

FOR BIDDING PURPOSES ONLY / NOT FOR CONSTRUCTION

PROJECT MANUAL

GREGG COUNTY COURTHOUSE ROOFING PROJECT PHASE 1 BID #2017-703

January 27, 2017

CCG 1-132-1



PROJECT: Gregg County Courthouse Roofing Project, Phase 1
Bid #2017-703

ADDRESS: 101 E. Methvin, Longview, TX 75601

OWNER: Gregg County
101 E. Methvin, Suite 300
Longview, TX 75601

OWNER'S PROJECT CONTACT: *During Procurement Period*
Kelli Davis, Purchasing Agent
Gregg County
101 E. Methvin, Suite 205
Longview, TX 75601
Tel: 903.237.2686
Email: purchasing@co.gregg.tx.us

During Construction Period
Harry McMahan, Maintenance Director
Gregg County
101 E. Methvin, Suite 110
Longview, TX 75601
Tel: 903.237.2581
Email: Harry.McMahan@co.gregg.tx.us

DESIGN PROF. OF RECORD: Vickie Crenshaw, P.E., RRC, RRO
Crenshaw Consulting Group, LLC
616 S. Coppell Rd.
Coppell, TX 75019
Tel: 214.758.0785
Fax: 214.792.9548
Cell: 214.500.8715
EM: vcrenshaw@crenshawcg.com

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BID INSTRUCTIONS/REQUIREMENTS

- ❖ ***SUBMISSION OF BIDS/BIDS: Two (2) complete sets*** of all bid documents (original and one (1) copy) shall be sealed and **marked** Bid #2017-703, Gregg County Courthouse Roof Replacement.

Gregg County Purchasing
Kelli Davis, CPPB, Purchasing Agent
101 East Methvin, St. 205
Longview, Texas 75601

- ❖ Questions concerning this bid/Bid and process shall be directed to Gregg County Purchasing Director by email to purchasing@co.gregg.tx.us; Kelli Davis. Failure to comply with this guideline could result in disqualification from the bid process.
- ❖ **All bids must be sealed** when returned to Gregg County.
- ❖ The bid must be signed and dated by a representative of the vendor's company who is authorized. It should be sealed, and received by Gregg County Purchasing Agent, 101 East Methvin, St. 205, Longview, TX, 75601 by the closing date and time specified. A facsimile transmission is **not** an acceptable response to this Bid.
- ❖ All questions/checklists/blanks must be included in your response on the forms provided. Failure to include any of the requested information within your bid may result in rejection/disqualification.
- ❖ BIDS WILL BE received and publicly acknowledged at the Gregg County Purchasing Department located at the address listed above on **February 24, 2017 at 2:00pm.** Vendors, their representatives and interested persons may be present. All submissions shall be open for public inspection except for trade secrets, financial information, and other confidential information contained in the Bid/bid and identified as such by vendor.
- ❖ **It is the bidders' sole responsibility to print and review all pages of the bid document, attachments, questions and their answers, addenda and special notices. The Bid Signature Form, Certification of eligibility and contract must be signed and returned. Failure to provide signatures on these forms could render bid non-responsive.**
- ❖ **All documents relating to this bid including but not limited to, the bid document, questions and their responses, addenda and special notices will be posted under the Bid number on the Gregg County Purchasing Department website and available for download by bidders and other interested parties. It is the bidders'/respondents' sole responsibility to review this site and retrieve all related documents prior to the Bid due date.**

- ❖ **Any bid received after the date and/or hour set for bid opening will not be accepted. Bidder will be notified and will advise Gregg County Purchasing as to the disposition by either pick up, return at bidder's expense, or destroyed with written authorization of the bidder.** If bids/Bids are sent by mail to the Purchasing Department, the bidder shall be responsible for actual delivery of the bid to the Purchasing Department before the advertised date and hour for opening of bids. If mail is delayed either in the postal service or in the internal mail system of Gregg County beyond the date and hour set for the bid opening, bids thus delayed will not be considered and will be disposed of as authorized.

Bid Submission Requirements

- ✓ **Completed and signed Bid Forms including *Certification of Eligibility, Bid Signature Form, Bid Contract, Official Bid Sheet* and *Vendor References*. Vendor shall submit original forms with original signatures,**
- ✓ **Insurance Certificates – Bidder must submit all Insurance Certificates with bid.**
- ✓ **List of Sub-Contractors (If applicable) – Bidder must submit a list of sub-contractors that will be used to complete bid guidelines.**
- ✓ **Information regarding any pending or past lawsuits within 10 years.**

STANDARD TERMS AND CONDITIONS

By returning this bid with price(s) quoted and forms executed, Respondent's certify and agree to the following:

1. Alternate bids will not be considered unless authorized. If there is any question as to the specifications or any part thereof, Respondent may submit to the Gregg County, Texas Purchasing Agent, a request for clarification. Such requests must be received a minimum of five (5) days prior to scheduled opening date.
2. Non-performance or non-compliance of the Standard Terms & Conditions, or non-performance or non-compliance with the Specifications shall be basis for termination by Gregg County of the bid or final executed contract. Termination in whole, or in part, by the County may be made solely at the County's option and without prejudice to any other remedy to which Gregg County may be entitled by law or in equity, or elsewhere under this Bid or the agreement, by giving thirty (30) days written notice to the vendor with the understanding that all work being performed under this agreement shall cease upon the date specified in such notice. Gregg County shall not pay for work, equipment, services or supplies, which are unsatisfactory. The Respondent may be given reasonable opportunity prior to termination to correct any deficiency. This however shall in no way be construed as negating the basis for termination for non-performance or non-compliance.
3. Respondent shall make all inquiries necessary to be thoroughly informed as to the specifications and all other requirements proposed in the Bid. Any apparent omission or silence of detail in the description concerning any point in the specifications shall be interpreted on the basis of best commercial practices, and best commercial practices shall prevail.
4. The Respondent shall affirmatively demonstrate Respondent's qualifications by meeting or exceeding the following minimum requirements:
 - ✓ Have adequate financial resources, or the ability to obtain such resources as required.
 - ✓ Be able to comply with any required or proposed delivery schedule.
 - ✓ Have a satisfactory record of performance.
 - ✓ Have a satisfactory record of integrity and ethics.
 - ✓ Be otherwise qualified and eligible to receive the award.
5. Invoices shall be sent to the Gregg County Purchasing Department, 101 East Methvin, St. 205, Longview, TX, 75601. Invoices must detail the materials/equipment/services delivered and **must reference the Gregg County Purchase Order Number.** Payments are processed after the Purchasing Department has verified that the material or equipment and/or services have been delivered in good condition and that no unauthorized substitutions have been made according to specifications. Neither a signed receipt nor payments shall be construed as an acceptance of any defective work, improper materials, or release of any claim for damage.

6. Only the Commissioners Court of Gregg County, Texas acting as a body may enter into any type of agreement or contract on behalf of Gregg County. Department heads, other elected or appointed officials, are not authorized to enter into any type of agreement or contract on behalf of Gregg County, or to agree to any type of supplemental agreements or contracts for goods or services. Contracts are subject to review by the County's attorney prior to signature by the authorized County official.
7. The Respondent shall be considered an independent Contractor and not an agent, servant, employee or representative of the County in the performance of the work. No term or provision, hereof, or act of the Respondent shall be construed as changing that status.
8. The Respondent shall defend, indemnify, and shall save whole and harmless the County and all its officers, agents, employees from and against all suits, actions, or claims of the character, name and description brought for or on account of any injuries or damages (including but not restricted to death) received or sustained by any person(s) or property on account of, arising out of, or in connection with the performance of the work, including without limiting the generality of the foregoing, any negligent act or omission of the Respondent on the execution or performance of the Contract.
9. The Respondent agrees, during the performance of the work, to comply with all applicable codes and ordinances of the City of Longview, Gregg County, or State of Texas as they may apply, as these laws may now read or as they may hereafter be changed or amended.
10. The Respondent shall obtain from the appropriate City, Gregg County, or State of Texas the necessary permit(s) required by the ordinances of the City, County, or State, for performance of the work.
11. The Respondent shall not sell, assign, transfer or convey the agreement in whole or in part, without the prior written consent of the County.
12. The parties herein agree that the agreement shall be enforceable in Gregg County, Texas, and if legal action is necessary to enforce it, exclusive venue shall lie in Gregg County, Texas.
13. The agreement shall be governed by, and construed in accordance with, the Laws of the State of Texas and all applicable Federal Laws.
14. Funding Clause - Payments required to be made by Gregg County under the terms of the agreement shall be contingent upon and subject to the initial and continuing appropriation of funding for the agreement by and through the Commissioners Court of Gregg County, Texas. In the event appropriations for funding of the agreement are not approved by and through the Commissioners Court, the contract shall terminate. Gregg County shall, submit written notice to Respondent thirty (30) days prior to such termination. Upon notice of termination, as provided in this paragraph, the Respondent may submit a final invoice to the County and coordinate with the Purchasing Agent to remove all property

belonging to said Respondent as soon as possible. Payment for final invoice will be subject to verification and approval by the purchasing agent. Thereupon, Gregg County will be released from its obligation to make further payments.

15. Gregg County is exempt from federal excise and sales taxes, ad valorem taxes and personal property taxes; therefore, tax must not be included in proposals tendered. Proposals offered must be complete and all inclusive. Gregg County will not pay additional taxes, surcharges or other fees not included in bid prices.
16. Gregg County expressly reserves the right to accept or reject in part or in whole, any bids submitted, and to waive any technicalities or formalities as to such waiver is determined to be in the best interest of Gregg County.
17. In case any one or more of the provisions contained in the agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and the agreement shall be considered as if such had never been contained herein.
18. Bids may be withdrawn prior to the official opening. Alterations made before the time of official opening must be initialed by Respondent guaranteeing authenticity. Proposals may not be amended, altered or withdrawn after the official opening, except upon the explicit recommendation of the Purchasing Agent and the formal approval of the Commissioners Court.
19. The agreement embodies the complete agreement of the parties hereto, superseding all oral or written previous and contemporary agreements between the parties and relating to matters herein, and except as otherwise provided herein cannot be modified without written agreement of the parties. A contract will be executed after determination of the award.
20. Respondent must provide a certificate of insurance conforming to the above listed requirements or a statement of Respondent's insurance carrier certifying that the required coverage shall be obtained by Respondent within ten (10) days of formal award of the Contract. In the case where a certification letter from an insurance carrier is attached to the bid in lieu of an insurance certificate, any formal award of a contract shall be contingent upon required coverage being put into force **prior** to any performance required by subject agreement.
21. Gregg County reserves the right to terminate an agreement/contract at any time, without cause, upon thirty (30) days written notice to Respondent. Upon termination, Gregg County shall pay Respondent for those costs directly attributable to work done or supplies obtained in preparation for completion or compliance with the Contract, except no payment shall be made for costs recoverable by Respondent in the normal course of doing business or which can be mitigated through the sale of supplies or materials obtained for use under this Contract. It is further agreed by Respondent that Gregg County shall not be liable for loss or reduction in any anticipated profit.

22. Additional or alternate bonds may be required in accordance with Texas statutes as outlined in the specifications.
23. Gregg County is wholly committed to developing, establishing, maintaining, and enhancing minority business involvement in the total procurement process. The County, its contractors, their suppliers and sub-contractors, vendors of goods, equipment, services, and professional services, shall not discriminate on the basis of race, color, religion, national origin, age, handicap, or sex in the award and/or performance of contracts. However, competition and quality of work remain the ultimate standards in contractor, sub-contractor, vendor service, professional service, and supplier utilization. All vendors, suppliers, professionals and contractors doing business or anticipating doing business with Gregg County shall support, encourage and implement steps toward our common goal of establishing equal opportunity for all citizens of Gregg County.
24. Respondents must agree to provide the following information as part of this proposal:
 - ✓ Form of business. (If a corporation, limited partnership or limited liability company, indicate the state of creation).
 - ✓ Name of contact person (single point of contact with the Respondent).
 - ✓ List of all criminal charges, civil lawsuits or dispute resolutions to which Respondent is a party in the past five (5) years and the nature of the issue. Indicate if and how it was resolved.
 - ✓ List all criminal charges, civil lawsuits, or alternative dispute resolutions to which Respondent becomes a party for the period beginning with the submission of the proposal until the rejection or award of the bid/RFP.
25. Gregg County reserves the right to accept or reject any or all bids, with or without cause, to waive technicalities, or to accept the bid which, in its sole judgment, best serves the interest of the County, or to award a contract to the next most qualified Respondent if a successful Respondent does not execute a contract within 10 business days after approval of the selection by the Gregg County Commissioners Court. Gregg County Reserves the right to award multiple contracts as necessary and in the best interest of the County.
26. Gregg County reserves the right to request clarification of information submitted and to request additional information of one or more Respondents.
27. Costs of preparation of a response to this request for bids are solely those of the Respondent. Gregg County assumes no responsibility for any such costs incurred by the Respondent. The Respondent also agrees that Gregg County assumes no responsibility for any costs associated with any administrative or judicial proceedings resulting from the solicitation process.
28. The awarding Respondent shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the work for at least two (2) years after completion of the contract resulting from this request for proposal. Gregg County shall have access to all records, documents and information collected and/or

maintained by others in the course of the administration of this agreement.

29. Bidder understands and agrees that in returning a response to this proposal/bid that it is neither an "offer" nor an "acceptance" until such time a formal contract is authorized/awarded by the Gregg County Commissioners Court; if any.
30. Bids must be submitted on the forms provided. Bids will not be considered if submitted by telephone, fax or any other means of rapid dispatch, nor will a proposal be considered if submitted to any other person or department other than specifically instructed.
31. Gratuities– Gregg County may, by written notice to the Seller, cancel this contract without liability to Seller if it is determined by Gregg County that gratuities, in the form of entertainment, gifts, or otherwise, were offered or given by the Seller, or any agent or representative of the Seller, to any officer or employee of Gregg County with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such a contract. In the event this contract is canceled by Gregg County pursuant to this provision, Gregg County shall be entitled, in addition to any other rights and remedies, to recover or withhold the amount of the cost incurred by Seller in providing such gratuities.
32. Termination - The performance of work under this order may be terminated in whole or in part by the Buyer in accordance with this provision. Termination of work hereunder shall be effected by the delivery to the Seller of a "Notice of Termination" specifying the extent to which performance of work under the order is terminated and the date upon which such termination becomes effective. Such right of termination is in addition to and not in lieu of rights of Buyer.
33. Force Majeure - If, by reason of Force Majeure, either party hereto shall be rendered unable wholly or in part to carry out its obligations under this Agreement then such party shall give notice and full particulars of such Force Majeure in writing to the other party within a reasonable time after occurrence of the event or cause relied upon, and the obligation of the party giving such notice, so far as it is affected by such Force Majeure, shall be suspended during the continuance of the inability then claimed, except as hereinafter provided, but for no longer period, and such party shall endeavor to remove or overcome such inability with all reasonable dispatch. The term Force Majeure as employed herein, shall mean acts of God, strikes, lockouts, or other industrial disturbances, act of public enemies, orders of any kind of government of the United States or the State of Texas or any civil or military authority, insurrections, riots, epidemics, landslides, lightning, earthquake, fires, hurricanes, storms, floods, washouts, droughts, arrests, restraint of government and people, civil disturbances, explosions, breakage or accidents to machinery, pipelines or canals or other causes not reasonably within the control of the party claiming such inability. It is understood and agreed that the settlement of strikes and lockouts shall be entirely within the discretion of the party having the difficulty, and that the above requirement that any Force Majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes and lockouts by acceding to the demands of the opposing party or parties when such settlement is unfavorable in the judgment of the party having the difficulty.

34. Assignment Delegation - No right or interest in this contract shall be assigned or delegation of any obligation made by Seller without the written permission of the Buyer. Any attempted assignment or delegation by Seller shall be wholly void and totally ineffective for all purposes unless made in conformity with this paragraph.
35. Waivers - No claim or right arising out of a breach of this contract can be discharged in whole or in part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.
36. Modification - Contract can be modified or rescinded only by a written and signed agreement by both of the parties duly authorized agents.
37. Applicable Law - This agreement shall be governed by the Uniform Commercial Code. Wherever the term "Uniform Commercial Code" is used, it shall be construed as meaning the Uniform Commercial Code as adopted in the State of Texas as effective and in force on the date of this agreement.
38. Advertising - Seller shall not advertise or publish, without Buyer's prior consent, the fact that Buyer has entered into this contract, except to the extent necessary to comply with proper requests for information from an authorized representative of the federal, state, or local government.
39. Right to Assurance - Whenever one party to this contract in good faith has reason to question the other party's intent to perform, he may demand that the other party give written assurance of his intent to perform. In the event a demand is made and no assurance is given within five (5) days, the demanding party may treat this failure as an anticipatory repudiation of the contract.
40. Venue - Both parties agree that venue for any litigation arising from this contract shall be in Longview, Gregg County, Texas.
41. No negotiations, decisions, or actions shall be executed by the vendor as a result of any discussions with any public service official, employee and/or consultant. Only those transactions provided in written form may be considered binding.
42. The contents of each vendor's bid, including specifications shall remain valid for a minimum of 60 calendar days from the Bid due date.
43. All documents submitted as part of the vendor's offering will be deemed confidential during the evaluation process.
44. Subcontracting: The Vendor must function as the single point of responsibility for the Agency. No vendor shall submit a proposal comprised of separate software packages from multiple subcontractors.

45. Investigation of Conditions: Before submitting a bid, respondent should carefully examine the specifications and fully inform themselves to the conditions of the equipment and limitations.
46. Contract Award:
 - 1) Gregg County reserves the right to reject any or all bids and to waive any minor informality or irregularity in a proposer's response if deemed in the best interests of the County.
 - 2) Award of a contract (if any) resulting from this bid will be made only by written authorization from Gregg County Commissioners Court.
47. Conflict of Interest: No public official shall have interest in this contract except in accordance with Vernon's Texas Codes Annotated, Local Government Code Title 5, Subtitle C, Chapter 171. State Law (CHAPTER 176 of the Local Government Code) requires the filing of a CONFLICT OF INTEREST QUESTIONNAIRE by certain individuals and businesses.
48. Design, Strength, Quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practice.
49. All Hardware of any other item offered in this bid must be new and unused, unless otherwise specified, in first-class condition and of current manufacture.
50. Descriptions: Whenever an article or material is defined or used in the BID specifications by describing a proprietary product or by using the name of a manufacturer, model number, or make, the term "or equal" if not inserted, shall be implied. Any reference to specified article or material shall be understood as descriptive, NOT restrictive, and is used to indicate type and quality level desired for comparison purposes unless otherwise noted. Bids must be submitted on units of quantity specified, extended, and totaled. In the event of discrepancies in extension, the unit prices shall govern.
51. Addendum: Any interpretations, corrections or changes to this Bid and Specifications will be made by addendum, unless otherwise stated. Issuing authority of addendum shall be the Commissioners' Court of Gregg County, Texas. Addendum will be mailed, emailed, or faxed to all that are known to have received a copy of the Bid. Vendors shall acknowledge receipt of all addenda and include receipt and response to addenda with submission.
52. Patents/Copyrights: The successful vendor agrees to protect Gregg County from claims involving infringements of patents and/or copyrights.

53. Contract Administrator: The Contract Administrator will serve as sole liaison between the Gregg County Commissioners Court and affected Gregg County Departments and the successful vendor. Unless directly outlined in this specification the vendor shall consider no one but the Contract Administrator authorized to communicate, by any means, information or suggestions regarding or resembling this bid throughout the proposal process. The Contract Administrator has been designated the responsibility to ensure compliance with contract requirements, such as but not limited to, acceptance, inspection and delivery. The County will not pay for work, equipment or supplies, which it deems unsatisfactory. Vendors will be given a reasonable opportunity to correct deficiencies before termination. This however, shall in no way be construed as negating the basis for termination for non-performance.
54. Packing slips or other suitable shipping documents shall accompany each special order shipment and shall include:
 - (a) Name and address of successful vendor;
 - (b) Name and address of receiving department and/or location;
 - (c) Gregg County Purchase Order number; and,
 - (d) Descriptive information of the materials shipped or services rendered, including item numbers, serial numbers, quantities, number of containers and package numbers, address/location of services rendered, as applicable.
55. Unless otherwise indicated, items will be new, unused, and in first class condition in containers suitable for damage-free shipment and storage.
56. Invoices must show all information as stated above, and will be issued for each purchase order.
57. Equipment/Good/Services supplied under this contract shall be subject to the County's approval. Item(s) found defective or not meeting specifications shall be picked up and replaced by the successful vendor within one (1) week after notification at no expense to the County. If item(s) is not picked up within one (1) week after notification, the item(s) will become a donation to the County for disposition.
58. Warranty: Successful vendor shall warrant that all equipment/goods/services shall conform to the proposed specifications and/or all warranties stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title.
59. Remedies: The successful vendor and Gregg County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.
60. Silence of Specification: The apparent silence of these specifications as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

61. The Contractor shall procure and maintain at its sole cost and expense for the duration of this Agreement insurance against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, volunteers, employees or subcontractors. The Contractor's insurance coverage shall be primary insurance with respect to the County, its officials, employees and volunteers. Any insurance or self-insurance maintained by the County, its officials, employees or volunteers shall be considered in excess of the Contractor's insurance and shall not contribute to it. Further, the Contractor shall include all subcontractors as additional insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein. **All Certificates of Insurance and endorsements shall be furnished to the County's Purchasing Agent and approved by the County before work commences.**
62. ***Standard Insurance Policies Required:***
- a. Commercial General Liability Policy
 - b. Automobile Liability Policy
 - c. Worker's Compensation Policy

General Requirements applicable to all policies:

- a. Only insurance carriers licensed and admitted to do business in the State of Texas will be accepted.
- b. Deductibles shall be listed on the Certificate of Insurance and are acceptable only on a per occurrence basis for property damage only.
- c. "Claims Made" policies will not be accepted.
- d. Each insurance policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to Gregg County.
- e. All insurance policies shall be furnished to Gregg County upon request.

Commercial General Liability

- a. General Liability insurance shall be written by carrier with an A:VIII or better rating in accordance with the current Best Key Rating guide.
- b. Minimum Combined Single Limit of \$1,000,000.00 per occurrence for bodily Injury and property damage with Gregg County named as an additional insured.
- c. No coverage shall be deleted from the standard policy without notification of individual exclusions being attached for review and acceptance.

Automobile Liability

- a. General Liability Insurance shall be written by a carrier with an A:VIII or better rating in accordance with the current Best Key Rating Guide.
- b. Minimum Combined Single Limit of \$600,000.00 per occurrence for bodily injury and property damage.

63. **Workers Compensation Insurance** - Pursuant to the requirements set forth in Title 28, Section 110.110 of the Texas compensation insurance policy; either directly through their employer's policy (the Contractor's or subcontractor's policy) or through an executed coverage agreement on an approved TWCC form. Accordingly, if a subcontractor does not have his or her own policy and a coverage agreement is used, Contractors and subcontractors must use that portion of the form whereby the hiring contractor agrees to provide coverage to the employees of the subcontractor. The portion of the form that would otherwise allow them not to provide coverage for the employees of an independent contractor may not be used.

The worker's compensation insurance shall include the following terms:

- a. Employer's Liability limits of \$500,000.00 for each accident is required.
- b. "Texas Waiver of Our Right to Recover from Others Endorsement" shall be included in this policy. (Waiver of Subrogation)

Pursuant to the explicit terms of Title 28, Section 110.110 (c) (7) of the Texas Administrative Code, the Proposal specifications, this Agreement, and all subcontracts on this Project must include the following terms and conditions in the following language, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

Definitions:

Certificate of coverage ("certificate") - A copy of a certificate of insurance, a certificate of authority to self-insure issued by the Texas Worker's Compensation Commission, or a coverage agreement (TWCC-81), TWCC-83, or TWCC-84), showing statutory worker's compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project - includes the time from the beginning of the work on the project until the Contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractors" in section 406.096 {of the Texas Labor Code}) - includes 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 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 which 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" does not include activities unrelated to the project, such as food/beverage respondents, office supply deliveries, and delivery of portable toilets.

- The Contractor shall provide coverage, based on the proper reporting of

classification codes and payroll amounts and filing of any coverage agreements, that meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all employees of the Contractor providing services on the project, for the duration of the project.

- The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- 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 governmental entity showing that coverage has been extended.
- The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
 - (1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file providing services on the project, and certificates of coverage showing coverage for all person; and
 - (2) no later than seven calendar days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
 - (3) The Contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.

The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the Contractor knew or should have known, or any change that materially affects the provision of coverage of any person providing services on the project.

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.

The Contractor shall contractually require each person with whom it contracts to provide services on a project, to:

- (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreement, that meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all of its employees providing services on the project, for the duration of the project;
- (2) provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;

- (3) provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- (4) obtain from each other person with whom it contracts, and provide to the Contractor:
 - (a) a certificate of coverage, prior to the other person beginning work on the project; and
 - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (6) notify the governmental entity in writing by certified mail or personal delivery, within 10 calendar days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
- (7) Contractually require each person with whom it contracts, to perform as required; with the certificates of coverage to be provided to the person for whom they are providing services.

By signing a contract with Gregg County, or providing, or causing to be provided a certificate of coverage, the Contractor who will provide services on the project will be covered by 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 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.

CERTIFICATES OF INSURANCE shall be prepared and executed by the insurance company or its authorized agent, and shall contain the following provisions and warranties:

- a. The company is licensed and admitted to do business in the State of Texas.
- b. The insurance policies provided by the insurance company are underwritten on forms that have been provided by the Texas State Board of Insurance or ISO.
- c. All endorsements and insurance coverage according to requirements and instructions contained herein.
- d. The form of the notice of cancellation, termination, or change in coverage provisions to Gregg County.
- e. Original endorsements affecting coverage required by the section shall be furnished with the certificates of insurance.

BONDING REQUIREMENTS

If applicable, a Bid Bond shall be required. Pursuant to the provisions of Section 262.032 (a) of the Texas Local Government Code, if the contract contemplated by this request is a bid for the construction of public works, or will be under a contract exceeding \$100,000.00, Gregg County may require the vendor to execute a good and sufficient bid bond in the amount of five percent (5%) of the total contract price. Said bond shall be executed with a surety company authorized to do business in the State of Texas.

If applicable, a Performance Bond shall be required. Pursuant to the provisions of Section 262.032 (b) of the Texas Local Government Code, within thirty (30) days of the date of the signing of a contract or issuance of a purchase order following the acceptance of a bid by Gregg County Commissioners Court and prior to commencement of the actual work, the successful vendor shall furnish a performance bond to Gregg County for the full amount of the contract if the contract exceeds \$50,000.00. Said bond shall be for the purpose of insuring the faithful performance of the work in accordance with the plans, specifications and contract documents associated with the contract.

If applicable, a Payment Bond shall be required. Pursuant to the provisions of Section 2253.021, Texas Government Code, if the amount of the contract awarded to the successful vendor exceeds \$25,000.00, the successful vendor shall execute a payment bond in the amount of the contract. Said bond is solely for the protection and use of payment bond beneficiaries who have a direct contractual relationship with the prime contractor or a subcontractor to supply public work labor or material. This bond must be issued to the County within ten (10) days of the award of the contract and before vendor begins the work.

If applicable, a Performance Bond shall be required. Pursuant to the provisions of Section 2253.021, Texas Government Code, if the amount of the contract awarded to the successful vendor exceeds \$100,000.00, the successful vendor shall execute a performance bond in the amount of the contract. Said performance bond is solely for the protection of Gregg County and is conditioned on the faithful performance of the work in accordance with the plans, specifications, and contract documents. This bond must be issued to the County within ten (10) days of the award of the contract and before the vendor begins the work.

Section 00 10 00
List of Drawings

ARCHITECTURAL SHEETS

G-001	Cover Sheet, Location Map, Sheet Index
A-001	General Notes, Roof Systems
AS-100	Aerial Site Plan
AD-100	Roof Plan (Demolition)
AD-101	Partial Roof Plan (Demolition)
AD-102	Partial Roof Plan (Demolition)
A-100	Roof Plan (New Work)
A-101	Partial Roof Plan (New Work)
A-102	Partial Roof Plan (New Work)
SP-100	LWC Pour Layout Plan
A-500	Details
A-501	Details
A-502	Details
A-503	Details
A-504	Details
A-506	Details
A-507	Details
A-508	Details
A-509	Details
A-510	Details
P-100	Roof Drain Layout

End of Section 00 10 00

Section 00 11 00
Advertisements and Invitations

PART 1: GENERAL

1.1 Project Information

A. Project Location

1. Gregg County Courthouse, 101 E. Methvin, Longview, TX 75601.

B. Project Description

1. Gregg County Courthouse Roofing Project, Phase 1.

C. Owner

1. Gregg County, 101 E. Methvin, Suite 300, Longview, TX 75601.

D. Bid Date and Time

1. Sealed bids for furnishing all labor and materials for the roof replacement at the Gregg County Courthouse will be received from bidders on or before February 24, 2017 at 2:00 p.m., local time. Bids will not be accepted after the deadline.

E. Bid Delivery

1. Deliver bids to:

Kelli Davis, Purchasing Agent
Gregg County
101 E. Methvin, Suite 205
Longview, TX 75601

2. Delivery of Bids is the sole responsibility of the bidder.

1.2 Pre-Bid Conference

- A. A pre-bid conference will be held at the Gregg County Courthouse, 101 E. Methvin, Suite 110, Longview, TX 75601. The pre-bid conference will be held on February 13, 2017 at 1:00 p.m., local time. Attendance is strongly encouraged.

End of Section 00 11 00

Section 00 21 00
Instructions to Bidders

PART 1: GENERAL

- 1.1 Bids may not be withdrawn after the Bid opening for at least thirty (30) days, or until Notice of Award of Contract or Rejection of Bid has been received.
- 1.2 The Owner reserves the right to reject any or all bids, to waive defects, and to waive any or all formalities or irregularities.
- 1.3 Bids not submitted in accordance with the detailed Contract Documents and not upon forms provided for the purpose will be considered irregular and the Owner reserves the right to reject the bids so submitted.
- 1.4 Questions are to be submitted in writing to the Design Professional, not less than five (5) calendar days before the date of the Bid Opening. Responses will be made in writing by Addendum; verbal replies are not binding.
- 1.5 Substitutions
 - A. The contract, if awarded, will be on the basis of materials and equipment described in the bid documents with no substitution. To obtain approval to use unspecified or alternate products, bidder shall submit a written request at least seven (7) calendar days prior to the date established for opening bids to the Design Professional. Requests received after this time will not be considered. Such requests must supply all required information including a detailed and itemized comparison of the proposed substitution and the specified product. The product(s) for which approval is requested must be clearly described, including all data necessary to demonstrate acceptability. Incomplete requests will not be considered. If the proposed substitution is acceptable to the Design Professional, the Design Professional shall confirm such acceptance in a written addendum.
- 1.6 Governing Laws and Regulations
 - A. The Bidder's attention is drawn to the requirements of the Contract Documents for adherence to applicable Federal, State, and local statutes, regulations, and ordinances, including payment and reporting of minimum wages, the Subcontractors Fair Practices Act, and payment of taxes. In evaluating bids, the Owner will apply preference to bids submitted by Texas Certified Resident Contractors.
- 1.7 The Contractor shall provide and pay for the building permit.
- 1.8 The Owner and/or Design Professional reserve the right to issue Addenda at any time prior to the bid opening. All such addenda become, upon issuance, an inseparable part of the contract documents. Each bidder shall include in his bid, the cost of such Addenda, if any, and shall acknowledge receipt in the space provided on the Bid Form.

