emergency Equipment: Maintain on-site equipment and material necessary to apply emergency temporary seals in the event of sudden storms or inclement weather.

C. Costs for emergency roofing shall be borne by Contractor.

## PART 2 – PRODUCTS

2.01 NAILBASE FOR STEEP SLOPE SHINGLES

A. Factory fabricated polyisocyanurate nailbase clad rigid insulation with nominal three-fourths inch (3/4") exterior grade plywood to achieve a minimum total R-value of 25. Verify compatibility with roofing membrane manufacturer.
   1. Rmax, “Nailable Base-4”
   2. Hunter Panels, “H-Shield NB”

A.

2.02 FASTENERS

A. Fasteners and fastening plates and/or termination bars shall be FM Approved and shall be listed in the FM Global Approval Guide, and as recommended by the insulation/fastener manufacturer for the specific application to meet the minimal requirements for wind uplift as required by the local jurisdiction and/or FM Global.

B. Standard Fastener for Steel Applications for 18-24 gauge Steel Substrates: Shall be a #12 fastener with a minimum .220 thread diameter and .12.5 buttress threads and a 30 degree spade point. Fasteners shall be fluorocarbon coated with CR-10 corrosion resistant coating when subjected to 30 Kesternich cycles (DIN 50018) shows less than 15% red rust which surpasses FM Global Approval Standard 4470, as manufactured by OMG Roofing Products, or approved equal. All fasteners shall be used in conjunction with the manufacturers approved round pressure plate. Fasteners, plates, and/or bars shall be FM approved and listed in the FM Global Approval Guide.

## PART 3 – EXECUTION

3.01 PROTECTION OF ROOFING

A. Provide special protection from traffic on yet to be removed roofing.

B. Provide special protection from traffic on completed work.

3.02 EXAMINATION AND PREPARATION

A. Do not install until defects are corrected and deck substrate meets roof system manufacturer's requirements.

B. Examine substrate and related surfaces, and verify that there are no conditions such as inadequate anchorage, foreign materials, moisture, ridges, depressions, or other conditions which would prevent satisfactory installation of roof system.

C. Start of work constitutes acceptance of deck substrate and site conditions.

D. Sweep deck substrates clean of dust and debris immediately prior to installation of tapered insulation.

3.03 NAILBASE FOR STEEP SLOPE INSTALLATION AS REQUIRED DUE TO DAMAGE DURING CONSTRUCTION

A. Comply with system manufacturer's written instructions for installing roof insulation.
1. Install one (1) layer of nailbase insulation under area of roofing in required thickness to achieve specified 'R' value. Install insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding one-fourth inch (1/4") with insulation.
2. Attach insulation to deck as recommended by the insulation manufacturer in the required pattern to achieve the design wind uplift loading specified.
3. Use Wind Rated fasteners as recommended by the insulation manufacturer.
4. Seal all joints in top layer of insulation with sealing tape.
5. Apply no more insulation than can be covered in the same workday.

3.04 BACKNAILING/STRAPPING

A. On slopes greater than one inch (1") in twelve inches (12"), refer to NRCA and/or manufacturer's guidelines for backnailing procedures and follow the more stringent guidelines for all specified materials.

| Slope | Interply& Top Pour | Backnail | Strap |
|---|---|---|---|
| 0 - ½" per 12" | Type IV | No | No |
| ½" - 2" per 12" | Type IV | Yes | Strap if possible |
| 2" - 3" per 12" | Type IV | Yes | Yes |

3.05 ADJUSTING

A. Remove insulation which has been damaged (broken, cracked, punctured, wet, etc.) and install acceptable new units before installation of roof system.

3.06 CLEANING

A. Remove debris and material wrappers from jobsite. Leave insulation clean and dry, ready to receive roofing membrane.

**END OF SECTION 07 22 16**

# SECTION 07 61 13
# STANDING SEAM METAL ROOF SYSTEM

## PART 1 - GENERAL

1.01 AREAS COVERED

A. Refer to roof plans for areas to be included in the scope of work

1.02 DEFINITIONS

| | |
|---|---|
| ACM | Asbestos Containing Materials |
| ANSI | American National Standards Institute |
| ASCE | American Society of Civil Engineers |
| ASTM | American Society for Testing and Materials |
| EPA | Environmental Protection Agency |
| EPS | Expanded Polystyrene |
| FM | Factory Mutual |
| IBC | International Building Code |
| NDL | No Dollar Limit |
| NESHAP | National Emissions Standards for Hazardous Air Pollutants |
| NRCA | National Roofing Contractors Association |
| OSHA | Occupational Safety & Health Administration |
| SBS | Styrene-Butadiene-Styrene |
| SDI | Steel Deck Institute |
| SMACNA | Sheet Metal and Air Conditioning Contractors National Association |
| SPRI | Single Ply Roofing Industry |
| UL | Underwriters Laboratories, Inc. |

1.03 REFERENCES (INCLUDING LATEST REVISIONS)

A. Comply with governing local, state, and federal regulations, safety standards, and codes.

B. Testing Laboratory Services: Test results shall meet or exceed established standards.

C. Underwriters Laboratories, Inc. (Roofing Covering): Class A fire hazard classification.

D. American Society for Testing and Materials (ASTM)

E. The National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual

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

G. American Society of Civil Engineers – ASCE 7

1.04 SECTION INCLUDES

A. Preformed and prefinished standing seam metal roof system with continuous mechanically seamed ribs, concealed clips and fastening devices.

B. Color coordinated ridge, hip, valley, gable, eave, corner, rake, headwall, counterflashings and miscellaneous flashings and attaching devices.

C. Provide concealed clips, fasteners, closures and factory and field applied sealants as necessary to meet design criteria and ensure a weathertight installation.

D. Bituminous membrane roofing underlayment.

E. Factory / Field fabricated polyisocyanurate nailbase clad rigid insulation with three-fourths inch (3/4") exterior grade plywood where required

1.05 INSTALLER QUALIFICATIONS

A. Roofing installer must be:
1. Currently prequalified with the Owner in accordance with Owner's prequalification requirements.
2. Currently in good standing with the manufacturer.
3. Installer must be an experienced single firm specializing in the type of roofing repair and/or removal and replacement work required, employing only experienced workers for the class of work in which they are employed, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Project Manager/Architect.
4. Contractor must have successfully completed previous projects warranted by the manufacturer.

B. It shall remain each Bidder's responsibility to determine his current status with the manufacturer's certification plan.

1.06 MANUFACTURER QUALIFICATIONS

A. A qualified manufacturer is one that is UL listed and has FM approvals for a membrane roofing system similar to that used for this project for a minimum of fifteen (15) years.

1.07 CONTRACT DOCUMENT QUALITY ASSURANCE

A. In the case of an inconsistency between the drawings and specifications or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Project Manager's/Architect's interpretation.

1.08 SUBMITTALS

A. Shop Drawings: Provide manufacturer's approved details of all perimeter conditions, projection conditions, and any additional special job conditions which require details other than indicated in the drawings.

B. Refer to Specification Section 01 33 00 for Submittal requirements

C. Engineered Design Calculations:
   1. Submit panel system manufacturer's design calculations verifying the panel system meets the specified building code as defined in these specifications.
   2. Design calculations shall be sealed by a registered Structural Engineer employed by the standing seam metal roof system manufacturer and licensed in the State of Texas.

D. Certification:
   1. Submit manufacturer's certification that materials and finishes meet specified requirements.
   2. Submit written verification of panel Applicator's factory installation training performed by the standing seam metal roof system manufacturer and a copy of the Panel Applicator's "Authorized Applicator" certificate.
   3. Submit roof panel manufacturer's certification that fasteners, clips, backup plates, closures, roof panels and finishes meet specification requirements, wind uplift requirements.
   4. Submit roof panel manufacturer's certification that installer meets requirements to install roof system and has been trained by the manufacturer to install this particular roof system and is qualified to obtain required warranties.
   5. Test Reports –Certified test results that indicate roof system meets or exceeds design and performance criteria. Testing to include:
      a) Uplift Testing:
         (1) Factory Mutual: Submit documentation that panel system has been tested at Factory Mutual per FM 4471 Section 4.3 and is currently listed.
         (2) Underwriters Laboratory: Submit documentation that panel System has been tested at Underwriters Laboratories per UL-580 and be currently listed under a UL Construction Number.
            (a) Submit documentation that panel system has been tested in accordance with UL-580/1897 and has been tested to failure.
         (3) ASTM E 1592. Submit ASTM E 1592 Test reports prepared by independent test laboratory and stamped by a professional engineer substantiating that roof system will meet the allowable wind pressures with a safety factor of 2.0.
      b) Static Water Testing Certification:
         (1) The panel system shall be tested in accordance with FM4471 Appendix G, and pass with no leakage. The test specimen must successfully withstand being submerged under six inches (6") of water for a minimum period of 7 days.
         (2) The panel system shall be tested in accordance with ASTM E 2140 and pass with no leakage. The test specimen must successfully withstand being submerged under six inches (6") of water for a minimum period of 6 hours.
      c) Air and Water Testing Certification:

(1) ASTM E 1680 – Manufacturer's test data for air infiltration rates up to 20 pounds per square inch differential pressure.
(2) ASTM E 1646- Manufacturer's test data for water infiltration rates up to 20 pounds per square inch differential pressure.

d) Impact Resistance:
(1) Submit documentation that panel system has been tested at Factory Mutual per FM 4471 Section 4.5 and is currently rated for "Severe Hail".

E. Shop Drawings: To be prepared by metal roof system manufacturer.
1. Submit roof plan showing panel layout, gutters and downspouts as applicable.
2. Provide metal roof flashing, gutter and downspout shop drawings.
a) Indicate gage and finish of materials.
b) Indicate fastener type, finish and spacing.
c) Indicate locations of field applied sealant.
d) Indicate location size and gauge of all back up plates.
3. Roof Panel Attachment:
a) Roof plan with wind uplift pressure calculations at field, corner and perimeter areas according to version of ASCE-7 referenced by locally-adopted Building Code and the authority having jurisdiction.
b) Roof plan indication roof clip spacing pattern at field, corner, perimeters and where panels are to be fixed from thermal movement.
c) Roof panel attachment plan must be stamped by licensed engineer in State of Texas , certifying roof attachment meets local Building Code requirements for wind uplift.

F. Samples:
1. Submit two samples, twelve inches (12") long, full width panel, showing metal gage, seam and required finish.
2. Two samples each for roof panel clip, and clip fastener.
3. Submit color samples for Architect's selection.
4. Submit sample warranties:
a) Coating Warranty.
b) Manufacturer Water Tightness Warranty complying with this Specification.
c) Installer Warranty.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers and rolls with all labels intact and legible including labels indicating appropriate warnings, storage conditions, lot numbers, and usage instructions. Materials damaged in shipping or storage shall not be used.

B. Protect products and accessories from damage and discoloration during transit and at project site.

C. Upon receipt of prefinished preformed metal panels, flat sheets, flashings and panel accessories, Panel Applicator shall examine each container for damage and for completeness of the consignment.

D. Store materials out of the weather in a clean, dry place. One end of each container should be slightly elevated and covered with a loose weatherproof covering to prevent condensation.

E. Panels and/or flashings with strippable film must not be stored in areas exposed to direct sunlight.

F. Care should be taken to prevent contact with any substance that may cause discoloration.

G. Store materials to provide ventilation and prevent bending, abrasion or twisting.

H. Do not overload roof structure with stored materials. Do not permit material storage or traffic on completed roof surfaces.

I. Manufacturer's packaging and/or roll plastic is not acceptable for exterior storage. Tarpaulin with grommets shall be minimum acceptable for exterior coverings. All materials stored as above shall be a minimum of four inches (4") off the substrate, and the tarpaulin tied off with rope.

J. Deliver materials requiring fire resistance classification to the job with labels attached and packaged as required by labeling service.

K. Deliver materials in sufficient quantity to allow continuity of work.

L. Handle and store material and equipment in such a manner as to avoid damage. Liquid products shall be delivered sealed, in original containers.

M. Handle rolled goods so as to prevent damage to edge or ends.

N. Select and operate material handling equipment so as not to damage existing construction or applied roofing.

O. Moisture-sensitive products shall be maintained in dry storage areas and properly covered. Provide continuous protection of materials against wetting and moisture absorption. Store roofing and flashing materials on clean raised platforms with weather protective covering when stored outdoors.

P. Store rolled goods on end.

Q. Protect materials against damage by construction traffic.

R. The proper storage of materials is the sole responsibility of the contractor and any wet or damaged roofing materials shall be discarded, removed from the project site, and replaced prior to application.

S. Comply with fire and safety regulations, especially with materials which are extremely flammable and/or toxic. Use safety precautions indicated on labels.

T. No storage of materials shall be permitted on roof areas other than those materials that are to be installed the same day. Any exception must be in written form.

U. Care should be taken to avoid gouging, scratching or denting.

V. Do not allow traffic on completed roof. If required, provide cushioned walk boards.

W. Protect installed products from damage caused by foreign objects and construction until completion of project.

1.10 SITE CONDITIONS

A. Job Condition Requirements:
1. Coordinate the work of the contractor with the work to be performed by other trades, to ensure proper sequencing of the entire work. The contractor is to schedule his work so that adequate time is allowed for other trades to perform their work.
2. Apply roofing in dry weather.
3. Do not apply roofing when ambient temperature is below 45° F.
4. Proceed with roofing work only when weather conditions are in compliance with manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with specifications.
5. Schedule the work so the building will be left watertight at the end of each day. Do not remove more roofing materials than can be reinstalled in any working day.
6. Load placed on the roof at any point shall not exceed the safe load for which the roof is designed.
7. All surfaces to receive new roofing shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Project Manager/Architect.
8. The contractor shall follow local, state, and federal regulations, safety standards, and codes for the removal, handling, and disposal of asbestos containing materials, if present. When a conflict exists, follow the stricter document.
9. Due caution should be exercised so as not to alter the structural integrity of the deck. When cutting through any deck, care should be taken so as not to damage the deck or any part of the deck, such as post tension cables, etc.
10. The contractor is to verify the location of all interior ducts, electrical lines, piping, conduit, and/or similar obstructions. The contractor is to perform all work in such a manner as to avoid contact with the above-mentioned items.

B. Protection of Work and Property:
1. Work: The contractor shall maintain adequate protection of all his work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. Contractor shall provide and maintain at all times any OSHA required danger signs, guards, and/or obstructions necessary to protect the public and his workmen from any dangers inherent with or created by the work in progress. All federal, state, and city rules and requirements pertaining to safety and all EPA standards, OSHA standards, NESHAP regulations pertaining to asbestos as required shall be fulfilled by the contractor as part of his proposal.

2. Property: Protect existing planting and landscaping as necessary or required to provide and maintain clearance and access to the work of this contract. Examples of two categories or degrees of protection are generally as follows: a) removal, protection, preservation, or replacement and replanting of plant materials; b) protection of plant materials in place, and replacement of any damage resulting from the contractor's operations.
3. Finished roof areas shall be protected from damage by the contractor during construction.
4. Twenty-four Hour Call: The contractor shall have personnel on call 24 hours per day, seven (7) days per week for emergencies during the course of a job. The Owner/Project Manager/Architect is to have the 24 hour numbers for the contact. Contractor must be able to respond to any emergency call and have personnel on-site within two (2) hours after contact. Numbers available to the Owner/Project Manager/Architect are to be mobile, home and office numbers for:
   a) Job Foreman
   b) Job Superintendent
   c) Owner or Company Officer

C. Damage to Work of Others: The contractor shall repair, refinish, and make good any damage to the building or landscaping resulting from any of his operation. This shall include, but is not limited to, any damage to plaster, tile work, wall covering, paint, ceilings, floors, or any other finished work. Damage done to the building, equipment, or grounds must be repaired at the successful contractor's expense holding the Owner harmless from any other claims for property damage and/or personal injury.

D. Measurements: It will be the contractor's responsibility to obtain and/or verify any necessary dimensions by visiting the job site, and the contractor shall be responsible for the correctness of same. Any drawings supplied are for reference only.

E. Use of Premises:
1. The contractor is advised that the Owner will occupy the building at all times, and the contractor must provide all safeguards required to protect personnel and to keep noise levels as low as reasonably possible for each operation.
2. The contractor shall:
   a) Coordinate work in such a manner as to not interfere with the normal operation of the building.
   b) Assume full responsibility for protection and safekeeping of products stored on premises.
   c) Agree to hold the Owner harmless in any and all liability of every nature and description which may be suffered through bodily injuries, including death of any persons by reason of negligence of the contractor, agents, employees, or subcontractors.

F. Cleaning and Disposal of Materials:
1. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean and shall allow no roofing materials to remain on the outside walls.

2. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust. A suitable scrap chute or hoist must be used to lower any debris. At completion, all work areas shall be left broom clean and all contractor's equipment and materials removed from the site.
3. All roofing related materials shall be removed from ladders, stairs, railings, and similar parts of the building.
4. Debris shall be deposited at an approved disposal site.