1.9 Bids must include a properly completed Contractor's Qualification Statement submitted using AIA Document A305. The Owner, at his option, may reject the bid of any Contractor who has not properly filed the Contractor's Qualification Form as stated above. The Owner reserves the right to require any and all bidders to submit any additional statements of previous experience in performing comparable work and as to financial and technical organization and resources available for this work in addition to the Contractor's qualifications.

1.10 Examination

A. Bidders shall thoroughly examine the proposed Contract Documents and visit the construction site as necessary to obtain first-hand knowledge of all proposed work, any existing infrastructure and local site conditions. Contractors will not be entitled to additional compensation or any extension of the contract time for failure to do so. There shall be no allowance for anticipated profits. Owner will provide access as requested. Bidders shall also familiarize themselves with Federal, State, and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the work. Submission of a Bid constitutes a representation by the Bidder that the Bidder has made all appropriate examinations, investigations and test and has made provisions as to the cost thereof in his Bid.

1.11 Interpretations

A. Bidders and subcontractors shall promptly notify the Design Professional of any ambiguity, inconsistency or error regarding the proposed Contract Documents in writing at least five (5) calendar days prior to Bid Opening. If appropriate, the Design Professional will issue a written addendum that shall thereafter be a part of the Bid Documents and proposed Contract Documents. Only written clarifications will be binding. All Bids shall be responsive to and include the provisions of all Addenda issued prior to bid opening.

1.12 Addenda

A. Addenda will be made available to all known bidders of record and will be available for inspection wherever bid documents are on file for that purpose. A complete Plan Holders' List will be maintained by the Design Professional. Generally, addenda are issued no later than four (4) days prior to date established for receipt of bids with the exception of an addendum canceling the project or postponing the bid opening date and time.

B. Design Professional will issue in writing any clarifications or changes to the Contract Documents.

C. Addenda will be distributed to all known bidders.

D. All addenda will become an inseparable part of the Contract Documents.

E. All bids submitted shall acknowledge acceptance of such addenda.

End of Section 00 21 00

Section 00 25 00
Pre-Bid Meeting

1.1 Pre-Bid Conference

- A. A pre-bid conference will be held at the Gregg County Courthouse, 101 E. Methvin, Suite 110, Longview, TX 75601. The pre-bid conference will be held on February 13, 2017 at 1:00 p.m., local time.
- B. Attendance by bidders is strongly encouraged.

End of Section 00 25 00

Section 00 31 00
Project Information

PART 1: GENERAL

1.1 Description of Work

- A. Phase 1 Roof Replacement at Gregg County Courthouse
 - 1. East Annex – Roof Areas Q, R, and S
 - 2. Main Building – Roof Areas D, D1, N, N1, N2, O, and P
- B. Contractor shall provide and pay for the building permit.

1.2 Work by Owner

- A. Owner will award a contract(s) for roof replacement and repair.
- B. Owner will provide site access, electrical power, and water during construction.
- C. Owner will provide electrical disconnects and reconnects as needed.

1.3 Contractor's Use of Premises

- A. Limit use of premises to allow:
 - 1. Owner occupancy.
 - 2. Work by others and work by Owner.
 - 3. Work sequence to allow occupant access.
 - 4. This is a non-smoking project. Use of tobacco is prohibited on the property.

1.4 Progress Schedule

- A. Coordinate scheduling, submittals, and work of various sections of specifications to ensure efficient and orderly sequence of installation with owner.

1.5 Field Engineering

- A. Contractor shall verify field measurements as indicated on project drawings.

1.6 Product Data

- A. Product Data: Duplicate copies.

1. To Owner for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

1.7 Shop Drawings

- A. Shop Drawings: Duplicate copies.

1. To Owner for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

1.8 Samples

- A. Samples for Selection: 1 set.

1. Submit samples of product and finishes from Owner selections.

1.9 Manufacturer's Instructions

- A. Submit manufacturer's printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, in quantities specified for Product Data.

1.10 Manufacturer's Certificates

- A. Submit certification by manufacturer to Owner, in quantities specified for Product Data.

1.11 Tolerances

- A. Comply fully with manufacturer's tolerances.

1.12 Examination

- A. Verify existing substrate surfaces are acceptable for subsequent work. Beginning new work means acceptance of existing conditions.

1.13 Preparation

- A. Clean substrate surfaces prior to installation.

1.14 Protection of Installed Work

- A. Contractor shall protect installed work and provide special protection where specified in individual specification sections.

1.15 Security

- A. Contractor shall provide security to facility to protect work and operations from unauthorized entry, vandalism, or theft.
- B. Contractor provides secure storage for tools and other equipment.

1.16 Products

- A. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by the Contract Documents.

1.17 Delivery, Handling, Storage, and Protection

- A. Deliver, handle, store, and protect Products in accordance with manufacturer's instructions.

1.18 Substitutions

- A. Substitutions to be submitted for prior approval a minimum of seven (7) working days prior to the bid opening.

1.19 Demonstration and Instructions (as applicable)

- A. Demonstrate operation and maintenance of Products to Owner's personnel.

1.20 Protecting Installed Construction

- A. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- B. Protect buildings and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects by protecting with appropriate materials and methods.

1.21 Pre-Construction Conference

- A. A pre-construction conference will be held following Notice of Award.
- B. A pre-construction conference will be held at a time and place fixed by the Design Professional.
- C. The Contractor must be prepared for a thorough discussion and review as well as revisions which may be deemed necessary in the opinion of the Design Professional of the following:
 - 1. Progress Schedules
 - 2. Materials List

3. Product Data
4. Equipment List
5. Job Procedures
6. Contact Persons – Phone Numbers
7. Inspection Procedures
8. Plans and Specifications
9. Shop Drawings
10. Supplemental Drawings
11. Other Matters Pertaining to Performance

End of Section 00 31 00

Section 00 42 00
Bid Form

- 1.1 Bids are to be submitted on the forms provided within the Request for Bids. Fill in all required blanks legibly, in ink or by typed text. Any alteration must be initialed by the individual signing the bid.
- 1.2 Bids shall be signed with the name and title/position of the person or persons authorized to bind the offeror to a contract. All names must be typed or printed below the signature.
- 1.3 Bids by corporations must be executed in the corporate name by the President or Vice President (or other corporate officer accompanied by evidence of authority to sign). The corporate address and state of incorporation must be shown on the bid.
- 1.4 Bids by partnerships must be executed in the partnership name and signed by a partner. The title must appear under the signature and the official address of the partnership must be shown below the signature.
- 1.5 By submitting a bid, each offeror acknowledges his understanding of these instructions and his willingness to comply with the requirements of the Bid and Contract Documents. If a bid is accepted by the Owner, said offeror shall execute all necessary agreements and provide the required documents within the specified period after the Notice of Award, subject to forfeiture of his Bid Security if such is not timely done. Offeror further acknowledges his understanding of the Payment/Performance Bond and insurance requirements called for in the Project Documents. Unless otherwise specified, forms such as "Notice to Proceed", "Notice of Award", "Agent's Affidavit", "Certificate of Substantial Completion", and similar which may be used during the life of the contract may be on AIA documents, or any other standard form acceptable to the parties.
- 1.6 Qualification of Offeror
 - A. The Owner intends to award this Project in accordance with the Request for Bids.
 - B. Owner may make such investigations as necessary to determine the ability of the offeror to perform the work, and the offeror shall furnish to the Owner all such information and data for this purpose as Owner may request including but not limited to proof of financial resources, production or service facilities, personnel and experience adequate to complete the project. Owner reserves the right to reject any bid if the evidence submitted by, or investigation of, such offeror fails to satisfy the Owner that such offeror is qualified to carry out the obligations of the Contract and to complete the work described therein. Offeror shall also construe this provision to incorporate any necessary investigation and/or monitoring during the life of the Contract to enforce any current policy of the Owner such as, but not limited to, no smoking or alcoholic beverages on Owner's property. As a general rule, any such regulation or law applying to Owner's personnel shall be deemed to be in force for Contractor's work force occupying any work site.
- 1.7 Plan Checking Fees, Permits, Other Charges

- A. Include as part of the bid any Plan Checking Fee as charged by any applicable entity or agency with jurisdiction over the project for checking Contract Documents prior to obtaining a building permit. Include in the bid all costs incurred for permits relating to this scope of work. Additionally, Owner does not pay for business licenses, professional affiliations and similar costs of doing business which are the Contractor's obligation to secure and maintain. The cost of all bonding will be paid by the Contractor and will not be paid by Owner. Contractor is responsible for obtaining and paying all fees associated with required building permit. Include these costs in your bid.

1.8 Prevailing Wage Rates

- A. It is the Contractor's responsibility to acquaint himself with and comply with State Regulations regarding payment of wages on public projects. Compliance is a part of this Bid. The Contractor shall pay all persons employed on the site of the project in compliance with all federal, state, and local laws.
- B. In the event it is found that any person employed by the Contractor or subcontractor on the site of a project covered by this Contract has been or is being paid, as a result of a violation, a rate of wages less than the rate of wages required by the Contract, Owner may, by written notice to the Contractor and his subcontractor (if the violation involves a subcontractor) terminate their right to proceed with the work, or such part of the work as to which there has been a willful failure to pay the required wages. Owner may prosecute the work to completion by Contract or otherwise, and the Contractor and his sureties shall be liable for any excess cost occasioned thereby.

1.9 Multiple Project Sites

- A. If this project includes separate facilities; the successful Contractor shall break down the bid into each respective site. In addition, the Contractor shall provide general conditions for each site including safety precautions and job superintendent. The Contractor shall submit separate pay applications for each individual site.

1.10 Commencement Date/Substantial Completion Date

1. The Commencement Date will not be later than fifteen (15) days after award and will be established by a Notice to Proceed. The allowed duration for construction will be: Phase 1 – Ninety (90) calendar days
2. If the Offeror fails to begin or complete work within this specified time period, liquidated damages will apply. Refer to Section 00 73 00 for additional information regarding liquidated damages.

End of Section 00 42 00

MANDATORY REQUIREMENTS CHECKLIST
GREGG COUNTY COURTHOUSE
ROOFING PROJECT – PHASE 1
BID #2017-703

OFFEROR: _____ DATE _____

Yes / No	<p>BID & QUALIFICATIONS (SEALED IN AN ENVELOPE)</p> <ol style="list-style-type: none"> 1) Certification of Eligibility, Refer to Section 00 42 00 – Attachment #2 2) Bid Signature Form, Refer to Section 00 42 00 – Attachment #2 3) Conflict of Interest Form, Refer to Section 00 42 00 – Attachment #2 4) Bid Form, Refer to Section 00 42 00 – Attachment #3 5) AIA A305 – Contractor’s Qualification Statement, Refer to Section 00 42 00 – Attachment #4 6) Contractor’s Qualification Affidavit, Refer to Section 00 42 00 – Attachment #5 7) Subcontractor Listing, Refer to Section 00 42 00 – Attachment #5 8) Anti-Trust Form, Refer to Section 00 42 00 – Attachment #6 9) Bid Bond 10) Completed W-9 Form 11) Sample Certificate of Insurance <p>Submit one (1) original hard copy, one (1) duplicate hard copy, and one (1) digital copy in PDF format on a CD or flash drive. All copies shall be in a sealed envelope.</p>
Yes / No	Acknowledge receipt of any and all amendments to this Request for Bids.

CERTIFICATION OF ELIGIBILITY

By submitting a bid or Bid in response to this solicitation, the bidder/proposer certifies that at the time of submission, he/she is ***not*** on the Federal Government's list of suspended, ineligible, or debarred contractors.

In the event of placement on the list between the time of bid/Bid submission and time of award, the bidder/proposer will notify the Gregg County Purchasing Agent. Failure to do so may result in terminating this contract for default.

Signature: _____ **Date:** _____

Printed Name: _____

BID SIGNATURE FORM

The undersigned agrees this bid becomes the property of Gregg County after the official opening.

The undersigned affirms he has familiarized himself with the local conditions under which the work is to be performed; satisfied himself/herself of the conditions of delivery, handling and storage of equipment and all other matters which may be incidental to the work, before submitting a bid.

The undersigned agrees if this bid is accepted, to furnish any and all items/services upon which prices are offered, at the price(s) and upon the terms and conditions contained in the Specifications. The period for acceptance of this Bid will be ninety (90) calendar days unless a different period is noted by the bidder.

The undersigned affirms that they are duly authorized to execute this contract, that this bid has not been prepared in collusion with any other Bidder, nor any employee of Gregg County, and that the contents of this bid have not been communicated to any other bidder or to any employee of Gregg County prior to the official opening of this bid.

Vendor hereby assigns to purchase 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.

The undersigned affirms that they have read and do understand the specifications and any attachments contained in this bid package. ***Failure to sign and return this form will result in the rejection of the entire bid.***

Signature _____ **X**

Company Name		
Address		
City/State/Zip Code		
Phone:	Office:	Fax:
	Cell:	Email:
Print Name		
Job Title		

To: Vendors of Gregg County, Texas
From: Kelli L. Davis, CPPB, Purchasing Agent
Re: ***Conflict of Interest Form (CIQ)***

Vendor;

Attached, please find link below to a Conflict of Interest Questionnaire. Please complete this form if you have a conflict of interest with any Gregg County Official, Employee, or Department. The questionnaire should reflect the name of the individual with whom the conflict of interest occurs. If you have any questions regarding compliance with Chapter 176 of the Texas Local Government Code, please consult your legal representative. Compliance is the responsibility of each individual, business, agent or representative who is subject to the law's filing requirements.

<http://www.ethics.state.tx.us/forms/CIQ.pdf>

Original completed forms should be filed with the County Clerk's Office and a copy sent to the Gregg County Purchasing Department either through bid return, fax, or email. Please see contact information below.

Gregg County Clerk
Gregg County Courthouse
101 East Methvin, St. 200
Longview, Texas 75601
Ph; 903-236-8430

Gregg County Purchasing Department
Email: purchasing@co.gregg.tx.us
Ph: 903-237-2684
Fx: 903-237-2682

Applicable Law

Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the records administrator of Gregg County (County Clerk) no later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Texas Local Government Code.

Certificate of Interested Parties (Form 1295)

In 2015, the Texas Legislature adopted House Bill 1295, which added Section 2252.908 of the Government Code. The law states that a government entity may not enter into certain contracts with a business entity unless the business entity submits a disclosure of interested parties to the government entity. The disclosure of interested parties will be submitted online via Form 1295 and must be submitted to the governmental entity prior to any signed contract and/or vote by the governing authority.

The Filing Process:

- 1.** Prior to award by Commissioners Court, your firm will be required to log in to the Texas Ethics Commission, https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm and fill out the Electronic Filing Application.
- 2.** Once submitted, the system will generate an electronic Form 1295 displaying a “Certificate Number.” Your firm must print, sign and notarize Form 1295.
- 3. Within ten (10) business days** from notification of pending award by the Gregg County Purchasing Agent, the completed Form 1295 **must** be submitted to Gregg County.
- 4.** Your firm will need to repeat this process and obtain a separate Form 1295 each time you enter into a new contract, renew a contract or make modification and/or amendments to a Gregg County contract.

Instructions and information are available at <https://www/ethics.state.tx.us/tec/1295-Info.htm> or you may call the Texas Ethics Commission at (512) 463-5800.

(Contractor's Letterhead)

COMPETITIVE SEALED BID FORM FOR
GREGG COUNTY COURTHOUSE
ROOFING PROJECT – PHASE 1
LONGVIEW, TEXAS

BID #2017-703

The undersigned, has carefully examined the Request for Bids, 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 Crenshaw Consulting Group, LLC. 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:

AREA	SQ FT	CALENDAR DAYS FOR COMPLETION	COST
East Annex <i>Areas Q, R, and S</i>			\$
Main Building <i>Areas D, D1, N, N1, N2, O, & P</i>			\$
Subtotal			\$
Owner's Contingency			\$ 25,000.00
TOTAL			\$

Option 1

Area D – Leave existing antenna and guy wires on roof and flash per Details 2/A500 and 9/A501. (_____)
(Deduct)

Acknowledge Addendums

Addendum Number

Dated

Unit Prices

Wood Nailers 1 x 2 \$ _____ /lin. Ft.

Wood Nailers 2 x 4 \$ _____ /lin. Ft.

Wood Nailers 2 x 6 \$ _____ /lin. Ft.

Wood Nailers 2 x 8 \$ _____ /lin. Ft.

Wood Nailers	2 x 10	\$ _____/lin. Ft.
Wood Nailers	2 x 12	\$ _____/lin. Ft.
Gypsum Deck Repair/Replacement		\$ _____/sq. Ft
Plywood	5/8"	\$ _____/sq. Ft

If the undersigned is notified of their acceptance of this bid within sixty (60) days after delivery of this Bid, they agree and pledge to be substantially complete on the entire work on or before the dated scheduled in the Project Manual. If the work is not complete by the stipulated date, the Contractor and/or their Surety shall be liable for and shall pay to the Owner for each calendar day of delay beyond the scheduled dates until the work is substantially completed the amount stipulated in the contract documents.

Subcontractors: The base bid is predicated on the acceptance of the subcontractors by the Design Professional and the Owner. A list of the proposed subcontractors is to be provided with this bid.

Bid Guarantee: The undersigned furnishes herewith the bid guarantee in the amount of 5% of the total base bid amount and attaches it to this bid. This bid guarantee warrants that the undersigned will not withdraw his bid for the period of sixty (60) days after the scheduled closing time for the receipt of bids, and if this bid is accepted, the undersigned will enter into a formal contract (prepared by the owner) and that the required 100% performance bond and the 100% payment bond will be provided to the Owner. In the event of the withdrawal of this bid within the period stipulated above, of failure of the undersigned to enter into a contract or provide the required bonds within ten (10) days after the undersigned has received notice of the acceptance of this bid the undersigned shall be liable to the Owner the full amount of the bid guarantee.

It is understood that the Owner reserves the right to accept or reject any and all bids and to waive all informalities. It is further agreed that this bid shall be valid for a period of sixty (60) days from the date of opening thereof.

Respectfully submitted,

By _____

Signature _____

Seal if bid is by a Corporation

Title _____

Business Address _____

Date _____



AIA[®] Document A305[™] – 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- Corporation
- Partnership
- Individual
- Joint Venture
- Other

NAME OF PROJECT: *(if applicable)*

TYPE OF WORK: *(file separate form for each Classification of Work)*

- General Construction
- HVAC
- Electrical
- Plumbing
- Other: *(Specify)*

§ 1 ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

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

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

§ 1.3.1 Date of incorporation:

§ 1.3.2 State of incorporation:

§ 1.3.3 President's name:

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.

§ 1.3.4 Vice-president's name(s)

§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership (if applicable):

§ 1.4.3 Name(s) of general partner(s)

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2 LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3 EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

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

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

§ 3.4.1 State total worth of work in progress and under contract:

§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

§ 3.5.1 State average annual amount of construction work performed during the past five years:

§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.

§ 4 REFERENCES

§ 4.1 Trade References:

§ 4.2 Bank References:

§ 4.3 Surety:

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5 FINANCING

§ 5.1 Financial Statement.

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof.

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

§ 6 SIGNATURE

§ 6.1 Dated at this day of

Name of Organization:

By:

Title:

§ 6.2

M being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this day of

Notary Public:

My Commission Expires:

CONTRACTOR'S QUALIFICATION AFFIDAVIT
(TO BE SUBMITTED WITH YOUR PROPOSAL)

Contractor's Name: _____

1. WORKERS COMP CERTIFICATION

- a. Contact for your Workers' Comp Insurance Agent
 - i. NAME _____
 - ii. PHONE _____
 - iii. EMAIL _____
- b. Approximately annual sales volume _____
- c. Total number of workers classified under workers' comp classification "5551" _____
- d. Current EMR (Experience Modification Rate) _____

2. OTHER INSURANCE CERTIFICATION

- a. Contact for your Insurance Agent if different from #1
 - i. NAME _____
 - ii. PHONE _____
 - iii. EMAIL _____
- b. Commercial Auto Policy Limit _____
- c. General Liability Policy Limit _____
- d. Umbrella Liability Policy Limit _____

3. SUBCONTRACTING STATEMENT

- a. Will any of the work be subcontracted to another firm Yes or No? _____
- b. If Yes, Please state why _____

- c. If Yes, please answer question #1 and #2 for this firm(s) on a separate page

4. MANUFACTURER CERTIFICATION

- a. Are you certified by the manufacturer to install and perform warranty repairs to the roof system you are bidding Yes or No? _____
- b. Please include a letter from manufacturer's representative to confirm that you are certified to install and perform warranty repairs to the roof system you are bidding.

5. PAYMENT AND PERFORMANCE BONDING CAPACITY

- a. State your current Payment and Performance Bonding Capacity
 - i. Single Project_____
 - ii. Aggregate_____
- b. Contact for your Bonding Agent
 - i. NAME_____
 - ii. PHONE_____
 - iii. EMAIL_____

6. PROFESSIONAL REFERENCES

- a. Provide professional references for a project similar to this one
 - i. NAME_____ PHONE_____ EMAIL_____
 - ii. NAME_____ PHONE_____ EMAIL_____
 - iii. NAME_____ PHONE_____ EMAIL_____

7. INSPECTION OF PLACE OF BUSINESS

- a. If requested may a company representative perform site visit to your place of business to inspect equipment and verify capabilities, Yes or No?_____
- b. If No, Please state why_____
- c. Physical Address_____

8. YEARS IN BUSINESS

- a. Please state the number of years your firm has operated under its current incorporation (legal entity)_____
- b. Please state any other names your firm has operated under_____

This Affidavit has been executed on the _____ of _____, _____
DAY MONTH YEAR

Company Name_____

By _____

Printed Name _____

Title _____

SUBSCRIBED AND SWORN TO BEFORE ME by _____ of
_____ on this the _____ of _____, _____ to certify
 DAY MONTH YEAR
which witness my hand and seal of office.

Notary Public in and for the State of _____

My commission
expires _____

SUBCONTRACTOR LISTING

TYPE OF WORK	NAME	CITY & STATE*	LICENSE*	PHONE NO.*
CRANE	_____	_____	_____	_____
ELECTRICAL	_____	_____	_____	_____
CARPENTRY	_____	_____	_____	_____
HVAC	_____	_____	_____	_____
INSULATION	_____	_____	_____	_____
LWIC	_____	_____	_____	_____
MASONRY	_____	_____	_____	_____
PAINTING	_____	_____	_____	_____
PLASTER	_____	_____	_____	_____
PLUMBING	_____	_____	_____	_____
ROOFING	_____	_____	_____	_____
OTHER	_____	_____	_____	_____
OTHER	_____	_____	_____	_____

**The Subcontractor Listing should be as complete as possible. As a minimum, name, address, county, and type of work must be shown. Remaining information may be provided as soon as practicable prior to award.*

Antitrust Certification Statement (Tex. Government Code § 2155.005)

I affirm under penalty of perjury of the laws of the State of Texas that:

(1) I am duly authorized to execute this contract on my own behalf or on behalf of the company, corporation, firm, partnership or individual (Company) listed below;

(2) In connection with this bid, neither I nor any representative of the Company have violated any provision of the Texas Free Enterprise and Antitrust Act, Tex. Bus. & Comm. Code Chapter 15;

(3) In connection with this bid, neither I nor any representative of the Company have violated any federal antitrust law; and

(4) Neither I nor any representative of the Company have directly or indirectly communicated any of the contents of this bid to a competitor of the Company or any other company, corporation, firm, partnership or individual engaged in the same line of business as the Company.

<p>Vendor _____ _____ _____</p> <p>Address _____ _____ _____</p> <p>Phone _____</p> <p>Fax _____</p>	<p>Bidder _____ Signature</p> <p>_____</p> <p>Printed Name</p> <p>_____</p> <p>Position with Company</p> <p>Official Authorizing Bid _____</p> <p>Signature</p> <p>_____</p> <p>Printed Name</p> <p>_____</p> <p>Position with Company</p>
--	---

Section 00 45 13
Prequalification

PART 1: GENERAL

- 1.1 The Contractor represents to the Owner that the Contractor:
- A. Is financially solvent, able to pay debts, and has sufficient working capital to complete the Work;
 - B. Is able to furnish the plant, tools, materials, supplies, equipment, skilled labor and sufficient experience and competence required to complete the Work equal to or exceeding industry standards;
 - C. Shall, prior to bid, be properly licensed, if applicable, and ensures to the Owner that such license shall remain in effect for the duration of the Work and warranty periods that the Contractor is authorized and properly licensed and/or registered to do business in the State of Texas and in the locale where the Work is located;
 - D. Execution of the agreement and performance thereof is within the Contractor's duly authorized powers; and
 - E. Or assigns have visited the site of Work and has become familiar with the conditions under which the Work is to be performed, obtained all available information and have correlated observations and acquired information with the requirements of the Contract Documents including conditions:
 - 1. Bearing upon access to the site, accommodations required, transportation, disposal, handling and storage;
 - 2. Affecting availability of labor, materials, equipment, water, electricity, utilities and roads;
 - 3. Such as weather and flooding;
 - 4. Related to the apparent form and nature of the Work site including the site conditions.
 - 5. That in general would be deemed by a prudent contractor to be material to the Work as to assess risk, contingencies and other circumstances.
 - F. Has completed prior contracts with diligent and continuous effort and has been responsive to post-occupancy corrections.

PART 2: DEBARRED OR SUSPENDED CONTRACTORS

A business (contractor, subcontractor, or supplier) that has either been debarred or suspended from doing business in the State of Texas or with Gregg County shall not be permitted to do business with the Owner and shall not be considered for award of contract during the period for which it is debarred or suspended.

End of Section 00 45 13

Section 00 46 00
Supplemental Information

PART 1: GENERAL

1.1 Asbestos Considerations

- A. The Contractor, Subcontractors, and Materials Suppliers will to the best of their abilities, provide and install materials that are *ASBESTOS-FREE*. Any material violating AHERA regulations must be removed by a licensed asbestos abatement Contractor and replaced with non-asbestos containing equal(s) at no cost to the Owner. The area where such work is conducted will be returned to its substantially complete condition. Such replacement action will be in effect for the period of construction and continue through the entire warranty year.

End of Section 00 46 00

Section 00 51 00
Notice of Award

1.1 Notice of Award

- A. The Owner shall be the sole judge as to the responsibility of the Offeror to satisfactorily perform the work as specified within the time limit set.
- B. Upon failure of the Contractor to enter a contract and to submit required documentation listed within the Contract Documents, within fifteen (15) days after receiving Notice of Award, the bid security shall be forfeited to the Owner, be made to the next qualified offeror, or the work may be re-advertised, or may be constructed by the Owner, in any legal manner.
- C. A Notice of Award will be forwarded by the Design Professional on behalf of the Owner to the successful Contractor.
- D. Notice of Award will be accompanied by the Owner/Contractor Agreement to be signed by the Contractor and returned to the Owner's Representative or Design Professional within fifteen (15) days of receipt.
- E. Notice of Award will state the date of the pre-construction conference to be held between the Owner's Representative, the Design Professional, and the Contractor.

End of Section 00 51 00

Section 00 52 00
Agreement Forms

PART 1: GENERAL

1.1 Contract and General Conditions.

- A. A sample of the AIA Contract and applicable General Conditions that will be used for this project follow this section.
- B. Within AIA documents, all references to "Architect" shall be replaced with "Design Professional".

End of Section 00 52 00

DRAFT AIA® Document A107™ - 2007

Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

« »
« »
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

«Sample»
« »
« »

The Architect:
(Name, legal status, address and other information)

« »
« »
« »
« »

The Owner and Contractor agree as follows.

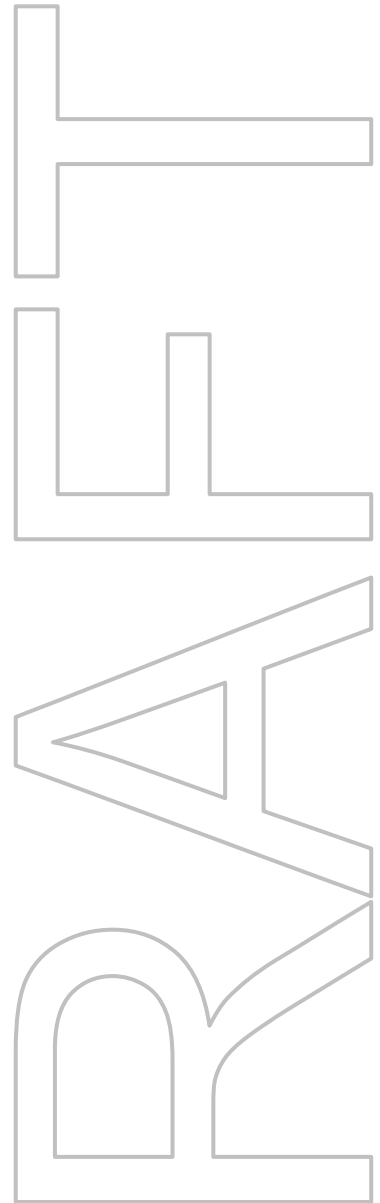
ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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TABLE OF ARTICLES

1 THE WORK OF THIS CONTRACT
2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
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19 MISCELLANEOUS PROVISIONS
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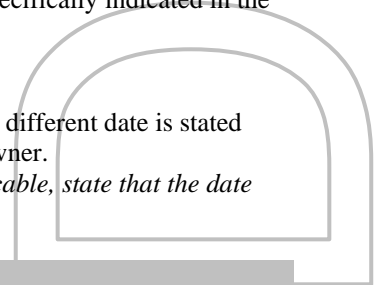


ARTICLE 1 THE WORK OF THIS CONTRACT

The Contractor shall execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)



<< >>

§ 2.2 The Contract Time shall be measured from the date of commencement.

§ 2.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows:

(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

ARTICLE 3 CONTRACT SUM

§ 3.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

Stipulated Sum, in accordance with Section 3.2 below

Cost of the Work plus the Contractor's Fee, in accordance with Section 3.3 below

Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 3.4 below

(Based on the selection above, complete Section 3.2, 3.3 or 3.4 below.)

§ 3.2 The Stipulated Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 3.2.1 The Stipulated Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.2.2 Unit prices, if any:

(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

Item

Units and Limitations

Price Per Unit (\$0.00)

§ 3.2.3 Allowances included in the stipulated sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item

Allowance

§ 3.3 COST OF THE WORK PLUS CONTRACTOR'S FEE

§ 3.3.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.3.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

<< >>

§ 3.4 COST OF THE WORK PLUS CONTRACTOR'S FEE WITH A GUARANTEED MAXIMUM PRICE

§ 3.4.1 The Cost of the Work is as defined in Exhibit A, Determination of the Cost of the Work.

§ 3.4.2 The Contractor's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee and the method of adjustment to the Fee for changes in the Work.)

<< >>

§ 3.4.3 GUARANTEED MAXIMUM PRICE

§ 3.4.3.1 The sum of the Cost of the Work and the Contractor's Fee is guaranteed by the Contractor not to exceed << >> (\$ << >>), subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

(Insert specific provisions if the Contractor is to participate in any savings.)

<< >>

§ 3.4.3.2 The Guaranteed Maximum Price is based on the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

<< >>

§ 3.4.3.3 Unit Prices, if any:

(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price Per Unit (\$0.00)

§ 3.4.3.4 Allowances included in the Guaranteed Maximum Price, if any:

(Identify and state the amounts of any allowances, and state whether they include labor, materials, or both.)

Item	Allowance

§ 3.4.3.5 Assumptions, if any, on which the Guaranteed Maximum Price is based:

<< >>

ARTICLE 4 PAYMENTS

§ 4.1 PROGRESS PAYMENTS

§ 4.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 4.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

<< >>

§ 4.1.3 Provided that an Application for Payment is received by the Architect not later than the <> day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the <> day of the <> month. If an Application for Payment is received by the Architect after the date fixed above, payment shall be made by the Owner not later than <> (<>) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 4.1.4 Retainage, if any, shall be withheld as follows:

<< >>

§ 4.1.5 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

<> % <>

§ 4.2 FINAL PAYMENT

§ 4.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 18.2, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 the contractor has submitted a final accounting for the Cost of the Work, where payment is on the basis of the Cost of the Work with or without a guaranteed maximum price; and
- .3 a final Certificate for Payment has been issued by the Architect.

§ 4.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

<< >>

ARTICLE 5 DISPUTE RESOLUTION

§ 5.1 BINDING DISPUTE RESOLUTION

For any claim subject to, but not resolved by, mediation pursuant to Section 21.3, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved in a court of competent jurisdiction.)

[<>] Arbitration pursuant to Section 21.4 of this Agreement

[<>] Litigation in a court of competent jurisdiction

[<>] Other *(Specify)*

<>

ARTICLE 6 ENUMERATION OF CONTRACT DOCUMENTS

§ 6.1 The Contract Documents are defined in Article 7 and, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 6.1.1 The Agreement is this executed AIA Document A107-2007, Standard Form of Agreement Between Owner and Contractor for a Project of Limited Scope.

§ 6.1.2 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 6.1.3 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

<< >>

Section	Title	Date	Pages

§ 6.1.4 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

<< >>

Number	Title	Date

§ 6.1.5 The Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are enumerated in this Article 6.

§ 6.1.6 Additional documents, if any, forming part of the Contract Documents:

- .1 Exhibit A, Determination of the Cost of the Work, if applicable.
- .2 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed, or the following:

<< >>

- .3 Other documents:

(List here any additional documents that are intended to form part of the Contract Documents.)

<< >>

ARTICLE 7 GENERAL PROVISIONS

§ 7.1 THE CONTRACT DOCUMENTS

The Contract Documents are enumerated in Article 6 and consist of this Agreement (including, if applicable, Supplementary and other Conditions of the Contract), Drawings, Specifications, Addenda issued prior to the execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 7.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be

construed to create a contractual relationship of any kind between any persons or entities other than the Owner and the Contractor.

§ 7.3 THE WORK

The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

§ 7.4 INSTRUMENTS OF SERVICE

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect’s consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 7.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 7.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

§ 7.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

§ 7.6 TRANSMISSION OF DATA IN DIGITAL FORM

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmission, unless otherwise provided in the Agreement or in the Contract Documents.

ARTICLE 8 OWNER

§ 8.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 8.1.1 The Owner shall furnish all necessary surveys and a legal description of the site.

§ 8.1.2 The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 8.1.3 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 9.6.1, the Owner shall secure and pay for other necessary approvals, easements, assessments and charges required for the construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 8.2 OWNER’S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents, or repeatedly fails to carry out the Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order is eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity.

§ 8.3 OWNER’S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner, without prejudice to any other remedy the Owner may

have, may correct such deficiencies and may deduct the reasonable cost thereof, including Owner's expenses and compensation for the Architect's services made necessary thereby, from the payment then or thereafter due the Contractor.

ARTICLE 9 CONTRACTOR

§ 9.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 9.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 9.1.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 8.1.1, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies, or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents.

§ 9.1.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 9.2 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 9.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters.

§ 9.2.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

§ 9.3 LABOR AND MATERIALS

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

§ 9.3.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 9.3.3 The Contractor may make a substitution only with the consent of the Owner, after evaluation by the Architect and in accordance with a Modification.

§ 9.4 WARRANTY

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation or normal wear and tear under normal usage.

§ 9.5 TAXES

The Contractor shall pay sales, consumer, use and other similar taxes that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 9.6 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 9.6.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as other permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 9.6.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 9.7 ALLOWANCES

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. The Owner shall select materials and equipment under allowances with reasonable promptness. Allowance amounts shall include the costs to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts. Allowance amounts shall not include the Contractor's costs for unloading and handling at the site, labor, installation, overhead, and profit.

§ 9.8 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 9.8.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 9.8.2 The Contractor shall perform the Work in general accordance with the most recent schedule submitted to the Owner and Architect.

§ 9.9 SUBMITTALS

§ 9.9.1 The Contractor shall review for compliance with the Contract Documents and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in coordination with the Contractor's construction schedule and in such sequence as to allow the Architect reasonable time for review. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them; (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so; and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents. The Work shall be in accordance with approved submittals.

§ 9.9.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 9.10 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 9.11 CUTTING AND PATCHING

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 9.12 CLEANING UP

The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus material from and about the Project.

§ 9.13 ROYALTIES, PATENTS AND COPYRIGHTS

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 9.14 ACCESS TO WORK

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 9.15 INDEMNIFICATION

§ 9.15.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.15.1.

§ 9.15.2 In claims against any person or entity indemnified under this Section 9.15 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 9.15.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 10 ARCHITECT

§ 10.1 The Architect will provide administration of the Contract and will be an Owner's representative during construction, until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 10.2 The Architect will visit the site at intervals appropriate to the stage of the construction to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general, if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 10.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or

charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 10.4 Based on the Architect's evaluations of the Work and of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 10.5 The Architect has authority to reject Work that does not conform to the Contract Documents and to require inspection or testing of the Work.

§ 10.6 The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 10.7 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect will make initial decisions on all claims, disputes and other matters in question between the Owner and Contractor but will not be liable for results of any interpretations or decisions rendered in good faith.

§ 10.8 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 10.9 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

ARTICLE 11 SUBCONTRACTORS

§ 11.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site.

§ 11.2 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of the Subcontractors or suppliers for each of the principal portions of the Work. The Contractor shall not contract with any Subcontractor or supplier to whom the Owner or Architect has made reasonable written objection within ten days after receipt of the Contractor's list of Subcontractors and suppliers. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 11.3 Contracts between the Contractor and Subcontractors shall (1) require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by the Contract Documents, assumes toward the Owner and Architect, and (2) allow the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Contract Documents, has against the Owner.

ARTICLE 12 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 12.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under conditions of the contract identical or substantially similar to these, including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such claim as provided in Article 21.

§ 12.2 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's activities with theirs as required by the Contract Documents.

§ 12.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

ARTICLE 13 CHANGES IN THE WORK

§ 13.1 By appropriate Modification, changes in the Work may be accomplished after execution of the Contract. The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, with the Contract Sum and Contract Time being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Owner, Contractor and Architect, or by written Construction Change Directive signed by the Owner and Architect.

§ 13.2 Adjustments in the Contract Sum and Contract Time resulting from a change in the Work shall be determined by mutual agreement of the parties or, in the case of a Construction Change Directive signed only by the Owner and Architect, by the Contractor's cost of labor, material, equipment, and reasonable overhead and profit, unless the parties agree on another method for determining the cost or credit. Pending final determination of the total cost of a Construction Change Directive, the Contractor may request payment for Work completed pursuant to the Construction Change Directive. The Architect will make an interim determination of the amount of payment due for purposes of certifying the Contractor's monthly Application for Payment. When the Owner and Contractor agree on adjustments to the Contract Sum and Contract Time arising from a Construction Change Directive, the Architect will prepare a Change Order.

§ 13.3 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

§ 13.4 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be equitably adjusted as mutually agreed between the Owner and Contractor; provided that the Contractor provides notice to the Owner and Architect promptly and before conditions are disturbed.

ARTICLE 14 TIME

§ 14.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 14.2 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 14.3 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 14.4 The date of Substantial Completion is the date certified by the Architect in accordance with Section 15.4.3.

§ 14.5 If the Contractor is delayed at any time in the commencement or progress of the Work by changes ordered in the Work, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions not reasonably anticipatable, unavoidable casualties or any causes beyond the Contractor's control, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine, subject to the provisions of Article 21.

ARTICLE 15 PAYMENTS AND COMPLETION

§ 15.1 APPLICATIONS FOR PAYMENT

§ 15.1.1 Where the Contract is based on a Stipulated Sum or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values, allocating the entire Contract Sum to the various portions of the Work, prepared in such form and supported by such

data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used in reviewing the Contractor's Applications for Payment.

§ 15.1.2 With each Application for Payment where the Contract Sum is based upon the Cost of the Work, or the Cost of the Work with a Guaranteed Maximum Price, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner to demonstrate that cash disbursements already made by the Contractor on account of the Cost of the Work equal or exceed (1) progress payments already received by the Contractor, less (2) that portion of those payments attributable to the Contractor's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

§ 15.1.3 Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 15.1.4 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests.

§ 15.2 CERTIFICATES FOR PAYMENT

§ 15.2.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 15.2.3.

§ 15.2.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluations of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 15.2.3 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 15.2.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 15.2.1. If the Contractor and the Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 9.2.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;

- .6 reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 15.2.4 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 15.3 PROGRESS PAYMENTS

§ 15.3.1 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-subcontractors in similar manner.

§ 15.3.2 Neither the Owner nor Architect shall have an obligation to pay or see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 15.3.3 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 15.4 SUBSTANTIAL COMPLETION

§ 15.4.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 15.4.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 15.4.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. When the Architect determines that the Work or designated portion thereof is substantially complete, the Architect will issue a Certificate of Substantial Completion which shall establish the date of Substantial Completion, establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 15.4.4 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 15.5 FINAL COMPLETION AND FINAL PAYMENT

§ 15.5.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions stated in Section 15.5.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 15.5.2 Final payment shall not become due until the Contractor has delivered to the Owner a complete release of all liens arising out of this Contract or receipts in full covering all labor, materials and equipment for which a lien could

be filed, or a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including costs and reasonable attorneys' fees.

§ 15.5.3 The making of final payment shall constitute a waiver of claims by the Owner except those arising from

- .1 liens, claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 15.5.4 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 16 PROTECTION OF PERSONS AND PROPERTY

§ 16.1 SAFETY PRECAUTIONS AND PROGRAMS

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury or loss. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, a Subcontractor, a sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 16.1.2 and 16.1.3, except for damage or loss attributable to acts or omissions of the Owner or Architect or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 9.15.

§ 16.2 HAZARDOUS MATERIALS

§ 16.2.1 The Contractor is responsible for compliance with the requirements of the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents, and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shutdown, delay and start-up.

§ 16.2.2 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area, if in fact, the material or substance presents the risk of bodily injury or death as described in Section 16.2.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 16.2.3 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

ARTICLE 17 INSURANCE AND BONDS

§ 17.1 The Contractor shall purchase from, and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, insurance for protection from claims under workers' compensation acts and other employee benefit acts which are applicable, claims for damages because of bodily injury, including death, and claims for damages, other than to the Work itself, to property which may arise out of or result from the Contractor's operations and completed operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or anyone directly or indirectly employed by any of them. This insurance shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater, and shall include contractual liability insurance applicable to the Contractor's obligations under Section 9.15. Certificates of Insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. The Contractor shall cause the commercial liability coverage required by the Contract Documents to include: (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 17.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 17.3 PROPERTY INSURANCE

§ 17.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance on an "all-risk" or equivalent policy form, including builder's risk, in the amount of the initial Contract Sum, plus the value of subsequent modifications and cost of materials supplied and installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 15.5 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 17.3.1 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and sub-subcontractors in the Project.

§ 17.3.2 The Owner shall file a copy of each policy with the Contractor before an exposure to loss may occur. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 17.3.3 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 12, if any, and any of their subcontractors, sub-subcontractors, agents and employees for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to Section 17.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 12, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 17.3.4 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause. The Contractor shall pay Subcontractors their just shares of insurance proceeds

received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their sub-subcontractors in similar manner.

§ 17.4 PERFORMANCE BOND AND PAYMENT BOND

§ 17.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 17.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 18 CORRECTION OF WORK

§ 18.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense, unless compensable under Section A.2.7.3 in Exhibit A, Determination of the Cost of the Work.

§ 18.2 In addition to the Contractor's obligations under Section 9.4, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 15.4.3, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty.

§ 18.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 8.3.

§ 18.4 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 18.5 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Article 18.

ARTICLE 19 MISCELLANEOUS PROVISIONS

§ 19.1 ASSIGNMENT OF CONTRACT

Neither party to the Contract shall assign the Contract without written consent of the other, except that the Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 19.2 GOVERNING LAW

The Contract shall be governed by the law of the place where the Project is located, except, that if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 21.4.

§ 19.3 TESTS AND INSPECTIONS

Tests, inspections and approvals of portions of the Work required by the Contract Documents or by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public

authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating the costs to the Contractor.

§ 19.4 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 19.4.

ARTICLE 20 TERMINATION OF THE CONTRACT

§ 20.1 TERMINATION BY THE CONTRACTOR

If the Architect fails to certify payment as provided in Section 15.2.1 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 4.1.3 for a period of 30 days, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 20.2 TERMINATION BY THE OWNER FOR CAUSE

§ 20.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 20.2.2 When any of the above reasons exists, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may, without prejudice to any other remedy the Owner may have and after giving the Contractor seven days' written notice, terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 20.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 20.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 20.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

§ 20.3 TERMINATION BY THE OWNER FOR CONVENIENCE

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 21 CLAIMS AND DISPUTES

§ 21.1 Claims, disputes and other matters in question arising out of or relating to this Contract, including those alleging an error or omission by the Architect but excluding those arising under Section 16.2, shall be referred initially to the Architect for decision. Such matters, except those waived as provided for in Section 21.8 and Sections

15.5.3 and 15.5.4, shall, after initial decision by the Architect or 30 days after submission of the matter to the Architect, be subject to mediation as a condition precedent to binding dispute resolution.

§ 21.2 If a claim, dispute or other matter in question relates to or is the subject of a mechanic's lien, the party asserting such matter may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 21.3 The parties shall endeavor to resolve their disputes by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with their Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to this Agreement, and filed with the person or entity administering the mediation. The request may be made concurrently with the binding dispute resolution but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 21.4 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any claim, subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association, in accordance with the Construction Industry Arbitration Rules in effect on the date of this Agreement. Demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 21.5 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation; (2) the arbitrations to be consolidated substantially involve common questions of law or fact; and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 21.6 Any party to an arbitration may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described in the written Consent.

§ 21.7 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 21.8 CLAIMS FOR CONSEQUENTIAL DAMAGES

The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 20. Nothing contained in this Section 21.8 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

« »« »

(Printed name and title)

CONTRACTOR (Signature)

« »« »

(Printed name and title)



Special Conditions

WORK. The CONTRACTOR shall provide and pay for all materials, supplies, machinery, equipment, tools, superintendence, labor, services, insurance, and all water, light, power, fuel, transportation and other facilities necessary for the execution and completion of the work covered by the contract Documents. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of a good quality. The CONTRACTOR shall if required, furnish satisfactory evidence as to the kind and quality of materials.

RIGHT OF ENTRY. The OWNER reserves the right to enter the property or location on which the work herein is contracted for by such agent or agents as he may elect, for the purpose of inspecting the work, or for the purpose of constructing or installing such collateral work as said OWNER may desire.

EQUIPMENT, MATERIALS AND CONSTRUCTION PLANT. The CONTRACTOR shall be responsible for the care, preservation, conservation, and protection of all materials, supplies, machinery, equipment, tools, apparatus, accessories, facilities, all means of construction, and any and all parts of the work, whether the CONTRACTOR has been paid, partially paid, or not paid for such work, until the entire work is completed and accepted.

CHARACTER OF WORKMEN. The CONTRACTOR agrees to employ only orderly and competent men, skillful in the performance of the type of work required under this contract, to do the work; and agrees that whenever the OWNER shall inform him in writing that any man or men on the work are, in his opinion, incompetent, unfaithful or disorderly, such man or men shall be discharged from the work and shall not again be employed on the work without the OWNER'S written consent.

PROTECTION AGAINST ACCIDENT TO EMPLOYEES AND THE PUBLIC. The CONTRACTOR shall at all times exercise reasonable precautions for the safety of employees and others on or near the work and shall comply with all applicable provisions of Federal, State, and Municipal safety laws and building and construction codes. All machinery and equipment and other physical hazards shall be guarded in accordance with the "Manual of Accident Prevention in Construction" of the Associated General Contractors of America except where incompatible with Federal, State, or Municipal laws or regulations. The CONTRACTOR shall provide such machinery guards, safe walkways, ladders, bridges, gangplanks, and other safety devices if necessary. The safety precautions actually taken and their adequacy shall be the sole responsibility of the CONTRACTOR, acting at his discretion as an independent contractor.

PROTECTION OF ADJOINING PROPERTY. The said CONTRACTOR shall take proper means to protect the adjacent or adjoining property or properties in any way encountered, which might be injured or seriously affected by any process of construction to undertaken under this Agreement, from any damage or injury by reason of said process of construction; and he shall be liable for any and all claims for such damage on account of his failure to fully protect all adjoining property. The CONTRACTOR agrees to indemnify, save and hold harmless the OWNER against any claim or claims for damages due to any injury to any adjacent or adjoining property, arising or growing out of the performance of the contract; but any such indemnity shall not apply to any claim of any kind

arising out of the existence or character of the work.

PROTECTION AGAINST CLAIMS OF SUB-CONTRACTORS, LABORERS, MATERIALMEN AND FURNISHERS OF MACHINERY, EQUIPMENT AND SUPPLIES. The CONTRACTOR agrees that he will indemnify and save the OWNER harmless from all claims growing out of the lawful demands of sub-contractors, laborers, workmen, mechanics, material men and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. When so desired by the OWNER, the CONTRACTOR shall furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the CONTRACTOR fails so to do, then the OWNER may at the option of the CONTRACTOR either pay directly any unpaid bills, of which the OWNER has written notice, or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to liquidate any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged, whereupon payments to the CONTRACTOR shall be resumed in full, in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligation upon the OWNER by either the CONTRACTOR or his Surety.

FINAL COMPLETION AND ACCEPTANCE. Within ten (10) days after the CONTRACTOR has given the OWNER written notice that the work has been completed, or substantially completed, the OWNER shall inspect the work and within said time, prepare and send a list of deficiencies. If there are not deficiencies found then OWNER will process final payment.

FINAL PAYMENT. The OWNER, who shall pay to the CONTRACTOR on or before the 30th day, and before the 35th day, after the date of Project Completion, the balance due the CONTRACTOR under the terms of this Agreement, provided he has fully performed his contractual obligations under the terms of this contract.

PAYMENTS WITHELD. The OWNER may, on account of subsequently discovered evidence, withhold payment to such extent as may be necessary to protect himself from loss on account of:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claims.
- (c) Failure of the CONTRACTOR to make payments properly to subcontractors or for material or labor.
- (d) Damage to another contractor.
- (e) Reasonable doubt that the work can be completed for the unpaid balance of the contract amount.
- (f) Reasonable indication that the work will not be completed within the contract time.

CHANGE ORDERS: Without invalidating this Agreement, the OWNER may, at any time or from time to time, order deletions or revisions to the work; such changes will be authorized by Change Order to be prepared by the OWNER after formal approval of the Gregg County Commissioners Court. The Change Order shall set forth the basis for any change in contract price, as hereinafter set forth for Extra Work, and any change in contract time which may result from the change..

EXAMINATION OF SITE OF PROJECT. Prospective bidders shall make a careful examination of the site of the project, soil and water conditions to be encountered, improvements to be protected, disposal sites for surplus materials not designated to be salvaged materials, and methods of providing ingress and egress to private properties and of handling traffic during construction of the entire project.

TRADE NAMES AND MATERIALS.

Where materials or equipment are specified by a trade or brand name, it is not the intention of the Owner to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality of performance, and to establish an equal basis for the evaluation of bids. Where the words "equivalent", "proper" or "equal to" are used, they shall be understood to mean the equivalent of, or equal to some other thing, in the opinion or judgment of the Owner. Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. Notwithstanding that the words "or equal to" or other such expressions may be used in the specifications in connection with a material, manufactured article or process, the materials, article or process specifically designated shall be used, unless a substitute shall be approved in writing by the Owner, and the Owner shall have the right to require the use of such specifically designated material, article or process.

BARRICADES, LIGHTS, AND WATCHMEN. Where the work is carried on in or adjacent to any street, alley or public place, the Contractor shall at his own cost and expense furnish and erect such barricades, fences, lights, and danger signals, shall provide such watchmen, and shall provide such other precautionary measures for the protection of persons or property and of the work as are necessary. Barricades shall be painted in a color that will be visible at night. From sunset to sunrise the Contractor shall furnish and maintain at least one light at each barricade and sufficient number of barricades shall be erected to keep vehicles from being driven on or into any work under construction. The Contractor shall furnish watchmen in sufficient numbers to protect the work. The Contractor will be held responsible for all damage to the work due to failure of barricades, signs, lights, and watchmen to protect it, and whenever evidence is found of such damage, the Owner may order the damaged portion immediately removed and replaced by the Contractor at his cost and expense. The Contractor's responsibility for the maintenance of barricades, signs, and lights, and for providing watchmen shall not cease until the project shall have been accepted by the Owner.

RESTORATION OF SITE & CLEANUP. Upon completion of the project (or major portions thereof) the Contractor shall restore the site to its original condition or better. Driveways and streets shall be compacted and resurfaced as originally found. All private property disrupted during construction including fences, patios, retaining walls, sidewalks, wooden decks, etc. shall be mended or repaired to their original condition. At the conclusion of the work, all tools, temporary structures and materials belonging to the Contractor shall be promptly removed, and all dirt, rubbish and other foreign substances shall be disposed of. The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver over such materials and equipment in an undamaged, clean condition.

SAFETY.

- In accordance with generally accepted construction practices, the Contractor alone will be

solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

- The duty of the Owner to conduct construction review of the Contractor's performance is not intended to include review of the adequacy of the Contractor's safety measures, in, or on, or near the construction site.

EXISTING UTILITIES AND SERVICE LINES. The Contractor shall be responsible for the protection of all existing utilities or service lines crossed or exposed by his construction operations. Where existing utilities or service lines are cut, broken or damaged, the Contractor shall replace or repair the utilities or service lines with the same type of original material and construction, or better, at his own cost and expense.

PROTECTION OF PROPERTY. The Contractor shall, at no additional expense to the Owner, protect by false work, braces, shoring or other property along his line of work or affected directly by his work, against damage and shall repair the damages or repay the injured Owners if such damage occurs. The Contractor shall exercise care to protect from injury all water pipes, sanitary sewer pipes, gas mains, telephone cables, electric cables, service pipes, and other utilities or fixtures which may be encountered during the progress of the work. All utilities and other service facilities or fixtures if damaged, shall be repaired by the Contractor without additional compensation. Protection is Contractor's responsibility and he must satisfy himself as to the existence and location of all utilities and structures.

CONTRACTS IN DEFAULT. The Owner may declare a contract in default for any one or more of the following reasons:

- Failure to complete the work within the contract period or any extension thereof.
- Failure or refusal to comply with an order of the Owner within a reasonable time.
- Failure or refusal to remove rejected materials.
- Failure or refusal to perform anew any defective or unacceptable work.
- Bankruptcy or insolvency, or the making of an assignment for the benefit of creditors.
- Failure to provide a qualified superintendent, competent workmen or subcontractors to carry on the work in an acceptable manner or failure to prosecute the work according to the agreed schedule of completion.
- Disregard or violation of any other important provisions of the Contract Documents as determined by the Engineer.

ENUMERATION OF THE CONTRACT DOCUMENTS

PROJECT: Gregg County Courthouse Roofing Project, Phase 1, Bid #2017-703.

The Contract Documents, except for Modifications executed after the effective date of the agreement, will consist of the following:

1. The Agreement including all addenda signed by the Owner and Contractor.
2. All general, supplemental, special or other conditions contained in the Request for Proposals and Project Manual.
3. The Specifications contained in the Request for Proposals, Project Manual, and on the Drawings.
4. The Drawings identified as follows: (or attach list)

ARCHITECTURAL SHEETS

G-001 Cover Sheet, Location Map, Sheet Index

A-001 General Notes

AS-100 Aerial Site Plan

AD-100 Roof Plan (Demolition)

AD-101 Partial Roof Plan (Demolition)

AD-102 Partial Roof Plan (Demolition)

A-100 Roof Plan (New Work)

A-101 Partial Roof Plan (New Work)

A-102 Partial Roof Plan (New Work)

SP-100 LWC Pour Layout Plan

A-500 Details

A-501 Details

A-502 Details

A-503 Details

A-504 Details

A-506 Details

A-507 Details

A-508 Details

A-509 Details

A-510 Details

P-100 Roof Drain Layout

5. The following list of addenda to the Drawings/Specifications:
6. The Proposal Documents including the Request for Proposals, Instructions to Offerors, the Proposal Form and Bond Form, the Subcontractor Listing Requirements, any Bond/Insurance Certificate/Insurance Endorsement Forms, Prevailing Wage Information, Contractor's Proposal and relevant Addenda or portions thereof shall be deemed to be so modified and amended as set out in the balance of the Contract Documents.

Section 00 55 00
Notice to Proceed

1.1 Notice to Proceed

- A. Notice to Proceed is the official notice from the Owner or Design Professional on behalf of the Owner to the Contractor to commence prosecution of the work, and commences the running of the time for completion of the work.
- B. Notice to Proceed will generally be given following receipt and approval of the following:
 - 1. Fully executed contract
 - 2. Certificate of Insurance
 - 3. Schedule of Values
 - 4. Construction Schedule
 - 5. Product and Material Submittals
- C. No work shall be commenced by the Contractor prior to receipt of Notice to Proceed.

End of Section 00 55 00

Section 00 61 00
Bond Forms

1.1 Bid Bond

- A. Bids shall be accompanied by an acceptable Bid Bond or Cashier's Check in a sum not less than five percent (5%) of the maximum bid, payable to the Owner, with the understanding that if the bid is accepted, the Bidder will, within fifteen (15) days, enter into a contract and give acceptable Surety Company Performance and Labor and Material Payment Bond, in the full amount of the contract for such work.
- B. In case of failure of the successful bidder to enter a contract and give acceptable Performance Bond and Labor and Material Payment Bond, the Bid Bond or Cashier's Check will be forfeited to the Owner as liquidated damages. Otherwise, it will be returned to the Bidder within sixty (60) days from the date of opening of the proposals.

1.2 Performance Bond

- A. A sample Performance Bond is attached for reference.

1.3 Payment Bond

- A. A sample Payment Bond is attached for reference.

1.4 Refer to Section 00 00 02, Page 13 for Owner's required Additional Information regarding Bonds.

End of Section 00 61 00

**STATUTORY PAYMENT BOND PURSUANT TO CHAPTER 2253
OF THE TEXAS GOVERNMENT CODE
(PUBLIC WORKS)**

(Penalty of this Bond must be 100% of Contract Amount)

KNOW ALL MEN BY THESE PRESENTS, That

(hereinafter called Principal), as Principal, and

(hereinafter called the Surety), as Surety, are held and firmly bound unto

(hereinafter call the Obligee), in the amount of

Dollars(\$ _____)

for the payment whereof the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the day of _____, 20__ ,to _____,

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed this instrument this day of _____, 20__

(Principal)

_____ By _____

(Surety)

_____ By _____

Attorney-in-Fact

**STATUTORY PERFORMANCE BOND PURSUANT TO CHAPTER 2253
OF THE TEXAS GOVERNMENT CODE
(PUBLIC WORKS)**

(Penalty of this Bond must be 100% of Contract Amount)

KNOW ALL MEN BY THESE PRESENTS, That

(hereinafter called the Principal), as Principal and

(hereinafter called the Surety), as Surety, are held and firmly bound unto

(hereinafter call the Oblige), in the amount of

Dollars(\$ _____)

for the payment whereof the said Principal and Surety bind themselves and their heirs, administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has entered into a certain written contract with the Oblige, dated the _____ day of _____, 200_, to

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work in accordance with the plans, specifications and contract documents, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Chapter 2253 of the Texas Government Code and all liabilities on this bond shall be determined in accordance with the provisions, conditions and limitations of said Chapter to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, the said Principal and Surety have signed this instrument this day of _____, 200__

(Principal)

_____ By _____

(Surety)

_____ By _____

Attorney-in-Fact

Section 00 62 00
Certificates and Other Forms

1.1 Insurance – General Requirements

- A. In addition to the information provided in this Section, the Owner's insurance requirements outlined in Section 00 00 02, Paragraphs 61 through 63 apply. Builder's Risk coverage is required as outlined in Paragraph 1.2.E of this section.
- B. Contractor's insurance requirements are as set forth in these documents. One (1) signed copy of all required certificates, endorsements, or other evidence of insurance must be delivered to Owner. One (1) copy shall be provided to the Design Professional.
- C. The Contractor must maintain the types and amounts of required insurance throughout the term of the agreement. Contractor is solely responsible for providing a Certificate of Insurance evidencing the required coverage types and amounts. The Owner may terminate this Contract if Contractor fails to timely comply with these requirements.
- D. Required insurer must be:
 - 1. Issued by a company or companies of sound and adequate financial responsibility;
 - 2. Authorized to do business in the State of Texas;
 - 3. Maintain an address for service of process in Texas;
 - 4. Have an "A" policyholder's rating and a financial rating of at least Class XI in accordance with the most current A.M. Best's Rating; or be acceptable to the Owner as evidenced by the Owner's written approval of such insurer.
- E. Certificates of Insurance and endorsements must be on forms acceptable to Owner and delivered to Owner prior to commencement of work. The Contractor shall furnish a Certificate of Insurance under current form of ACORD 25 (2001/08). The Certificate shall include a 30 day cancellation clause. The Certificate must include the provision that the insurance company will mail 30 day written notice to the Owner. The wording "will endeavor" is not acceptable. Contractor shall provide Owner and Design Professional with a transmittal letter stating that all insurance documents have been reviewed and have met or exceeded the contract document requirements.
- F. In addition, if requested by Owner, Contractor shall deliver to Owner a certified copy of any policies called for in these documents including any endorsements, addenda, or amendments to such policies within ten (10) days. If Owner is damaged by Contractor's failure to obtain and maintain the required insurance, then Contractor shall be liable to Owner for all costs, expenses, and damages which may result. All insurance policies to be furnished by Contractor for purposes of this project shall be subject to approval by Owner. All policies shall be on an occurrence as opposed to claims made basis.