1.11 SEQUENCING AND SCHEDULING

A. Coordinate roofing schedule with work of other trades.

B. Plan lay up of roofing system with respect to deck slope. Avoid situations where excessive drainage could pass into completed roofing.

C. Maintain communication with roofing manufacturer's representative to inform of progress and to schedule periodic inspections.

D. All penetrations shall be made in roof deck prior to beginning with roof installation

1.08 PERFORMANCE REQUIREMENTS

A. Roofing System: Shall prevent water migration into roof assembly or building interior through the roof assembly and substrate self-adhered membrane.

1.09 QUALITY ASSURANCE

A. Manufacturer's Qualifications:
1. Minimum twenty (20) years experience in the fabrication of standing seam metal roof systems on projects of similar size and scope. Upon request, submit a minimum of five (5) project references for Architect's review. List project address, date of installation, Architects and Owner's name and telephone numbers.
2. No other manufacturer of standing seam metal roof systems will be accepted without prior written approval of the Architect and based upon the manufacturer verifying the product can meet or exceed all performance criteria listed in these specifications.
3. Requests to be listed as an approved manufacturer must be submitted in writing a minimum fifteen (15) days prior to bid date accompanied by product literature, technical information, sealed engineer's calculations verifying conformance, and a product sample. Approved manufacturers will only be set forth in a written and issued addendum.
4. No substitutions will be permitted after the bid date.

B. Applicator Qualifications:
1. Panel Applicator must have a minimum of five (5) years experience in the application of standing seam metal roof systems.
2. Panel Applicator must be factory trained by the standing seam metal roof system manufacturer prior to the bid date in order to obtain a contract for installation.

3. Use adequate members of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this Section.
4. Use equipment of adequate size, capacity and numbers to accomplish the work of this Section in a timely manner.
5. Upon request, submit a minimum of five (5) successfully completed projects of similar size and scope. List project address, date of installation, Architect and Owner's name and telephone numbers.
6. Single Source Responsibility: Provide all items of the standing seam metal roof system work specified herein by a single roofing contractor to provide undivided responsibility.

C. Maintain one copy of each document on site.

D. Factory Technical Representative: Roofing Contractor is to arrange and schedule the manufacturer’s technical representative to be on site the first day of the installation of manufacturer’s roofing system. The manufacturer's technical representative shall inspect the work of the contractor at least one time each week during the installation of the roofing system. The manufacturer's technical representative shall perform with the owner's representative and the roofing contractor a final inspection of the roofing system. At the completion of the final inspection, provide to the roofing contractor a list of punch list items (if any) to be correct before technical acceptance of the roofing project and prior to issuance of manufacturer's Twenty (20) Year Warranty. Field reports shall be provided after each inspection within five (5) days of site visit

E. Manufacturer: Manufacturer's facility and equipment must undergo an annual quality assurance audit by Factory Mutual. This assures that manufacturers equipment, procedures and quality program are maintained to insure a uniform product consistent with that which was tested and FM Approved.

F. Field Measurements: Prior to fabrication of panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units, where final dimensions cannot be established prior to fabrication.

G. Install a thirty foot (30') wide, quality control area of metal roofing, for review by the project manager , to establish the quality of installation for the roof, and have approved prior to installing additional metal panels

1.10 REGULATORY REQUIREMENTS

A. Conform to all applicable local codes for roof assembly fire hazard requirements.

B. Provide certification of inspection confirming approval of design and installation by authority having jurisdiction.

C. Fire Hazard Classifications: UL Class A.

1.11 PRE-INSTALLATION CONFERENCE

A. Convene a preinstallation conference two weeks prior to commencing the Work.

B. Attendants: Panel Applicator, installer of each component of associated work, installers of deck or substrate construction to receive roofing work, Architect, Owner or Owner's Representative, Roofing system manufacturer's technical representative and General Contractor.

C. Record discussion, decisions and agreements reached and furnish a copy to each attendant.

D. Review installation procedures and coordination required with related Work.

E. Tour representative areas of roofing substrates, inspect and discuss condition of substrates, roof drains, curbs, penetrations, wood nailers and other preparatory work performed by other trades.

F. Review structural loading limitations of steel deck and inspect deck for loss of flatness and as required for mechanical fastening.

G. Review roofing system requirements (approved manufacturer's shop drawings, specifications and other contract documents.

H. Review required submittals.

I. Review and finalize construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to avoid delays.

J. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.

K. General Contractor to document the meeting with written minutes and copy all in attendance.

## 1.12 ENVIRONMENT REQUIREMENTS

A. Do not apply roofing during inclement weather.

B. Do not apply roofing system to damp or frozen deck or substrate

## 1.13 SYSTEM DESCRIPTION

A. Work Included: The contractor shall provide all material, labor, and administration and other items to provide a complete standing seam metal roof system complying with performance requirements indicated and capable of withstanding structural movement, thermally induced movement and exposure to weather without failure or infiltration of water into the building interior.

B. Coordinate standing seam metal roof system with roofing substructure work

C. Design Requirements:
   1. The standing seam metal roof system, including: panels, flashings, attachment clips and attachment screws shall be designed by the metal roof system manufacturer per to meet the following design criteria:
      a) 2024 version of the International Building Code, (IBC-2024).
      b) An ultimate wind speed of 130 mph. [per IBC 2024]
      c) Listing of applicable loads by roof zones (interior, edges and corners).
      d) The building importance factor is to be based on building location and design standards - Essential Facilities confirm with Structural Engineer and ASCE7 criteria.
      e) Roof snow load is zero or on a project by project basis.
      f) The building exposure factor is "C", open terrain.
   2. The standing seam metal roof system manufacturer shall provide an engineered analysis of the roofing system, sealed by a registered Structural Engineer employed by the manufacturer and licensed in the State of Texas, verifying that the product and attachment methods will resist wind pressures imposed upon it pursuant to the design criteria and that the roofing system fully complies with all specified requirements.
   3. The panel system shall bear fully documented proof that it has been independent laboratory evaluated using the U.S. Army Corps of Engineers Guide Specification (CEGS) 07416.
      a) Testing shall include establishment of ultimate and allowable system uplift capacities for both the "field" and "areas of discontinuity".
      b) "Proof" shall be defined as both the manufacturer and the product being included in the document entitled: "List of Approved Standing Seam Metal Roof Systems" as published by the U.S. Army Corps of Engineers.
   4. Provide factory preformed panel system that has been pretested and certified by manufacturer to comply with specified requirements under installed conditions.
   5. Provide factory engineered and tested end lap (splice) details at roof third points, per ASTM 2140 water immersion testing.
   6. Provide continuous mechanically seamed ribs that inherently increase load span capability, stiffness and flexural stress handling capacity.
   7. Provide continuous butyl sealant within the confines of the female flange.
   8. Provide factory-preformed panel that has been tested and approved for a Class 4 Impact (Hail) resistance rating per UL 2218. Listing shall be present on the UL website (Refer to Underwriters Laboratories website at www.ul.com).
   9. Must be tested in accordance with UL 580.
   10. On-site or field manufactured panels are prohibited unless otherwise approved by Project Manager / Architect. Field curving of pre-manufactured panels is acceptable.

D. Structural Requirements:
   1. Panel structural properties determined in accordance with latest edition of American Iron and Steel Institute's "Cold Formed Steel Design Manual," using "effective width" concepts.
   2. Wind uplift design for roof assemblies shall be calculated by the standing seam metal roofing system manufacturer per ASTM E 1592. Calculations shall include establishment of ultimate and allowable roof system uplift capacities for both the "field" and "areas of discontinuity".
   3. Provide confirmation of positive and negative buckling moments and uplift capacity determined by full-scale tests.

E. Substrate Criteria:
   1. Standing Seam Metal Roofing System: Engineer standing seam metal roof system installed over high temperature Bituminous membrane underlayment and Polyisocyanurate Nailbase clad rigid insulation over metal decking that is capable of withstanding the design loads when applied at 90° to the surface and spaced as shown on the approved shop drawings.
   2. High Temperature Waterproof Membrane Underlayment: Apply waterproof Bituminous membrane under entire roof surface per manufacturers written instructions.
   3. Polyisocyanurate Nailbase Clad Rigid Insulation: Attach Polyisocyanurate Nailbase clad Rigid Insulation to metal decking as per the manufacturers written instructions and in the required pattern to resist the design loading.

F. Environmental Requirements: Actual independent laboratory certified test results must be submitted.
   1. Resistance to air infiltration: 002 cfm per linear foot of joint when tested in accordance with ASTM E 1680 at static test pressure differential of 12 psf.
   2. Resistance to water infiltration: No leakage through panel joints when tested in accordance with ASTM E 1646 at static test pressure differential of 12 psf.

## 1.14 WARRANTY

A. Furnish manufacturer's standard twenty (20) year, non-prorated, material and labor written finish warranty stating that architectural fluorocarbon finish will be:
   1. Free from fading or color change in excess of five (5) NBS units as measured per ASTM 2244-68.
   2. Will not chalk in excess of a numerical rating of seven (7) when measured in accordance with standard procedures specified in ASTM D 659-74.
   3. Will not peel, crack, chip or delaminate.
   4. Warranties supplied by Metal Roof Installer or 3rd Party Warranties are not acceptable.
   5. Coverage includes roof panels, roof flashing, roof penetrations and roof curbs.

B. Furnish a written warranty signed by the Panel Applicator for a two (2) year period from the date of substantial completion of the building guaranteeing materials and workmanship for weathertightness of the roofing system, flashings, penetrations and against all leaks.

C. Special Weathertight Warranty: Furnish manufacturer's 20-year, full system, non-prorated, no dollar limit weathertight warranty to be jointly signed by the manufacturer and the Panel Applicator.

D. Protect products and accessories from damage and discoloration during transit and at project site. Store sheets and components in dry storage area to prevent condensation.

E. Do not overload roof structure with stored materials. Do not permit material storage or traffic on completed roof surfaces.

## PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Standing Seam Metal Roof System:
1. Petersen Aluminum Corporation: Tite-Loc Plus – Basis of design
2. Berridge
3. McElroy Metals
4. Or prior approved equal

B. Bituminous Membrane Waterproof Underlayment: A 40 mil self-adhering high temp membrane 260 degree min, or prior approved equal.
1. Tamko "TW Metal and Tile"
2. Or prior approved equal

C. Polyisocyanurate Nailbase-Clad Rigid Insulation: Rmax, Inc., or prior approved equal to achieve an R-value of 30 minimum
1. All insulation shall be in compliance with Section 07 22 16 Roof Board Insulation.
2. All insulation shall be approved in writing by the membrane manufacturer as to thickness, type, and manufacturer. All insulation must be approved for the specific application, Underwriters Laboratory approved

D. Substitutions:
1. Approved manufacturers will only be set forth in a written and issued addendum.
2. Alternate manufacturers must fully comply with all specified requirements.

2.02 MATERIALS

A. Panels:
1. Prefinished Galvalume® sheet, ASTM AZ50 made of 55% aluminum, 1.6% silicon and the balance zinc as described in ASTM specification A792.
2. Panels shall be 22-gauge with a Polyvinylidene (Kynar 500) Finish.
3. Factory fabricated panel with integral continuous overlapping seams suitable for continuous locking or crimping by mechanical means during installation. Onsite or field manufactured panel profiles are not acceptable unless prior approval is made.
4. Seam Size:
   a) Male leg: 2" high
   b) Female leg: 2" high
5. Provide butyl sealant within the confines of female seam flange, on the bottom edge of female seam flange, designed to seal against adjacent male panel leg.

B. Clip/Fastener Assemblies:.
1. Typical clip, UL-90 requirements:
   a) Wind Rated Fasteners: As per approved manufacturer's engineered shop drawings.
   b) Wind Rated Clip: Sliding 22-gauge galvanized steel hook in combination with a double fastened 18-gauge galvanized steel base, both at Fy (MIN) = 33 ksi. Clip hook shall have a shop installed hot-melt butyl sealant for continuity of seal at clip locations.

2. Typical Low Clip Requirements:
   a) UL-90 Fasteners: As per approved manufacturer's engineered shop drawings.
   b) Sliding 26-gauge at Fy=40ksi (MIN) galvanized steel hook in combination with a double fastener 18-gauge at Fy = 50 ksi (MIN) galvanized steel base. Clip hook shall have a shop installed hot-melt butyl sealant for continuity of seal at clip locations.
3. Standard Flashing Fasteners: Same as Wind Rated Fasteners specified above.

C. Accessories:
1 Provide manufacturer's standard accessories and other items essential to completeness of the standing seam metal roof installation.
2. Roof Jacks: Manufacturer's standard EPDM with an aluminum sealing base ring; for openings twelve inches (12") or smaller, centered in panel; do not interrupt seam.
3. Roof Curbs: fabricated to the specifications of the standing seam metal roof manufacturer, thereby assuring compatibility with the roof construction framing and covering. Roof curbs shall be of sufficient size and design to coordinate with requirements for support of heat and smoke vents specified in another Division 7 Section. Roof curb flashing and framing shall provide for the expected expansion and contraction of the standing seam metal roofing system.
4. Gutters and downspouts will be fabricated to the same gauge and specification as panel.

D. Field Sealants:
1. Color coordinated primerless silicone, urethane, or high grade, non-curing butyl as recommended and engineered by panel manufacturer.
2. Do not use sealants containing asphalt.

E. Bituminous Membrane Waterproof Underlayment:
1. 40 mil flexible, self-adhering rubberized asphalt sheet membrane with a polymeric film on the surface and a removable silicone-treated release sheet on the adhesive side
2. Bituminous membrane underlayment shall be rated for high temperature resistance up to 260 F.
3. Bituminous membrane shall have a maximum permeance rating of 0.05 perms.
4. Minimum thickness shall be 40 mils.

F. Clad Nailbase insulation shall be in compliance with Section 07 22 16 Roof Board Insulation.

## 2.03 FABRICATION

A. Panels:
1. Provide factory formed panel widths of sixteen inch (16"), with a one and one-half inch (1-1/2") high standing seam.
2. On-site or field manufactured panels are prohibited.
3. Provide panels with no end laps (splices).
4. Roof panels shall have flush horizontal and vertical surfaces to facilitate sealing at terminations.
5. Turn panel ends up depth of ribs at ridge/hip end of panel.

B. Seams:
1. Panel seams shall interlock entire length of seam, by means of a mechanically driven rib seamer.
2. Design standing seam to lock up and resist joint disengagement during design wind uplift conditions as calculated to comply with local building codes and design uplift criteria.
3. Provide factory sealant within confines on trailing edge of female seam leg to aid in resistance of leaks and provide panel-to-panel seal while allowing expansion and contraction movement, and the seams shall be continuously locked or crimped together by mechanical means during installation.

C. Clips:
1. Provide Wind Rated Clips designed to allow panels to thermally expand and contract and provide a minimum of ± one inch (1") of thermal movement. Clips shall incorporate a self-centering feature to allow a minimum of one-half inch (1/2") of movement in either direction for a total movement of one inch (1").
2. Clips shall be designed to meet positive and negative pressures as calculated and engineered by the standing seam metal roofing system manufacturer.
3. Fasteners shall penetrate the metal deck a minimum of three-fourths inch (3/4").

D. Engineer panels to use concealed anchors that permit expansion and contraction.

E. Trim/Flashings:
1. Prefinished sheet metal designed by the manufacturer in the same gauge, material and finish as the standing seam metal roofing system.
2. Locations, design, sealing and fastening methods as per the manufacturer's approved engineered shop drawings.

## 2.04 FINISH

A. Fluorocarbon Coating:
1. Full strength 70% Kynar 500® coating baked on for fifteen (15) minutes at 450°F to dry-film thickness of 1.0 mil.
2. 15% reflective gloss (ASTM D 523). (Low Gloss).
3. 0.3 mil baked on epoxy primer.
4. Backer side of panels to be painted with an off-white polyester coating.
5. Top Side Color: As selected by Architect from manufacturer's full range of color offerings, including premium, metallic and custom colors.

## 2.05 ROOF PLAQUE

A. Contractor shall provide a sixteen inch by sixteen inch (16” x 16”) metal plaque on the underside of each of the roof hatches that states the following:
1. Building Envelope Consultant, phone number.
2. School district phone number.
3. School district emergency phone number,
4. Contractor name, phone number.
6. Roof system, warranty information, and
7. Roof Manufacturer, phone number.

2.07 EXTERIOR ROOF ACCESS LADDER

A. Fixed Ladder Design, with the required OSHA Approved fall protection.

B. Refer to Specification Section 07 72 00 Roof Accessories for further information.

2.08 ROUGH LUMBER

A. Refer to Specification Section 06 10 53 Miscellaneous Carpentry for further information

B. Vertical Wall Shimming Material: Shall be exterior grade plywood unless otherwise accepted by Project Manager/Architect. Thickness shall be as required for attachment or to make material flashing flush or level with offsets and/or transitions, minimum three-fourths inch (3/4"). Proper selection of material is required to achieve UL guidelines.