- G. At the time of the Contractor's execution of the contract, Contractor shall deliver to Owner a certificate(s) of insurance testifying that he has obtained full Worker's Compensation and Employer's Liability insurance coverage for all persons whom he employs or may employ during the course of the project. Such coverage shall be maintained for the duration of the contract and the warranty period shall meet the most current requirements.
- H. All policies are subject to examination and approval by the Owner for adequacy as to content, form of protection, and providing company.
- I. If mandatory deductibles should be required under the terms of any insurance to be provided for this project, or if Contractor should elect to increase the mandatory deductible amounts or purchase insurance with voluntary deductible amounts, the Contractor shall not be entitled to any reimbursement from Owner for payment of the amount of the deductible in the event of a paid claim. Owner must approve any changes in deductible amounts in writing.
- J. Required insurance naming the Owner and Design Professional as additional insured must be primary insurance and not contributing with any other insurance available to Owner, under any third party liability policy.
- K. Before the Notice to Proceed is issued for this Contract, the Contractor must provide the Owner and Design Professional a Certificate of Insurance or a certified copy of the insurance policy evidencing the required insurance. Thereafter, the Contractor must furnish new certificates or copies of the policy before any existing certificate expires.

1.2 Types and Amounts of Insurance

The following types and amounts of insurance are required in this contract.

- A. **Commercial General Liability Insurance:** Refer to Section 00 00 02, Paragraph 62 for Owner's insurance requirements.
- B. **Automobile Liability Insurance:** Refer to Section 00 00 02, Paragraph 62 for Owner's insurance requirements.
- C. **Workers' Compensation Coverage:** Refer to Section 00 00 02, Paragraph 63 for Owner's insurance requirements.
- D. **Subcontractor's Liability Insurance:** Contractor shall require each Subcontractor to provide such coverage or include Subcontractors as Additional Insured under the Contractor's policy. Neither the Owner nor the Design Professional, their directors, officers, board members, representatives, agents, or employees will be responsible for any claims or actions occasioned by the failure of the Contractor to comply with this obligation. Each Subcontractor shall be required by the Contractor to provide Employer's Liability coverage as listed in Section 00 00 02, Paragraphs 61 through 63.
- E. **Builder's Risk Insurance**

1. Contractor shall obtain and maintain Builder's Risk "Special Form" insurance coverage for full insurable value to replace or repair up to the contract sum, with provisions for endorsements to increase coverage if the contract sum is increased. Such insurance coverage shall include the interests of Owner, Contractor, Subcontractor, and Sub-subcontractors in the work and shall insure without limitation against the perils of fire with extended coverage and shall include "Special Form" insurance for the physical loss or damage including, without duplication of coverage, theft, vandalism, and malicious mischief. Such coverage shall include work in progress and completed work. If not covered by the "Special Form" insurance, Contractor shall also obtain similar property insurance coverage on portions of the work stored off the site or in transit when such portions of the work are to be included in an application for payment. Such insurance shall include as additional insured the Owner, the Owner's representative(s), and each of their respective directors, officers, board members, employees, and agents, and Crenshaw Consulting Group, LLC. The form of coverage and policy called for herein must be accepted and approved by Owner.
2. Such insurance may have a deductible clause but not to exceed \$5,000 per occurrence. Contractor shall be liable for the deductible on any loss to which the deductible applies.
3. Any loss under this section shall be adjusted with the Owner and made payable to the Owner. Upon receipt of the insurance proceeds, Owner shall reimburse Contractor or his Subcontractors for any insured losses less any deductible charged to the Owner.
4. Contractor shall deliver to Owner such endorsements to the coverage provided herein to insure coverage of the entire work even if Owner should take partial occupancy of part of the work before substantial completion is reached on all the work. The policy shall contain a "Permission to Occupy" endorsement acceptable to the Owner.
5. To the extent Contractor or any Subcontractor is reimbursed by Owner for any loss covered by the insurance provided, the Contractor or Subcontractor shall waive any claim they may have for such losses to the extent covered by the insurance.

1.3 State Mandated Workers' Compensation Insurance Coverage

- A. Refer to Owner's insurance requirements in Section 00 00 02, Paragraph 63.
- B. The Contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage amounts, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the Contractor providing services on the project.
- C. The Contractor must provide a certificate of coverage to the Owner and Design Professional prior to being awarded the Contract.

- D. Contractor must have a Workers' Compensation modifier rate of one (1) or lower to qualify for the project. Contractor must submit evidence with insurance documentation submitted with proposal.
- E. 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 Owner showing that coverage has been extended.
- F. The Contractor shall obtain from each person providing services on a project, and provide to the Owner and Design Professional:
 - 1. A certificate of coverage, prior to that person beginning work on the project, so the Owner and Design Professional will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - 2. No later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- G. The Contractor shall retain all required certificates of coverage for the duration of the project and for one (1) year thereafter.
- H. The Contractor shall notify the Owner in writing by certified mail or personal delivery, within ten (10) 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.
- I. 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.
- J. The Contractor shall contractually require each person with whom it contracts to provide services on a project to:
 - 1. Provide coverage, 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, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - 2. Provide to the Contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing service on the project, for the duration of the project.
 - 3. Provide the Contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

4. Obtain from each other person with whom it contracts, and provide to the Contractor”
 - a. A certificate of coverage, prior to the other person beginning work on the project; and
 - b. A new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate ends during the duration of the project.
 5. Retain all required certificates of coverage on file for the duration of the project and for one (1) year thereafter;
 6. Notify the Owner in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing service on the project; and
 7. Contractually require each person with whom it contracts, to perform as required by Paragraphs 1-7, with the certificates of coverage to be provided to the person for whom they are providing services.
- K. By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the Owner that all employees of the Contractor and subcontractors who will provide services on the project will be covered by 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 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's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the Owner to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the Owner.

End of Section 00 62 00

Section 00 64 00
Prevailing Wage Rates

1.1 Prevailing Wage Rates

- A. Minimum prevailing wage rates are applicable for the performance of this Contract. For federally funded projects, wage rates must comply with federal law.
- B. It is the Contractor's responsibility to acquaint himself with and comply with State Regulations regarding payment of wages on public projects. Compliance is a part of this Proposal. The Contractor shall pay all persons employed on the site of the project in compliance with all federal, state, and local laws.
- C. In the event it is found that any person employed by the Contractor or subcontractor on the site of a project covered by this Contract has been or is being paid, as a result of a violation, a rate of wages less than the rate of wages required by the Contract, Owner may, by written notice to the Contractor and his subcontractor (if the violation involves a subcontractor) terminate their right to proceed with the work, or such part of the work as to which there has been a willful failure to pay the required wages. Owner may prosecute the work to completion by Contract or otherwise, and the Contractor and his sureties shall be liable for any excess cost occasioned thereby.

End of Section 00 64 00

Section 00 73 00
Supplementary Conditions

PART 1: GENERAL

1.1 These are general conditions to all Contractors. Reference to, or requirements for, non-applicable conditions for any particular contract will be construed to have no meaning relative to the performance of such work.

1.2 Definitions

A. The following terms as used in this contract shall be defined and interpreted as follows:

1. "Contractor" or "This Contract": The particular contract executed by the Contractor and the Owner, of which these General Conditions are integral parts.
2. "Owner": The entity that is part of this contract, contracting under the official name set forth in the Agreement.
3. "Owner's Representative": The person designated by the Owner, or his duly authorized assistants and/or inspectors, acting as a representative for the Owner in the administration of this contract for the benefit of the Owner in accordance with the Contract Documents.
4. "Contractor": The person, partnership, firm, or corporation contracting to do the work under these Contract Documents. The term shall also include the Contractor's agents, employees, and subcontractors. The legal address is shown in the Bid.
5. "Architect", "Engineer", or "Design Professional": The Engineer or Design Professional as designated by the Owner's Representative, the Project Manager, or his duly authorized assistants and/or inspectors, acting as agents for the Owner in the administration of this contract under the direction of the Owner's Representative and Project Manager, for the benefit of the Owner in accordance with the Contract Documents. All references to "Architect" within all AIA documents used in the Contract Documents and throughout the project duration, shall be replaced with "Design Professional".
6. "Project": The structure or improvement to be constructed in whole or in part through the performance of the contract.
7. "Project Manager": The person designated by the Owner or his duly authorized assistants and/or inspectors, acting as agents for the Owner in the administration of this contract for the benefit of the Owner in accordance with the Contract Documents.

8. "Plans": The plans shall mean all official drawings and reproductions of drawings made or to be made pertaining to the work provided for in the contract, or to any structure connected therewith.
9. "Specifications": The specifications shall mean the prescribed directions, requirements, explanations, terms, and provisions pertaining to the various features of the work to be done, or manner and method of performance, and the manner and method of measurements and payments. They also include directions, requirements, and explanations as set forth on the plans. "Reference Specifications" shall mean the technical specifications of other agencies incorporated or referred to herein.
10. "Work": The work necessary to manufacture and deliver the machinery, equipment and material, and/or the furnishings of all labor, tools, materials, equipment, construction equipment, working drawings where required, and other necessities for the construction or erection of the structures shown and called for in the plans, specifications, and contract and the act of constructing or erecting said structures complete.
11. "Item": A convenient subdivision of work under these specifications as herein separately described.
12. "Material" or "Materials": These words shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise), and any other classes of material to be furnished in connection with the contract.
13. "Equipment": The machinery, accessories, appurtenances, and manufactured articles to be furnished and/or installed under the Contract.
14. "Contractor's Equipment": The phrase "Contractor's Equipment" shall include all items of materials or equipment remaining in the contractor's ownership and removed from the site upon completion of the project.
15. "Or Equal": Any manufactured article, material, method, or work, which in the opinion of the Owner's Representative and Project Manager, is equally desirable or suitable for the purposes intended in these specifications and contract as compared with similar articles specifically mentioned herein.
16. "Contract Drawings" or "Drawings": All drawings or plans prepared by the Design Professional.
17. "Details" or "Additional Drawings": All details or drawings prepared and issued by the Design Professional subsequent to the signing of the contract, and for further explanation or amplification of the Contract Drawings or for the revision of the same, all as herein provided.

18. "Supplemental Drawings and Instructions": The Design Professional may furnish, at his sole discretion, upon written request of the Contractor, with reasonable promptness, additional instructions by means of drawings or documents necessary, in the opinion of the Design Professional, for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents.
19. "Words and Phrases": Whenever the words, "as directed," "as required," "as permitted," or words of like effect are used, it shall be understood that the direction, requirement or permission of the Owner, Owner's Representative, Project Manager, and Design Professional is intended. The words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary or proper in the judgment of the Owner, Owner's Representative, Project Manager, and Design Professional. The words "approved," "acceptable," "satisfactory," or words of like import shall mean approved by or acceptable to the Owner, Owner's Representative, Project Manager, and Design Professional.
20. "Contract Price": Either the Unit prices, or lump sum price, or prices named in the bid, executed contract, or in properly executed change orders.
21. "Surety": Any firm or corporation executing a safety bond or bids payable to the Owner securing the performance of the contract either in whole or in part.
22. "Time Limits": All time limits stated in the Contract Documents are of the essence of the contract.
23. "Contract Documents": The Contract Documents shall consist of the following, and in case of conflicting provisions, the first mentioned shall have precedence.
 - a. Request for Bid / Information for Offerors
 - b. Project Manual / Specifications
 - c. Detailed Drawings and Written Instructions / Plans
 - d. Addenda
 - e. Executed Agreement / Contract
 - f. Change Orders after the Agreement is Signed
 - g. Measurement and Payment
 - h. Special Provisions
 - i. Technical Provisions
 - j. General Conditions
 - k. Supplementary Conditions
 - l. Bid
 - m. Payment and Performance Bonds
24. "Conflict of Provisions": In the event of any conflict between any provisions or requirement of the component parts of this Contract, the component part having the highest order of sequence shall govern.

1.3 Abbreviations

- A. Whenever the following abbreviations are used on the plans, specifications, bids, and contracts, they shall be construed to mean the words and terms as listed below:

1.	CI	Cast Iron
2.	CIP	Cast Iron Pipe
3.	CL	Centerline
4.	Conc.	Concrete
5.	Conc. Pav.	Concrete Pavement
6.	Conc. Ret. Wall	Concrete Retaining Wall
7.	Cond.	Conduit
8.	C to C	Center to Center
9.	DFPA	Douglas Fir Plywood Association
10.	E	East
11.	Elev.	Elevation
12.	Ex.	Exist or Existing
13.	FBM	Foot Board Measure
14.	G	Gas
15.	GA	Gauge
16.	GIP	Galvanized Iron Pipe
17.	ID or dia	Inside Diameter
18.	L	Length
19.	Max	Maximum
20.	Min	Minimum
21.	MJ	Mechanical Joint
22.	N	North
23.	NIC	Not in Contact
24.	OD	Outside Diameter
25.	P	Power
26.	Pav	Pavement
27.	PJM	Premolded Expansion Joint Material
28.	PL	Property Line
29.	PLk	Planking
30.	Pri	Primary
31.	Prop	Proposed
32.	PSF	Pounds Per Square Foot
33.	PSI	Pounds Per Square Inch
34.	R	Radius
35.	Rem	Remove
36.	Repl	Replace
37.	S	South
38.	Sq	Square
39.	W	West

1.4 Execution, Correlation, and Intent of Documents

- A. The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the documents is to include all labor and materials, equipment, and transportation necessary for the proper execution of the work except where material or equipment is specifically accepted. Materials or work described in words, which so applied have a well-known technical or trade meaning, shall be held to refer to such recognized standards.
- B. It is intended that work not covered under any heading, section, branch, class, or trade of the specifications shall be supplied if it is shown on drawings or is reasonably inferable as being necessary to produce the intended results. Minor items of work or material omitted from the original plans or specifications, but clearly inferable from the information presented and which are called for by accepted good practice shall be provided and/or performed by the Contractor as part of his original cost.
- C. Where the Contract Documents refer to referenced specifications, such specifications shall be applied to technical provisions only, unless otherwise designed.

1.5 Plans and Specifications – Omissions and Discrepancies

- A. Upon receipt of award of contract, the Contractor shall carefully study and compare all drawings, specifications, and other instructions, and shall, prior to ordering material or performing work, report in writing to the Owner's Representative an error, inconsistency, or omission in respect to design, mode of construction, or cost which he may deliver. If the Contractor, in the course of this study or in the accomplishment of the work, finds any discrepancy between the drawings and the physical condition of the locality as represented in the drawings, or any such errors or omissions in respect to design, mode of construction or cost in drawings or in the layout as given by points and instruction, it shall be his duty to inform the Owner's Representative immediately in writing and the Owner's Representative shall properly check the same. Any work done after such discovery, until correction of drawings or authorization of extra work is given, if the Owner's Representative finds that extra work is involved, will be done at the Contractor's risk. If extra work is involved, the procedure shall be as provided in changes in the work.

1.6 Examination of Site of Work

- A. Before submitting his bid, the Offeror shall examine the site of the work and ascertain for himself all the physical conditions in relation thereto. Failure to do this shall not relieve the Offeror from entering into a contract nor excuse him from performing the work in strict accordance with the terms of the contract and

specifications. He will not be entitled to additional compensation if he subsequently finds the conditions to require other methods or equipment that he did not anticipate in making his unit contract bid prices. Any statement or representation made by an officer, agent, or employee of the Owner with respect to the physical conditions appertaining to the site of the work shall not be binding upon the Owner.

1.7 Status of Owner's Representative or Design Professional

- A. The Owner's Representative and Design Professional shall act as advisor and consultant to represent the Owner in matters relating to the contract, PROVIDED, HOWEVER, nothing contained herein or elsewhere in the Contract Documents shall be construed as requiring the Owner's Representative or Design Professional to direct the method or manner of performing any work by the Contractor under this contract. The Owner, or his duly authorized official, has authority to stop the work whenever, in his opinion, such stoppage may be necessary to insure the proper execution of the contract. The Owner's Representative or Design Professional may reject all work and materials which, in their opinion, do not conform to the contract.
- B. It is understood and agreed by and between the parties hereto that the work included in the contract is to be done to complete satisfaction of the Owner's Representative or his duly authorized representative, and that the decision of the Owner's Representative as to the true construction and meaning of the contract, plans, specifications, and estimates, and as to all questions arising as to proper performance of the work shall be final. The Owner's Representative shall determine the unit quantities and the classification of all work done and materials furnished under the provisions of this agreement and his determination thereof shall be final and conclusive and binding upon the Contractor.
- C. The Owner's Representative shall decide any and all questions which may arise as to the quality or acceptability of materials furnished and work performed and as to the rate of progress of the work, and all questions as to acceptable fulfillment and performance of the contract on the part of the Contractor and as to compensation. The decision of the Owner's Representative in such matters shall be final.
- D. The Owner's Representative may direct the sequence of conducting work when it is in locations where the Owner is doing work either by contract or by his own forces, or where such other works may be affected by the Contract, in order that conflict may be avoided and the work under these specifications be harmonized with that under other contracts, or with other work being done in connection with, or growing out of, operations of the Owner. Nothing herein contained, however, shall be taken to relieve the Contractor of any of his obligations or liabilities under the contract.

- E. The Owner nor his representatives have authority to waive the obligation of the Contractor to perform the work in accordance with the Contract Documents. Failure or omission on the part of the Owner or his representatives to condemn unsuitable, inferior, or defective work and/or labor or material or equipment furnished under the Contract shall not release the Contractor or his bond from performing the work in accordance with the Contract Documents.

1.8 Owner's Representative Decision

- A. The Owner's Representative shall, within a reasonable time after presentation of written claims by the Contractor to him, make decisions in writing on all claims and on all matters relating to the execution and progress of the work or the interpretation of the Contract Documents. The Contractor must make all claims in writing. Oral instructions shall be disregarded by the Contractor. Notice of all claims shall be addressed to the Owner's Representative.
- B. All the decisions of the Owner's Representative shall be final, except in cases where disputed time and/or increase or decrease of the Contract price is involved, which if no agreement in this regard thereto is reached, shall be subject to determination by a court of competent jurisdiction unless otherwise settled by compromise or arbitration. In respect to performance of the work prior to any such determination, if the Contractor does proceed with the work which is the subject of dispute, he does so at his own risk pending such determination.

1.9 Contractors Representation and Warranty

- A. In submitting a bid under these Contract Documents, the Contractor represents and warrants that he has specified himself as to construction conditions by personal examination of the plans, examinations, and investigations as to the nature of the soil and construction problems which may be encountered by reason thereof. Contractor also warrants and represents himself to be experienced and an expert in the construction contemplated. Contractor further understands that in mailing the contract award, Owner is relying upon the representations and warranties of Contractor herein contained.

1.10 Inspection and Tests

- A. The Owner's Representative shall at all times have access to the work to observe the progress and quality wherever it is in preparation or progress, and the Contractor shall provide proper facilities for such access and for necessary inspection and testing at the Contractor's expense. After inspection, a re-examination of questioned work may be ordered by the Owner's Representative, and if so ordered, the work shall be uncovered by the Contractor. If such work be found by the Owner's Representative to be in accordance with the Contract Documents, the Owner shall pay the cost of re-examination and replacement. If such work be not found in accordance with the Contract Documents, the Contract shall pay such costs.

- B. The Owner will make all tests of the completed work as deemed necessary by the Owner's Representative to assure that the work is in accordance with the specifications. All initial testing will be at the Owner's expense. If, for any reason, a test is unsatisfactory, the Contractor shall pay all costs incurred by the Owner or Owner's Representative for the inspection and retesting of the unsatisfactory test.
- C. Where in the specifications, the Owner's Representative's or instructions, laws, ordinances, or any government authority require any work to be specially tested or inspected, the Contractor shall give the Owner's Representative timely notice that such test or completed work is ready for inspection. If the inspection is by another authority than the Owner's Representative, the Contractor shall give the Owner's Representative and timely notice of the data fixed for such inspection. Required certificates of inspection by authority other than the Owner's Representative shall be secured by the Contractor.

1.11 Final Inspection and Acceptance

- A. All materials and completed work are subject to final inspection by the Owner's Representative before acceptance by the Owner. The Owner's Representative may require and shall have the right to subject all machinery and equipment and work to such test, as in his opinion, will assist in determining whether the contract has been performed in accordance with the Contract Documents.

1.12 Plans and Specifications Accessible

- A. The Contractor will be furnished two copies of plans and specifications and shall keep at least one copy of the same constantly accessible at the construction site.
- B. When shop drawings are required to be submitted for acceptance, one copy of the approved shop drawings shall be kept constantly accessible at the construction site.

1.13 Ownership of Drawings

- A. All drawings, specifications, and copies thereof prepared or furnished by the Design Professional are the property of the Design Professional. They are not to be used on other work, and with the exception of the signed contract set, are to be returned to the Design Professional upon completion of the work.

1.14 Liquidated Damages

- A. The Work's beginning and completion dates are essential conditions of the Contract Documents. The Work must begin as stated in the Notice to Proceed.
- B. The Contractor must proceed with the Work at a rate of progress to ensure full completion within the Contract Time. The Contractor and Owner expressly agree

that the Contract Time for completing the Work is a reasonable time, considering the average climatic and economic conditions and other factors prevailing in the locale.

- C. Because time is of the essence, liquidated damages apply to its performance. For each working day that any Work remains uncompleted after the final completion time as stated in the Contract and Notice to Proceed, the Owner will deduct the amount of \$500.00 from money due or to be due to the Contractor.
- D. The sums of money deducted for failure to complete any portions of the Work on time are not a penalty, but are reasonable liquidated damages, per working day, for defaulting on the contracted final completion time. The Owner and Contractor agree to fixed amounts because it is impracticable and extremely difficult to ascertain actual damages the Owner would sustain. The Contractor or Contractor's Surety must promptly pay any additional amounts if the amount the Owner can withhold from money due the Contractor does not cover the amount of liquidated damages.
- E. The Owner will not charge the Contractor with liquidated damages or any excess cost when the Contractor has given prompt written notice to the Owner and Design Professional, and the Owner confirms, that the delay in completion of the Work is due to:
 - 1. To any preference, priority, or allocation order issued by the Owner.
 - 2. To unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including acts of God, of the public enemy, of the Owner, of another Contractor in performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and
 - 3. To any delays of subcontractors caused by the same occurrences listed above.

1.15 Work Hours

- A. Any time the Contractor intends to work on Saturdays or after 5:00 PM on weekdays, he shall receive prior approval in writing from the Owner for such work on those specific days. No work will be allowed on legal holidays or Sundays except as listed below.
- B. When work on Saturday or overtime work is permitted, and if the nature of work is such that inspection would be required by the Owner, the Contractor shall pay the Owner the composite salary, overtime pay and other overhead expenses relative to the employee designed to perform the construction inspection for a minimum of eight (8) hours even if the construction inspection lasts for a period less than eight

(8) hours. For the work permitted after 5:00 PM on weekdays, the Contractor shall pay the Owner the composite salary, overtime pay, and other overhead expenses for the actual time spent by the employee designated to perform the construction inspection.

- C. The Owner will bill the Contractor for the expenses relative to that employee's work. The Contractor will be required to pay the Owner within thirty (30) calendar days from the date of billing. Contractor's failure to pay on time will result in withholding the sum from payments that become due to the Contractor.
- D. In the sole opinion of the Owner's Representative, if the nature of the work is such that it does not require inspection, the Owner's Representative may allow the Contractor to work extended hours, weekends, or holidays without inspection personnel present at the work site provided the Contractor received prior approval to work such hours and/or days.

1.16 No Indebtedness

- A. Contractor agrees that no payments owed by him of any nature whatsoever to the Owner, including payment in advance for service charges or any sums of any character whatsoever, shall become delinquent or in arrears.
- B. The Owner will not knowingly award contracts for goods or services to any Contractor in arrears to the Owner for any debt, claim, demand, or account whatsoever, including taxes, penalty or interest. Contractor is responsible for ensuring that no indebtedness exists.

1.17 Sales Tax

- A. The Owner qualifies as an exempt agency, under the Texas Limited Sales, Excise and Use Tax Act (the "Tax Act"), and is not subject to any State or City sales tax on materials incorporated into the project. The Owner will provide an exemption certificate to the Contractor. The Contractor must have a sales tax permit issued by the Comptroller of Public Accounts and must issue a resale certificate complying with the Tax Act, as amended, when purchasing incorporated materials. The Contractor is responsible for any sales taxes applicable to equipment purchases, rentals, leases, consumable supplies which are not incorporated into the project, tangible personal property purchased for use in the performance of this contract and not completely consumed, or other taxable services used to perform this contract, or other taxes required by law in connection with this Project.

1.18 Verification of Employment Eligibility

- A. The Contractor must comply with the Immigration Reform and Control Act (IRCA) by not knowingly obtaining labor or services of an unauthorized alien. The Contractor is solely responsible for verifying employment eligibility as required by IRCA.

1.19 Severability

- A. If any provisions of this Contract are determined to be void or unenforceable by a court of competent jurisdiction, that determination does not affect any other provisions of the Contract. If any provision is susceptible to more than one construction, a construction which renders the provision valid must be used.

End of Section 00 73 00

Section 01 10 01
Hierarchy of Information

PART 1: GENERAL

1.1 General Information

- A. Within the Drawings, if inconsistencies are found, written directions/instructions/notes take precedence over graphic illustrations; written dimensions over scaled; and large scale details over small scaled plans or sections; however, Contractor shall promptly bring to the Owner's and Engineer's attention any discrepancies, inconsistencies, or ambiguities within the Drawings, or within the Contract Documents, prior to proceeding with the Work.

End of Section 01 10 01

Section 01 11 00
Summary of Work

PART 1: GENERAL

1.1 Related Documents

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

1.2 Description of Work

- A. Roof Removal and Replacement, Gregg County Courthouse, Longview, TX.

1. Roof Area D: Work consists of removal of existing roof to existing concrete deck for application of new temporary roof, lightweight insulating concrete, and installation of new SBS modified bitumen roof membrane system.

Inspect all concrete deck areas and related penetrations for deficiencies. Repair all areas using appropriate compatible materials as approved by the manufacturer.

Remove all metal roof panels and related structural supports. Remove all brick knee walls down to concrete deck/cinder block walls.

- Install new flat metal panels to existing all-horizontal bar network at wall-deck transitions.
- Install new rigid insulation and coverboard as specified to level with existing concrete deck.

Remove antenna tower or allow tower to remain in place as directed by the Owner.

Install new roof system over existing concrete deck and prepared substrate.

- New modified bitumen base ply / temporary roof will be fully adhered to the existing concrete deck and coverboard areas as specified.
- New lightweight insulating concrete system will be placed over base ply / temporary roof as specified.
- New fiberglass base sheet will be mechanically fastened as specified over lightweight insulating concrete.
- New SBS modified bitumen base ply will be torch applied to base sheet as specified.
- New SBS modified bitumen cap sheet will be torch applied to base ply as specified.
- New SBS modified bitumen flashing membranes will be applied at all walls, curbs and roof drains as specified.

2. Roof Area D-1: Work consists of removal of existing stairwell extending to Roof Area D.

Remove all brick knee walls down to concrete deck/cinder block walls.

- Install new structural supports across the width dimension on 4 foot centers as shown in the plans and details.
- Install new Type F roof deck panels to new structural supports.
- Install new rigid insulation and coverboard as specified to level with existing concrete deck.
- New modified bitumen base ply / temporary roof will be fully adhered to the existing concrete deck and coverboard areas as specified.
- Install new Ships Ladder from floor of Area D-1 to new roof hatch.

Existing roofing and flashing materials in Area D-1 will remain in place unless otherwise directed by Owner and D/P.

3. Roof Areas N & N-1 (except Area N & N-1 Tunnel-way), N-2, Q, R & S: Work consists of removal of existing roof to existing gypsum deck for application of new lightweight insulating concrete, and installation of new SBS modified bitumen roof membrane system.

Inspect all gypsum deck areas and related penetrations for deficiencies. Repair all areas using appropriate compatible materials as approved by the manufacturer.

Install new roof system over existing gypsum deck and prepared substrate.

- New fiberglass base sheet will be mechanically fastened as specified over existing gypsum deck as specified.
- New modified bitumen base ply / temporary roof will be fully adhered to the base sheet as specified.
- New lightweight insulating concrete system will be placed over base ply / temporary roof as specified.
- New fiberglass base sheet will be mechanically fastened as specified over lightweight insulating concrete.
- New SBS modified bitumen base ply will be torch applied to base sheet as specified.
- New SBS modified bitumen cap sheet will be torch applied to base ply as specified.
- New SBS modified bitumen flashing membranes will be applied at all walls, curbs and roof drains as specified.

4. Roof Areas N & N-1 Tunnel-way: Work consists of preparation of existing roof for application of new lightweight insulating concrete, and installation of new SBS modified bitumen roof membrane system.

Existing foil-faced modified bitumen roof membrane at Area N Tunnel-way will serve as temporary roof and substrate for installation of new SBS modified bitumen membrane system. Inspect all membrane areas and related penetrations for deficiencies. Repair all areas using appropriate compatible materials as approved by the manufacturer.

All existing foil-faced SBS modified bitumen roof membrane will remain in place prior to and during installation of the new lightweight insulating concrete insulation system. All such foil surfacing on existing membrane exposed above the lightweight insulating concrete system after installation will be completely removed.

- New SBS modified bitumen base ply will be torch applied to existing roof membrane, prepared as specified.
- New SBS foil-faced modified bitumen cap sheet will be torch applied base ply as specified.
- New SBS modified bitumen flashing membranes will be applied at all walls, curbs and roof drains as specified.

5. Roof Area O: Existing metal roof panel system and insulation will be removed.

New metal roof panels and insulation will be installed to areas with new related trims, counterflashing, gutters and downspouts as specified.