2.09 MISCELLANEOUS MATERIALS

A. Other materials shall be as specified, or of the best grade for the proposed use, as recommended by the manufacturer of said product.

2.10 EXPANSION JOINTS

A. All Expansion joints shall be in compliance with Section 06 10 53 Miscellaneous Carpentry.

B. Expansion joints at walls and field of the roof shall be curbed as outlined in accordance with NRCA and SMACNA guidelines. The curbs will be flashed as outlined above in Curb Flashings.

C. Provide field fabricated wood backed expansion joints where shown on the drawings in size as indicated and acceptable to authorities having jurisdiction.

D. Expansion joint nailers shall extend upward a minimum height as determined and required by the metal panel manufacturer.

E. Expansion joints at walls and field of the roof shall be curbed as outlined in accordance with NRCA and SMACNA guidelines. The curbs will be flashed as outlined above in Curb Flashings.

F. Provide structural expansion joint in the field of the roof where the roof span exceeds 250’-0” in any direction.

**PART 3 - EXECUTION**

3.01 CONNECTING WORK

A. General: Provide metal roofing panels of full length from eave to ridge NO END LAPS

ALLOWED.

1. Field cutting by torch is not permitted.
2. Do not apply roofing during inclement weather.
3. Do not apply roofing to damp or frozen deck surface.
4. Do not expose materials vulnerable to water, wind or sun damage in quantities greater than can be weatherproofed during the same day.
5. Rigidly fasten point of fixity (high center) of metal roof panels and allow free eave movement due to thermal expansion and contraction per the approved shop drawings.
6. Install screws fasteners with power tools having controlled torque.
7. Locate and space fasteners per the approved shop drawings in true vertical and horizontal alignment.
8. Install all flashings per the approved shop drawings as work progresses. Position roof jacks only in the flat of the panel; do not alter standing seam ribs.

B. The Panel Applicator shall examine all surfaces on which their work is to be applied, and shall notify the Architect in writing if not suitable to receive their work. Work on any surface shall constitute acceptance of this surface by the Panel Applicator. After beginning installation, install approximately 500 square feet of panels for Architect's approval, before proceeding with substantial work.

C. Wood Members, Units: Comply with requirements of Section 06 10 53 Miscellaneous Carpentry of these specifications for nailers and other wood members indicated as roofing system work. Provide wood pressure treated with water-borne preservatives for above ground use. All nailers shall be anchored sufficiently to resist a force of 75 pounds ± per linear foot in any direction. Provide nailers at all locations required by the roofing manufacturer (whether shown or not) – verify conditions prior to commencement of roofing installation.

## 3.02 EXAMINATION

A. Ensure surfaces are ready for panel application.

B. Inspect and ensure surfaces are free from objectionable warp, wave, and buckle before proceeding with installation of pre-formed metal roofing.

C. Ensure substrate is ready to receive metal roofing. Report items for correction and do not proceed with metal roof panel system installation until resolved.

## 3.03 FIELD MEASUREMENTS

A. Panel Applicator must take field measurements to verify or supplement dimensions indicated prior to fabrication of any materials. Where field measurements cannot be made without delaying the work, either establish opening dimensions and proceed with fabricating panels without field measurements or allow for trimming panel units.

## 3.04 NAILBASE CLAD RIGID INSULATION INSTALLATION

A. Comply with system manufacturer's written instructions for installing roof insulation.

B. Clad Nailbase insulation shall be in compliance with Section 07 22 16 Roof Board

Insulation.

3.05 WATERPROOF UNDERLAYMENT INSTALLATION

A. Adhere one ply of 40 mil self-adhering waterproofing underlayment over entire roof surface. Stagger joints perpendicular to metal roofing panels and over parapet blocking per manufacturer's written instructions, but with not less than six inch (6") laps at vertical (side) laps and four inch (4") horizontal (top and bottom) laps.

B. Install an extra layer of minimum thirty-six inch (36") wide waterproof membrane down all valley, rake wall, eaves and gable conditions, using a minimum six inch (6") horizontal (top and bottom) lap.

3.06 METAL ROOFING INSTALLATION

A. Workmanship shall conform to standards set forth in the architectural sheet metal manual as published by SMACNA.

B. Comply with manufacturer's instructions for assembly, installation, and erection in order to achieve a weathertight installation. Install in accordance with approved shop drawings.
1. Anchor securely in place using clips and fasteners spaced in accordance with manufacturer's recommendations for design wind load criteria.
2. Panels should be installed in such a manner that horizontal lines are true and level and vertical lines are plumb.
3. Field apply sealant to penetrations, transitions, and other locations as necessary for an airtight, waterproof installation.
4. Remove all protective film, if any, before installation of materials.

C. Dissimilar Metals: Do not allow panels or flashings to come into contact with dissimilar metals.

D. Install field panels in continuous lengths, without end laps. Remove and replace panels with end laps.

E. Do not install panels damaged by shipment or handling.

F. Install intermittent clips with bearing plates and continuous clips according to pattern in wind uplift rating at field, corners and perimeter roof areas.

G. Fix panels at location depicted on reviewed shop drawing(s).

H. Breadpan roof panel at ridge, hip and headwalls.

I. Allow for one inch (1") panel clearance at penetrations.

J. Install concealed supports, angles and brackets as furnished by manufacturer to form complete assemblies.

K. Remove roof panel and flashing protective film prior to extended exposure to sunlight,

heat, and other weather elements.

L. Field-apply sealant tape and gun-grade sealant according to reviewed shop drawings and manufacturer's requirements for airtight, waterproof installation.

M. Ensure sealant beads and tape are applied prior to sheet metal installation to achieve a concealed bead. Neatly trim exposed portions of sealant without damaging roof panel or flashing finish.

N. Align pipe penetrations to occur at center of roof panel. Correct improperly placed penetrations before proceeding with panel installation. Remove and replace roof panels which have improperly placed penetration flashings.

O. Align roof curbs to fit roof panel module and overlap standing seam(s). Allow for proper drainage on both sides of curb.

P. Install sheet metal flashings according to manufacturer's recommendations, reviewed shop drawings and in accordance with provision of Section 07 62 00.

3.07 ROUGH LUMBER

A. All rough carpentry shall be in compliance with Section 06 10 53 Miscellaneous Carpentry.

B. Nailers shall be installed according to NRCA, Underwriters Laboratory, and IBC guidelines.

3.09 INSTALLATION OF EXTERIOR ROOF ACCESS LADDER

A. Refer to specification section 07 72 00 Roof Accessories for further information

B. Provide required structural members to properly install the roof hatch.

Examination:

1. Coordinate anchorages. Furnish setting drawings, templates, and anchorage structural loads for fastener resistance.
2. Do not begin installation until supporting structure is complete and ladder installation will not interfere with supporting structure work.
3. If supporting structure is the responsibility of another installer, notify Architect of unsatisfactory supporting work before proceeding.

B. Installation: Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction.

C. Protection:

1. Protect installed products until completion of project.
2. Touch-up, repair or replace damaged products before Substantial Completion.

3.11 CLEAN UP

A. Clean exposed surfaces of work promptly after completion of installation.

B. Only minor scratches and abrasions will be allowed to be touched up. Any other damaged material shall be replaced.

C. Leave work areas clean, free from grease, dirt, finger marks, stains and stains.

D. Remove scrap and debris from surrounding grounds and work areas daily.

3.12 OVERNIGHT SEAL

A. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.

B. Installation shall be performed according to accepted roofing practice as outlined in the NRCA Roofing Manual.

3.13 FIELD QUALITY CONTROL

A. Owner reserves the right to have finished Work inspected using infrared thermography or other appropriate, non-destructive means to establish satisfactory conditions of completed Work.

B. Correct identified defects or irregularities. Cut out and repair membrane defects before end of each day.

3.14 MANUFACTURER'S FIELD SERVICES

A. Provide manufacturer's field services as required to qualify for specified warranty.

B. Roofing materials manufacturer's representative shall visit the site and observe the progress of the Work at a rate of not less than one time per week.
   1. Site visits shall be followed up by a written report of findings which is to be transmitted to the Owner's Representative within five (5) days of the site visit.

**END OF SECTION 07 61 13**

# SECTION 07 62 00
# SHEET METAL AND MISCELLANEOUS ACCESSORIES

## PART 1 - GENERAL

1.01 AREAS COVERED

A. Refer to roof plans for areas to be included in the scope of work.

1.02 DEFINITIONS

| | |
|---|---|
| ACM | Asbestos Containing Materials |
| ANSI | American National Standards Institute |
| ASCE | American Society of Civil Engineers |
| ASTM | American Society for Testing and Materials |
| EPA | Environmental Protection Agency |
| EPS | Expanded Polystyrene |
| EVT | Equiviscous Temperatures |
| FM | Factory Mutual |
| IBC | International Building Code |
| KEE | Ketone Ethylene Ester |
| NDL | No Dollar Limit |
| NESHAP | National Emissions Standards for Hazardous Air Pollutants |
| NRCA | National Roofing Contractors Association |
| OSHA | Occupational Safety & Health Administration |
| SBS | Styrene-Butadiene-Styrene |
| SDI | Steel Deck Institute |
| SMACNA | Sheet Metal and Air Conditioning Contractors National Association |
| SPRI | Single Ply Roofing Industry |
| UL | Underwriters Laboratories, Inc. |

1.03 REFERENCES (INCLUDING LATEST REVISIONS)

A. Comply with governing local, state, and federal regulations, safety standards, and codes.

B. Testing Laboratory Services: Test results shall meet or exceed established standards.

C. Underwriters Laboratories, Inc. (Roofing Covering): Class A fire hazard classification.

D. American Society for Testing and Materials (ASTM)

E. The National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual

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

G. American Society of Civil Engineers – ASCE 7

1.04 INSTALLER QUALIFICATIONS

A. Roofing installer must be:
1. Currently prequalified with the Owner in accordance with Owner's prequalification requirements.
2. Currently in good standing with the manufacturer.
3. Installer must be an experienced single firm specializing in the type of roofing repair and/or removal and replacement work required, employing only experienced workers for the class of work in which they are employed, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Project Manager/Architect.
4. Contractor must have successfully completed previous projects warranted by the manufacturer.

B. It shall remain each Bidder's responsibility to determine his current status with the manufacturer's certification plan.

1.05 MANUFACTURER QUALIFICATIONS

A. A qualified manufacturer is one that is UL listed and has FM approvals for a membrane roofing system similar to that used for this project for a minimum of fifteen (15) years.

1.06 CONTRACT DOCUMENT QUALITY ASSURANCE

A. In the case of an inconsistency between the drawings and specifications or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Project Manager's/Architect's interpretation

1.07 SUBMITTALS

A. Product Data:
1. Submit shop drawings, product data and mockups of all sheet metal.

1.08 QUALITY ASSURANCE

A. Comply with governing local, state, and federal regulations, safety standards, and codes. Provide products of acceptable manufacturers in satisfactory use in similar service for five (5) years. Use experienced installers. Deliver, handle and store materials in accordance with manufacturer's instructions.

B. Reference Standards: Applicable portions of ASCE, SMACNA, ASTM, and NAAMM publications.

1.09 PRE-INSTALLATION CONFERENCE

A. Convene a preinstallation conference two weeks prior to commencing the Work.

B. Require attendance of parties directly affecting the Work of this Section.

C. Review condition of roof deck and installation, installation procedures and coordination with related work.

1.10 WARRANTIES

A. Manufacturer's Product Warranty: Submit manufacturer's ten (10) year labor and material warranty signed by the manufacturer's authorized official, guaranteeing to correct failures in product which may occur during the warranty period, without reducing or otherwise limiting any other rights to correction which the Owner/Project Consultant may have under the contract documents. Failure is defined to include product failure which leads to interruption of a watertight installation. Correction may include repair or replacement of failed product.

B. Contractor's Warranty Period: For roofing flashing and sheet metal, provide a written warranty which shall warrant work to be free of leaks and defects in materials and workmanship for two (2) years, starting from date of substantial completion.

C. Defects of the sheet metal occurring during the warranty period shall be promptly corrected by the contractor, and defects of the roofing shall be promptly corrected by the manufacturer at no additional cost to the Owner. Upon notification from the Owner or the Owner's representative that evidence of a defect exists, the responsible party shall immediately inform the Owner's representative of the date on which corrective work will be scheduled, and shall notify the Owner's representative when the corrective work has been completed.

## PART 2 - PRODUCTS

2.01 SHEET METAL MATERIAL

A. Hot-dipped Galvanized Steel for use as counter flashings (where not visible from the ground), pitch pans and expansion joints: Minimum 24-gauge, G-90, hot-dipped galvanized metal, commercial quality, ASTM A 653/A 653M.

B. Hot-dipped Galvanized Steel for use as continuous clips: Minimum 22-gauge, G-90, hot-dipped galvanized metal, commercial quality, ASTM A 653/A 653M.

C. Prefinished Galvanized Sheet Steel (where visible from the ground): Shall be 24-gauge flat stock, prefinished with Kynar finish meeting ASTM A 446, forty-five and one-half inches to forty-eight inches width by one hundred twenty inches in length (45-1/2" - 48" x 120") for use as new metal edge gravel guard, cover plates, downspouts, gutters, coping and miscellaneous metal.

D. Stainless Steel: QQ-S-766, Class 304 or 316; or ASTM A 167, Type 304 or 316; form and condition most suitable for the purpose.

E. Prefinished Aluminum: Shall be that most suitable for the purpose.

F. All existing sheet metal shall be replaced with new metal of like gauge and type, or as specified on drawings.

G. All prefinished metal color shall be as selected by Owner/Architect from manufacturer's full range of colors, including metallics.

I. Elvaloy® Cladded Metal for Pitch Pans: Shall be G-90 galvanized steel with 25 mil Elvaloy® membrane.

I. Elvaloy® Cladded Metal: Shall be G-90 galvanized steel with 25 mil Elvaloy® membrane lamination; width shall be four feet (4'), length shall be eight feet (8') or ten feet (10').

2.02 FASTENERS

A. Fasteners shall be same metal as flashing/sheet metal, or other non-corrosive metal as recommended by sheet manufacturer for the specific application. Match finish of exposed heads with material being fastened.

B. Fasteners and fastening plates or bars shall be listed in the FM Global Approval Guide.

C. Fastener for Brick: Shall be one-fourth inch by two inches (1/4" x 2"), zinc with plated steel or stainless steel nail, one piece unit, flat head.

D. Screws: Self-taping sheet metal type with neoprene washer, as appropriate.

E. Pop Rivets: Full stainless-steel Series 42 or 44, as appropriate.

F. Continuous Clip: Concealed hold-down clip type; of same materials as coping, gravel guard, sized to suit application. Use a continuous clip, minimum 22-gauge G-90 galvanized.

2.03 RELATED MATERIAL

A. Plastic Cement: FS SS-C-153, cutback type.

B. Solder: QQ-S-571 composition best suited for purpose; use high tin content, minimum 60/40, for stainless steel and monel alloy.

C. Copper, Sheet, and Strip: QQ-C-576, ASTM B 370, light cold-rolled temper, minimum 16 ounce.

D. Sealant (for Sheet Metal): One-component polyurethane, conforming to requirements of FS TT-S-230C, non-staining and non-bleeding.

E. Miscellaneous Materials:
1. Downspout Boots: Provide and install cast iron by Neenah Foundry Company, or pre-approved equal. Provide powder coating to match adjacent downspout color.
2. Splash Blocks: Concrete, 3000 psi, 28 days. Provide and install with protection pads at all downspouts. Dimensions shall be a minimum eighteen inches wide by thirty-six inches long (18" x 36").

3. Metal Accessories: Provide and install sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size, and gauge required for performance.

## PART 3 - EXECUTION

### 3.01 INSPECTION

A. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place, substrates are smooth and clean and nailing strips located.

B. Verify membrane termination and base flashings are in place, sealed and secure, prior to metal installation.

C. Beginning of installation means acceptance of conditions.

D. Compatibility: Provide materials that are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

### 3.02 PREPARATION

A. Field measure site conditions prior to fabricating work. Provide all shop drawings and mock-ups one month prior to installation to the Owner/Project Consultant for approval.

B. Install starter and edge strips and cleats before starting installation.

### 3.03 FABRICATION - GENERAL

A. Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual" and other recognized industry practices. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer's instructions and recommendations. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels as indicated, with exposed edges folded back to form hems.

B. Fabricate gravel stops/fascia, gutters/downspouts, counterflashings, pitch pans, expansion joints, and copings with new galvanized sheet metal as specified. Fabricate gravel guard and fascia to size and dimensions as indicated on the drawings. Fabricate light metal coping, gutters and downspouts as indicated.