6. Roof Area P: : Work consists of removal of existing roof to existing concrete deck for of new PVC single-ply roof membrane system.

Install new roof system over existing concrete deck and prepared substrate.

- New drain and associated piping plus accessories installed where indicated on roof plan.
- New PVC single-ply roof membrane adhered to the concrete deck as specified.
- New PVC flashing membranes will be applied at all walls, curbs, and roof drain as specified.
- New fluid-applied membrane will be applied to all HVAC support legs as specified.

End of Section 01 11 00

Section 01 20 00
Warranty Period

PART 1: GENERAL

1.1. Related Documents

Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01, Division 26, and the Appendix.

1.2 Warranty

All Contractors shall warranty his work against defective materials and workmanship for a period of two (2) years from and after the date of acceptance of the installation by the Owner.

The SBS modified bitumen roof system manufacturer's twenty (20) year NDL roof system warranty covering roof membrane and all membrane & fluid-applied flashings supplied by the against leaks and performance of lightweight insulating concrete applies to this project.

The metal roof system manufacturer's twenty (20) year warranty against leaks, fading, and rusting applies to this project.

Neither the final payment nor any provisions in the Contract Documents shall relieve the Contractor, or his subcontractors, of the responsibility for faulty materials or workmanship.

The Contractor shall remedy any defects due thereto, and pay for any damages to other work resulting there from, which shall appear.

This warranty shall not be construed to include the normal maintenance of the various components of the system covered by these Specifications.

PART 2: PRODUCTS

2.1 As specified in other sections of these Contract Documents.

PART 3: EXECUTION

3.1 Equipment manufacturer warranty and service allowances shall not reduce the warranty provisions of this document. Contractors shall be responsible to provide warranty service, including parts, specified herein.

End of Section 01 20 00

Section 01 23 00
Alternates

PART 1: GENERAL

1.1 General Information

- A. As to any Alternates accepted by Owner in the Notice of Award, Contractor shall insure such are incorporated as part of the Work pursuant to the requirements for each accepted Alternate as provided in the Contract Documents. Accepted Alternates shall be incorporated into the Project Manual.

End of Section 01 23 00

Section 01 26 00
Contract Modification Procedures

PART 1: GENERAL

1.1 Change Orders

- A. All Change Orders must be approved in writing by the Owner's Representative or Owner.
- B. Contractor to submit request for Change Order using AIA Document G701 "Change Order" form.
- C. Upon approval of the request, the Design Professional will issue the Change Order.

End of Section 01 26 00

DRAFT AIA[®] Document G701[™] - 2001

Change Order

PROJECT (Name and address):	CHANGE ORDER NUMBER:	OWNER: <input type="checkbox"/>
	DATE:	ARCHITECT: <input type="checkbox"/>
TO CONTRACTOR (Name and address):	ARCHITECT'S PROJECT NUMBER:	CONTRACTOR: <input type="checkbox"/>
	CONTRACT DATE:	FIELD: <input type="checkbox"/>
	CONTRACT FOR: General Construction	OTHER: <input type="checkbox"/>

THE CONTRACT IS CHANGED AS FOLLOWS:
(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

The original Contract Sum was	\$	0.00
The net change by previously authorized Change Orders	\$	0.00
The Contract Sum prior to this Change Order was	\$	0.00
The Contract Sum will be increased by this Change Order in the amount of	\$	0.00
The new Contract Sum including this Change Order will be	\$	0.00
The Contract Time will be increased by Zero (0) days.		
The date of Substantial Completion as of the date of this Change Order therefore is		

NOTE: This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

_____ ARCHITECT (Firm name)	_____ CONTRACTOR (Firm name)	_____ OWNER (Firm name)
_____ ADDRESS	_____ ADDRESS	_____ ADDRESS
_____ BY (Signature)	_____ BY (Signature)	_____ BY (Signature)
_____ (Typed name)	_____ (Typed name)	_____ (Typed name)
_____ DATE	_____ DATE	_____ DATE

Section 01 29 00
Payment Procedures

PART 1: GENERAL

1.1 Application for Payment

- A. All applications for payment shall be submitted to the Design Professional.
- B. All applications for payment shall be submitted on the attached AIA Document G702-G703 "Application and Certificate for Payment."
- C. Requests for payment should be figured carefully. A statement corrected in ink will not be acceptable; therefore, a statement found to be in error will be returned for a corrected statement to be submitted.
- D. In the event the Project includes work at multiple locations, separate Applications for Payment will be required for each location.
- E. Final payment will not be released without compliance with all closeout procedures outlined in Section 01 77 00.

End of Section 01 29 00

Application and Certificate for Payment

TO OWNER: 0 FROM CONTRACTOR:	PROJECT: VIA ARCHITECT:	APPLICATION NO: PERIOD TO: CONTRACT FOR: General Construction CONTRACT DATE: PROJECT NOS: / /	Distribution to: OWNER: <input type="checkbox"/> ARCHITECT: <input type="checkbox"/> CONTRACTOR: <input type="checkbox"/> FIELD: <input type="checkbox"/> OTHER: <input type="checkbox"/>
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CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	\$	0.00
2. Net change by Change Orders	\$	0.00
3. CONTRACT SUM TO DATE (Line 1 + 2).....	\$	0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	\$	0.00
5. RETAINAGE:		
a. 0 % of Completed Work (Column D + E on G703)	\$	0.00
b. 0 % of Stored Material (Column F on G703)	\$	0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	\$	0.00
6. TOTAL EARNED LESS RETAINAGE	\$	0.00
(Line 4 Less Line 5 Total)		
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	\$	0.00
(Line 6 from prior Certificate)		
8. CURRENT PAYMENT DUE	\$	0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE		
(Line 3 less Line 6)		
	\$	0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ 0.00	\$ 0.00
Total approved this Month	\$ 0.00	\$ 0.00
TOTALS	\$ 0.00	\$ 0.00
NET CHANGES by Change Order	\$	0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:
 By: _____ Date: _____
 State of: _____
 County of: _____
 Subscribed and sworn to before
 me this _____ day of _____

Notary Public:
 My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ 0.00
 (Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:
 By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract

DRAFT AIA[®] Document G703[™] - 1992

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
 In tabulations below, amounts are stated to the nearest dollar.
 Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
 APPLICATION DATE:
 PERIOD TO:
 ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G		H BALANCE TO FINISH (C - G)	I RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD		TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)		
	GRAND TOTAL	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	0.00 %	\$ 0.00	\$ 0.00

Section 01 30 00
Administrative Provisions

PART 1: GENERAL

1.1 OSHA Regulations

- A. The Contractor will comply with all OSHA regulations.

1.2 Temporary Facilities

- A. Contractor shall furnish materials and labor to build temporary buildings, provide sanitary arrangements, and telephone, and include costs of such facilities in his bid. This work shall be in accordance with the following specifications.

- 1. Temporary Sanitary Arrangements

- a. Toilet facilities maintained in sanitary condition, as approved by health officer, and remove with all contents at completion of job.

1.3 Description

- A. Each division or section of the Specifications shall be deemed to have as its leading paragraph the following, which shall become part of each section or division as if written out in full: "Description: Contractor performing this work shall furnish all labor, equipment, tools, appurtenances, and materials, except those specified to be furnished by others, and pay all special taxes or permits necessary to complete the work as hereinafter required or as shown or called for on the drawings and by these specifications."

1.4 Substitution of Equipment and Unspecified Products

- A. Refer to Section 01 60 00 – Product Requirements.

1.5 Contractor's Guarantee

- A. Contractor expressly warrants and guarantees the Work (including labor and materials) for a period of two (2) years from date of Substantial Completion.
- B. Contractor's guarantee (together with any additional guarantees or warranties required in the Specifications or the Contract Documents, to be secured if necessary from Manufacturers and Subcontractors) shall be delivered to the Owner in a form acceptable to the Owner in conformance with the requirements of the Contract Documents as a condition precedent to final payment being due.

1.6 Certificate of Occupancy

- A. If the facility is unoccupied during construction, Contractor shall obtain Certificate of Occupancy from the City Building Department prior to Final Completion.

1.7 Contractor's Use of Premises / Owner Occupancy

- A. Various portions of the Project Site may or will be utilized by the Owner and the public, primarily during the time the Work is being performed.
- B. Contractor shall schedule and coordinate the Work to minimize disruption to such usage and coordinate the Work to minimize disruption to such usage and shall take all precautions to avoid injury to person or property resulting from Contractor's activities.
- C. Contractor shall limit use of Project Site to matters essential to performing the Work and confine construction operation to those areas designated on the Drawings.
- D. Contractor shall keep existing entrances and driveways serving the project site clear and available for use by Owner, personnel, and and the general public, unless limiting such access has been previously approved by the Owner in writing.
- E. Materials / equipment will be stored only in areas designated by the Owner and Contractor assumes full responsibility for the protection and safekeeping of such materials / equipment.

1.8 Coordination

- A. Contractor shall coordinate work of the various sections of specifications to assure efficient and orderly sequence of the Work.
- B. Report all discrepancies of existing conditions to the Design Professional.
- C. Contractor shall coordinate the activities of all trades and all subcontractors, and be responsible to insure that all aspects of the Work and the interrelationship of the Work is fully understood by all persons performing any part of the Work. No additional cost shall accrue to the Owner as a result of any lack of such coordination of understanding.

1.9 Reference Standards

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of Bid Opening, except when a specific date is specified.

End of Section 01 30 00

Section 01 31 00
Project Management and Coordination

PART 1: GENERAL

1.1 Description

- A. Contractor shall coordinate the Work of all trades and Subcontractors on the job.
- B. It shall be Contractor's responsibility to see that all aspects of the Work and the interrelationships of all Work are fully understood by all persons performing any part of the Work.
- C. No additional cost shall accrue to the Owner as a result of any lack of such coordination of understanding.
- D. Contractor shall assure appropriate scheduling, submittals, and work of various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.

1.2 Meetings

- A. In addition to Progress Meetings specified in Section 01 47 00, Contractor shall hold appropriate pre-installation conferences with personnel and Subcontractors to assure coordination of work.

1.3 Coordination of Submittals

- A. Contractor shall schedule and coordinate submittals specified in Section 01 33 00, and shall coordinate the work of each section having interdependent responsibilities for installing, connecting to, and placing in service listed equipment.
- B. Contractor shall also coordinate requests for substitutions to assure compatibility of effect on work of other sections.

1.4 Coordination of Contract Closeout

- A. Coordinate
 - 1. Completion and clean-up of work of separate sections in preparation for Substantial Completion.

B. Coordinate Access to Site

1. By various sections (after Owner occupancy of premises), for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

C. Assemble and Coordinate

1. Closeout documentation specified in Section 01 77 00.

End of Section 01 31 00

Section 01 31 01
Job Site Administration

PART 1: GENERAL

- 1.1 In addition to the requirements under the General Conditions, Contractor shall have the following job site administration responsibilities.
- 1.2 Personnel and Responsibility
 - A. Provide competent administration and supervisory personnel.
 - B. Contractor shall at all times be present at the Work in person or represented by a competent superintendent who shall supervise and direct the Work and shall be authorized by the Contractor to receive and fulfill instruction from the Design Professional.
 - C. Contractor shall, at all times during working hours, be represented in all matters pertaining to this Project by one, and only one, fully competent and experienced general superintendent. Instructions and information given by the Design Professional to the Contractor's superintendent on the Work shall be considered as having been given to the Contractor. Before any Work is done at the job site, the Contractor shall give written notice to the Design Professional stating who the Contractor's superintendent will be, giving his home address and telephone number. The Design Professional shall be informed in writing prior to any change of general superintendent. A statement naming more than one representative at a time to be in charge and depending upon which is present at the time will not be acceptable.

End of Section 01 31 01

Section 01 33 00
Submittal Procedures

PART 1: GENERAL

1.1 Submittal Procedures

- A. Submittal form to identify Project, Contractor, subcontractor or supplier, and pertinent Contract Document references.

1.2 Submittals

- A. Submit the following to the Design Professional
 - 1. Manufacturer's Catalog Data
 - 2. Roof System Submittal
 - 3. Sheet Metal Submittals
 - 4. Roof Product Cut Sheets
 - 5. Approved Applicator Status
 - 6. Wood Products

End of Section 01 33 00

Section 01 33 01
Shop Drawings, Product Data, and Samples

PART 1: GENERAL

1.1 Related Documents

- A. Drawings, Agreement, General and Supplementary Conditions, and Division 1 Specification sections apply to work of this section.

1.2 Shop Drawings

- A. Shop drawings include specially prepared data for this project; including drawings, diagrams, details, schedules, calculations, instructions, measurements, and similar information.
- B. Present drawings in a clear, thorough manner. Identify details by reference to sheet, schedule, or room number.

1.3 Product Data

- A. Product data includes standard printed information on materials, products, and systems not specifically prepared for this project.
- B. Preparation
 - 1. Clearly mark each copy to identify pertinent products or models.
 - 2. Show performance characteristics and capacities.
 - 3. Show dimensions and clearances required.
 - 4. Show wiring and piping diagrams and controls.
 - 5. Supplement manufacturer's standard data to provide information unique to the Work.
- C. Manufacturer's Standard Schematic Drawings and Diagrams
 - 1. Modify to delete information which is not applicable to the Work.
 - 2. Supplement standard information to provide information specifically applicable to the Work.

3. Submit manufacturer's printed instructions for delivery, storage, assembly, installation start-up, adjusting and finishing, in quantities specified for Product Data.

1.4 Samples

- A. Samples include physical examples of materials, products, and units of work; either for limited visual inspection or for more detailed testing and analysis.
- B. Mock-ups are a special form of samples, which are too large or otherwise inconvenient for handling in specified manner for transmittal of sample submittals.
- C. Submit full range of manufacturer's standard colors, texture, and patterns for Owner's selection.
- D. Submit samples for selection of finishes within fifteen (15) days after Notice of Award or as noted in sections.
- E. Submit samples to illustrate selected colors and functional characteristics of product, with integral parts and attachment devices.
- F. Coordinate submittal of different categories for interfacing work.
- G. Include identification of each sample, giving full information.
- H. Field Samples
 1. Provide samples of finishes at Project as requested.
 2. Install sample complete and finished.
 3. Acceptable samples in place may be retained in completed Work.
 4. Sufficient size and quantity to clearly illustrate functional characteristics of the product with integrally related parts and attachment devices, full range of color, texture, and pattern.

1.5 Submission Requirements

- A. Deliver submittals (Shop Drawings, Product Data, and Samples) to Design Professional at address listed on Title Page.
 1. Identify Project, Contractor, Subcontractor, and Major Supplier.
 2. Identify pertinent Drawing sheet and detail number and Specification section number, as appropriate.

3. Identify any deviations from Contract Documents.
 4. Show Contractor's executed review and approval marking and provide space for Design Professional's marking.
 5. Submittals which are received from sources other than through the Contractor's office will be returned by Design Professional "without action."
- B. Coordinate submittal of related items.
 - C. Make submittals sufficiently in advance of construction requirements to allow adequate time for review and rechecking, if necessary.
 - D. Revise and resubmit, identifying changes since previous submittals, any submittals rejected, for further review.
 - E. Make submittals promptly and in such sequence as to not cause delay in the Work.
 - F. Coordinate and sequence different categories of submittals for same work, and for interfacing units of work, so that one will not be delayed for coordination of Design Professional's review with another.
 - G. Do not make any submittals for products which have not received prior approval from Design Professional.
 - H. Number Required
 1. Shop Drawings and Product Data
 - a. Submit the number of copies which the Contractor requires plus two copies for the Design Professional and one for the Owner.
 - b. Include an electronic copy of all documents.
 2. Samples
 - a. Submit three (3) samples of each Product requested unless otherwise noted in Specification section.
 - I. Do not begin fabrication or work which requires submittals until the return of the submittals with the Design Professional's approval thereof.

1.6 Resubmission Requirements

- A. Make any corrections or changes required by the Design Professional and resubmit.
- B. Identify any changes since previous submittal for further review.

1.7 Contractor Responsibilities

- A. Review Shop Drawings, Product Data, and Samples prior to submission.
- B. Determine and verify:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Catalog numbers and similar data
 - 4. Conformance with Specifications.
 - 5. Failure to do so will cause return of submittal without consideration.
 - 6. Contractor shall be liable for any delays or other costs caused by inaccurate or inadequate submittals.
 - 7. Submittals will be reviewed by Design Professional to verify that Contractor is making the dimension drawings required for his construction layout.
 - 8. Approval of these submittals by Design Professional does not relieve Contractor of compliance with Contract Documents.

1.8 Distribution

- A. Distribute copies of submittals which carry the Design Professional's stamp to:
 - 1. Subcontractors.
 - 2. Supplier or Fabricator or other affected subcontractors.
- B. Maintain one set of each submittal at project site, available for reference by Design Professional and others.

End of Section 01 33 01

Section 01 35 00
Special Procedures

PART 1: GENERAL

1.1 Description

- A. Safety Requirements.
- B. Fire Protection.
- C. Utilities.
- D. Site Access.

1.2 Safety Requirements

- A. Construction work shall be carried out using procedures and techniques which will assure full protection for persons within the building and on site whether part of the Contractor's forces or other persons.

1.3 Fire Protection

- A. Provide portable fire extinguisher in each area of work and one at each kettle so that fires may receive immediate response.
- B. Assure that workers know where extinguishers are located and know how to use them.
- C. Extinguishers shall be UL rated.
- D. Torch Safety: Crew members handling torches shall be trained by an Authorized Certified Roofing Torch Applicator (CERTA) Trainer, be certified according to CERTA torch safety guidelines as published by the National Roofing Contractors Association (NRCA), and follow torch safety practices as required by the contractor's insurance carrier. Designate one person on each crew to perform a daily fire watch. The designated crew member shall watch for fires or smoldering materials on all areas during roof construction activity, and for the minimum period required by CERTA guidelines after roofing material application has been suspended for the day.

1.4 Utilities

- A. Coordinate all utility shut-downs, street blockades, access limitations, and similar activities which affect the operation of the facility and neighbors with the Design Professional and Owner.

- B. Protect facilities, grounds, landscaping, sprinklers, and equipment from damage. Repair of damage to property is the Contractor's responsibility.

1.5 Site Access

- A. Construction vehicles to enter construction site from areas coordinated with Owner.

1.6 Building Access

- A. Access to the building and/or site to be coordinated with the Design Professional and the Owner's representative. Unscheduled tours, visitations, etc. are prohibited.

End of Section 01 35 00

Section 01 45 00
Quality Control

PART 1: GENERAL

1.1 Description

- A. General Quality Control
- B. Workmanship
- C. Manufacturer's Instructions
- D. Manufacturer's Certificates
- E. Mockups
- F. Manufacturer's Field Services
- G. Testing Laboratory Services

1.2 Related Documents

- A. Section 01 33 01, Shop Drawings, Product Data, and Samples – Submittal of Manufacturer's Instructions.

1.3 Quality Control – General

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
- B. Defective work may be rejected when it does not conform to contract requirements.

1.4 Workmanship

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure product with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.5 Manufacturer's Instructions

- A. Comply with instructions, including each step in sequence.
- B. Should instructions conflict with Contract Documents, request clarification from Design Professional before proceeding.

1.6 Manufacturer's Certificates

- A. Submit manufacturer's certificate, in duplicate, stating that products meet or exceed specified requirements.

1.7 Manufacturer's Field Services

- A. Require supplier or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, and to make appropriate recommendations.
- B. Submit written report to Design Professional listing observations and recommendations.

1.8 Testing Laboratory Services

- A. Contractor to secure services of an Independent Testing Laboratory to perform inspections, tests, and other services required by individual Specification sections. Cost of this service is in the Proposal.
- B. Services performed in accordance with requirements of governing authorities and with specified standards.
- C. Reports submitted to Design Professional in duplicate giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
- D. Contractor
 - 1. Cooperate with Testing Laboratory personnel.
 - 2. Furnish tools, sample removal and repair, and assistance as requested.
 - 3. Notify Testing Laboratory 24 hours prior to expected time for operations requiring testing services.
 - 4. Make arrangements with Testing Laboratory to pay for additional samples and tests for Contractor's convenience.

1.9 On-Site Quality Control

- A. Provide qualified personnel to observe field conditions and oversee project.
- B. Contractor shall be responsible for selecting and supplying all labor and skilled supervision required for the successful project completion.
- C. Contractor shall provide all materials and equipment (except those provided by the Owner) required to complete the project satisfactorily and in strict accordance with instructions.
- D. Contractor is solely responsible for his/her method and means of construction.
- E. Contractor is solely responsible for the safety of his/her employees.
- F. Contractor is responsible for maintaining quality control over suppliers, manufacturers, products, services, site conditions, and workmanship.
- G. Defective work shall be rejected when not in compliance with Contract Documents.

End of Section 01 45 00

Section 01 47 00
Project Meetings

PART 1: GENERAL

1.1 Requirements Included

- A. Contractor's Participation
 - 1. Pre-Construction Conference
- B. Contractor's Administration
 - 1. Progress Meetings
- C. Post-Installation Conferences

1.2 Pre-Construction Conference

- A. A pre-construction conference will be held following Notice of Award.
 - 1. Design Professional will schedule a pre-construction conference following receipt of executed contract, insurance certificate, payment and performance bonds, construction schedule, schedule of values, and following receipt of all required product submittals.
- B. A pre-construction conference will be held at a time and place fixed by the Owner's Representative, which will typically be within one week from date of Notice to Proceed.
- C. Attendance
 - 1. Owner's Representative
 - 2. Design Professional
 - 3. Contractor and Superintendent
 - 4. All Major Subcontractors
 - 5. Manufacturer's Representative
- D. The Contractor must be prepared for a thorough discussion and review as well as revisions which may be deemed necessary in the opinion of the Owner's Representative of the following:
 - 1. Progress Schedules

2. Materials List
 3. Product Data
 4. Equipment List
 5. Job Procedures
 6. Designation of Responsible Personnel and Emergency Contacts
 7. Review of all subcontractors and material suppliers with name and telephone number of individual responsible.
 8. Inspection Procedures
 9. Plans and Specifications
 10. Shop Drawings
 11. Supplemental Drawings
 12. Schedule of Values
 13. General discussion of Project
 14. Other Matters Pertaining to Performance
 15. Procedures and processing of field decisions, submittals, substitutions, application for payments, proposal requests, change orders, and contract closeout procedures.
- E. Owner's Representative and Design Professional
1. Administer site review conference at Project Site for clarification of Contractor responsibilities in use of site and review of administrative procedures.

1.3 Progress Meetings

- A. Schedule and administer: Project meeting every week throughout progress of Work.
- B. Meetings held: At Project Site with job superintendent and major subcontractors involved with current work to review progress and schedule. Owner or Design Professional invited when appropriate.

End of Section 01 47 00

Section 01 48 00
Construction Progress Schedules / Schedule of Values

PART 1: GENERAL

1.1 General Information

- A. Submit initial progress schedules and schedule of values in duplicate within fifteen (15) days after execution of Owner-Contractor Agreement. After review by Design Professional, revise and resubmit as required. Submit revised schedules with first Application for Payment and each subsequent Application for Payment, reflecting changes since previous submittal.

1.2 Construction Progress Schedules

- A. Submit horizontal bar chart with separate bar for each major trade or operation, identifying first work day of each week.
- B. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of Work as of time of each Application for Progress Payment.
- C. Show submittal dates required for Shop Drawings, Product Data, and Samples, and product delivery dates, including those furnished by Owner those Allowances.

1.3 Schedule of Values

- A. Submit Schedule of Values on form approved by Owner. Contractor's standard form of media-driven printout will be considered on request.
- B. Format: Table of Contents of this Project Manual. Identify each line item with number and title of the major Specification sections.
- C. Include, in each line item, directly proportional amount of Contractor's overhead and profit.
- D. Review schedule to list Change Orders as part of each Application for Payment.

End of Section 01 48 00

Section 01 50 00
Temporary Facilities and Control

PART 1: GENERAL

1.1 Description

- A. Sanitary Facilities
- B. Heat
- C. Water
- D. Drinking Water
- E. Power
- F. Lighting
- G. Project Bulletin Board
- H. Barricades
- I. Landscape Protection
- J. Project Identification Sign

1.2 Utilities

- A. Provide, without delay, temporary utilities needed to accomplish the Work.

PART 2: PRODUCTS

Not Applicable.

PART 3: EXECUTION

3.1 Temporary Sanitary Facilities

- A. Provide approved chemical toilets throughout period of construction except as noted herein.
- B. Keep toilets properly serviced to prevent undue stench and to assure cleanliness.
- C. Workers will not be allowed access to restrooms at the project site.

3.2 Heat

- A. Provide temporary heat as required to properly protect Work and enhance workmanship.
- B. Use caution not to place temporary space heaters where they may cause overlay rapid drying or other harm to adjacent materials.

3.3 Water

- A. Contractor shall make water available for construction at locations to be designated prior to construction.

3.4 Drinking Water

- A. Clean source, approved by local health officer, dispensed either from a bubbler with guarded orifice or from push-button dispenser.
- B. Use of common drinking cups, dipper, canteens, or dipping water from containers is prohibited.

3.5 Power

- A. Provide temporary electric power of adequate capacity to light work sufficiently to assure safety of workers and good workmanship and to operate power equipment.

3.6 Bulletin Board

- A. Install and maintain, where directed and during life of contract, a weather-tight or protected bulletin board, approximately 3' high by 4' long, mounted conspicuously near job office.
- B. Remove bulletin board from site upon completion of project.
- C. The following items must be displayed on bulletin board at all times:
 - 1. State Minimum Wage Rates.
 - 2. Safety Requirements.
 - 3. Official Notices or Announcements.
 - 4. Other items as appropriate.

3.7 Construction Fence

- A. Provide fence around active construction site to prevent injury to workmen, and the public. Location and size of fence shall be approved by Owner.

B. Public access shall be provided at all times.

3.8 Landscape Protection

A. Protect existing landscape impacted by construction area by continuing to irrigate, by hand if necessary, by vegetation, and if necessary providing barriers around trees and shrubs designated by the Owner and/or Design Professional.

3.9 Parking

A. Arrange with Owner for approval of temporary parking areas to accommodate construction personnel.

End of Section 01 50 00

Section 01 60 00
Product Requirements

PART 1: GENERAL

1.1 Description

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Product Options
- E. Product List
- F. Substitutions
- G. Systems Demonstration

1.2 Related Requirements

- A. Section 01 45 00, Quality Control
- B. Section 01 77 00, Closeout Procedures

1.3 Products

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification section shall be the same and shall be interchangeable.

1.4 Transportation and Handling

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.5 Storage and Protection

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions. Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed. Failure to cover materials upon arrival at the job site with canvas tarpaulins will result in a one hundred dollar a day deduction for each and every day material storage requirements remain in non-compliance.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.

1.6 Product Options

- A. **Products Specified by Reference Standards or by Description Only.** Any product meeting those standards.
- B. **Products Specified by Naming One or More Manufacturers with a Provision for Substitution.** Submit a request for substitution for any manufacturer not specifically named.
- C. **Products Specified by Naming Several Manufacturers.** Products of named manufacturers meeting specifications. No options, no substitutions allowed.
- D. **Products Specified by Naming Only One Manufacturer.** No options, no substitutions allowed.

1.7 Limitations on Substitutions

- A. During Bidding or Proposal Period, see Instructions to Bidders / Proposers.
- B. After execution of the Agreement, substitutions other than those specifically named in the Contract Documents will be approved by the Owner only if:
 - 1. A product or equipment becomes unavailable due to no fault of Contractor;

2. The product or equipment proposed for substitution is equal to and/or superior to equipment named in construction, efficiency, and utility; and
 3. The product or equipment named in the Specifications cannot be delivered to the job in time to complete the Work in proper sequence to the work of the other Contractors DUE TO CONDITIONS BEYOND THE CONTROL OF THE CONTRACTOR.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. To receive consideration, written requests for substitution must be submitted to the Design Professional, accompanied by documentary proof of equality or differences in price and delivery, if any, in the form of certified quotations from the suppliers of BOTH specified and proposed equipment. In case of a difference in price, Owner will receive all benefits of the difference in cost involved in any substitution and a deductive Change Order will be issued to credit Owner with any savings by reason of the approved substitution. No substitution request shall be deemed granted until and unless the substitution has been approved by the Owner, Contractor, and Design Professional specifying any credit due to Owner.
- D. Any substitution request constitutes a representation that Contractor:
1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 2. Will provide the same warranty as specified product.
 3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
 4. Waives any claims for additional costs arising from the substitution.
- E. If substitutions proposed by Contractor create the need for additional design work, Contractor shall reimburse Owner for these services and any other expenses involved herein.
- F. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data Submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- G. Design Professional and Owner will determine acceptability of proposed substitution and will notify Contractor of acceptance or rejection in writing within a reasonable time.
- H. Only one request for substitution will be considered for each product. When substitution is not accepted, provide specified product.

1.8 Systems Demonstration

- A. Prior to final inspection, demonstrate operation of each system to Design Professional and Owner.
- B. Instruct Owner's personnel in operation, adjustment, and maintenance of equipment and systems, using the operation and maintenance data as the basis of instruction.

End of Section 01 60 00

Section 01 74 00
Cleaning

PART 1: GENERAL

1.1 Description

A. Work Included

1. The provisions of the cleanliness for the building premises and site throughout the construction period and final cleaning.

B. Related Work Described Elsewhere

1. Comply with all requirements for cleaning described in various sections of these specifications.

1.2 Quality Assurance

- A. Inspection: Conduct daily and more often as necessary to verify that acceptable standards of cleanliness are being met and maintained.

- B. Contractor shall be responsible for providing all personnel, materials, and equipment needed to maintain an approved standard of cleanliness.

PART 2: PRODUCTS

2.1 Cleaning Materials and Equipment

- A. Provide all personnel, compatible materials and equipment needed to maintain an approved standard of cleanliness.

PART 3: EXECUTION

3.1 Progress Cleaning

A. Site and Structure

1. As required, inspect and remove all scrap, debris, and waste materials, clean weekly and more often if necessary with all means necessary to ensure a "broom clean" condition, acceptable to the Owner and Design Professional.
2. Contractor shall be responsible for removing all scraps, debris, and waste materials.
3. Collect and maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition daily.

3.2 Final Cleaning

- A. "Clean" for the purpose of this article shall be interpreted as meaning the level of cleanliness provided by commercial maintenance subcontractors using commercial building maintenance equipment and materials to ensure the Owner can accept a completely clean project.
- B. Should the Owner occupy any portion of the work prior to final acceptance, the provisions of the General Conditions of the contract shall apply.