C. Form sheet metal on bending brake.

D. Form materials with straight lines, sharp angles and smooth curves.

E. Fold back edges on concealed side of exposed edge to form hem (1/4" minimum).

F. Weld or solder joints on parts that are to be permanently and rigidly assembled.

G. Limit single-piece lengths to ten feet (10').

H. Fabricate corner pieces with eighteen inch (18") extensions, mitered and sealed by forming as one piece.

I. Where installing flashing directly to masonry or dissimilar materials, backpaint with bituminous paint.

J. Install new metal rooftop projections. New rooftop projection details shall be as recommended in NRCA or SMACNA handbooks. All rooftop projections shall be cleaned, all joints sealed, and painted with a rust inhibitive paint.

K. All sheet metal shall be sealed and watertight.

L. Metal work should be secured so as to prevent damage from buckling or wind. Where clips are shown, fabricate as detailed.

M. All metal to receive bitumen or adhesive shall be first primed with primer.

N. All prefinished metal shall be sanded and/or abraded prior to receiving primer.

O. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.

P. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.

## 3.04 INSTALLATION

A. General: All sheet metal termination to vertical wall shall have a through-wall with receiver installed on masonry walls or prefabricated "Z" bar flashing pre-installed to fluid applied wall finished prior to installation of sheet metal termination. This applies to edge metal, base flashing closures and all vertical surface intersections. Refer to NRCA, SMACNA, and metal manufacturer's guidelines.

B. Fascia:
1. Shall be installed with expansion joints, ten feet (10') on center, one-fourth inch (1/4") expansion leeway, with a cover plate.
2. Form sections identical to profiles as shown or approved similar, to match existing building.
3. Fabricate corner pieces with minimum eighteen inch (18"), maximum forty-eight inch (48") extensions, formed and sealed with rivets and sealant, as one piece.
4. Hem exposed edges one-half inch (1/2") minimum.
5. Backpaint flashing in contact with masonry or dissimilar materials with bituminous paint. Surface sand before applying primers.
6. Integrate flashing in a manner consistent with detailing.

7. Provide and install continuous clip, minimum 22 gauge.
8. Apply sealant at horizontal juncture of gravel guard metal to exterior vertical wall.
9. Shall be fabricated in accordance with published details.
10. Install bead of sealant at metal edge juncture at exterior wall surface.

D. Expansion Joint Field and at Wall:
1. All Expansion joints shall be in compliance with Section 06 10 53 Miscellaneous Carpentry.
2. Expansion joints at walls and field of the roof shall be curbed as outlined in accordance with NRCA and SMACNA guidelines. The curbs will be flashed as outlined above in Curb Flashings.

F. Gutter and Downspout:
1. All Gutter and Downspouts shall be in compliance with Section 07 62 13 Gutter and Downspouts.

3.05 FINISH

A. Backpaint concealed metal surfaces with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals. Exposed surfaces to be provided with a factory applied fluorocarbon Kynar finish meeting ASTM A 446 and AAMA specification 605.2 for high performance coating.

**END OF SECTION 07 62 00**

# SECTION 07 62 13
# GUTTERS AND DOWNSPOUTS

## PART 1 - GENERAL

1.01 AREAS COVERED

A. Refer to roof plans for areas to be included in the scope of work.

1.02 SUMMARY

A. Section Includes:
1. Precoated galvanized steel gutters, downspouts, scuppers, brackets, spacers, fasteners, stiffeners, and caps.
2. Precast concrete splash blocks.

1.03 REFERENCES

A. American Society for Testing and Materials:
1. ASTM A 48 – Grey Iron Castings.
2. ASTM A 167 – Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
3. ASTM A 361 – Sheet Steel, Zinc-Coated (Galvanized) by Hot-Dip Process for Roofing and Siding.
4. ASTM A 446 – Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
5. ASTM B 32 – Solder Metal.
6. ASTM B 209 – Aluminum and Aluminum Alloy Sheet and Plate.

B. Federal Specifications: FS TT-C-494 – Coating Compound, Bituminous, Solvent Type, Acid Resistant.

C. SMACNA – Architectural Sheet Metal Manual.

D. ASCE - American Society of Civil Engineers: ASCE 7

E. Comply with governing local, state, and federal regulations, safety standards, and codes.

1.04 INSTALLER QUALIFICATIONS

A. Installer must be:
1. Currently prequalified with the Owner in accordance with Owner's prequalification requirements.
2. Currently in good standing with the manufacturer.
3. Installer must be an experienced single firm specializing in the type of roofing related repair and/or removal and replacement work required, employing only experienced workers for the class of work in which they are employed, having at least five (5) years successful experience on projects similar in size and scope and acceptable as applicators by the Project Manager/Architect.

4. Contractor must have successfully completed previous projects warranted by the manufacturer.

B. It shall remain each Bidder's responsibility to determine his current status with the manufacturer's certification plan.

1.05 MANUFACTURER QUALIFICATIONS

A. A qualified manufacturer is one that is UL listed and has FM approvals for a membrane roofing system similar to that used for this project for a minimum of fifteen (15) years

1.06 SUBMITTALS

A. Product Data: Provide technical data, installation instructions (as applicable) and general recommendations for each specified sheet material and fabricated product.

B. Shop Drawings: Showing layout, profiles, jointing methods, fastening details, locations, and installation details.
1. Submit shop drawings, product data and mockups of all sheet metal fabrications to be used on project.
2. Shop drawings shall be single line profile engineered drawings or CAD drawings of each fabrication component on 8-1/2” x 11” sheet and shall indicate date, project name, project number, Architect/Engineer name, name of component, sheet metal type, finish, gauge, securement, and approximate dimensions of finished product. All dimensions shall be field verified prior to fabrication.
3. Submit manufacturers and contractor’s sample warranty documents.
4. Submit ES-1 certifications of sheet metal fabrication shop and ES-1 certifications of each applicable sheet metal component. (ie: edge metals, copings, & gutters).

C. Samples: Submit six inch (6”) long samples of shop fabricated and/or factory products illustrating component design, finish, color, and configuration.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in manufacturer's original, unopened containers and rolls with all labels intact and legible including labels indicating appropriate warnings, storage conditions, lot numbers, and usage instructions. Materials damaged in shipping or storage shall not be used.

B. Manufacturer's packaging and/or roll plastic is not acceptable for exterior storage. Tarpaulin with grommets shall be minimum acceptable for exterior coverings. All materials stored as above shall be a minimum of four inches (4") off the substrate, and the tarpaulin tied off with rope.

C. Deliver materials requiring fire resistance classification to the job with labels attached and packaged as required by labeling service.

D. Deliver materials in sufficient quantity to allow continuity of work.

E. Handle and store material and equipment in such a manner as to avoid damage. Liquid products shall be delivered sealed, in original containers.

F. Select and operate material handling equipment so as not to damage existing construction or applied roofing.

G. Protect materials against damage by construction traffic.

H. The proper storage of materials is the sole responsibility of the contractor and any Damaged materials shall be discarded, removed from the project site, and replaced prior to application.

I. No storage of materials shall be permitted on roof areas other than those materials that are to be installed the same day. Any exception must be in written form.

J. Stack preformed and prefinished material to prevent twisting, bending or abrasion, and to provide ventilation. Slope to drain.

K. Prevent contact with materials during storage which may cause discoloration, staining or damage.

1.08 SITE CONDITIONS

A. Job Condition Requirements:
1. Coordinate the work of the contractor with the work to be performed by other trades, to ensure proper sequencing of the entire work. The contractor is to schedule his work so that adequate time is allowed for other trades to perform their work.
2. Apply metal in dry weather.
3. Proceed with roofing work only when weather conditions are in compliance with manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with specifications.
4. Schedule the work so the building will be left watertight at the end of each day.
5. Load placed on the roof at any point shall not exceed the safe load for which the roof is designed.
6. All surfaces to receive new metal shall be smooth, dry, and free from dirt, debris, and foreign material before any of this work is installed. Competent operators shall be in attendance at all times equipment is in use. Materials shall be stored neatly in areas designated by the Project Manager/Architect.
7. The contractor is to take all necessary precautions to prevent damage to the existing roof. All damage to the existing roof that could result in roof leaks is to be repaired on a daily basis by the roofing contractor.
8. The contractor shall follow local, state, and federal regulations, safety standards, and codes for the removal, handling, and disposal of asbestos containing materials, if present. When a conflict exists, follow the stricter document.
9. Due caution should be exercised so as not to alter the structural integrity of the deck. When cutting through any deck, care should be taken so as not to damage the deck or any part of the deck, such as post tension cables, etc.

B. Protection of Work and Property:
   1. Work: The contractor shall maintain adequate protection of all his work from damage and shall protect the Owner's and adjacent property from injury or loss arising from this contract. Contractor shall provide and maintain at all times any OSHA required danger signs, guards, and/or obstructions necessary to protect the public and his workmen from any dangers inherent with or created by the work in progress. All federal, state, and city rules and requirements pertaining to safety and all EPA standards, OSHA standards, NESHAP regulations pertaining to asbestos as required shall be fulfilled by the contractor as part of his proposal.
   2. Property: Protect existing planting and landscaping as necessary or required to provide and maintain clearance and access to the work of this contract. Examples of two categories or degrees of protection are generally as follows: a) removal, protection, preservation, or replacement and replanting of plant materials; b) protection of plant materials in place, and replacement of any damage resulting from the contractor's operations.
   3. Finished roof areas shall be protected from damage by the contractor during construction.
   4. Twenty-four Hour Call: The contractor shall have personnel on call 24 hours per day, seven (7) days per week for emergencies during the course of a job. The Owner/Project Manager/Architect is to have the 24 hour numbers for the contact. Contractor must be able to respond to any emergency call and have personnel on-site within two (2) hours after contact. Numbers available to the Owner/Project Manager/Architect are to be mobile, home and office numbers for:
      a) Job Foreman
      b) Job Superintendent
      c) Owner or Company Officer

C. Damage to Work of Others: The contractor shall repair, refinish, and make good any damage to the building or landscaping resulting from any of his operation. This shall include, but is not limited to, any damage to plaster, tile work, wall covering, paint, ceilings, floors, or any other finished work. Damage done to the building, equipment, or grounds must be repaired at the successful contractor's expense holding the Owner harmless from any other claims for property damage and/or personal injury.

D. Measurements: It will be the contractor's responsibility to obtain and/or verify any necessary dimensions by visiting the job site, and the contractor shall be responsible for the correctness of same. Any drawings supplied are for reference only.

E. Use of Premises:
   1. The contractor is advised that the Owner will occupy the building at all times, and the contractor must provide all safeguards required to protect personnel and to keep noise levels as low as reasonably possible for each operation.
   2. The contractor shall:
      a) Coordinate work in such a manner as to not interfere with the normal operation of the building.

b) Assume full responsibility for protection and safekeeping of products stored on premises.
c) Agree to hold the Owner harmless in any and all liability of every nature and description which may be suffered through bodily injuries, including death of any persons by reason of negligence of the contractor, agents, employees, or subcontractors.

F. Cleaning and Disposal of Materials:
1. Contractor shall keep the job clean and free from all loose materials and foreign matter. Contractor shall take necessary precautions to keep outside walls clean and shall allow no roofing materials to remain on the outside walls.
2. All waste materials, rubbish, etc., shall be removed from the Owner's premises as accumulated. Rubbish shall be carefully handled to reduce the spread of dust. A suitable scrap chute or hoist must be used to lower any debris. At completion, all work areas shall be left broom clean and all contractor's equipment and materials removed from the site.
3. Debris shall be deposited at an approved disposal site.

## 1.09 SEQUENCING AND SCHEDULING

A. Coordinate work with roofing work for correct sequencing of items which makes up entire weatherproof, rain drainage and sheet metal system.

B. Coordinate work with downspout discharge pipe inlet.

C. Coordinate gutter and downspout system with installation of field fabricated flashing and sheet metal and sheet metal roofing under Section 07600. Work of this Section shall bring gutters and downspouts to point of connection with roofing system, with necessary accommodations for connections.

## 1.10 PERFORMANCE REQUIREMENTS

A. Metal gutters and downspouts System: Shall prevent water migration through seams and connections or building interior through the metal edge system and base flashing.

## 1.11 QUALITY ASSURANCE

A. Installer Qualifications: Five years documented experience installing sheet metal systems.

B. Regulatory Requirements: Comply with applicable code for size and method or rainwater discharge. Comply with SMACNA Manual for sizing components for rainfall intensity determined by storm occurrence of 1 in 5 years.

C. Gutters/Downspouts and all accessories shall be designed and provided by metal roofing manufacturer providing the standing seam metal roof panels.

D. Factory Technical Representative: Roofing Contractor is to arrange and schedule the manufacturer's technical representative to be on site the first day of the installation of manufacturer's roofing system. The manufacturer's technical representative shall inspect the work of the contractor at least one time each week during the installation of the roofing system. The manufacturer's technical representative shall perform with the owner's representative and the roofing contractor a final inspection of the roofing system. At the completion of the final inspection, provide to the roofing contractor a list of punch list items (if any) to be correct before technical acceptance of the roofing project and prior to issuance of manufacturer's Twenty (20) Year Full System Warranty. Field reports shall be provided after each inspection within five (5) days of site visit.

1.12 REGULATORY REQUIREMENTS

A. Conform to all applicable local codes for metal assembly.

B. Provide certification of inspection confirming approval of design and installation by authority having jurisdiction.

1.13 PRE-INSTALLATION CONFERENCE

A. Convene a preinstallation conference two weeks prior to commencing the Work.

B. Require attendance of parties directly affecting the Work of this Section.

C. Review condition of roof deck and installation, installation procedures and coordination with related work.

1.14 WARRANTIES

A. Manufacturer's Product Warranty: Submit manufacturer's ten (10) year labor and material warranty signed by the manufacturer's authorized official, guaranteeing to correct failures in product which may occur during the warranty period, without reducing or otherwise limiting any other rights to correction which the Owner/Project Consultant may have under the contract documents. Failure is defined to include product failure which leads to interruption of a watertight installation. Correction may include repair or replacement of failed product.

B. Contractor's Warranty Period: For roofing flashing and sheet metal, provide a written warranty which shall warrant work to be free of leaks and defects in materials and workmanship for two (2) years, starting from date of substantial completion.

C. Defects of the sheet metal occurring during the warranty period shall be promptly corrected by the contractor, and defects of the roofing shall be promptly corrected by the manufacturer at no additional cost to the Owner. Upon notification from the Owner or the Owner's representative that evidence of a defect exists, the responsible party shall immediately inform the Owner's representative of the date on which corrective work will be scheduled, and shall notify the Owner's representative when the corrective work has been completed.

D. New work shall be installed so as not to affect or void existing manufacturer's warranty.

## PART 2 - PRODUCTS

2.01 MATERIALS

A. Pre-Coated Galvanized Steel: ASTM A 446, Grade A, G 90 zinc coating, 24-gauge core steel, shop pre-coated.

B. Fasteners: Galvanized steel screws, bolts or nuts, as applicable.

C. Stiffener Angles and Supports: Formed steel, type to match gutters, 18-gauge and clad with prefinished metal cover.

D. Solder: ASTM B 32, 50-50 percent tin/lead solder with rosin flux for use with steel.

E. Neutralized: Five percent (5%) to ten percent (10%) washing soda solution.

F. Protective Back Paint for Galvanizing: Zinc chromate or galvanized iron type.

G. Bituminous Coating: FS TT-G-494, or MIL-C-18480, or SSPC-12, cold-applied bituminous mastic, compound, for 15 mil dry film thickness coating.

H. Wire Screen: One-half inch (1/2") mesh, stainless steel.

I. Splash Pads or Blocks: Precast concrete type; minimum 3000 psi at 28 days, with minimum five percent (5%) air entrainment.

J. Prefinished steel downspout boots: Steel powder coated boots, color to match the downspout.

2.02 FABRICATION

A. Gutters: SMACNA style profile as detailed by Architect; same gauge as panel, 24-gauge minimum.

B. Downspouts: SMACNA profile as detailed by Architect; same gauge as panel, 24-gauge minimum.

C. Fabricate gutters and downspouts true to design and dimensions, straight and without deformation. Finish work free from blemishes, abrasions, tool marks, burrs and other defects which may affect strength or performance. Form corners to smallest radius possible without causing grain separation or otherwise impairing work. Allow for expansion and contraction.

D. Completely weld joints in gutter sections to provide watertight units. Form expansion joints between gutter sections as shown. Weld stiffener angles to gutters 4'-0" on center.

E. Weld angles to underside of gutters at downspout locations to form frame, weld downspout tube to angles.

F. Form gutters in eight foot (8') or ten foot (10') long welded sections, lap joints one and one-half inch (1-1/2"). Provide loose-locked expansion joints midway between outlet tubes and where gutter ends adjoin walls. Fit joints with cover strips in manner to provide watertight connections.

G. Provide outlet tubes with flanges riveted and soldered to form gutters. Extend tubes three inches (3") into downspouts. Set gutters to slope to downspouts minimum one-eighth inch (1/8") for each foot.

H. Form downspouts in eight foot to ten foot (8' - 10') lengths. Telescope end joints one and one-half inch (1-1/2") and lock longitudinal joints. Fasten downspouts to walls with three inch (3") wide straps. Space straps not more than eight feet (8') apart. Provide shoulder of solder on each side of downspout above each strap. Fasten straps to walls with screws in lead sleeves. Form downspouts of length to discharge water three feet to zero inches (3' – 0") from building slab.

I. Lock and solder, or weld without flux all seams. Close tops of downspout heads with 18-gauge removable strainer type with wire screen.

J. Hem exposed edges of metal.

2.03 FINISHES

A. Gutter and Downspouts: 70-75 percent fluorocarbon resin equivalent to Kynar 500/Hylar 5000; Colors as selected from manufacturer full range of colors including premium colors as selected by Project Manager / Architect.

B. Back paint concealed metal surfaces with protective backing paint to minimum dry thickness of 15 mils.

C. Apply bitumen protective backing paint on surfaces in contact with dissimilar materials.

## PART 3 - EXECUTION

3.01 REFERENCE

A. In the instance of a conflict between these specifications and those of the manufacturer and/or current NRCA, Underwriters Laboratory and IBC guidelines, the more stringent specifications (better quality or greater quantity of work) shall take precedence.

B. The manufacturer's Technical Specifications and current SMACNA, Underwriters Laboratory and IBC guidelines shall be considered a part of this specification and shall be referred to for general application procedures and recommendations.

C. Application of materials shall be in strict accordance with the manufacturer's recommendations and current NRCA, SMACNA, Underwriters Laboratory and IBC guidelines, except where more stringent requirements (better quality or greater quantity of work) are shown or specified.

D. General Installation:
   1. Comply with governing local, state, and federal regulations, safety standards, and codes.
   2. Protect adjacent areas with tarpaulin or other durable materials.
   3. Use cleaning materials or primers necessary to render an acceptable surface/substrate.
   4. All surfaces/substrates shall be clean and dry prior to application of materials.
   5. All surfaces that are to receive the self-adhered membranes shall be primed with a fast-drying primer.

3.02 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive the Work of this Section.

B. Verify that deck is secure, that it is clean and smooth, free of depressions, waves, abrupt elevation change, protrusions, or projections and properly sloped to drains.

C. Verify that deck surfaces are dry and free of frost, dew or other moisture.

3.03 INSTALLATION

A. Install gutters, downspouts and accessories in accordance with SMACNA Architectural Sheet Metal Manual.

B. Joint lengths with seams watertight. Flash and seal gutters to downspouts and accessories.

C. Slope gutters to drain. Confirm slopes with Project Manager / Architect for aesthetics.

D. Set splash blocks under downspouts where they occur on the roof surface and at grade.

E. Install gutter, downspout, and accessories.
   1. Join lengths with seams pop riveted and sealed watertight. Flash and seal collector head to downspouts and accessories.
   2. Seal all metal joints watertight for full metal surface contact.
   3. Collector Head: SMACNA style profile; submit detail for approval.
   4. Downspouts: Rectangular profile. Seal all joints, six inches by six inches (6" x 6") minimum or as shown on published details.
   5. Support Brackets, Joint Fasteners: Profiled to suit gutters and downspouts.
   6. Anchorage Devices: SMACNA requirements. Type recommended by fabricator.
   7. Collector Head Supports – Kynar.
   8. Downspout Support Straps – Kynar.

F. Install 18-gauge clad with prefinished metal cover or powder coated metal supports under gutter and fastened to exterior fascia at 30” O.C. max staggered between the upper gutter straps at 30” O.C. in alternating sequence.

G. Install steel downspout boots on the ends of the downspout where they empty down on existing grade as where shown on the drawings:

3.04 FIELD QUALITY CONTROL

A. Flood test gutters and downspouts upon completion. Repair any leaks.

3.05 FINISH

A. Back paint concealed metal surfaces with bituminous paint where expected to be in contact with cementitious materials or dissimilar metals. Exposed surfaces to be provided with a factory applied fluorocarbon Kynar finish meeting ASTM A 446 and AAMA specification 605.2 for high performance coating.

**END OF SECTION 07 62 13**

# SECTION 07 72 00
# ROOF ACCESSORIES

## PART 1 – GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Wall Mounted Access Ladder

1.03 SUBMITTALS

A. Shop Drawings: Provide manufacturer's approved details of all pertinent conditions, projection conditions, and any additional special job conditions which require details other than indicated in the drawings.

B. Refer to Specification Section 01 33 00 for Submittal requirements
   Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

C. 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.
   3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.

1.04 QUALITY ASSURANCE

A. Sheet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.

B. Factory Technical Representative: Roofing Contractor is to arrange and schedule the manufacturer’s technical representative to be on site the first day of the installation of manufacturer’s roofing system. The manufacturer's technical representative shall inspect the work of the contractor at least one time each week during the installation of the roofing system. The manufacturer's technical representative shall perform with the owner's representative and the roofing contractor a final inspection of the roofing system. At the completion of the final inspection, provide to the roofing contractor a list of punch list items (if any) to be correct before technical acceptance of the roofing project and prior to issuance of manufacturer's Twenty (20) Year Full System Warranty. Field reports shall be provided after each inspection within five (5) days of site visit.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Pack, handle, and ship roof accessories properly labeled in heavy-duty packaging to prevent damage.

1.06 PROJECT CONDITIONS

A. Field Measurements: Verify required openings for each type of roof accessory by field measurements before fabrication and indicate measurements on Shop Drawings.

1.07 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.
   1. With Architect's approval, adjust location of roof accessories that would interrupt(roof expansion joints.

1.08 WARRANTY

A. The product manufacturer shall provide a one-year full system material warranty necessary to cover replacement of all components of the system against defects in manufacturing. The warranty will not include Acts of God, vandalism, neglect, metal finish or improper spacing of equipment, which would be a result of improper application.

**PART 2 – PRODUCTS**

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers listed in other Part 2 articles.

2.02 METAL MATERIALS

A. Aluminum Sheet: ASTM B 209, alloy and temper recommended by manufacturer for type of use and mill finish.
   1. Color: TO MATCH EXISTING
   2. Baked-Enamel Finish: AA-C12C42R1x (Chemical Finish: Cleaned with inhibited chemicals; Chemical Finish: Acid-chromate-fluoride-phosphate conversion coating; Organic Coating: As specified below). Apply baked enamel complying with paint manufacturer's written instructions for cleaning, conversion coating, and painting.
      a) Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603 except with a minimum dry film thickness of 1.5 mil, medium gloss.
      b) Color and Gloss: As selected by Project Manager from manufacturer's full range.

3. High-Performance Organic Finish (2-Coat Fluoropolymer): AA-C12C40R1x (Chemical Finish: Cleaned with inhibited chemicals; Chemical Finish: Conversion coating; Organic Coating: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with AAMA 2604 and with coating and resin manufacturer's written instructions.
   a) Color and Gloss: As selected by Project Manager from manufacturer's full range.
4. Powder-Coat Finish: Immediately after cleaning and pretreating, electrostatically apply manufacturer's standard baked-polymer thermosetting powder finish. Comply with resin manufacturer's written instructions for application, baking, and minimum dry film thickness.
   a) Color and Gloss: As selected by Project Manager from manufacturer's full range.

E. Aluminum Extrusions and Tubes: ASTM B 221 (ASTM B 221M), alloy and temper recommended by manufacturer for type of use, mill finished.

F. Stainless-Steel Shapes or Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304 or Type 316, No. 2D finish.

G. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized to comply with ASTM A 123/A 123M, unless otherwise indicated.

H. Steel Tube: ASTM A 500, round tube, baked-enamel finished.

I. Galvanized Steel Tube: ASTM A 500, round tube, hot-dip galvanized to comply with ASTM A 123/A 123M.

J. Galvanized Steel Pipe: ASTM A 53/A 53M.

## 2.03 MISCELLANEOUS MATERIALS

A. Acrylic Glazing: ASTM D 4802, thermoformable, monolithic sheet, category as standard with manufacturer, Type UVA (formulated with UV absorber), Finish 1 (smooth or polished).

B. Polycarbonate Glazing: Thermoformable, monolithic polycarbonate sheets manufactured by extrusion process, burglar-resistance rated per UL 972 with an average impact strength of 12 to 16 ft-lbf/in. of width when tested according to ASTM D 256, Method A (Izod).

C. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, complying with AWPA C2; not less than one and one-half inches (1-1/2") thick.

D. Polyethylene Sheet: 6-mil thick, polyethylene sheet complying with ASTM D 4397.

E. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by roof accessory manufacturer. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners.

F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, or PVC; or flat design of foam rubber, sponge neoprene, or cork.

G. Elastomeric Sealant: ASTM C 920, polyurethane sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

H. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, polyisobutylene plasticized, and heavy bodied for hooked-type expansion joints with limited movement.

I. Roofing Cement: ASTM D 4586, nonasbestos, fibrated asphalt cement designed for trowel application or other adhesive compatible with roofing system.

## 2.04 WALL MOUNTED ACCESS LADDERS

A. Fixed Ladder Design, as manufactured by O'Keefe's, Inc., or approved equal.

1. Ladder safety devices or fall-arrest systems are required on ladders over 24 feet.
2. Ladder safety devices or fall-arrest systems are required on all ladders in high or hazardous areas.
3. Landing platforms are required at 50 feet above the bottom of the ladder.
4. Rail and harness fall arrest system as alternate to landing platforms shall be a permissible manufacturer’s option.
    a) Fixed Ladder Bottom Bracket.
    b) Bottom floor supported bracket.
    c) Bottom wall supported bracket.
    d) Bracket as drawn.

B. Fixed Access Ladder
1. Tubular Rail Low Parapet Access Ladder with Platform and Return.
    a) Model 503, as manufactured by O’Keeffe’s Inc.

C. Materials
1. Aluminum Sheet: Alloy 5005-H34 to comply with ASTM B209.
2. Aluminum Extrusions: Alloy 6063-T6 to comply with ASTM B221.

E. Finishes
1. Mill finish. As extruded.
2. Clear Anodic Finish: AA-M10C22A41 Mechanical finish as fabricated. Architectural Class I, clear coating 0.018 mm or thicker.
3. Furnish touchup kit for each type and color of paint finish provided.

F. Fabrication
1. Rungs: Not less than 1-1/4 inches in section and 18–3/8 inches long, formed from tubular aluminum extrusions. Squared and deeply serrated on all sides.
    a) Rungs shall withstand a 1,500 pound load without deformation or failure.
2. Channel Side Rails: Not less than 1/8 inch wall thickness by 3 inches wide.
3. Heavy Duty Tubular Side Rails: Assembled from two interlocking aluminum extrusions no less than 1/8 inch wall thickness by 3 inches wide. Construction shall

be self-locking stainless steel fasteners, full penetration TIG welds and clean, smooth and burr-free surfaces.

4. Ship Ladders: Not less than 1-1/4 inches high, 4-1/8 inch deep and 2 feet wide; tread spacing shall be 1 foot on center. Handrails shall be aluminum pipe, not less than 1-1/2 inches in diameter with hemispheric end caps.
5. Walk-Through Rail and Roof Rail Extension: Not less than 3 feet 6 inches above the landing and shall be fitted with deeply serrated, square, tubular grab rails.
6. Landing Platform: 1-1/2 inches or greater diameter, tubular aluminum guardrails and decks of serrated aluminum treads.
7. Security Doors: Formed 1/8 inch thick aluminum sheet. Security panels shall extend on both sides, perpendicular to the door face, to within 2 inches of the wall. Security door shall be furnished with continuous aluminum piano hinge and heavy duty forged steel locking hasps.
8. Ship Ladder Seismic Bottom Support: Manufacturer's standard; two isolation bearings per stringer.
9. Rail and Harness Fall Arrest System: Supplied where specified as alternate to safety cage and landing platforms, in accordance with OSHA regulation 1910.28; permanently mounted to ladder rungs and complete with necessary components.

G. Exterior Roof Access Ladder Warranty

1. Ladder manufacturer has responsibility for an extended Corrective Period for work of this Section for a period of 5 years from date of Substantial Completion against all the conditions indicated below, and when notified in writing from Owner, ladder manufacturer shall promptly and without inconvenience and cost to Owner correct said deficiencies.
   a) Defects in materials and workmanship.
   b) Deterioration of material and surface performance below minimum OSHA standards as certified by independent third party testing laboratory. Ordinary wear and tear, unusual abuse or neglect excepted.
   c) Within the warranty period, the ladder manufacturer shall, at its option, repair, replace, or refund the purchase price of defective ladder.

2. Ladder manufacturer shall be notified immediately of defective products and be given a reasonable opportunity to inspect the goods prior to return. Ladder manufacturer will not assume responsibility, or compensation, for unauthorized repairs or labor. Ladder manufacturer makes no other warranty, expressed or implied, to the merchantability, fitness for a particular purpose, design, sale, installation, or use, of the ladder; and shall not be liable for incidental or consequential damages, losses of or expenses, resulting from the use of ladder products

## PART 3 – EXECUTION

### 3.01 EXAMINATION

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

1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored and is ready to receive roof accessories.
2. Verify dimensions of roof openings for roof accessories.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General: Install roof accessories according to manufacturer's written instructions. Anchor roof accessories securely in place and capable of resisting forces specified. Use fasteners, separators, sealants, and other miscellaneous items as required for completing roof accessory installation. Install roof accessories to resist exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Install roof accessories to fit substrates and to result in watertight performance.

C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
   1. Coat concealed side of uncoated aluminum roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
   2. Underlayment: Where installing exposed-to-view components of 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 underlayment.
   3. Bed flanges in thick coat of asphalt roofing cement where required by roof accessory manufacturers for waterproof performance.

D. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.

3.03 TOUCH UP

A. Touch up factory-primed surfaces with compatible primer ready for field painting in accordance with Division 9 painting Sections.

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

3.04 CLEANING

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

**END OF SECTION 07 72 00**

# ROCKWALL INDEPENDENT SCHOOL DISTRICT
# CELIA HAYS ELEMENTARY SCHOOL
# PARTIAL ROOFING REPLACEMENT
# 1880 TANNERSON DR., ROCKWALL
# TEXAS, 75087




TRUE

VICINITY MAP




TRUE

LOCATION MAP

| SHEET INDEX | |
|---|---|
| **Sheet Number** | **Sheet Name** |
| GS1.00 | COVER SHEET |
| GS2.00 | WIND UPLIFT PRESSURE PLAN |
| GS2.01 | WIND UPLIFT PRESSURE PLAN - ENLARGED |
| R1.01 | OVERALL ROOF PLAN |
| R2.01 | ROOF DETAILS |