End of Section 01 74 00

Section 01 77 00
Closeout Procedures

PART 1: GENERAL

1.1 Project Closeout

- A. Submit all closeout documentation and paperwork as outlined in the Contract Documents, including but not limited to:
 - 1. Contractor's Warranties
 - 2. Subcontractor's Warranties
 - 3. Manufacturer's Warranties
 - 4. Equipment Operation Manuals
 - 5. Affidavit of Payment of Debts and Claims
 - 6. Contractor's Affidavit of Release of Liens.
 - 7. Consent of Surety Company to final payment.
 - 8. List of all subcontractor's and service organizations, including names, addresses, and telephone numbers for emergency service.

- B. Closeout Procedures
 - 1. Contract closeout as described in, but not limited to, the Contract Documents, Agreement, and applicable general, special, and supplementary conditions.
 - 2. Substantial Completion as described in, but not limited to, the Contract Documents, Agreement, and applicable general, special, and supplementary conditions.
 - a. Submit appropriate certification that work is substantially complete.
 - b. Design Professional will inspect work to determine status of completion following receipt of Notice of Substantial Completion.
 - c. Design Professional will notify Contractor of any work not substantially complete.

- d. Contractor shall remedy the deficiencies and notify Design Professional when ready for re-inspection.
 - e. Design Professional will re-inspect work.
 - f. Contractor will be liable to Owner for any additional changes of Design Professional.
 - g. Upon Design Professional's determination that work is substantially complete, Design Professional will notify Owner.
3. Contractor to submit notice of final completion.
- a. Contractor shall verify work is complete in accordance with the Contract Documents, work has been inspected, and work is ready for Owner's inspection.
 - b. Contractor shall submit signed and dated final application for payment identifying total adjusted contract sum, previous payments, and amount remaining due.
 - c. Contractor shall complete all punch list items listed by the Design Professional and Manufacturer's representative.
 - d. Contractor shall provide written verification that all scuppers and downspouts are functioning properly. All roof drains and scuppers shall be operational on a day to day basis.
 - e. Contractor shall certify all equipment and systems have been tested and are operational.

1.2 Final Cleaning

- A. Execute final cleaning prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view.
- C. Remove waste and surplus materials, rubbish, and construction facilities from site.

End of Section 01 77 00

DRAFT AIA[®] Document G704[™] - 2000

Certificate of Substantial Completion

PROJECT:
(Name and address):

PROJECT NUMBER: /
CONTRACT FOR:
CONTRACT DATE:

OWNER:
ARCHITECT:
CONTRACTOR:
FIELD:
OTHER:

TO OWNER:
(Name and address):

TO CONTRACTOR:
(Name and address):

PROJECT OR PORTION OF THE PROJECT DESIGNATED FOR PARTIAL OCCUPANCY OR USE SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found, to the Architect's best knowledge, information and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated above is the date of issuance established by this Certificate, which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

Warranty

Date of Commencement

Crenshaw Consulting Group, LLC
ARCHITECT

BY

DATE OF ISSUANCE

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment.

Cost estimate of Work that is incomplete or defective: \$ 0.00

The Contractor will complete or correct the Work on the list of items attached hereto within Zero (0) days from the above date of Substantial Completion.

CONTRACTOR

BY

DATE

The Owner accepts the Work or designated portion as substantially complete and will assume full possession at (time) on (date).

OWNER

BY

DATE

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage.)

DRAFT AIA[®] Document G706[™] - 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

TO OWNER: *(Name and address)*

CONTRACT FOR:

CONTRACT DATED:

OWNER:
ARCHITECT:
CONTRACTOR:
SURETY:
OTHER:

STATE OF:
COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose

Indicate Attachment Yes No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

DRAFT AIA[®] Document G707[™] - 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER:

CONTRACT FOR:

ARCHITECT:

TO OWNER: *(Name and address)*

CONTRACT DATED:

CONTRACTOR:

SURETY:

OTHER:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

on bond of
(Insert name and address of Contractor)

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the
Surety of any of its obligations to
(Insert name and address of Owner)

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)

Section 05 51 33.13
Metal Stairs and Ladders

PART 1 - GENERAL

1.1 Section Includes

- A. Aluminum fixed vertical ladders.

1.2 Related Sections

- A. Section 06 10 00 - Rough Carpentry
- B. Section 07 55 10 Modified Bitumen Membrane Roofing

1.3 References

- A. ANSI A14.3: Ladders - Fixed - Safety Requirements
- B. OSHA 1910.27: Fixed Ladders

1.4 Submittals

- A. Submit under provisions of Section 01 33 00 and Section 01 33 01.
- B. Product Data : Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings for Ladders
 - 1. Plan and section of ladder installation.

1.5 Delivery, Storage, and Handling

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store products until installation inside under cover. If stored outside, under a tarp or suitable cover.

1.6 Warranty

- A. Limited Warranty: Five years against defective material and workmanship, covering parts only, no labor or freight. Defective parts, if deemed so by the manufacturer, will be replaced at

no charge, freight excluded, upon inspection at manufacturer's plant which warrants same.

PART 2 - PRODUCTS

2.1 Manufacturer

- A. Acceptable Manufacturer: Precision Ladders, LLC, which is located at: P. O. Box 2279 ; Morristown, TN 37816-2279; Toll Free Tel: 800-225-7814; Tel: 423-586-2265; Email: info@PrecisionLadders.com; Web: www.PrecisionLadders.com

2.2 Aluminum Fixed Vertical Ladder

- A. Aluminum Fixed Vertical Ladder and Components: Ladder, cage, rest platforms, floor mounting brackets, security doors, walk-thru, and side rails.

1. Model: Model FL -*** (***= vertical height in inches) Fixed ladder with parapet platform and roofside return. Aluminum Fixed Vertical Ladder as manufactured by Precision Ladders LLC.
2. Capacity: Unit shall support a 1500 lb (680 kg) loading without failure, and individual treads shall withstand a 3,000 lb (1361 kg) loading without failure.
3. Performance Standard: Units designed and manufactured to meet or exceed ANSI A14.3 and OSHA 1910.27.

B. Components

1. Ladder Stringer: 2-1/2 inch by 1-1/16 inch by 1/8 inch (64 mm by 27 mm by 3 mm) extruded 6005-T5 aluminum channel. Pitch: 90 degrees.
2. Ladder Tread: 2-1/4 inch by 3/4 inch by 1/4 inch (57 mm by 19 mm by 6 mm) extruded 6005-T5 aluminum with deeply serrated top surface.
3. Ladder Mounting Bracket: 8-1/2 inch by 2 inch by 3 inch by 1/4 inch thick (216 mm by 51 mm by 76 mm by 6 mm) aluminum angle.
4. Walk-Thru
 - a. Hand Rails: 1-1/4 inch (32 mm) aluminum square tube with rounded edges.
 - b. Mounting Brackets: 4 inch by 4 inch by 1/4 inch (102 mm by 102 mm by 6 mm) aluminum.
 - c. Side Rails: 42 inch (1067 mm) side rail extension for through ladder exits.
5. Rest Platform
 - a. 1/8 inch (3 mm) aluminum tread plate.

- b. Platform Size: 30" inches by 48 inches (762 mm by 1219 mm) standard.
 - c. Toe Boards. 6005 T-5 aluminum.
 - d. Handrails: 1-1/4 inch (32 mm) aluminum square tube 42 inches (1067 mm) high.
6. Fall Prevention System: Complete system with rail, sleeves, and harness to limit any fall to 6 inches (152 mm) or less.
7. Floor Brackets: Floor bracket at foot of each stringer, 3 by 2 by 1/4 inch (76 by 51 by 6 mm).
8. Finishes:
- a. Standard: Mill finish on aluminum ladder components.
 - b. Optional Finishes
 - 1. Powder Coated
 - 2. Anodized

2.3 Fabrication

- A. Completely fabricate ladder ready for installation before shipment to the site.
- B. Completely fabricate handrail components and ship to site ready for field assembly and attachment to ladder.

PART 3 - EXECUTION

3.1 Examination

- A. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. Examine materials upon arrival at site. Notify the carrier and manufacturer of any damage.

3.2 Installation

- A. Install in accordance with manufacturer's instructions.

3.3 Protection

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

End of Section 05 51 33.13

Section 05 51 33.16
Inclined Metal Ladders

PART 1 - GENERAL

1.1 Section Includes

- A. Aluminum Ships Ladders

1.2 Related Sections

- A. Section 06 10 00 - Rough Carpentry

1.3 Submittals

- A. Submit under provisions of Section 01 30 00 and Section 01 30 01.
- B. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings for Ladders
 - 1. Plan and section of ladder installation.

1.4 Delivery, Storage, and Handling

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store ladder until installation inside under cover. If stored outside, under a tarp or suitable cover.

1.5 Warranty

- A. Limited Warranty: Five years against defective material and workmanship, covering parts only, no labor or freight. Defective parts, if deemed so by the manufacturer, will be replaced at no charge, freight excluded, upon inspection at manufacturer's plant which warrants same.

PART 2 - PRODUCTS

2.1 Manufacturers

- A. Acceptable Manufacturer: Precision Ladders, LLC, which is located at: P. O. Box 2279 ; Morristown, TN 37816-2279; Toll Free Tel: 800-225-7814; Tel: 423-586-2265; Fax: 423-586-

2091; Web: www.PrecisionLadders.com or A/E approved equal.

B. Substitution requests will be considered in accordance with provisions of Section 01 60 00.

2.2 Aluminum Ships Ladder

A. Aluminum Ships Ladder

1. Model: SL-** (** = height in vertical inches) Aluminum Ships Ladder as manufactured by Precision Ladders, LLC or A/E approved equal.
2. Capacity: Unit shall support a 1000 lb (454 kg) total load without failure.
3. Degree of Incline: 75 degrees.

B. Components: Ladder, mounting brackets and handrails on both sides.

1. Ladder Stringer: 5 inch by 2 inch by 3/16 inch (127 mm by 51 mm by 5 mm) extruded 6005-T5 aluminum channel.
2. Ladder Treads: 5-3/16 inch by 1-1/8 inch by 1/8 inch (131 mm by 29 mm by 3 mm) extruded 6005-T5 aluminum with serrated slip resistance surface standard. 1-1/4 inch by 1-1/4 by 1-1/4 inch angle welded to underside of treads. Treads shall be welded and bolted to stringer with 1/4" stainless steel bolts.
3. Ladder Mounting Brackets:
 - a. Floor Brackets: 2 inch by 3 inch by 1/4 inch (51 mm by 76 mm by 6 mm) aluminum angle.
 - b. Top Bracket: 4-3/4 inch by 5 inch by 1/4 inch (121 mm by 127 mm by 6 mm) aluminum angle.
4. Handrails: 1-1/4 inches (32 mm) Schedule 40, 6005-T5 aluminum pipe provided with internal aluminum fittings.
5. Platform:
 - a. Surface: Platforms 9 Sq Ft or less shall be made of standard tread material. Platforms larger than 9 Sq Ft shall have a bar grating surface.
 - b. Toe Boards: 4 inch by 1/4" 6005 T-5 aluminum.
 - c. Handrails: 1-1/4 inches (32 mm) Schedule 40, 6005-T5 aluminum pipe provided with internal aluminum fittings.
6. Finishes:
 - a. Standard: Mill finish on aluminum ladder components.

- b. Optional Finishes
 - 1. Powder Coated
 - 2. Anodized
- C. Options
 - 1. Tread material: bar grating and various types of formed plate.
 - 2. Extend-A-Rail, ladder safety post attached to one side of ladder to assist the climber in entering or exiting the top of ladder.
 - 3. 42 inch handrail extension (walk-thru) for accessing platforms, landings or elevated work spaces.
 - 4. Crossover ladders with platform between two ladders.

2.3 Fabrication

- A. Completely fabricate ladder ready for installation before shipment to the site.
- B. Completely fabricate handrail components ready for field assembly to ladder before shipment to site.

PART 3 - EXECUTION

3.1 Examination

- A. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- B. Examine materials upon arrival at site. Notify the carrier and manufacturer of any damage.

3.2 Installation

- A. Handle and store product according to manufacturer recommendations.
- B. Establish distance from the floor to the underside of the roof hatch cover. Locate the mounting bracket centerline 14-1/4" (356 mm) below the underside of the roof hatch. Check clear floor space required in installed position, then install the ladder to 60 to 70 degrees. Flush handrails shall be installed on both sides of the ladder side rails.
- C. Follow manufacturer recommendations for complete installation.

3.3 Protection

- A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

End of Section 05 51 33.16

Section 06 10 00
Rough Carpentry

PART 1 General

1.1 Section Includes

- A. Roof-mounted curbs.
- B. Roofing nailers.
- C. Preservative treated wood materials.
- D. Concealed wood blocking, nailers, and supports.

1.02 Reference Standards

- A. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware, 2005.
- B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials, 2008.
- C. AWPA C2 - Lumber, Timber, Bridge Ties and Mine Ties - Preservative Treatment by Pressure Processes; American Wood-Preservers' Association, 2003.
- D. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood-Preservers Association, 2007.
- E. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce), 2005.

1.03 Delivery, Storage, and Handling

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 PRODUCTS

2.01 General Requirements

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- B. Lumber fabricated from old growth timber is not permitted.

2.02 Dimension Lumber for Concealed Applications

- A. Sizes: Nominal sizes as indicated on drawings.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Standard or No. 3.
- D. Nailer width: Minimum 5-1/2 in. (nominal) wide or as wide as the nailing flange of each roof accessory.
- E. Nailer thickness: Thickness of roof insulation.

2.03 Accessories

- A. Fasteners and Anchors:
 - 1. Preservative-treated Wood: Stainless Steel, Type 304 or Type 316 Fasteners or Anchors approved for substrate type.
 - 2. Non-Treated Wood: Hot-dipped Galvanized Steel per ASTM A 153/A 153M.

2.04 Factory Wood Treatment

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Preservative Treatment:

1. Preservative Pressure Treatment of Lumber above Grade: AWWPA Use Category UC3B, Commodity Specification A (Treatment C2) using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber in contact with masonry or concrete.

2.05 Protective Metal Primers

- A. One component aromatic polyurethane, mio-zinc filled, moisture-cured, micaceous iron oxide and zinc filled primer.
 1. Series 394 PerimePrime by Tnemec; or DP Approved equal in accordance with Sections 01 30 00 and 01 60 00.

PART 3 EXECUTION

3.01 Installation – General

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

3.02 Blocking, Nailers, and Supports

- A. Provide framing and blocking members as indicated and as required to support roof accessories, fixtures and equipment. Attach wood blocking and perimeter nailers to resist minimum 200 lb. per foot uplift force in any direction. Perimeter wood nailers shall be installed in accordance with ANSI/SPRI ES-1 2011 requirements, fastened with approved anchors 4" in from each end and a maximum of 2' o.c. thereafter.
- B. Total wood nailer height shall match the total thickness of insulation being used and shall be installed with a 1/8" gap between each length and at each change of direction. Additional stacked wood nailers, blocking or wood cant strips where required to meet insulation height or detail requirements shall be fastened with corrosion resistant screws approved for use with the type of wood nailer being installed. Pressure treated wood nailers shall be fastened with stainless steel screws or bolts. Fasteners shall be set a maximum of 12" o.c. and staggered with corner regions fastened a maximum of 6" o.c., installed to resist a force of 200 lbs. per foot. Nails are not approved for use to attach wood nailers to substrates or each other.
- C. Metal framing, decking, sheet metal flashings and other metals shall be protected from direct contact with treated wood blocking and nailers. Prime structural steel angles, supports, framing, metal decking and flashings where treated wood materials are installed

with a protective metal primer. Metal flashings installed above treated wood nailers shall be separated from contact with a separation layer of self adhered, modified bitumen moisture barrier underlayment complying with ASTM D1970, or heavy duty fiberglass base sheet.

3.03 Roof Related Carpentry

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
- B. Provide wood curb at all roof openings except where specifically indicated otherwise. Form corners by alternating lapping side members.

End of Section 06 10 00

Section 07 22 00
Lightweight Insulating Concrete Roof Insulation

PART 1 GENERAL

1.1 Section Includes

- A. Lightweight Insulating Concrete Application to Prepared Substrate

1.2 Related Sections

- A. Section 06 10 00 – Rough Carpentry
- B. Section 07 54 60 – Fluid Applied Flashing Membrane
- D. Section 07 55 10 – SBS Modified Bitumen Roof over Lightweight Insulating Concrete
- E. Section 07 60 00 – Flashing and Sheet Metal

1.3 Reference Standards

- A. References in these specifications to standards, test methods and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout these specifications.

ASTM American Society for Testing and Materials
Philadelphia, PA

FM Factory Mutual Engineering and Research
Norwood, MA

UL Underwriters Laboratories
Northbrook, IL

1.4 Submittals

- A. Submittals shall be made in accordance with the General Requirements.
- B. All submittals which do not conform to the following requirements will be rejected.
 - 1. Submit a sample copy of the roof system guarantee covering the proposed lightweight insulating concrete system and roof membrane system.
 - 2. Submit documentation confirming compliance with project Factory Mutual 1-90 wind uplift requirements for insulation & membrane systems proposed for use on this project. Documentation shall include confirmation that all components including expanded polystyrene fill board are FM approved and will be covered

under the Primary Roofing Manufacturer's single source 20-year NDL Guarantee for the total roof assembly.

3. Submit a letter from the roof membrane manufacturer confirming the intention to issue the roof system guarantee covering the proposed lightweight insulating concrete system and roof membrane system at project completion.
4. Submit a letter from the proposed lightweight insulating concrete system supplier confirming that the Contractor is approved to install the proposed lightweight insulating concrete system.
5. Manufacturer's Data: The Contractor shall submit complete Manufacturer's data, showing conformance with the Contract Documents on all materials proposed for use in the work.
6. Shop Drawings: Include plans, sections, and details showing roof slopes, lightweight insulating concrete thicknesses, embedded insulation board, roof penetrations, roof perimeter terminations and curbs, control and expansion joints, and roof drains.
7. Material Certificates: For each of the following, signed by Manufacturers:
 - a. Cementitious materials.
 - b. Vermiculite aggregate.
 - c. Expanded polystyrene Insulation Board

1.5 Quality Assurance

- A. Acceptable Contractor: The Contractor must be certified in writing by the supplier to install the proposed lightweight insulating concrete system.
- B. Agency Approvals: The proposed lightweight insulating concrete system shall conform to the following requirements. No other testing agency approvals will be accepted.
 1. Underwriters Laboratories: Tested by Underwriters Laboratories in accordance with the procedures of ASTM E 119 and listed in the most recent Underwriters Laboratories Fire Resistance Directory. Lightweight insulating concrete roof insulation components are defined by Underwriters Laboratories under Sections CCVW for foamed plastic and CCOX for floor or roof – topping mixture in the latest edition of the Underwriters Laboratories Fire Resistance Directory.
 2. Factory Mutual: Tested by Factory Mutual Research and listed in the most recent FM Global RoofNav as non-combustible or Class 1, and for 1-90 windstorm classification utilizing the specific roof membrane system proposed for use on this project.

- C. The Contractor shall arrange to have periodic inspections of the lightweight insulating concrete system made by a technical representative of the Manufacturer. Contractor shall submit copies of the Manufacturer's inspection reports including photos within 3 days after inspection to DP, and shall correct deficiencies noted in the Manufacturer's report within 7 days.

1.6 Product Delivery, Storage, and Handling

- A. Delivery: Deliver materials in the supplier's original unopened packages, fully identified as to Manufacturer, brand or other identifying data and bearing the proper Underwriters Laboratories label.
- B. Storage: Store cellular concentrate at temperatures between 52°F and 80°F. Expanded polystyrene board should not be stored in areas of standing water prior to application but can be exposed to rainwater before application. Boards must be clean and free from foreign substances.

1.7 Project / Site Conditions

A. Requirements Prior to Job Start

1. Notification: Give a minimum of 5 days notice to the Owner and Manufacturer prior to commencing any work and notify both parties on a daily basis of any change in work schedule.
2. Permits: Obtain all permits required by local agencies and pay all fees which may be required for the performance of the work.
3. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NRCA and other industry or local governmental groups.

B. Environmental Requirements

1. Precipitation: Do not apply materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials and building interiors are protected from possible moisture damage or contamination.
2. Temporary Drainage: Contractor shall provide and maintain adequate roof drainage at all times during construction and shall provide temporary drainage means as necessary to promptly remove water from the roof during removal and replacement of existing membrane and decking materials. Drainage provisions shall include Emergency power and other means as necessary to ensure the prevention of accumulated rainwater and / or rain loads in excess of the existing roof system structural limits. Contractor shall monitor weather conditions and forecasts to avoid tear off and exposure of partially completed deck replacement areas to inclement weather. Areas made watertight with temporary membrane

where water may accumulate shall receive careful review for placement and provision of adequate temporary drainage prior to placement of new Lightweight Insulating Concrete fill, thermal insulations, roof membrane materials and permanent drains.

3. Temperature Restrictions: When air temperatures of 40°F or above are predicted to occur within the first 24 hours after placement, normal mixing and application procedures may be used. When air temperatures of 32°F to 40°F are predicted to occur within the first 24 hours after placement, the Contractor may increase the Portland cement quantity 15% by weight. Do not install the lightweight insulating concrete system when air temperatures are below 32°F.

1.8 Warranty / Guarantee

- A. Roof System Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish Owner with the roof system Manufacturer's 20 Year NDL labor and materials roof system guarantee. The roof system guarantee shall include both the roofing and flashing membranes, and the specified new lightweight insulating concrete system consisting of aggregate fill, patented-pre-formed polystyrene panels, and base sheet fasteners. All repair or replacement costs covered under the guarantee shall be borne by the roofing membrane Manufacturer. The guarantee shall be a term type, without deductibles or limitations on coverage amount, and be issued at no additional cost to Owner. Specific items covered under the roof system guarantee include:

1. The actual resistance to heat flow through the roof insulation will be at least 80% of the design thermal resistance, provided that the roofing membrane is free of leaks;
2. Should a roof leak occur the insulating performance of the roof insulation will be at least 80% of the design thermal resistance within a 2 year period following repair of the leak.
3. The roof insulation will remain in a reusable condition should the roof membrane require replacement (excluding damage caused by fastener pullout during removal of the old membrane.)
4. The roof insulation material will not cause structural damage to the building as a result of expansion from thermal or chemical action.

PART 2 PRODUCTS

2.1 Materials

- A. Acceptable Manufacturer: Provide a lightweight insulating concrete roof insulation system incorporating pregenerated foam and expanded polystyrene board supplied by a single Manufacturer.

1. NVS Roof Insulation System by Siplast, Inc., Irving, TX. No options; no substitutions allowed.

2.2 System Description

- A. Lightweight Concrete System Description: Provide materials used in the lightweight concrete roof insulation system conforming to the following.
 1. Portland Cement: Portland cement conforming to Type I, II, or III as defined by ASTM C 150.
 2. Vermiculite Aggregate: Vermiculite concrete aggregate conforming to ASTM C 332.
 - a. NVS Concrete Aggregate by Siplast, Inc., Irving, TX. No options; no substitutions allowed.
 3. Expanded Polystyrene Insulation Board: Expanded polystyrene (EPS) insulation board having a nominal density of 1 pcf defined as Type I by ASTM C 578 and containing approximately 3% open area. Each bundle of board shall be delivered to the job site with clear identification as to Manufacturer and shall carry the Factory Mutual approval label and the Underwriter's Laboratories Classified label on each bundle.
 - a. Insulperm Insulation Board by Siplast, Inc., Irving, TX. No options; no substitutions allowed.
 4. Water: Potable water that is clean and free of deleterious amounts of acid, alkali and organic materials.
- B. Thermal Resistance: R-25 average insulating fill thermal resistance value.

2.3 Mix Design

- A. Density: Mix Portland cement and pre-generated foam with water to achieve a wet density ranging from 38 to 48 pcf, resulting in a minimum dry density of 30 pcf and minimum compressive strength of 200 psi.

PART 3 EXECUTION

3.1 Examination

- A. General: Ensure that all surfaces to receive lightweight insulating concrete are free of oil, grease, paints/primers, loose mill scale, dirt, or other foreign substances. Cleaning or other corrections of surfaces to receive lightweight insulating concrete is the responsibility of the Contractor.

- B. Substrate Acceptance: Contractor shall examine surfaces to receive the roof insulation system and determine that the surfaces are acceptable for placement of the lightweight insulating concrete system, and comply with the Manufacturer's requirements for issuance of the project warranty.

3.2 Preparation

- A. General: Remove water or any other substance that would interfere with bonding of the lightweight concrete system.
- B. Tear Off of Existing Roofing Materials: Remove existing roof membrane and insulation to structural deck, metal flashings, drain flashings and flashing membranes as directed by the DP. Do not remove more area than can be replaced or made watertight by the close of the day. Contractor shall ensure that all areas under demolition and subsequent construction remain watertight with acceptable night seals and temporary flashings as required.
- C. Preparation of Substrates: Refer to Section 07 55 00 for preparation of existing structural deck, temporary roof membrane installation, metal flashings, and drain flashings, as indicated on project drawings.
- D. Temporary Drainage: Contractor shall provide temporary means of drainage including all necessary pumps and equipment sufficient to fully drain tributary and primary roof sections under construction where water may stand or become entrapped.

3.3 Application

- A. General: Provide equipment and application procedures conforming to the material supplier's application instructions.
- B. Applications Incorporating Expanded Polystyrene Panels: When the specified expanded polystyrene insulation panels are to be incorporated into the lightweight insulating concrete system, place a 1/8 inch (3 mm) minimum thickness of insulating concrete slurry coat over top of the prepared substrate. Place the thickness of expanded polystyrene insulation panels shown in the approved shop drawings within 30 minutes of applying the insulating concrete slurry coat to the substrate. Fill the holes in the expanded polystyrene insulation panels and place a 1 inch minimum thickness of insulating concrete over top of the expanded polystyrene insulation panels within the same day's application.
- C. Thermal Resistance: Install the specified lightweight insulating concrete system to provide for a minimum average thermal value of R-25 or as shown on the architectural details/drawings.
- D. Slope: Install the specified lightweight insulating concrete system to provide for a minimum positive roof slope of 1/8 inch per foot or as required to achieve positive drainage of the completed roof system within 48 hours after rainfall. Lightweight fill shall be sloped to drains and outlets with formed crickets/saddles on upslope side of curbs, between drains and as required to ensure positive slope to drain. Contractor shall verify elevations,

existing conditions and slope provided by roof structural framing. After completion roof areas that pond water shall be corrected at the Contractor's expense.

3.4 Field Quality Control

- A. Protection: Avoid roof-top traffic over the roof insulation system until one can walk over the surface without creating surface damage.
- B. Compressive Strength Testing: The D.P. reserves the option to select an independent testing laboratory to randomly sample the top placement of insulating concrete to verify the thickness and density, and to secure and test compressive strength cylinders in accordance with ASTM C 495. The Owner will be responsible for the cost and engagement of the independent testing laboratory services.
- C. Application Monitoring: Monitor the thickness and wet density of the lightweight insulating concrete at the time of placement to determine conformance to the Manufacturer's requirements. Monitor the placement of proper thickness of polystyrene insulation board in accordance with the contract documents.
- D. Fastener Withdrawal Testing: Conduct a base ply fastener pull test three or more days following the application of the lightweight insulating concrete to ensure a minimum withdrawal resistance of 40 pounds (18 kg) per fastener.

3.5 Patching

- A. Patching: Perform all patching and repairing of insulating concrete using Zono-Patch or other materials approved by the lightweight insulating concrete supplier.

End of Section 07 22 00

Section 07 41 00
Metal Roof and Wall Panels

PART 1: GENERAL

1.1 Summary

A. Section Includes: This Section specifies factory-formed metal roof and wall panels.

B. Related Sections

1. Section 07 60 00 – Flashing and Sheet Metal
2. Section 07 90 00 – Joint Sealants

1.2 References

A. ASTM International

1. ASTM A653/A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanized) by the Hot-Dip Process.
2. ASTM A792/A792M Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process.
3. ASTM B209 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. ASTM E283 Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences Across the Specimen.
5. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
6. ASTM E1592 Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.
7. ASTM E1646 Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.
8. ASTM E1680 Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems.

B. Sheet Metal and Air Conditioning Contractor's National Association (SMACNA)

1. SMACNA Architectural Sheet Metal Manual.
- C. Underwriters Laboratories, Inc. (UL)
1. UL 263 Fire Tests of Building Construction and Materials.
 2. UL 580 Tests for Uplift Resistance of Roof Assemblies.
- 1.3 System Description
- A. Materials
1. G90 hot-dipped galvanized Grade A structural quality steel in compliance with ASTM A653.
- B. Performance Requirements
1. Wind uplift in compliance with UL Classification 580 for UL Classified 90 rated assemblies.
 2. Air Infiltration: Maximum 0.011 cfm/lf (0.061 m³/hr/m) of seam at static pressure of +/-6.24 psf (0.30 kPa) when tested per ASTM E1680.
 3. Water Penetration: No uncontrolled water penetration through the panel joints at a static pressure of 12.0 psf (0.57 kPa) when tested in accordance with ASTM E1646.
- C. Finish Performance Requirements
1. Color Change and Fade Resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM G23; color change, after removal of surface deposits such as dirt or chalk, maximum 5 Δ Hunter units.
- 1.4 Submittals
- A. General: Submit listed action submittals in accordance with General and Special Conditions of the Contract and Division 1.
- B. Shop Drawings: Indicate information on shop drawings as follows:
1. Layout, profiles and product components including dimensions, anchorage, erection details, flashing details, elevations, plans and sections required to indicate conditions.
- C. Samples: Submit as follows

1. Two (2) 12" x 12" samples of each Wall and Flashing product to show selected colors and finishes used on project. Select panel color to provide closest match to existing. Provide panel color samples to Design Professional for approval.
- D. Product Data: Submit product data, including manufacturer's spec data product sheet, for specified products.
1. Material Safety Data Sheets (MSDS).

1.5 Information Submittals

A. Quality Assurance

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
3. Manufacturer's Instructions and Guidelines: Manufacturer's installation instructions.

1.6 Closeout Submittals

- A. Warranty: Submit warranty documents specified.
- B. Operation and Maintenance Data: Submit operation and maintenance data for installed products in accordance with Sections 01 77 00.
1. Manufacturer's instructions covering maintenance requirements.

1.7 Quality Assurance

A. Qualifications

1. Manufacturer Qualifications: Not less than 5 years experience in the actual production of specified products.
 - a. Member of the Metal Building Manufacturer's Association (MBMA).
 - b. Certified by AISC in the Metal Building category.
 - c. Primary manufacturer roof and wall sheeting including trim.
 - d. Manufacturer capable of providing field service representation during construction.

2. Installer Qualifications: Firm experienced in application or installation of systems similar in complexity to those required for this project, plus the following:
 - a. Acceptable to or licensed by manufacturer.
 - b. Three (3) years experience with systems.
 - c. Successfully completed not less than 5 comparable scale projects using this system.