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DEAN D. BROWN
117508
LICENSED
PROFESSIONAL ENGINEER

**ISSUE DATE:** 03/02/2026

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| 03/02/2026 - IFC |

| REVISIONS | | |
|---|---|---|

PROJECT FOR:
ROCKWALL ISD
CELIA HAYS ELEMENTARY SCHOOL
PARTIAL ROOF REPLACEMENT
1880 TANNERSON DR.
ROCKWALL, TEXAS 75087

**JOB:** 25-1270-56
**DATE:** 03/02/2026
**DRAWN BY:** MJ
**CHECKED BY:** HS

COVER SHEET

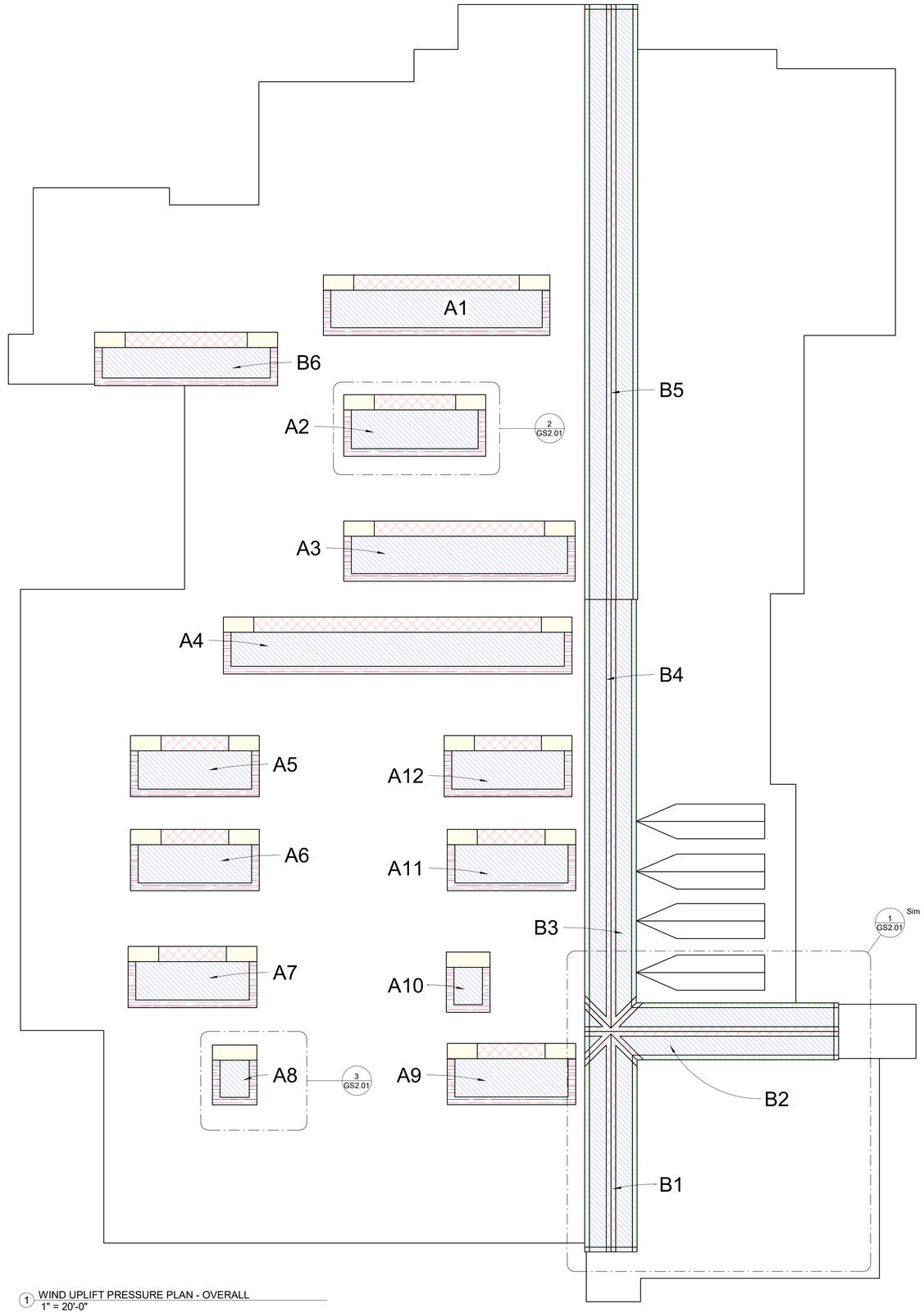
GS1.00

| Area | Zone | Uplift Pressure (Risk Cat III) (psf) | Uplift Pressure (Risk Cat IV) (psf) | 0.6h (ft) | 0.2h (ft) | a (ft) |
|---|---|---|---|---|---|---|
| A1-A7,A9,A11,A12,B6 | | | | - | - | 2.6 |
| | 1 | 32.5 | 34.9 | | | |
| | 2 | 35.1 | 37.6 | | | |
| | 2r | 35.1 | 37.6 | | | |
| | 3 | 61.3 | 65.7 | | | |
| A8,A10 | | | | - | - | 2.6 |
| | 1 | 32.5 | 34.9 | | | |
| | 2 | 35.1 | 37.6 | | | |
| | 2r | - | - | | | |
| | 3 | 58.6 | 62.9 | | | |
| B1-B5 | | | | - | - | 1.6 |
| | 1 | 24.1 | 25.8 | | | |
| | 2e | 24.1 | 25.8 | | | |
| | 2n | 53.5 | 57.5 | | | |
| | 2r | 24.1 | 25.8 | | | |
| | 3e | 80.9 | 86.8 | | | |
| | 3r | 53.5 | 57.5 | | | |

NOTE 1: Multiply Basic Design Wind Pressures x 0.6 to achieve ASD Wind Pressures

NOTE 2: This design conforms to 2021 IBC, section 1603.1.4

REFER TO SHEET GS2.01 FOR WIND PRESSURE LABELS




1 WIND UPLIFT PRESSURE PLAN - OVERALL
1" = 20'-0"

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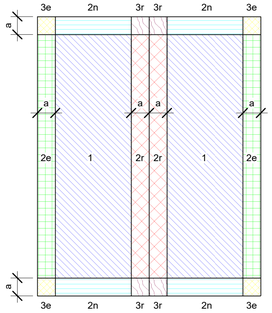
REVISIONS

PROJECT FOR:
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PARTIAL ROOF REPLACEMENT
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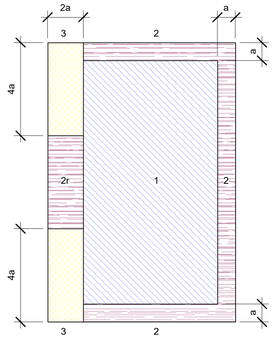
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**DATE:** 03/02/2026
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**CHECKED BY:** DB

WIND UPLIFT PRESSURE PLAN

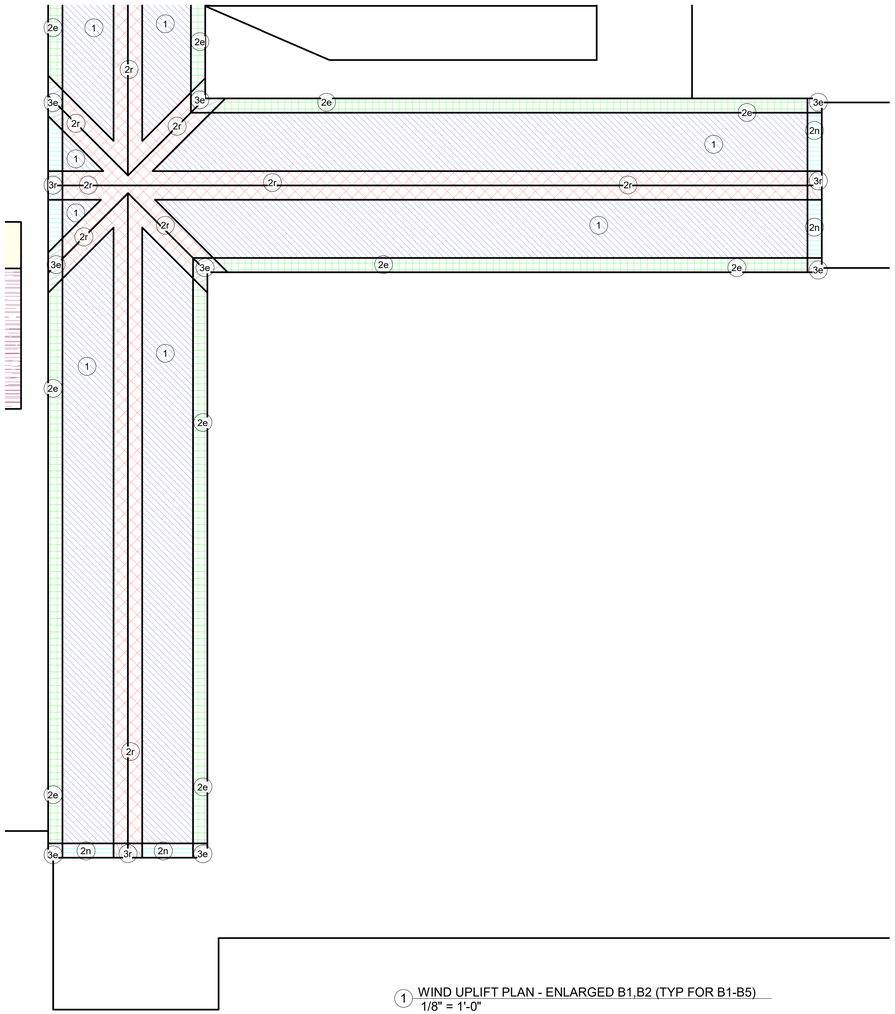
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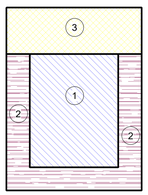

5 UPLIFT KEY PLAN - GABLE
1/32" = 1'-0"



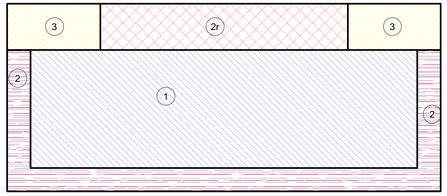

4 UPLIFT KEY PLAN - MONO SLOPE
1/32" = 1'-0"




1 WIND UPLIFT PLAN - ENLARGED B1,B2 (TYP FOR B1-B5)
1/8" = 1'-0"




3 WIND UPLIFT PLAN - ENLARGED A8 (TYP FOR A8,A10)
1/8" = 1'-0"




2 WIND UPLIFT PLAN - ENLARGED A2 (TYP FOR A1-A7,A9,A11,A12,B6)
1/8" = 1'-0"

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ISSUES
03/02/2026 - IFC

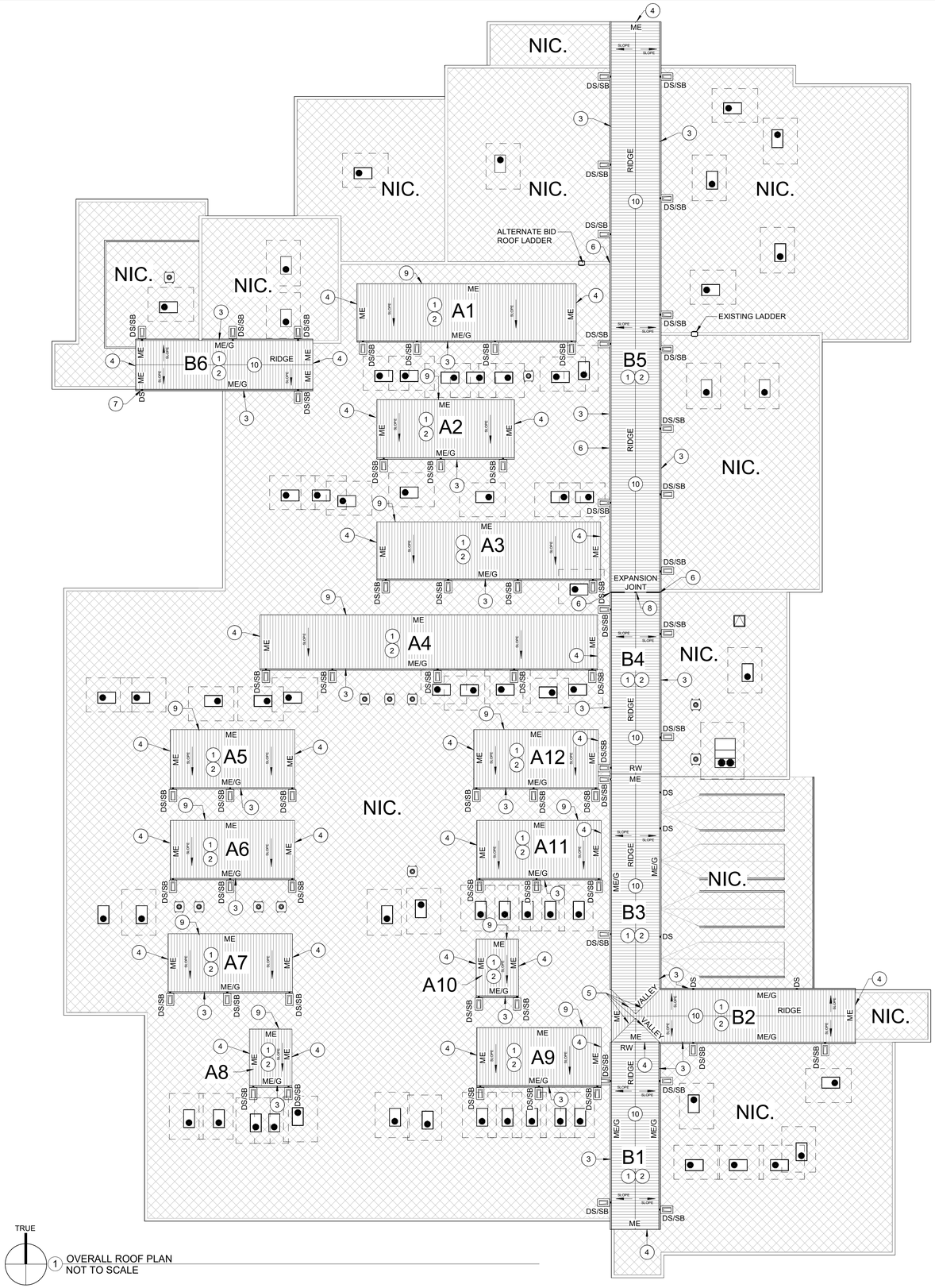
REVISIONS

PROJECT FOR:
ROCKWALL ISD
CELIA HAYS ELEMENTARY SCHOOL
PARTIAL ROOF REPLACEMENT
1880 TANNERSON DR.
ROCKWALL , TEXAS 75087

**JOB:** 25-1270-56
**DATE:** 03/02/2026
**DRAWN BY:** DB
**CHECKED BY:** DB

WIND UPLIFT PRESSURE PLAN - ENLARGED

# GS2.01




TRUE

1 OVERALL ROOF PLAN
NOT TO SCALE

**SCOPE OF WORK**:

BASE BID SCOPE OF WORK ROOF AREAS: B1 - B6
METAL DECK, SLOPE IN DECK ASSUMED

- TEAR OFF EXISTING ROOF SYSTEM DOWN TO THE EXISTING SUBSTRATE. REPAIR / REPLACE AND DAMAGED DECKING BACK TO ITS ORIGINAL CONDITION
- PROVIDE 1-PLY OF 40 MIL HIGH TEMPERATURE SELF-ADHERED MEMBRANE OVER SUBSTRATE WITH ADDITIONAL PLY AT ALL EAVES, VALLEYS, RIDGES AND RAKE CONDITIONS.
- PROVIDE PRE-FINISHED STANDING SEAM ROOF SYSTEM AS SPECIFIED.
- PROVIDE TREATED WOOD NAILERS AROUND THE PERIMETER AND ALL PENETRATIONS TO MATCH ROOF THICKNESS.
- PROVIDE ALL ASSOCIATED METAL TRIM, GUTTERS AND DOWSNPOUTS.
- PROVIDE 20 YEAR NDL WARRANTY WITH WEATHER TIGHTNESS WARRANTY.

ALTERNATE BID SCOPE OF WORK ROOF AREAS: A1- A12
METAL DECK, SLOPE IN DECK ASSUMED

- TEAR OFF EXISTING ROOF SYSTEM DOWN TO THE EXISTING SUBSTRATE. REPAIR / REPLACE AND DAMAGED DECKING BACK TO ITS ORIGINAL CONDITION.
- PROVIDE 1-PLY OF 40 MIL HIGH TEMPERATURE SELF-ADHERED MEMBRANE OVER SUBSTRATE WITH ADDITIONAL PLY AT ALL EAVES, VALLEYS, RIDGES AND RAKE CONDITIONS.
- PROVIDE PRE-FINISHED STANDING SEAM ROOF SYSTEM AS SPECIFIED.
- PROVIDE TREATED WOOD NAILERS AROUND THE PERIMETER AND ALL PENETRATIONS TO MATCH ROOF THICKNESS.
- PROVIDE ALL ASSOCIATED METAL TRIM, GUTTERS, AND DOWNSPOUTS.
- PROVIDE 20 YEAR NDL WARRANTY WITH WEATHER TIGHTNESS WARRANTY.

ALTERNATE BID ROOF TO ROOF ACCESS LADDER

- PROVIDE NEW ALUMINUM ROOF TO ROOF ACCESS LADDER AS DETAILED AND COORDINATE LOCATION W/OWNER.

SPECIFIC ROOF NOTES:

1. REMOVE EXISTING ROOF SYSTEM IN ITS ENTIRETY AND PREP EXISTING SUBSTRATE TO RECEIVE NEW ROOF SYSTEM.
2. PROVIDE NEW ROOF SYSTEM AS DETAILED.
3. PROVIDE PREFINISHED GUTTERS AND DOWNSPOUTS WITH CONCRETE SPLASH BLOCKS WHERE THE DOWNSPOUTS EMPTIES ON TO THE ROOF OR AT GRADE.
4. PROVIDE PREFINISHED RAKE TRIM AS DETAILED.
5. PROVIDE PREFINISHED METAL VALLEYS AS DETAILED
6. REMOVE AND REPLACE EXISTING BACKER ROD AND SEALANT FULL HEIGHT OF WALL AND INSTALL NEW BACKER ROD AND SEALANT BACK TO ORIGINAL CONDITION.
7. CONNECT NEW DOWNSPOUT TO EXISTING DOWNSPOUT BOOT.
8. PROVIDE NEW ROOF EJ AS DETAILED.
9. PROVIDE PREFINISHED HIGH EAVE CLOSURE TRIM.
10. PROVIDE PREFINISHED RIDGE CAP AS DETAILED.

**GENERAL ROOF NOTES**:

A. PROVIDE ALL REQUIRED UTILITY / STRUCTURAL COMPONENTS AND/OR CONNECTIONS FOR THE FUNCTIONAL USE OF ALL CONTRACTOR SUPPLIED EQUIPMENT OR APPLIANCES, REGARDLESS OF ANY OMISSIONS OR INCONSISTENCIES ENCOUNTERED IN THE CONSTRUCTION DOCUMENTS.
B. THE WORD 'PROVIDE' SHALL MEAN 'FURNISH AND INSTALL COMPLETE AND READY TO USE.'
C. IF DISCREPANCIES APPEAR BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER QUALITY, QUANTITY, AND PRICE SHALL SUPERSEDE.
D. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BECOME FAMILIAR WITH THE PROJECT AND THE ON-SITE / OFF-SITE CONDITIONS PRIOR TO BIDDING OR COMMENCING WORK.
E. ROOF SLOPES SHOWN ON DRAWINGS ARE GENERAL AND CONCEPTUAL ONLY. TAPER INSULATION IS SHOWN CONCEPTUALLY AND FOR INTENT ONLY; NOT TO SCALE AND SHOWN AS GRAPHIC REPRESENTATION ONLY TO SHOW SLOPE. INTENT IS TO PROVIDE POSITIVE DRAINAGE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
F. ALL WOOD BLOCKING AT ROOF EDGES ARE TO BE FABRICATED FROM CONT. 2X6 FR-WD BOARDS. PROVIDE LARGER 2X FR-WD AS REQUIRED PER DIMENSIONED DETAILED OR AS FIELD CONDITIONS DICTATE. ALL COPING TO BE SLOPED TOWARD THE INTERIOR.
G ALL EXPOSED FLASHING, TRIM (IF APPLICABLE) AND THEIR ACCESSORIES SHALL BE PREFINISHED.
H. ANY CRACKS OR VOIDS IN RISE WALLS ABOVE COUNTER FLASHING SHALL BE REPAIRED WITH COMPATIBLE SEALANT.
I. PROVIDE NEW CONCRETE SPLASH BLOCKS ON ROOF ELEVATION SUPPORTED BY A WALK PAD WHERE DOWNSPOUTS OCCUR.
J. ALL METAL FLASHING SHALL EXTEND BEYOND ROOF EDGE MIN. 8" WHERE FLASHING ABUTS VERTICAL WALL SURFACE AS DETAILED. ALL FLASHING SHALL BE INSTALLED IN SHINGLE FASHION.
K. MECHANICAL, ELECTRICAL, AND PLUMBING ROOF EQUIPMENT SHOWN ON THIS PLAN IS FOR GENERAL INFORMATION ONLY.
L. FLASHING AND STRIPPING MATERIALS, BASE PLY MEMBRANES, INSULATION, AND ACCESSORIES SHOULD BE RECOMMENDED BY THE ROOFING SYSTEM MANUFACTURER FOR INTENDED USE AND COMPATIBILITY WITH THE ROOFING SYSTEM.
M. PROVIDE STEP FLASHING AND COVER PLATE AT SLOPED ROOF HI/LOW CONDITIONS.
N. GUTTERS SHALL BE PREFINISHED GALVANIZED STEEL, SIZE PER ROOF PLAN, UNO. PROVIDE PREFINISHED 1/4"x1 1/2" GALVANIZED STEEL BENT PLATE BRACKETS AND PREFINISHED 1" GALVANIZED STEEL SPACERS AT 36" O.C. MAX, STAGGER WITH EACH OTHER AT 18" O.C.
O. PROVIDE PREFINISHED GUTTER EXPANSION JOINTS 30'-0" O.C. MAX.
P. DOWNSPOUTS SHALL BE 5"x6" PREFINISHED GALVANIZED STEEL UNO AS INDICATED ON ROOF PLAN. PROVIDE PREFINISHED 2" GALVANIZED STEEL HANGERS AT 36" O.C. COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
Q. PROVIDE CAST IRON BOOT PER TYPICAL AT ALL DOWNSPOUTS THAT ARE TO GRADE,
R. PROVIDE SPLASH BLOCKS AT ALL ROOF LEADER NOZZLES THAT SPILL ONTO GROUND.

| | | |
|---|---|---|
| Building Code | | 2021 IBC |
| Energy Code | | 2021 IECC |
| Existing Building Code | | 2021 IEBC |
| ASCE Wind Uplift | | ASCE 7-16 |
| Wind Exposure | | C |
| Internal Pressure Coefficient | | +/-0.18 |
| Risk Category | | III |
| Basic Design Wind Speed, $V$ (mph) | | 111 |
| Allowable Stress Design (ASD) Wind Speed, $V_{asd}$ = | $V\sqrt{0.6}$ (mph) | 86 |
| Risk Category (Storm Shelters & Essential Facilities) | | IV |
| Basic Design Wind Speed, $V$ (mph) | | 115 |
| Allowable Stress Design (ASD) Wind Speed, $V_{asd}$ = | $V\sqrt{0.6}$ (mph) | 89 |

## ROOF LEGEND

NOT IN CONTRACT
METAL ROOF SYSTEM

DS/SB — DOWNSPOUT/ SPLASHBLOCK
EJ — EXPANSION JOINT
ME/G — METAL EDGE W/GUTTER
ME — METAL EDGE
RW — RISE WALL

## LEGEND

BASE BID
B1
ROOF AREA

ALTERNATE BID
A1
ROOF AREA

ARMKO
TEXAS REGISTERED ENGINEERING FIRM F-6498
1320 SPINKS ROAD
FLOWER MOUND
TEXAS 75028
(972) 874-1388

THIS DOCUMENT WAS PRODUCED BY OR UNDER THE DIRECT SUPERVISION OF REGISTERED ARCHITECT

STATE OF TEXAS — DEAN D. BROWN — LICENSED — 117508 — PROFESSIONAL ENGINEER

**ISSUE DATE:** 03/02/2026

CONTRACTOR **SHALL** VERIFY ALL SUBSTRATES, DIMENSIONS, CURBS, PENETRATIONS, ECT. **THOSE SHOWN ARE TYPICAL BUT MAY NOT BE ALL INCLUSIVE**
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| ISSUES |
|---|
| 03/02/2026 - IFC |

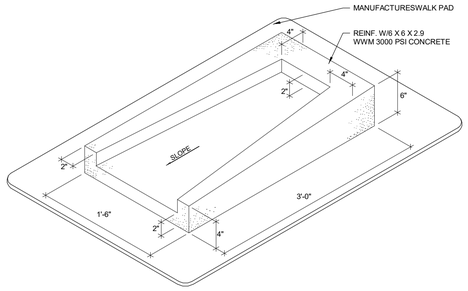
| REVISIONS | | |
|---|---|---|

PROJECT FOR:
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CELIA HAYS ELEMENTARY SCHOOL
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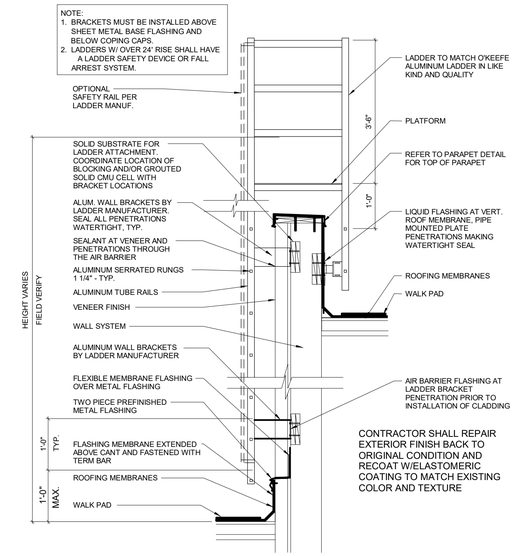
**JOB:** 25-1270-56
**DATE:** 03/02/2026
**DRAWN BY:** MJ
**CHECKED BY:** HS

OVERALL ROOF PLAN

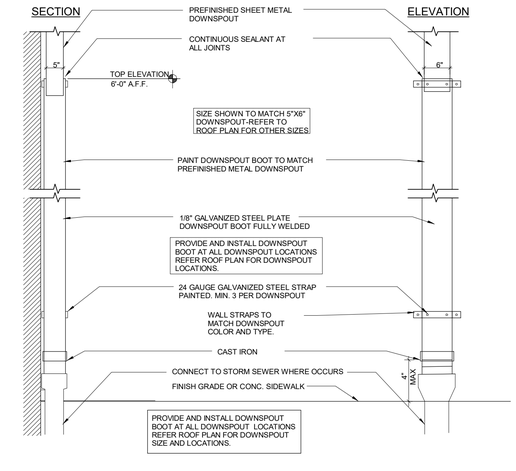
R1.01




12 SPLASH BLOCK
NOT TO SCALE




11 ALUMINUM LADDER (ALTERNATE)
NOT TO SCALE




10 DOWNSPOUT
NOT TO SCALE

DO NOT MAKE REPAIRS OR ALTERATIONS
TO THIS ROOF WITHOUT APPROVAL FROM THE
DIRECTOR OF OPERATIONS AND MAINTENANCE OFFICE

PROJECT NAME
PROJECT ADDRESS

THIS ROOF IS GUARANTEED FROM XX/XX/XX UNTIL XX/XX/XX

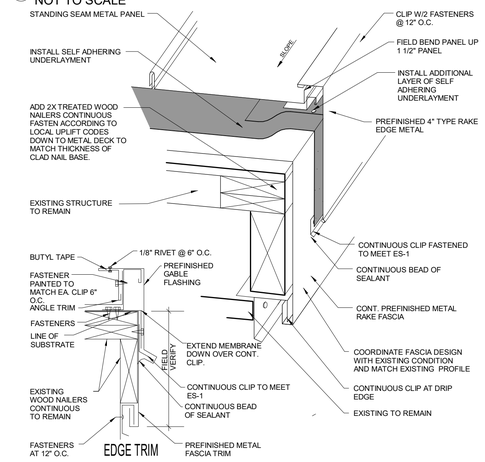
SCHOOL DISTRICT NAME,
DAY PHONE NUMBER
EMERGENCY PHONE NUMBER
ENVELOPE CONSULTANT NAME, PHONE NUMBER

ROOFING MANUFACTURER NAME, PHONE NUMBER

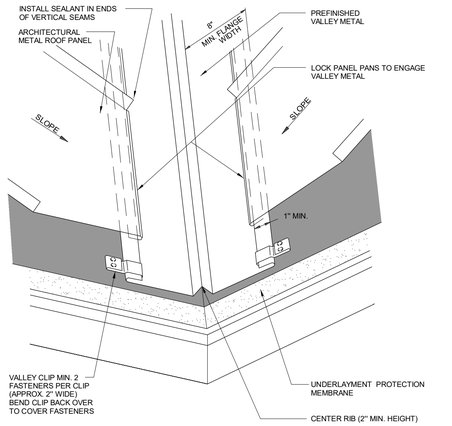
GENERAL CONTRACTOR NAME, PHONE NUMBER

ROOFING CONTRACTOR NAME, PHONE NUMBER

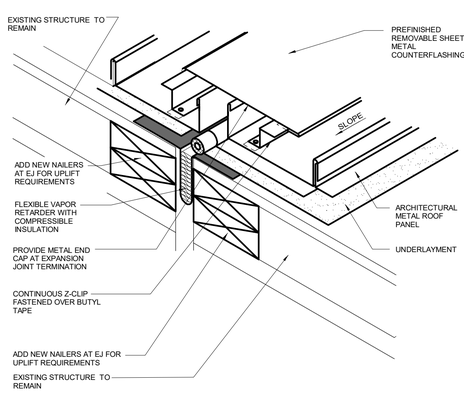
9 ROOF PLAQUE
NOT TO SCALE



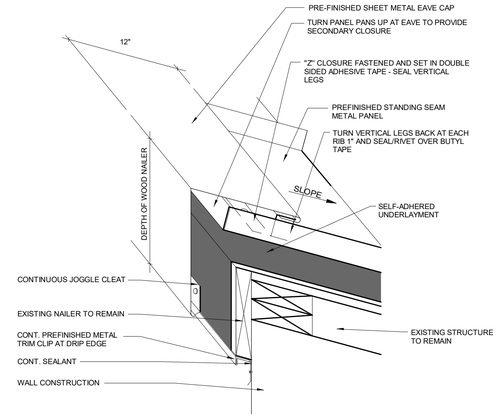

8 RAKE WIDE FASCIA
NOT TO SCALE



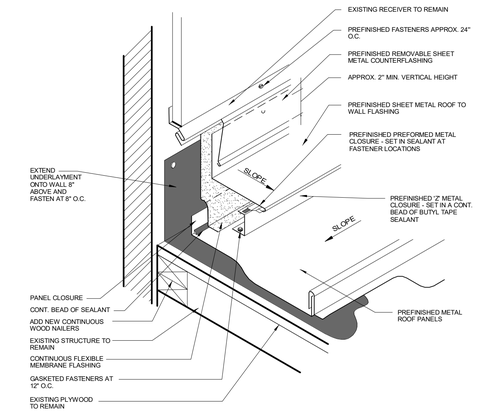

7 VALLEY DETAIL
NOT TO SCALE



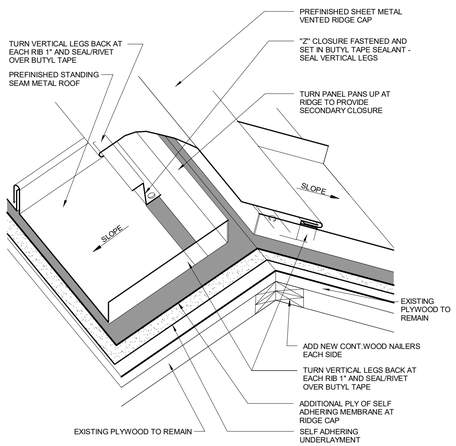

6 FIELD EXPANSION JOINT
NOT TO SCALE



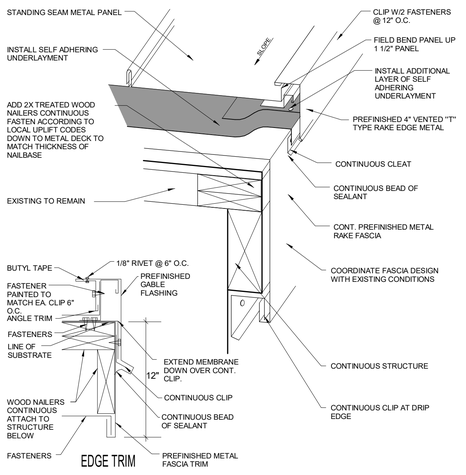

5 HIGH EAVE DETAIL
NOT TO SCALE



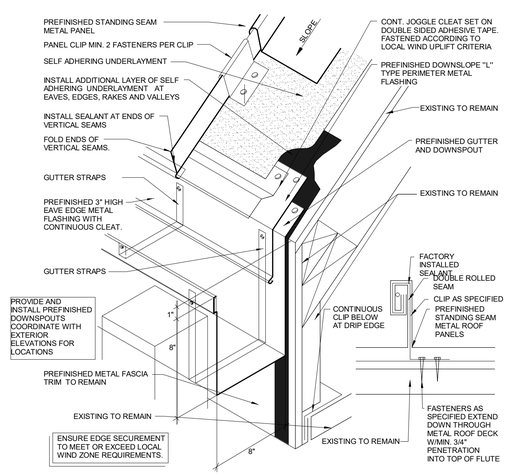

4 RIESWALL TO ROOF
NOT TO SCALE




3 RIDGE CAP
NOT TO SCALE




2 RAKE DETAIL
NOT TO SCALE




1 METAL EDGE WITH GUTTER
NOT TO SCALE

ARMKO
TEXAS REGISTERED ENGINEERING FIRM F-6498
1320 SPINKS ROAD
FLOWER MOUND
TEXAS 75028
(972) 874-1388

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**ISSUE DATE:** 03/02/2026

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| ISSUES |
|---|
| 03/02/2026 - IFC |

| REVISIONS | | |
|---|---|---|

PROJECT FOR:
ROCKWALL ISD
CELIA HAYS ELEMENTARY SCHOOL
PARTIAL ROOF REPLACEMENT
1880 TANNERSON DR.
ROCKWALL, TEXAS 75087

**JOB:** 25-1270-56
**DATE:** 03/02/2026
**DRAWN BY:** MJ
**CHECKED BY:** HS

ROOF DETAILS

R2.01

**SHIPPING LABEL**

*This label should be affixed to the outside of the package when submitted in response to this request.*

FROM: _____

_____

_____

Package _____ of _____

SHIP TO: Rockwall Independent School District
Attn: Jana Hunter, Director of Purchasing
1050 Williams Street
Rockwall, TX 75087

CONTENTS: BID RESPONSE
BID NUMBER: RFCSP 2526.03-004
BID TITLE: RHHS and Hays ES Roof Replacement
BID DUE DATE: April 2, 2026
TIME DUE: 2:00 P.M. (CST)

----------FOLD OR CUT HERE----------

FROM: _____

_____

_____

Package _____ of _____

SHIP TO: Rockwall Independent School District
Attn: Jana Hunter, Director of Purchasing
1050 Williams Street
Rockwall, TX 75087

CONTENTS: BID RESPONSE
BID NUMBER: RFCSP 2526.03-004
BID TITLE: RHHS and Hays ES Roof Replacement
BID DUE DATE: April 2, 2026
TIME DUE: 2:00 P.M. (CST)

# Rockwall Independent School District
# RFCSP 2526.03-004 RHHS and Hays Roof Replacement

## OFFER FORM

*This form should serve as the cover to all responses; failure to sign may result in disqualification.*

The undersigned authorized representative of the responding company indicated below hereby acknowledges;

- They are authorized to enter into contractual relationship on behalf of the responding company;
- They have carefully examined this document in its entirety;
- They propose to supply any products/services submitted under this solicitation at the prices quoted and in strict compliance with all terms, policies and procedures, unless any exceptions are noted;
- They understand verbal orders are not authorized and no order should be initiated without an authorized purchase order signed by the Director of Purchasing and that non-compliance may result in non-payment;
- Any and all exceptions have been noted in writing in the response and that no other exception will be claimed;
- The accuracy of all certifications which accompany this offer;
- The stated organization is an equal opportunity employer;
- The organization has not been a party to any collusion among offer/vendors in restraint of freedom of competition by agreement to offer at a fixed price or to refrain from offering; or with any RISD employee, Board Trustee, or consultant as to quantity, quality, or price in the prospective contract, or in any terms of the prospective contract except in any authorized discussion(s) with RISD's Purchasing personnel; or in any discussions or actions between offer/vendors and any RISD employee, Board Trustee, or consultant concerning exchange of money or other things of value for special consideration in the award of this contract.
- The prices in this offer have been determined independently, without consultation, communication, or agreement for the purpose of restricting competition, as to any matter related to such prices, with any other vendor or with any competitor;
- Notice of award and/or any communication regarding an award will be submitted via RISD and not by any consultant, contractor or other party involved in this solicitation.