B. Regulatory Requirements

1. FM Class I-90
2. SMACNA Architectural Sheet Metal Manual
3. UL 263
4. UL 580
5. UL 790
6. UL 2218

- C. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.8 Delivery, Storage, and Handling

- A. General: Comply with Division 1.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Store products in manufacturer's unopened packaging until ready for installation.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- E. Storage and Protection
 1. Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
 2. Stack prefinished material to prevent twisting, bending, abrasion, scratching, and denting.
 3. Elevate one end of each skid to allow for moisture runoff.

4. Prevent contact with material that may cause corrosion, discoloration, or staining.
5. Provide factory installed strippable vinyl film protective coating to panels.

1.9 Project Ambient Conditions

- A. Installation Location: Assemble and erect components only when temperatures are above 40 degrees F (4 degrees C) and rising.

1.10 Sequencing

- A. Sequence with Other Work: Comply with manufacturer's written recommendations for sequencing construction operations.

2.11 Warranty

- A. Project Warranty: Refer to General and Special Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Design Professional's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's 20-Year Panel Finish Warranty is in addition to, and not a limitation of, other rights Owner may have under the Construction Documents.
- C. Manufacturer shall warrant installed system for the periods described herein, starting from Date of Substantial Completion against all the conditions indicated below. When notified in writing from Owner, manufacturer/installer shall promptly and without inconvenience and cost to Owner, correct said deficiencies.

1. Materials and Workmanship Warranty: 2-Year

2. Panel Finish Warranty

- a. Finish coating shall not peel, blister, chip, crack or check in finish, and shall not chalk in excess of 8 numerical ratings when measured in accordance with ASTM D659.

- b. Finish coating shall not change color or fade in excess of 5 NBS units as determined by ASTM D2244.

- i. Panel finish: 20 years

PART 2: PRODUCTS

2.1 Acceptable Manufacturers

- A. MBCI or Design Professional Approved Equal
- B. Peterson Aluminum Corp. or Design Professional Approved Equal

2.2 Sheet Metal Roof and Wall Panels

A. Metal Wall & Flashing Panels – (Roof Area N-2)

1. Replacement Roof and Wall Panels: Panel 36 inch (915 mm) wide net coverage, with 1-1/4 inch (30 mm) high ribs at 12 inches (305 mm) on center. Match existing or DP approved equal.
 - a. Material: 24 ga. Galvalume coated steel
 - b. Striation: Yes
 - c. Panel Color: Mill finish
 - d. Sealant Bead: Field Applied

B. Metal Roof Panels – (Roof Area O)

1. Replacement Wall Panels: “PBR” Panel 36 inch (915 mm) wide net coverage, with 1-1/4 inch (30 mm) high ribs at 12 inches (305 mm) on center.
 - a. Material: Pre-finished Galvalume steel per ASTM 792-86 AZ -55. Finish shall be full strength Kynar 500 Fluoropolymer coating, applied by the manufacturer on a continuous coil coating line, with the exposed side dry film thickness of 0.70 to 0.90 mil over 0.25 to 0.35 mil prime coat, to provide a total dry film thickness of 0.95 to 1.25 mil. Back side shall be coated with primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500 finish supplier. Color selected by Owner from manufacturer’s standard range of colors.
 - b. Thickness: 24 ga. (0.61 mm)
 - c. Side laps: Fully overlapping ribs secured together with No. 12-14 self-drilling tapping fasteners with neoprene washers, color-matched carbon steel fasteners.
 - d. Length: Full length.
 - e. End laps, where required: 4 inches (100 mm) wide, located at a support member.
 - f. Cut panels square at each end; provide base trim at sill.

2.3 Accessories

A. Panel Fasteners

1. For Galvalume and pre-finished roof panels: Stainless steel-capped carbon steel fasteners with integral sealing washer.
2. Color of exposed fastener heads to match the wall panel finish.
3. Concealed Fasteners: Self-drilling type, of size as required.
4. Provide fasteners in quantities and location as required by the manufacturer.

B. Flashing and Trim: Match material, finish, and color of adjacent components. Provide trim at framed openings, at base and ends of metal panel wall and as required or specified to provide weather tightness and a finished appearance.

C. Sealants, Mastics and Closures: Manufacturer's standard type.

1. Provide at wall panel end laps, side laps, transitions and accessories as required providing a weather resistant wall system; use tape mastic or gun grade sealant at side laps and end laps.
2. Closures: Formed to match panel profiles; closed cell elastic material, manufacturer's standard color.
3. Tape mastic: Pre-formed butyl rubber-based, non-hardening, non-corrosive to metal; white or light gray.
4. Gun grade sealant: Non-skinning synthetic Elastomeric based material; match panel color.

2.4 Source Quality Control

- ### A. Cladding components and materials shall be from single manufacturer and lot.

PART 3: EXECUTION

3.1 Manufacturer's Instructions

- ### A. Compliance: Comply with manufacturer's written data, including product technical bulletins, and product catalog installation.

3.2 Examination

- A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.
 - 1. Do not proceed until unsatisfactory conditions have been corrected.
 - 2. Verify that substrate conditions are acceptable for product installation in accordance with manufacturer's instructions prior to installation of wall panels.

3.3 Preparation

- A. Ensure surfaces are clean and free of dirt and other foreign matter harmful to performance of new materials.
- B. Remove manufacturer's protective film from panel surfaces.
- C. Coordinate panel installation with work of other trades to provide a noncorrosive and leak-proof installation.
- D. Prevent galvanic action of dissimilar metals in proximity to one another.

3.4 Installation

- A. Install panels vertical and in compliance with the manufacturer's instructions. Install panels plumb, true and in correct alignment with structural framing, in accordance with shop drawings and manufacturer's printed installation instructions.
 - 1. Variation from Plumb: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
 - 2. Variation from Level: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
 - 3. Variation from True Plane: Maximum 1/8" (3.2 mm) in 20 feet (6.096 m).
- B. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.
- C. Fasten cladding system to structural supports.
- D. Locate end laps over supports. Place side laps over corresponding adjacent panel edge and fasten panels together per manufacturer's recommendation.
- E. Install sealant and gaskets to prevent weather penetration.
- F. Install system free of rattles, noise due to thermal movement, and wind whistles.

- G. Seal wall panels watertight and weather tight with sealant in compliance with building manufacturer's standard procedures. Form joints to conceal sealant.
- H. High Wind Detail: Install butyl tape sealant in-seam at side laps of end laps over wall panels prior to installation of fasteners.
- I. Seams: Provide uniform, neat seams.
- J. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leak proof installation.
- K. Install metal trim around window frames and mechanical louvers and at ends of wall in a weather tight condition.

3.5 Field Quality Control

- A. Manufacturer's Field Services: Provide manufacturer's field services consisting of product use recommendations and weekly site visits for inspection of product installation in accordance with manufacturer's instructions and project plans and specifications. Discrepancies shall adhere to most stringent.

3.6 Final Cleaning

- A. Final clean up shall comply with Section 01 77 00.
- B. Upon completion, remove surplus and excess materials, rubbish, tools, and equipment.

3.7 Protection

- A. Protect installed product from damage during construction in accordance with Section 01 77 00.

End of Section 07 41 00

Section 07 54 19
Adhered PVC Membrane Roofing

PART 1 - GENERAL

1.01 Summary

A. Section includes:

1. Install a complete adhered PVC roofing system including membrane, flashings, insulation, and other components.

B. Related sections:

1. Section 06 10 00 Rough Carpentry.
2. Section 07 60 00 Flashing and Sheet Metal.
3. Section 07 90 00 Joint Sealants.

1.02 Quality Assurance

- A. The roofing system shall be from a single source manufacturer. Separated components of roofing system will not be allowed, except as specified.
- B. This roofing system shall be applied only by a roofing applicator authorized by the manufacturer prior to bid.
- C. Upon completion of the installation and the delivery of certification that all work has been done in strict accordance with the contract specifications and manufacturer's requirements, a manufacturer's technical service representative shall inspect the installed roof system and furnish a report to the A/E within 7 calendar days of the site visit.

1.03 Submittals

A. Furnish to the A/E the following submittals:

1. Copies of product literature.
2. Provide written approval by the insulation manufacturer for use and performance of the product in the proposed system.
3. Sample draft copy of manufacturer's warranty indicating the specified duration.
4. Sample draft copy of applicator's warranty indicating the specified duration.
5. Dimensioned shop drawings which shall include:
 - a. Outline of roof with roof size and elevations shown.

- b. Indicate all crickets designed to project specific conditions.
- c. Details of flashing methods for all penetrations, flashing / counterflashing, copings, base flashing, and expansion joint for all project specific conditions.
- d. Provide technical acceptance letter from the manufacturer.
 - i. Certifications by manufacturers of roofing materials that all materials supplied comply with all requirements of the identified ASTM and other industry standards or practices.
 - ii. Certification from the applicator that the system specified meets all identified code and insurance requirements as required by the specification.

1.04 Code Requirements

- A. The applicator shall submit evidence the proposed roof system meets the requirements of the 2012 International Building Code (IBC), and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.
- B. System shall be designed to meet a minimum wind design requirements of the most recent version of FM 1-29. Meet or exceed the following calculated design wind pressures by a factor of 2:
 - 1. Field - 45 psf.
 - 2. Perimeter/Corner Enhancement per FM 1-29 or Metro Dade RAS 117.
- C. Underwriters Laboratories, Inc. - Northbrook, IL.
 - 1. Class A Assembly.

1.05 Product Delivery, Storage, and Handling

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weld-ability. Unvented polyethylene tarpaulins are not

accepted. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed. A one hundred dollar (\$100) per day fee shall be assessed and deducted from the contract amount each day of non-compliant material storage.

- D. Store adhesives at temperatures between 40 degree F (5 degree C) and 80 degree F (27 degree C). Store adhesive canisters per manufacturer's specific storage instructions.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions as supplied by material manufacturer.
- F. All materials which are determined to be damaged by the A/E's Representative are to be removed from the job site and replaced at no cost to the Owner.

1.06 Job Conditions

- A. The PVC membrane and associated materials may be installed under certain adverse weather conditions but only after consultation with the manufacturer, as installation time and system integrity may be affected.
- B. Only as much of the new roofing as can be made weather tight each day, including all flashing and detail work, shall be installed. All seams shall be heat welded before leaving the job site that day.
- C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.
- D. All surfaces to receive new membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface meeting industry and manufacturer's standards prior to system application. Torches are not allowed.
- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Uninterrupted water stops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Water stops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- G. The applicator is cautioned that certain PVC membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with the PVC membrane. Consult the manufacturer's literature regarding compatibility, precautions, and recommendations.

- H. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over felt type cloth or plywood over insulation board shall be provided for all new roof areas that receive rooftop traffic during construction.
- I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air or similar methods.
- J. The applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.
- K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable city, state and federal requirements.
- L. All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site and properly transported to a legal dumping area authorized to receive such material.
- M. Take precautions that storage and application of materials and equipment does not overload the roof deck or building structure.
- N. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks, and excessive heat.
- O. All rooftop contamination that is anticipated or that is occurring shall be reported to the manufacturer to determine the corrective steps to be taken.
- P. Immediately stop work if any unusual or concealed condition is discovered and shall immediately notify the A/E of such condition in writing for correction.
- Q. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.
- R. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.
- S. Conduct fastener pullout tests in accordance with the latest version of the SPRI/ANSI Fastener Pullout Standard to verify condition of the deck/substrate and to confirm expected pullout values. Provide copies of reports to the A/E.
- T. The PVC membrane shall not be installed under the following conditions without consulting the manufacturer's technical department for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.

2. Any exterior wall has 10 percent or more of the surface area comprised of opening doors or windows.
 3. The wall/deck intersection permits air entry into the wall flashing area.
- U. Precautions shall be taken when using solvent based adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.
- V. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.
- W. PVC membranes are slippery when wet or covered with snow, frost, or ice. Working on surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.

1.07 Warranties

- A. Roof System Warranty: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the A/E with the manufacturer's 20 year NDL roof system warranty. The warranty shall be a term type, without deductibles or limitations on coverage amount. Warranty period begin at the date of Substantial Completion.
- B. Applicator shall provide A/E with a separate workmanship warranty. Applicator's/roofing contractor's warranty to repair any leaks within a 12 hour period shall be in effect for a two (2) year duration from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 General

- A. The basis of design is GAF Materials Corporation; other manufacturers may submit substitution request as A/E approved equal for general conformance. # P-FA-T-N-60 mil (1.5 mm) Membrane or approved equal

2.02 Membrane

- A. EverGuard™ FA 80 mil PVC:
1. A smooth type, polyester scrim reinforced PVC, or A/E approved equal, membrane with a nominal 0.080 inch (80 mils) thickness. Meets or exceeds the minimum requirements of ASTM D-4434. Each full roll contains approximately 600 SF of roofing material, 76" x 60', weighing 243 lbs., # P-FA-T-I-80 single-ply roofing membrane by roof system manufacturer.

- a. Color: White, or as selected by Owner from Manufacturer's standard colors.

2. Technical / Physical Properties:

<u>Parameters</u>	<u>ASTM Test Method</u>	<u>ASTM D-4434 Standard Min.</u>	<u>Typical Physical Properties</u>
Reinforcing Material	-	-	Polyester
Overall Thickness(1), min., inches (mm)	D751	0.045 (1.14)	0.080 inches
Thickness Above Scrim	-	-	0.023 (avg.)
Breaking Strength, min., lbf/in. (KN/m)	D751	200 lbf/in (35.0)	350 lbf x 320 lbf
Elongation at Break, min. (machine / transverse)	D751	15% / 15%	35% / 35%
Seam strength(2), min. (% of breaking strength)	D751	75	95
Tensile Strength, min., (% of original)	D751	90	95
Elongation, min., (% of original)	D751	90	90
Tearing Strength	D751	45 lbf	70 lbf x 80 lbf
Low Temperature Bend, -40° F (-40° C)	D2136	-40 F	-40F
Accelerated Weathering Test (florescent light, UV exposure)	G53	No visible deterioration	No visible deterioration
UV-B, 8 hr. @ 70 C, 5,000 hrs. exposure	-	@ 7 x magnification	@ 7 x magnification
Water Absorption	D750	+/-3% (max.)	0.06%
Reflectivity (white)	C1549	-	0.83
Emissivity (white)	C1371	N/A	0.87

Notes

- (1) Typical Physical Properties data is applicable for 0.080 in membrane thickness.
 (2) Failure occurs through membrane rupture not seam failure.
 (3) Physical Properties shown are prior to applying felt backing, if specified.

2.03 Flashing Materials

A. Wall/curb flashing:

1. Membrane flashings shall be of same type, thickness, and color of roofing membrane.

B. Perimeter edge flashing:

1. A PVC-coated, heat weld-able sheet metal, capable of being formed into a variety of shapes and profiles. A 24 gauge galvanized metal sheet with a 40 mil (1.0 mm) unreinforced PVC membrane laminated on one side. The dimensions are 4 feet x 8 feet (1.2 m x 2.4 m) or 4 feet x 10 feet (1.2 m x 3.0 m). Color selected by Owner.

2.04 Miscellaneous Flashing

- A. A prefabricated vent pipe flashing made from 0.048 inch (48 mil/1.2 mm) thick PVC membrane with stainless steel clamping bands.
- B. Circular 0.048 inch (48 mil/1.2 mm) thick PVC membrane patch welded over T-joints formed by overlapping thick membranes.
- C. A proprietary sealant from the approved manufacturer to be used at flashing terminations.
- D. A solvent-based reactivating adhesive used to attach membrane to flashing substrate.

2.05 Attachment Components

A. Membrane adhesive:

1. Solvent-based bonding adhesive: Solvent based rubberized adhesive for use with EverGuard PVC membranes, or A/E approved equal, [EverGuard Bonding Adhesive](#), or A/E approved equal, by roof system manufacturer. Application rates as required by manufacturer.

- 2.06 A specially designed, heavy-duty, corrosion-resistant fastener used to attach membrane to structural concrete roof decks by GAF. A shank diameter of approximately 0.21 inch (5.3mm) and a thread diameter of approximately 0.26 inch (6.6). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement and simplicity of application.

2.07 Miscellaneous Accessories

- A. Termination bar: Extruded aluminum termination bar with angled lip caulk receiver and lower leg bulb stiffener. Pre-punched slotted holes at 8" on center or 12" on center. 3/4" x 10' with 0.090" cross section, EverGuard® Lip Termination Bar by GAF or A/E approved equal.

- B. Vent boots: 0.075 inch thick molded PVC membrane sized to accommodate most common pipe and conduits, (1 inch to 6 inch diameter pipes), including square tube. Hot-air welded directly to EverGuard® PVC membrane by GAF or A/E approved equal, supplied with stainless steel clamping rings, EverGuard® PVC Preformed Vent Boots, or A/E approved equal, by roof system manufacturer. Color to match membrane.
- C. Unreinforced flashing membrane: EverGuard® unreinforced flashing membrane sized to accommodate existing conduit, pipe vent, and steel column conditions. Hot-air weld directly to PVC membrane. EverGuard® PVC Unreinforced Flashing Membrane by GAF or A/E approved equal. Color to match membrane.
- D. High Temperature Stack Flashing: EverGuard® unreinforced flashing membrane by GAF or A/E approved equal, bonded to EverGuard® Bonding Adhesive by GAF or A/E approved equal, around stack, GAF Water Block, or A/E approved equal, around top edge of flashing. Hot-air weld directly to PVC membrane. Color to match membrane.
- E. Coated Metal Sealant Box Penetration Flashing: For multiple pipe penetrations in a cluster arrangement. System consists of field bent EverGuard® coated metal, by GAF or A/E approved equal, to form a sealant box as needed to capture all pipes in the cluster, stripping for vertical seam, flange fasteners, quick set non-shrink grout, EverGuard® pourable sealant, by GAF or A/E approved equal, EverGuard® pre-formed corners by GAF or A/E approved equal, EverGuard® 6" wide flashing strip, by GAF or A/E approved equal heat welded at base.
- F. Preformed corners: 0.075 inch thick molded PVC membrane for both inside and outside corners of base and curb flashing. Hot-air weld directly to EverGuard® PVC membrane, by GAF or A/E approved equal. Size 4 inch x 4 inch with 4 inch flange, EverGuard® PVC Preformed Corners by GAF or A/E approved equal. Color to match membrane.
- G. Custom PVC boots: For special shapes of existing building elements (ie: wide flange). Verify all conditions.
- H. Prefabricated expansion joint covers: Flat-mounted and curb-mounted made of 0.060" thick reinforced membrane with foam supported bellows, heat welds directly to roofing membrane, equipped with metal nailing flanges and membrane welding flaps, Metalastic® Prefabricated Expansion Joint Covers by GAF or A/E approved equal. Color to match membrane.
- I. PVC walkway pads: 1/8 inch thick extruded and embossed PVC pads 30 inch x 36 inch, heat welds directly to roofing membrane. Herringbone traction surface, gray in color, EverGuard® PVC Walkway Pads, by GAF or A/E approved equal.

- J. Aluminum tape: 2 inch (50 mm) wide pressure-sensitive aluminum tape for separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at PVC clad joints.
- K. Compressible pressure sensitive adhesive: Foam with pressure-sensitive adhesive on one side; used with metal flashings as a preventive measure against air and windblown moisture entry.
- L. Sealant tape: High performance sealant tape used with metal flashings as a preventive measure against air and windblown moisture entry.
- M. Solvent cleaner: High quality solvent cleaner used for the general cleaning of residual asphalt, scuff marks, etc., from the membrane surface. Use daily to clean seam areas prior to hot-air welding in tear off or dirty conditions or if the membrane is not welded the same day it is unrolled.
- N. Perimeter warning tape: 2 inch wide rolls by 30 feet long with a release liner. Perimeter warning tape shall exceed reflectivity 3 requirements and Federal Spec. L-S-300, Class 1.

2.08 Sealants

- A. Refer to Section 07 90 00 Joint Sealants.
 - 1. Depending on substrates, the following sealants are options for temporary overnight tie-ins:
 - a. Spray-applied, water-resistant urethane foam.
 - b. Mechanical attachment with rigid bars and compressed sealant.

2.09 Miscellaneous Fasteners and Anchors

- A. All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. All concrete fasteners and anchors shall have a minimum embedment of 1-1/4 inch (32 mm) and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

PART 3 - EXECUTION

3.01 Substrate Condition

- A. Confirm that roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
- B. All surfaces are smooth and free of dirt, debris and incompatible materials.
- C. Concrete decks shall be smooth, clean, and dry.
- D. All roof surfaces shall be free of water, ice and snow.

3.02 Substrate Preparation

- A. Load materials on the rooftop in such a manner as to eliminate risk of deck overload due to concentrated weight.
- B. Concrete Deck (Area P):
 - 1. The underside of the concrete decks, either the vented metal forms or exposed concrete, must remain unobstructed to the escape of water vapor. Materials that retard the flow of vapor must not be installed directly below the deck. Foil-faced insulation secured to the bottom of the deck, spray-on fireproofing, or paint, which obstructs the venting of the concrete, are just three examples of the unacceptable deck assemblies.
 - 2. Joints must be filled with a masonry grout to correct imperfections between slabs and feathered to provide a slope not greater than 1/4" per foot (2.1 cm/m), for non-insulated assemblies or 1/8" per foot (1.0 cm/m) for insulated assemblies.
 - 3. Fill depressions with masonry grout and treat cracks greater than 1/8" (3 mm) width in accordance with the deck manufacturer's recommendations.
 - 4. If the joints cannot be grouted and finished smooth, then a leveling course of lightweight concrete (minimum 2" (5.1 cm) thickness) must be applied. Do not seal joints between the slabs; leave open to permit venting and drying of roof fill from below.

3.03 Substrate Inspection

- A. A dry, clean, and smooth substrate shall be prepared to receive the adhered roof membrane.
- B. Inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.
- C. The substrate shall be clean, smooth, dry, and free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.
- D. All roof surfaces shall be free of water, ice and snow.

3.04 Installation of PVC Membrane

- A. The surface of the concrete deck shall be inspected prior to installation of the PVC roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination.
- B. Over the properly installed and prepared substrate surface, adhesive shall be applied using solvent-resistant 3/4 inch (19 mm) nap paint rollers. The adhesive shall be applied to the substrate at a rate according to the manufacturer requirements. The adhesive shall be applied in smooth, even coating with no gaps, globs, puddles or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be coated with adhesive. The first layer of adhesive shall be allowed to dry completely prior to installing the membrane.
- C. When the adhesive on the substrate is dry, the PVC roof membrane is unrolled. Adjacent sheets shall be overlapped 3 inches (75 mm). Once in place, one-half of the sheet's length shall be turned back and the underside shall be coated with adhesive at a rate of 1/2 gallon per 100 square feet (0.2 liters per m²). When the membrane adhesive has dried slightly to produce strings when touched with a dry finger, the coated membrane shall be rolled onto the previously-coated substrate being careful to avoid wrinkles. Do not allow adhesive on the underside of the PVC membrane to dry completely. The amount of membrane that can be coated with adhesive before rolling into substrate will be determined by ambient temperature, humidity and crew. The bonded sheet shall be pressed firmly in place with a water-filled, foam-covered lawn roller by frequent rolling in two directions. The remaining un-bonded half of the sheet shall be folded back and the procedure repeated.

3.05 Hot-Air Welding of Seam and Seam Overlaps

- A. General:
 1. All seams shall be hot-air welded. Seam overlaps should be 3 inches (76 mm) wide for the machine welding process and 4 inches (100 mm) wide when hand-welding.
 2. All membrane to be welded shall be clean and dry.
- B. Hand welding:
 1. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow", the hand roller is positioned perpendicular to the nozzle and rolled lightly. For straight seams, the 1-1/2 inch (40 mm) wide nozzle is recommended for use. For corners and compound connections, the 3/4 inch (20 mm) wide nozzle shall be used.
- C. Machine welding:

1. Machine welded seams are achieved by the use of automatic welding equipment. When using this equipment, manufacturer's instructions shall be followed and local codes for electric supply, grounding and over current protection observed. Dedicated circuit house power or a dedicated portable generator is recommended. No other equipment shall be operated simultaneously off the generator.
 2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.
- D. Quality control of welded seams:
1. The applicator shall check all welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark gray material from the underside of the top membrane. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the applicator at no extra cost to the Owner.

3.06 Membrane Flashings

- A. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the contractor's expense. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces. Use caution to ensure adhesive fumes are not drawn into the building.
- B. Adhesive for membrane flashings:
1. Over the properly installed and prepared flashing substrate, adhesive shall be applied according to manufacturer's instructions. The adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
 2. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.
 3. All flashings shall extend a minimum of 8 inches (0.2 m) above roofing level.
 4. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the PVC membrane.

5. All flashing membranes shall be mechanically fastened along the counter-flashed top edge at 6-8 inches (0.15-0.20 m) on center.

3.07 Metal Flashings

- A. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the manufacturer and of the following:
 1. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.
 2. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.
 3. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.
 4. Termination bar installation: Continuous water block behind top edge of roof membrane, butyl tape between membrane and back of termination bar, install termination bar with fasteners at 12 inches on-center.
 5. Metal joints shall be watertight.
 6. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).
 7. Counterflashings shall overlap base flashings at least 4 inches (100 mm).

3.08 PVC Coated Metal Base Flashings and Edge Metal

- A. PVC coated metal flashings shall be formed and installed per the drawings.
 1. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 inches (100 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 inch (25 mm).
 2. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.
- B. Adjacent sheets of PVC coated metal sheets shall be spaced 1/4 inch (6 mm) apart. The joint shall be covered with 2 inch (50 mm) wide aluminum tape. A 4 inch minimum (100 mm) wide strip of PVC flashing membrane shall be hot-air welded over the joint.
- C. Position the roof membrane over edge of roof and down outside face of wall covering wood nailer(s) completely. Allow 1 inch (26 mm) of excess membrane to extend down past the wood nailer. Hot-air weld all seams making sure there are no voids in welds.

3.09 Walkway Installation

- A. Roofing membrane to receive walkway shall be clean and dry. Place chalk lines on membrane sheet to indicate location of walkway. Apply a continuous coat of adhesive to the membrane sheet and the back of walkway in accordance with the manufacturer's technical requirements and press walkway into place with a water-filled, foam-covered lawn roller. Clean the membrane sheet in areas to be welded. Hot-air weld the entire perimeter of the walkway to the membrane sheet. Check all welds with a rounded screwdriver. Re-weld any inconsistencies or cold welds.

3.10 Perimeter Warning Tape

- A. Areas of membrane where tape is to be applied must be cleaned to a "like new" condition. Failure to properly clean the membrane will result in less than satisfactory adhesion. The membrane should be cleaned as follows:
 - 1. New membrane: Remove loose dirt and dust by wiping clean with water. For areas where dirt is embedded, scrub the application area with a commercial cleaner such as Simple Green, 409, or other similar all purpose cleaner using a Scotch Brite scrubbing pad or similar product. Wash away residual cleaning material with clean water.
 - 2. Weathered membrane: For areas where there is excessive dirt build-up, use the above cleaning procedure followed by cleaning with a natural fiber rag wet with MEK, and wipe away all residual cleaning solution and remaining dirt until membrane has a "like new" appearance.
- B. After surface is clean and dry, apply tape to surface taking care to avoid trapping air and creating blisters as tape is smoothed over with hand pressure. If a chalk line is used be sure to keep chalk dust clear of application area.
- C. Do not apply perimeter warning tape to surfaces where the temperature is below 40 degrees Fahrenheit.
- D. Perimeter warning tape may be slippery when wet.

3.11 Temporary Cut-Off

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary water block shall be constructed to provide a 100 percent watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the water block. Water block shall be sealed to the deck or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of off-site. None of these materials shall be used in the new work.

- B. If inclement weather occurs while a temporary water block is in place, the applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the applicator's expense.

3.12 Completion

- A. Finished roof surface shall be cleaned, including all boot and equipment scuff marks and left in bright white condition.
- B. Prior to demobilization from the site, the work shall be reviewed by the technical representative and the applicator. All defects noted and non-compliances shall be itemized in a punch list. These items must be corrected immediately to the satisfaction of the Owner and A/E. The A/E will create the final punch list after receiving the technical representative's punch list.

End of Section 07 54 19

Section 07 54 60
Fluid-Applied Flashing Membrane

PART 1 GENERAL

1.1 Section Includes

- A. Preparation of Substrate to Receive Roofing Materials
- B. Base Sheet/Roof Insulation Application to Prepared Substrate
- C. Modified Bitumen Ply Sheet Application to Prepared Substrate
- D. Poly(methyl methacrylate) (PMMA)-based Roof Membrane Application
- E. PMMA-based Roof Flashing Application

1.2 Products Installed But Not Furnished Under This Section

- A. Sheet Metal Flashing and Trim
- B. Sheet Metal Roofing Specialties

1.3 Related Sections

- A. Section 06 10 00 – Rough Carpentry
- B. Section 07 55 10 – Modified Bitumen Roofing
- C. Section 07 60 00 – Flashing and Sheet Metal

1.4 Reference Standards

- A. References in these specifications to standards, test methods and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout these specifications.

ASTM	American Society for Testing and Materials Philadelphia, PA
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FM	Factory Mutual Engineering and Research Norwood, MA
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NRCA	National Roofing Contractors Association
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	Rosemont, IL
OSHA	Occupational Safety and Health Administration Washington, DC
SMACNA Association	Sheet Metal and Air Conditioning Contractors National Chantilly, VA
UL	Underwriters Laboratories Northbrook, IL

1.5 Description of Work

- A. Flashing Assembly: PMMA flashing membrane assembly used for specialty waterproofing applications at walls, curbs, penetrations and roof drains. Flashing assembly will be compatible with SBS modified bitumen membranes, concrete, steel, masonry, and PVC conditions.

1.6 Submittals

All submittals which do not conform to the following requirements will be rejected.

A. General

1. Letter from the proposed primary roofing manufacturer confirming that the Contractor is an acceptable Contractor authorized to install the proposed system.
2. Letter from the primary roofing manufacturer stating that the proposed application will comply with the Manufacturer's requirements in order to qualify the project for the specified guarantee.
3. Shop Drawings
 - a. Submit in accordance with General and Special Conditions of Contract and Division 1 Specification Sections, indicating roof size, membrane attachment layout, location, and type of penetrations, perimeter and penetration details, roof insulation make-up and layout.
4. Product Data Submittals
 - a. Submit certification letter from Manufacturer with applicable Factory Mutual Global RoofNav, Metro Dade, Underwriters Laboratories or approved testing lab report for proposed roof assembly compliance to required project wind uplift, fire and other performance and regulatory requirements. Provide required field, perimeter, and corner insulation and/or membrane fastening requirements to meet project regulatory

requirements. Submittal shall include proposed membrane layout and fastening patterns for each zone of the roof installation, taper/cricket layouts, Manufacturer's installation requirements, complete set of proposed details and other roofing product accessories required.