- Receipt of Addenda, or lack thereof:

None: _____ (initial)

# 1: _____ (initial) # 2: _____ (initial)

# 3: _____ (initial) # 4: _____ (initial)

| | |
|---|---|
| Name of Company: | Date: |
| Signature of Authorized Rep: | Printed Name: |
| Position or Title: | Phone: |
| Email: | Fax: |

## RESPONDENT'S PROPOSAL

The undersigned has carefully examined the Request for Proposals, Contract Documents, Conditions of the Contract, the Specifications, the Drawings and any addenda to the Drawings and Specifications, the site, premises and all conditions affecting the work on the project listed above as prepared by Rockwall ISD. The undersigned proposes to furnish all labor, materials, services and equipment necessary to complete the entire work in strict accordance with the above documents for the following sum:

| ROCKWALL HEATH HIGH SCHOOL ROOF | | |
|---|---|---|
| **Description** | **LS** | **Amount** |
| Base Bid (P+P Bonds included) | 1 | $ |
| *Contingency* | *1* | *$80,000.00* |
| Alternate #1 | 1 | $ |
| Alternate #2 | 1 | $ |
| TOTAL: | | |

| HAYS ELEMENTARY SCHOOL ROOF | | |
|---|---|---|
| **Description** | **LS** | **Amount** |
| Base Bid (P+P Bonds included) | 1 | $ |
| *Contingency* | *1* | *$50,000.00* |
| Alternate #1 | 1 | $ |
| Alternate #2 | 1 | $ |
| TOTAL: | | |

Respondent's (Company) Name: _____

Signature: _____

Title: _____

## VENDOR DATA

| FOR PURCHASE ORDER: ORDERING ADDRESS INFORMATION | | |
|---|---|---|
| Company Name: | | |
| Address: | | |
| City, State, Zip: | | |
| Contact Person: | | |
| Title: | | |
| Phone \| Fax: | | |
| Email address: | | |
| May we submit orders via email: | | |
| Email address, if different: | | |

| FOR PAYMENTS: REMITTANCE ADDRESS INFORMATION | | |
|---|---|---|
| Company Name: | | |
| Address: | | |
| City, State, Zip: | | |
| Contact Person: | | |
| Title: | | |
| Phone \| Fax: | | |
| Email address: | | |

| FOR BID NOTIFICATIONS | |
|---|---|
| Contact Email: | |

**COOPERATIVE AGREEMENTS**

*If the vendor holds a contract with any of the following, please circle and provide contract number(s) as applicable.*

| Allied States | Choice Partners | CTPA | DIR | E&I | EPIC6 | EPCNT | HGAC | Omnia Partners | PACE | Tarrant County | TASB Buy Board | TIPS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

Contract Number(s):

**REFERENCE SHEET**
**DO NOT LEAVE BLANK**

**REFERENCE 1**

| | | |
|---|---|---|
| School District Name: | | |
| Contact Name: | | |
| Address: | | |
| Phone \| Fax: | | |
| Email Address: | | |

**REFERENCE 2**

| | | |
|---|---|---|
| School District Name: | | |
| Contact Name: | | |
| Address: | | |
| Phone \| Fax: | | |
| Email Address: | | |

**REFERENCE 3**

| | | |
|---|---|---|
| School District Name: | | |
| Contact Name: | | |
| Address: | | |
| Phone \| Fax: | | |
| Email Address: | | |

**Please note: Some projects may require more attention to be given to historical projects of like scope, type, location, institute, etc. While it is not a requirement, the District prefers references be given for school districts of similar size to Rockwall ISD and the district may evaluate responses as a whole, based on references provided.*

# VENDOR ACKNOWLEDGEMENTS

## RESIDENT BIDDER

A governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident bidder underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the great of the following (1) the amount by which a resident bidder would be required to underbid the resident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located; or (2) the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in the state in which a majority of the manufacturing relating to the contract will be performed.

A governmental entity may not award a governmental contract to a nonresident bidder unless the nonresident underbids the lowest bid submitted by a responsible resident bidder by an amount that is not less than the amount by which a resident bidder would be required to underbid the nonresident bidder to obtain a comparable contract in (1) the state in which the nonresident's principal place of business is located; or (2) a state in which the nonresident is a resident manufacturer.

This subchapter does not apply to a contact involving federal funds.

## FELONY CONVICTION AND CRIMINAL HISTORY NOTICE

Texas Education Code, Section 44.034, Notification of Criminal History, Subsection (a), states, "a person or business entity that enters into a contract with a school district must give advance notice to the District if the person or owner or operator of the business entity has been convicted of a felony." The notice must include a general description of the conduct resulting in the conviction of a felony. Subsection (b) states, "a school district may terminate a contract with a person or business entity if the district determines that the person or business entity failed to give notice as required by Subsection (a) or misrepresented the conduct resulting in the conviction." The district must compensate the person or business entity for services performed before the termination of the contract. Vendor is responsible for the performance of the persons, employees and/or sub-contractors. Vendor assigns to provide services for Rockwall ISD pursuant to this proposal on any and all Rockwall ISD campus or facilities. Vendor will not assign individuals to provide services at a Rockwall ISD campus or facility who have a history of violent, unacceptable, or grossly negligent behavior or who have a felony conviction, without the prior written consent of the Rockwall ISD Purchasing Department.

## CONFIDENTIALITY DECLARATION

Any portion of the response considered to be confidential or contain proprietary information, or to contain trade secrets, must be marked accordingly. This designation may not necessarily guarantee the non-release of the information under the Public Information Act or as otherwise required by law, but does provide the District with a means to review the issues thoroughly and, if justified, request an opinion by the Attorney General's office prior to releasing any information requested under the Public Information Act.

## INTER-LOCAL AGREMEENTS WITH OTHER SCHOOL DISTRICTS

Rockwall ISD is a member of the Central Texas Purchasing Alliance (CTPA) and the Education Purchasing Cooperative of North Texas (EPCNT), each serving as an alliance of over 100 school districts in Texas representing millions of students, sharing information, services and contractual opportunities. A list of member districts can be found on the RISD Purchasing webpage.

In support of this collaborative effort, all awards made by Rockwall ISD may be adopted by other active member districts in either (or both) of the identified entities. By adopting a contract from another member district, the adopting district has met the competitive bidding requirements established by the Texas Education Code, Section 44.031 (a)(4). While there is no obligation to participate, doing so will streamline the public purchasing process and cut costs to the public. It will also keep vendors from having to answer multiple bids for many school districts for the same product(s) or services, thereby saving the vendors resources.

All purchases by members and participants other than Rockwall ISD will be billed directly to that entity and paid by that entity. Rockwall ISD will not be responsible for another entity's debts. Each governmental entity will order its own materials/services as necessary and according their policies.

## COMMITMENT TO PROVIDE INSURANCE

Bidder will be able to furnish a valid insurance certificate reflecting as Certificate Holder: Rockwall ISD, 1050 Williams Street, Rockwall TX 75087. The vendor shall provide and maintain insurance in a company rated no less than an "A" by A.M. Best Company.

Vendor is aware of all costs to provide insurance, will do so pending contract award, and will provide a valid insurance certificate as describe within this solicitation.

## DEBARMENT OR SUSPENSION CERTIFICATION

Non-Federal entities are prohibited from contracting with or making sub-awards under covered transaction to parties that are suspended or debarred or whose principals are suspended or debarred. Covered transactions include procurement of goods or services equal to or in excess of $100,000. Vendors receiving individual awards of $100,000 or more and all sub-recipients must certify that the organizations and its principals are not suspended or debarred.

## INDEMNIFICATION AND HOLD HARMLESS

Except as otherwise expressly provided, respondent shall defend, indemnify and hold RISD harmless from and against all claims, liability, loss and expenses, including reasonable costs, collection expenses, and attorney's fees incurred, which arise by reason of the acts or omissions of respondent, its agents or employees in the performance of its obligation under this contract.

## STATEMENT OF COMPLIANCE/DEVIATION

Unless otherwise stated, this proposal complies with all specifications and/or scope of work contained in the solicitation document. Any deviations from any part of this solicitation shall be listed on a separate page as provided by the respondent with detailed conditions and information. RISD will consider any deviations in its evaluation, and reserves the right to accept or reject any bid based upon any deviations.

## CONTRACTOR CERTIFICATION

If an employee of a contractor is covered under SB 9 the contractor must bear the burden of obtaining a national, fingerprint-based criminal history check. Under Section 22.0834 of the Education Code, the contractor is then required to certify to the district that the criminal history check has been performed. Under the statute SB 9, a contractor is required to conduct a criminal history review on an employee only when the following criteria has been met: 1) The employer has contracted with the district to provide services. 2) The particular employee will have continuing duties relating to the contract with the district. 3) The particular employee will have contact with students.

## TOXIC CONTROL COMPLIANCE

Rockwall Independent School District has established Management Plans for ensuring a high level of environmental air quality through its Operations Department. All contractors performing construction projects for RISD must familiarize themselves with these Management Plans and comply prior to the beginning of any awarded construction project. RISD employees are available to review such plans and assist in interpretation and understanding its Asbestos Management Plans at any time prior to beginning construction.

Certification of non-use of Asbestos and Lead Containing Materials is required by all General and Sub-Contractors for all construction projects, by State and Federal regulations which RISD is subject to. Completion of this Affidavit is mandatory before final payment on a project will be made. Complete this certificate, have it notarized and submit it with your application for final payment, certifying that no materials used in conjunction with this project contain asbestos or lead in any form and that all Material Safety Data Sheets (MSDS) have been supplied to Owner before submitting application for final payment.

## MWBE/HUB CERTIFICATION

A bidder/proposer that has been certified as a Minority/Women Business Enterprise (also known as "Historically Underutilized Business" or "HUB") is encouraged to indicate its MWBE certification status when responding to this Bid/Proposal. If so, please provide the Certificate Number and Name of Certifying Agency.

## CERTIFICATION OF EQUAL EMPLOYMENT STATEMENT

It is the policy of the District not to discriminate on the basis of race, color, national origin, gender, limited English proficiency or handicapping conditions in its programs. Vendor agrees not to discriminate against any employee orapplicant for employment to be employed in the performance of this Contract, with respect to hire, tenure, terms, conditions and privileges of employment, or a matter directly or indirectly related to employment, because of age (except where based on a bona fide occupational qualification), sex (except where based on a bona fide occupationalqualification) or race, color, religion, national origin, or ancestry. Vendor further agrees that every subcontract entered into for the performance of this Contract shall contain a provision requiring non-discrimination inemployment herein specified, binding upon each subcontractor. Breach of this covenant may be regarded as a material breach of the Contract.

## CERTIFICATION OF SECTION 2271.002 TEXAS GOVERNMENT CODE

This section applies to a contract that: (1) is between a governmental entity and a company with 10 or more full-time employees; and (2) has a value of $100,000 or more that is to be paid wholly or partly from public funds of the governmental entity. A governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of the contract.

## CERTIFICATION OF SECTION 2252 TEXAS GOVERNMENT CODE

This section applies to contracts with companies engaged in business with Iran, Sudan, or foreign terrorist organization is prohibited. A governmental entity may not enter into a governmental contract with a company that is identified on a list prepared and maintained under Section 806.051, 807.051 or 2252.153. The comptroller shall prepare and maintain, and make available to each governmental entity, a list of companies known to have contracts with or provide supplies and services to a foreign terrorist organization.

## CERTIFICATION OF SECTION 2276 TEXAS GOVERNMENT CODE

This section applies only to a contract that (1) is between a governmental entity and a company with 10 or more full-time employees; and (2) had a value of $100,000 or more that is to be paid wholly or partly from public funds of the governmental entity. Except as provided by Subsection (c), a governmental entity may not enter into a contract with a company for goods or services unless the contract contains a written verification from the company that (1) does not boycott energy companies; and (2) will not boycott energy companies during the term of the contract.

## CERTIFICATION OF SECTION 2274 TEXAS GOVERNMENT CODE

This section applies only to a contract that: (1) is between a governmental entity and a company with at least 10 full-time employees: and (2) has a value of at least $100,000 that is paid wholly or partly from public funds of the governmental entity. Except as provided by Subsection (c) and Section 2274.003, a governmental entity may not enter into a contract with a company for the purchase of goods or services unless the contract contains a written verification from the company that it: (1) does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association. Subsection (b) does not apply to a governmental entity that (1) contracts with a sole-source provider; or (2) does not receive any bids from a company that is able to provide the written verification required by that subsection.

## CERTIFICATION OF SECTION 2273 TEXAS GOVERNMENT CODE

A governmental entity may not enter into a taxpayer resource transaction with an abortion provider or an affiliate of an abortion provider. This subsection does not apply to a taxpayer resource transaction that is subject to a federal law in conflict with Subsection (a) as determined b by the executive commissioner of the Health and Human Services Commission and confirmed in writing by the Attorney General.

## CERTIFICATION OF SECTION 2274 TEXAS GOVERNMENT CODE

A governmental entity may not enter into a contract or other agreement relating to critical infrastructure in this state with a company that is (1) owned by or the majority of stock or other ownership interest of the company is held or controlled by (a) individuals who are citizens of China, Iran, North Korea, Russia, or a designated country; (b) a company or other entity, including governmental entity, that is owned or controlled by citizens of or is directly controlled by the government of China, Iran, North Korea, Russia, or a designated country; or (2) headquartered in China, Iran, North Korea, Russia, or a designated country.

## CONFLICT OF INTEREST

Effective January 1, 2006, any person or entity who contracts or seeks to contract with RISD for the sale or purchase of property, goods, or services (as well as agents of such persons) (hereafter referred to as Vendors) are required to file a Conflict of Interest Questionnaire with the District. Each covered person or entity who seeks to or who contracts with RISD is responsible for complying with any applicable disclosure requirements. Forms received by the District become public records immediately and the law requires school districts that maintain web sites to place these records on the District's web site.

The Conflict of Questionnaire must be filed no later than the seventh business day after the date that the vendor begins contract discussions or negotiations with the government entity, or submits to the entity an application, response to a request for proposal or bid, correspondence, or other writing related to a potential agreement with the entity.

The vendor also shall file an updated questionnaire not later than September 1 of each year in which a covered transaction is pending, and the seventh day after the date of an event that would make a statement in the questionnaire incomplete and inaccurate.

Note: A vendor is not required to file an updated questionnaire if the person had filed an updated statement on or after June 1, but before September 1 of the year.

Completed forms should be sent to Rockwall Independent School District Purchasing Department, 1050 Williams Street, Rockwall, Texas 75087. Forms are available from the Texas Ethics Commission website.

**The Rockwall ISD website provides a list of Local Government Officers, Superintendent and other Personnel**

## IRS FORM W9

This is a required form by the IRS for government entities that pay vendors in excess of $600.00 annually in order to issue a 1099 form and is required in conjunction with the reporting requirements by the Internal Revenue Service.

Please include a current W9 with vendor's response.

**Vendor affirms they have read all certifications as described in this section and agrees to comply with all federal, state, and local laws, rules, regulations and ordinances, as applicable. It is further acknowledged the vendor certifies compliance with all provisions, laws, acts, regulations, etc. as specifically noted.**

| | |
|---|---|
| Company Name: | |
| Federal Tax ID #: | |
| City, State, Zip: | |
| Phone Number: | |
| Printed Name of Authorized Representative: | |
| Title of Authorized Representative: | |
| Email Address: | |
| Signature of Authorized Representative: | |
| Date Signed: | |