- b. Include Manufacturer's technical product data sheets, specifications, details and applicable MSDS data sheets.

B. Submittals Prior to Project Close-Out

1. Certificate of Analysis from the testing laboratory of the primary roofing materials manufacturer, confirming the physical and mechanical properties of the roofing membrane components. Quality Assurance/Quality Control data as required to meet the specified properties. A separate Certificate of Analysis for each production run of material shall indicate the following information:
 - a. Material type
 - b. Lot number
 - c. Production date
2. Manufacturer's printed recommendations for proper maintenance of the specified roof system including inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

1.7 Quality Assurance

- A. Acceptable Products: Primary roofing products, including each type of sheet, all manufactured in the United States, shall be supplied by a single Manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. The primary roofing products shall have maintained a consistent composition for a minimum of five years.
- B. Product Quality Assurance Program: Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third party auditor under the ISO 9001:2000 audit process. A certificate of analysis for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.
- C. Agency Approvals: The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.
 1. Underwriters Laboratories Class Listed as a rated material.
 2. Factory Mutual Approval Standard 4470 listing as an Approved material.

- D. Acceptable Contractor: Contractor shall have a minimum of 2 years experience in successfully installing the same or similar flashing materials and be certified in writing by the roofing materials manufacturer to install the primary roofing products.
- E. Scope of Work: The Work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof installation in accordance with this specification. Comply with the latest written application instructions of the Manufacturer of the primary roofing and liquid-applied flashing products.
- F. Local Regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.
- G. Manufacturer Requirements: Ensure that the primary roofing & flashing materials manufacturer provides direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.

1.8 Product Delivery, Storage, and Handling

- A. Delivery: Deliver materials in the Manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.
- B. Storage: Store materials out of direct exposure to the elements. Store roll goods on a clean, flat and dry surface. All material stored on the roof overnight shall be stored on pallets. Rolls of roofing must be stored on ends. Store materials on the roof in a manner so as to preclude overloading of deck and building structure. Store materials such as solvents, adhesives and asphalt cutback products away from open flames, sparks or excessive heat. Cover all material using a breathable cover such as a canvas. Polyethylene or other non-breathable plastic coverings are not acceptable.
- C. Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Handle rolled goods to prevent damage to edges or ends.
- D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above will be automatically rejected, removed and replaced at the Contractor's expense.

1.9 Project / Site Conditions

- A. Requirements Prior to Job Start:
 - 1. Notification: Give a minimum of 5 days notice to the Owner and Manufacturer prior to commencing any Work and notify both parties on a daily basis of any change in Work Schedule.

2. Permits: Obtain all permits required by local agencies and pay all fees which may be required for the performance of the Work.
3. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NRCA and other industry or local governmental groups.

B. Environmental Requirements:

1. Precipitation: Do not apply flashing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that stored materials, applied flashings, and building interiors are protected from possible moisture damage or contamination.
2. Temperature Restrictions – PMMA-based Materials: Do not apply catalyzed resin materials if there is a threat of inclement weather. Follow the resin manufacturer's specifications for minimum and maximum ambient, material and substrate temperatures. Do not apply catalyzed resin materials unless ambient and substrate temperatures fall within the resin manufacturer's published range.

C. Protection Requirements:

1. Membrane Protection: Provide protection against staining and mechanical damage for newly applied flashing and adjacent surfaces throughout this project.
2. Limited Access: Prevent access by the public to materials, tools and equipment during the course of the project.
3. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.
4. Site Condition: Complete, to the Owner's satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

1.10 Guarantee / Warranty

- A. Roof System Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the Owner with the Manufacturer's 20 Year NDL labor and materials guarantee covering the lightweight insulating concrete, roof membrane including fluid applied flashings, fasteners and accessories. The guarantee shall be a term type, without deductibles or limitations on coverage amount, and shall be issued at no additional cost to the Owner.

PART 2 PRODUCTS

2.1 Flashing Membrane Products

- A. Catalyzed Acrylic Resin Flashing System: A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component PMMA acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.

2.2 Description of Systems

- A. Parapro 123 Flashing System by Siplast; Irving, TX; or DP approved equal in accordance with Sections 01 30 00 and 01 16 00.
1. Resin for Field Membrane Construction: A flexible, PMMA-based resin for use in combination with fleece fabric to form a monolithic, reinforced roofing membrane.. The values listed below are based upon a 90 mil (2.3 mm) resin thickness.
 2. Thickness (avg): 90 mils (2.3 mm) at 0.31 kg/ft² (3.3 kg/m²) coverage rate (ASTM D 5147, section 5).
 3. Weight (min per 100 ft² of coverage): 68.4 lb (3.3 kg/m²)
 4. Peak Load (avg) @ 73°F (23°C): 70 lbf/in (12.3 kN/m) (ASTM D 5147 section 6)
 5. Peak Load (avg) @ 73°F (23°C): 90 lbf/inch (15.8 kN/m) (ASTM D 412, dumbbell)
 6. Elongation at Peak Load (avg) @ 73°F: 35% (ASTM D 5147, section 6)
 7. Elongation at Peak Load (avg) @ 73°F: 35% (ASTM D 412, dumbbell)
 8. Shore A Hardness (avg): 81 (ASTM D 2240)
 9. Water Absorption, Method I (24h @ 73°F): 0.8% (ASTM D 570)
 10. Water Absorption, Method II (48h @ 122°F): 1.2% (ASTM D 570)
 11. Low temperature flexibility @ 23 F (-5°C): PASS (ASTM D 5147, section 11)
 12. Dimensional Stability (max): 0.15% (ASTM D 5147, section 10)
 13. Tear Strength (avg): 90 lbf (0.4 kN) (ASTM D 5147, section 7)
 14. Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
- B. Fleece for Membrane Reinforcement: A non-woven, 110 g/m², needle-punched polyester fabric reinforcement as supplied by the membrane system manufacturer.
1. Pro Fleece by Siplast; Irving, TX

2.3 Flashing Membrane Accessories

- A. Resin Accessories
1. Cleaning Solution/Solvent: A clear solvent used to clean and prepare transition areas of in-place catalyzed resin to receive subsequent coats of resin and to clean substrate materials to receive resin.

- > Pro Prep by Siplast; Irving, TX
- 2. Preparation Paste: A PMMA-based paste used for remediation of depressions in substrate surfaces or other irregularities.
 - > Pro Paste Resin by Siplast; Irving, TX
- 3. Repair Mortar: A two-component, PMMA-based, aggregate filled mortar used for patching concrete substrates.
 - > Pro Mortar by Siplast; Irving, TX
- 4. Thixotropic Agent: A liquid additive used to increase the viscosity of the PMMA-based resin products, allowing the resins to be applied over sloped substrates.
 - > Pro Thixo by Siplast; Irving, TX
- 5. Color Finish Resin: A pigmented, PMMA-based resin for used to provide a color finish for both field and flashing membranes.
 - > Pro Color Finish by Siplast; Irving, TX
- 6. Catalyst: A peroxide-based reactive agent used to induce curing of PMMA-based resins.
 - > Pro Catalyst Powder by Siplast; Irving, TX

B. PMMA Primers

- 1. Primer for Wood, Plywood and Rigid Insulation, Masonry and Vertical Concrete Substrates: A fast-curing PMMA-based primer for use in over wood, plywood and rigid insulation substrates.
 - > Pro Primer W by Siplast; Irving, TX
- 2. Primer for Horizontal Concrete Substrates: A fast-curing PMMA-based primer for use over horizontal concrete substrates.
 - > Pro Primer T by Siplast; Irving, TX

- C. Sealant: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials. Acceptable types are as follows:

1. Siplast PS-209 Elastomeric Sealant and/or Siplast PS-715 NS Elastomeric Sealant by Siplast; Irving, TX; or DP approved equal in accordance with Sections 01 30 00 and 01 16 00.

PART 3 EXECUTION

3.1 Preparation

- A. General: Ensure that substrates are free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, bituminous products, release agents, laitance, paint, loose particles/friable matter, rust or any other material that would be detrimental to adhesion of the catalyzed primer and/or resin to the substrate. Some surfaces may require scarification, shotblasting, or grinding to achieve a suitable substrate.

3.2 Substrate Preparation

- A. Preparation of Steel/Aluminum Substrates: Grind to generate a "white-metal" surface and remove loose particles. Extend preparation area a minimum of 1/2-inch (13 mm) beyond the termination of the roofing/flashing system. Notch steel surfaces to provide a rust-stop where detailed.

3.3 Flashing Membrane Mixing and Installation

- A. Preparation/Mixing/Catalyzing Resin Products: Pour the desired quantity of resin into a clean container and using a spiral mixer or mixing paddle, stir the liquid for the time period specified by the resin manufacturer. Calculate the amount of catalyst powder needed using the manufacturer's guidelines and add the pre-measured catalyst to the resin component. Mix again for the time period specified by the resin manufacturer, ensuring that the product is free from swirls and bubbles. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before pot life expires.
- B. Preparation/Mixing/Catalyzing Aggregate-Filled Resin Products: Pour the entire desired quantity of resin into a clean container and slowly add the pre-measured quantity of aggregate using a spiral mixer or mixing paddle, stirring the mixture for the time period specified by the resin manufacturer. Calculate the amount of catalyst powder needed using the manufacturer's guidelines and add the pre-measured catalyst to the resin/aggregate mixture. Mix again for the time period specified by the resin manufacturer, ensuring that the product is free from swirls and bubbles. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before pot life expires.
- C. Primer Application: Apply primer resin using a roller or brush at the rate specified by the primer manufacturer over qualified and prepared substrates. Apply primer resin at the increased rate specified by the primer manufacturer over DensDeck Prime or other porous

substrates. Do not let resin pool or pond. Do not under-apply or over-apply primers as this may interfere with proper primer catalyzation. Make allowances for waste, including saturation of roller covers and application equipment.

- D. Paste Application: Apply catalyzed preparation paste using a trowel over prepared and primed substrates. Before application of any resin product over cured paste, wipe the surface of the paste using the specified cleaner/solvent and allow to dry. Treat the surface again if not followed up by resin application within 60 minutes.

3.4 Flashing Membrane Application

- A. Catalyzed Acrylic Resin Flashing System: Install the liquid-applied primer and flashing system in accordance with the membrane system manufacturer's printed installer's guidelines and other applicable written recommendations as provided by the Manufacturer.
 1. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to cure.
 2. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
 3. Apply an even, generous base coat of flashing resin to prepared surfaces using a roller at the rate specified by the resin manufacturer. Work the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch (5 cm) and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin immediately following embedment of the fleece at the rate specified by the resin manufacturer, ensuring that the fleece is fully saturated. Ensure that the flashing resin is applied to extend beyond the fleece (maximum ¼-inch (6 mm)). Remove the tape before the catalyzed resin cures. Make allowances for waste, including saturation of roller covers and application equipment.
 4. Should work be interrupted for more than 12 hours or the surface of the cured resin becomes dirty or contaminated by the elements, wipe the surface to be lapped with new flashing resin using the specified cleaner/solvent. Allow the surface to dry for a minimum 20 minutes and a maximum 60 minutes before continuing work.
- B. Water Cut-Off: At end of day's Work, or when precipitation is imminent, construct water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

- C. Sealant: Apply a smooth continuous bead of the specified sealant at the exposed finish ply edge transition to fluid-applied flashings incorporated into the roof system as shown in the project details.

3.5 Field Quality Control and Inspections

- A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.
- B. Notification of Completion: Notify the Manufacturer by means of Manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.
- C. Final Inspection:
 - 1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the Manufacturer's representative. Complete, sign, and mail the punch list form to the Manufacturer's headquarters.
- D. Issuance of the Guarantee: Complete all post installation procedures and meet the Manufacturer requirements.

End of Section 07 54 60

Section 07 55 10
Modified Bitumen Membrane Roofing

PART 1 GENERAL

1.1 Section Includes:

- A. Preparation of Substrate to Receive Roofing Materials
- B. Base Sheet, Temporary Roof, and Lightweight Insulating Concrete Application to Prepared Substrate
- C. Roof Membrane Application
- D. Roof Flashing Applications
- E. Incorporation of Sheet Metal Flashing Components and Roofing Accessories into the Roof System

1.2 Products Installed But Not Furnished Under This Section

- A. Sheet Metal Flashing and Trim
- B. Sheet Metal Roofing Specialties

1.3 Related Sections

- A. Section 06 10 00 – Rough Carpentry
- B. Section 07 22 00 – Lightweight Insulating Concrete Roof Insulation
- C. Section 07 54 60 – Fluid-Applied Membrane Flashing
- D. Section 07 60 00 – Flashing and Sheet Metal

1.4 Reference Standards

References in these specifications to standards, test methods and codes, are implied to mean the latest edition of each such standard adopted. The following is an abbreviated list of associations, institutions, and societies which may be used as references throughout these specifications.

ASTM American Society for Testing and Materials
 Philadelphia, PA

FM	Factory Mutual Engineering and Research Norwood, MA
NRCA	National Roofing Contractors Association Rosemont, IL
OSHA	Occupational Safety and Health Administration Washington, DC
SMACNA	Sheet Metal and Air Conditioning Contractors National Association Chantilly, VA
UL	Underwriters Laboratories Northbrook, IL

1.5 Description of Work

- A. Roof Areas D, N, N-1, N2, Q, R, & S: Roof membrane and lightweight insulating concrete insulation sole source system over existing concrete and gypsum roof decks.
1. Installation of new lightweight insulating concrete system over existing prepared roof in accordance with Section 07 22 00.
 2. Installation of 20 Year Two-Ply SBS membrane system: torch-applied base ply / torch-applied cap sheet, granule surfaced roof membrane.

1.6 Submittals

All submittals which do not conform to the following requirements will be rejected.

- A. General
1. Letter from the proposed primary roofing manufacturer confirming that the Contractor is an acceptable Contractor authorized to install the proposed system.
 2. Letter from the primary roofing manufacturer stating that the proposed application will comply with the Manufacturer's requirements in order to qualify the project for the specified guarantee.
 3. Shop Drawings
 - a. Submit in accordance with General and Special Conditions of Contract and Division 1 Specification Sections, indicating roof size, membrane attachment layout, location, and type of penetrations, perimeter and penetration details, roof insulation make-up and layout.

4. Product Data Submittals

- a. Submit certification letter from Manufacturer with applicable Factory Mutual Global RoofNav, Metro Dade, Underwriters Laboratories or approved testing lab report for proposed roof assembly compliance to required project wind uplift, fire and other performance and regulatory requirements. Provide required field, perimeter and corner insulation and/or membrane fastening requirements to meet project regulatory requirements. Submittal shall include proposed membrane layout and fastening patterns for each zone of the roof installation, taper/cricket layouts, Manufacturer's installation requirements, complete set of proposed details and other roofing product accessories required.
- b. Include Manufacturer's technical product data sheets, specifications, details and applicable MSDS data sheets.

B. Submittals Prior to Project Close-Out

1. Certificate of Analysis from the testing laboratory of the primary roofing materials manufacturer, confirming the physical and mechanical properties of the roofing membrane components. Testing shall be in accordance with the parameters published in ASTM D 5147 and ASTM D 6298 and indicate Quality Assurance/Quality Control data as required to meet the specified properties. A separate Certificate of Analysis for each production run of material shall indicate the following information:
 - a. Material type
 - b. Lot number
 - c. Production date
 - d. Dimensions and Mass (indicate the lowest values recorded during the production run) for roll length, width, selvage width, total thickness, thickness at selvage (coating thickness) and weight
 - e. Physical and Mechanical Properties: Low temperature flexibility, peak load, ultimate elongation @ 5% maximum load, dimensional stability, compound stability, granule embedment and resistance to thermal shock (foil faced products).
2. Manufacturer's printed recommendations for proper maintenance of the specified roof system including inspection frequencies, penetration addition policies, temporary repairs, and leak call procedures.

1.7 Quality Assurance

- A. **Acceptable Products:** Primary roofing products, including each type of sheet, all manufactured in the United States, shall be supplied by a single Manufacturer which has been successfully producing the specified types of primary products for not less than 10 years. The primary roofing products shall have maintained a consistent composition for a minimum of five years.
- B. **Product Quality Assurance Program:** Primary roofing materials shall be manufactured under a quality management system that is monitored regularly by a third party auditor under the ISO 9001:2000 audit process. A certificate of analysis for reporting/confirming the tested values of the actual material being supplied for the project will be required prior to project close-out.
- C. **Agency Approvals:** The proposed roof system shall conform to the following requirements. No other testing agency approvals will be accepted.
1. Underwriters Laboratories Class A acceptance of the proposed roofing system (including mopping asphalt or cold adhesive) without additional requirements for gravel or coatings.
 2. Factory Mutual Approval Standard 4470 listing as applicable for the proposed membrane system. The roof membrane configuration shall comply with FM Class 1-SH (severe hail) exposure. Roof configuration (including fastening of base sheet or insulation) shall be installed to meet minimum 1-90 windstorm construction including perimeter and corner enhancements per FM LPDS 1-29 or Metro Dade RAS 117.
 - a. FM Class 1 Classification: Meet or exceed the following calculated field design pressure by a factor of 2: Zone 1 = -45 psf with perimeter and corner enhancements.
- NOTE: The Owner and DP recognize that FM Approvals no longer include poured gypsum as an approved deck. Therefore, the new assembly tested requirements are recognized as acceptable when applied over an FM Approved substrate, such as structural concrete, to be applicable to the existing gypsum deck and existing modified bitumen roof system.
3. ANSI/SPRI ES-1 Classification – Metal edging and coping cap shall be certified to meet or exceed the following calculated uplift pressures by a factor of 2:
 - a. Horizontal = 25 psf/Vertical = 42 psf
- D. **Acceptable Contractor:** Contractor shall have a minimum of 2 years experience in successfully installing the same or similar roofing materials and be certified in writing by the roofing materials manufacturer to install the primary roofing products.

- E. Scope of Work: The Work to be performed under this specification shall include but is not limited to the following: Attend necessary job meetings and furnish competent and full time supervision, experienced roof mechanics, all materials, tools, and equipment necessary to complete, in an acceptable manner, the roof installation in accordance with this specification. Comply with the latest written application instructions of the Manufacturer of the primary roofing products. In addition, application practice shall comply with requirements and recommendations contained in the latest edition of the Handbook of Accepted Roofing Knowledge (HARK) as published by the National Roofing Contractors Association, amended to include the acceptance of a phased roof system installation.
- F. Local Regulations: Conform to regulations of public agencies, including any specific requirements of the city and/or state of jurisdiction.
- G. Manufacturer Requirements: Ensure that the primary roofing materials manufacturer provides direct trained company personnel to attend necessary job meetings, perform periodic inspections as necessary, and conducts a final inspection upon successful completion of the project.

1.8 Product Delivery, Storage and Handling

- A. Delivery: Deliver materials in the Manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.
- B. Storage: Store materials out of direct exposure to the elements. Store roll goods on a clean, flat and dry surface. All material stored on the roof overnight shall be stored on pallets. Rolls of roofing must be stored on ends. Store materials on the roof in a manner so as to preclude overloading of deck and building structure. Store materials such as solvents, adhesives and asphalt cutback products away from open flames, sparks or excessive heat. Cover all material using a breathable cover such as a canvas. Polyethylene or other non-breathable plastic coverings are not acceptable.

Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed. Failure to cover materials upon arrival at the job site with canvas tarpaulins will result in a one hundred dollar a day deduction for each and every day material storage requirements remain in non-compliance.

- C. Handling: Handle all materials in such a manner as to preclude damage and contamination with moisture or foreign matter. Handle rolled goods to prevent damage to edges or ends.

- D. Damaged Material: Any materials that are found to be damaged or stored in any manner other than stated above will be automatically rejected, removed and replaced at the Contractor's expense.

1.9 Project / Site Conditions

A. Requirements Prior to Job Start

1. Notification: Give a minimum of 5 days notice to the Owner and Manufacturer prior to commencing any Work and notify both parties on a daily basis of any change in Work Schedule.
2. Permits: Obtain all permits required by local agencies and pay all fees which may be required for the performance of the Work.
3. Safety: Familiarize every member of the application crew with all fire and safety regulations recommended by OSHA, NRCA, and other industry or local governmental groups.

B. Environmental Requirements

1. Precipitation: Do not apply roofing materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, applied roofing, and building interiors are protected from possible moisture damage or contamination.
2. Temperature Restrictions - cold adhesive: At low temperatures, the specified cold adhesive becomes more viscous, making even distribution more difficult. The optimal temperature of the adhesive at point of application is 70° - 100°F (21° - 38°C). To facilitate application when ambient temperatures are below 50°F (10°C), store the adhesive and roll goods in a warm place immediately prior to use. Bulk warmers, inline heaters, or other pre-heating equipment should be used to maintain the proper viscosity of the adhesive when using mechanical application equipment. Consider "flying in" the pre-cut roofing sheets in by placing them into the adhesive rather than rolling them into position. Roll or broom the sheets to ensure contact with the underlying adhesive. Suspend application in situations where the adhesive cannot be kept at temperatures allowing for even distribution.

C. Protection Requirements

1. Membrane Protection: Provide protection against staining and mechanical damage for newly applied roofing and adjacent surfaces throughout this project.
2. Limited Access: Prevent access by the public to materials, tools and equipment during the course of the project.

3. Torch Safety: Crew members handling torches shall be trained by an Authorized Certified Roofing Torch Applicator (CERTA) Trainer, be certified according to CERTA torch safety guidelines as published by the National Roofing Contractors Association (NRCA), and follow torch safety practices as required by the contractor's insurance carrier. Designate one person on each crew to perform a daily fire watch. The designated crew member shall watch for fires or smoldering materials on all areas during roof construction activity, and for the minimum period required by CERTA guidelines after roofing material application has been suspended for the day.
4. Debris Removal: Remove all debris daily from the project site and take to a legal dumping area authorized to receive such materials.
5. Site Condition: Complete, to the Owner's satisfaction, all job site clean-up including building interior, exterior and landscaping where affected by the construction.

1.10 Guarantee / Warranty

- A. Roof System Guarantee and Roof Membrane/System Guarantee: Upon successful completion of the project, and after all post installation procedures have been completed, furnish the Owner with the Manufacturer's 20 year NDL labor and materials roof system guarantee covering the lightweight insulating concrete system, and roof membrane including SBS & fluid applied flashings, base sheets, fasteners and accessories. The guarantee shall be a term type, without deductibles or limitations on coverage amount, and shall be issued at no additional cost to the Owner.

PART 2 PRODUCTS

2.1 Roofing System Assembly / Products

- A. Anchor / Base Sheet:
 1. Base Sheet: A fiberglass reinforced, asphalt coated sheet with a polypropylene film on the backside, having a minimum weight of 25 lb/sq
 - a. Siplast Parabase FS. No options; no substitutions allowed.
 2. Temporary Roof: SBS Smooth Surfaced Field Sheet - Siplast Paradiene 20 TG. No options, no substitutions allowed.

2.2 Description of Systems

- A. Roofing Membrane Assembly: A roof membrane assembly consisting of two plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. Both

reinforcement mats shall be impregnated/saturated and coated each side with an SBS modified bitumen blend. The cross sectional area of the sheet material shall contain no oxidized or non-SBS modified bitumen. The roof system shall pass 500 cycles of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles. The roof system shall pass 200 cycles of ASTM D 5849 after heat conditioning performed in accordance with ASTM D 5147. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.

B. SBS Smooth Surfaced Field Sheet, Stripping Ply and Flashing Reinforcing Ply - Siplast Paradiene 20 TG. No options; no substitutions allowed.

- a) Thickness (avg): 114 mils (2.9 mm) (ASTM D 5147)
- b) Thickness (min): 110 mils (2.8 mm) (ASTM D 5147)
- c) Weight (min per 100 ft² of coverage): 76 lb (3.7 kg/m²)
- d) Maximum filler content in elastomeric blend: 35% by weight
- e) Low temperature flexibility @ -15° F (-26° C) - PASS (ASTM D 5147)
- f) Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
- g) Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
- h) Ultimate Elongation (avg.) @ 73°F (23°C): 50% (ASTM D 5147)
- i) Dimensional Stability (max): 0.1% (ASTM D 5147)
- j) Compound Stability (min): 250°F (121°C) (ASTM D 5147)
- k) Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
- l) Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria

C. SBS Granule Surfaced FR Cap Sheet - Siplast Paradiene 30 FR TG. No options; no substitutions allowed.

- a) Thickness (avg): 138 mils (3.5 mm) (ASTM D 5147)
- b) Thickness at selvage (coating thickness) (avg): 118 mils (3.0 mm) (ASTM D 5147)
- c) Thickness at selvage (coating thickness) (min): 114 mils (2.9 mm) (ASTM D 5147)
- d) Weight (min per 100 ft² of coverage): 112 lb (5.4 kg/m²)
- e) Maximum filler content in elastomeric blend: 35% by weight
- f) Low temperature flexibility @ -15°F (-26°C): PASS (ASTM D 5147)
- g) Peak Load (avg) @ 73°F (23°C): 30 lbf/inch (5.3 kN/m) (ASTM D 5147)
- h) Peak Load (avg) @ 0°F (-18°C): 75 lbf/inch (13.2 kN/m) (ASTM D 5147)
- i) Ultimate Elongation (avg.) @ 73°F (23°C): 55% (ASTM D 5147)
- j) Dimensional Stability (max): 0.1% (ASTM D 5147)
- k) Compound Stability (min): 250°F (121° C) (ASTM D 5147)

- l) Granule Embedment (max individual loss): 2.0 grams per sample (ASTM D 5147)
- m) Approvals: UL Class listed, FM Approved (products shall bear seals of approval)
- n) Reinforcement: fiberglass mat or other meeting the performance and dimensional stability criteria
- o) Surfacing: ceramic granules

D. Flashing Membrane Assembly – Walls, Penetration Curbs, Sumped Drain Flashing Areas: A flashing system consisting of a prefabricated, aluminum foil surfaced, reinforced, Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt flashing membrane.

Siplast Veral Aluminum Flashing System

1. SBS Foil Surfaced Fiberglass Composite Reinforced Flashing Ply - Siplast Veral Aluminum. No options; no substitutions allowed.
 - a. Thickness (avg.) - 154 mils - 3.9 mm
 - b. Thickness at selvage (avg.) - 150 mils (3.8 mm) (ASTM D 5147)
 - c. Thickness at selvage (min.) - 146 mils (3.7 mm) (ASTM D 5147)
 - d. Weight (min. per 100 ft² of coverage) - 96 lb. – 4.6 kg/m²
 - e. Filler content in elastomeric blend - less than 35% by weight
 - f. Low temperature flexibility @ -0° F (-18° C) - PASS (ASTM D 5147)
 - g. Peak Load (avg.) @ 73° F - 180 lbf/inch (31.7 kN/m) (ASTM D 5147)
 - h. Peak Load (avg.) @ 0° F - 150 lbf/inch (26.5 kN/m) (ASTM D 5147)
 - i. Ultimate Elongation (avg.) @ 73° F - 45% (ASTM D 5147)
 - j. Dimensional Stability (max.) - 0.2% (ASTM D 5147)
 - k. Compound Stability (min.) - 225° F (121° C) (ASTM D 5147)
 - l. Approvals - UL Class listed (products shall bear seal of approval)
 - n. Reinforcement - fiberglass scrim/fiberglass mat or other meeting the performance criteria
 - o. Surfacing – aluminum foil.

PRODUCT: Siplast Veral Aluminum

Catalyzed Acrylic Resin Flashing System - A specialty flashing system consisting of a liquid-applied, fully reinforced, multi-component PMMA acrylic membrane installed over a prepared or primed substrate. The flashing system consists of a catalyzed acrylic resin primer, basecoat and topcoat, combined with a non-woven polyester fleece. The resin and catalyst are pre-mixed immediately prior to installation. The use of the specialty flashing system shall be specifically approved in advance by the membrane manufacturer for each application.

1. Parapro 123 Flashing System by Siplast; Irving, TX. No options; no substitutions allowed.

2.3 Roofing Accessories

A. Bituminous Cutback Materials:

1. Primer: An asphalt, solvent blend conforming to ASTM D 41 requirements.
 - a. Siplast PA-1125 Asphalt Primer by Siplast; Irving, TX. No options; no substitutions allowed.
2. Mastics: An asphalt cutback mastic, reinforced with non-asbestos fibers, used as a base for setting metal flanges conforming to ASTM D 4586 Type II requirements.
 - a. Siplast PA-1021 Plastic Cement by Siplast; Irving, TX. No options; no substitutions allowed.

B. Sealants: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials. Acceptable types are as follows:

1. Siplast PS-209 Elastomeric Sealant or PS-715 NS Elastomeric Sealant by Siplast; Irving, TX. No options; no substitutions allowed.

C. Ceramic Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.

1. Perlite Cant Strips: A cant strip composed of expanded volcanic minerals combined with waterproofing binders. The top surface shall be pre-treated with an asphalt based coating. The face of the cant shall have a nominal 4 inch dimension.
2. Drain Sump Sloping Fill Material: A lightweight insulating concrete patching compound incorporating cementitious binders, low density fine aggregates, and additives supplied by a single manufacturer.
 - a. Zono-Patch Lightweight Insulating Concrete Patching Compound by Siplast, Inc., Irving, TX. No options; no substitutions allowed.

D. Fasteners

1. Base Sheet Fasteners: Base sheet fasteners shall be approved by the manufacturer of the primary roofing products. Acceptable base sheet fasteners for specific substrate types are listed below.
 - a) Lightweight Concrete Substrates: A single unit, precision formed, electro zinc coated steel fastener having a 2.7 inch diameter rib reinforced cap

and 1 inch long rectangular legs, designed to expand when fully driven into the lightweight concrete. Fasteners for lightweight concrete shall meet FM Standard 4470 requirements for corrosion resistance.

NVS Fasteners by Siplast; Irving, TX

- b) Gypsum Concrete Substrates: A single unit, precision formed, Galvalume (AZ-55) coated steel fastener having a 2.7 inch cap and a 1.4 inch long shank. The fastener shall incorporate twin high tensile steel wires that facilitate a diverging reverse hook action when driven into the structural substrate.

ParaLok Fasteners by Siplast; Irving, TX

- c) Base Sheet / Flashing Reinforcing Sheet Fasteners for Wood/Plywood Substrates: Fasteners for attachment of base sheets or base plies to wood/plywood substrates shall be approved by the manufacturer of the primary roofing products. Acceptable fasteners for specific substrate types are listed below.

- 1) 12 gauge, spiral or annular threaded shank, zinc coated steel roofing fastener having a minimum 1 inch head.

- a) Square Cap by W.H. Maze Co.; Peru, IL

- b) 12 Gauge Simplex Nail by the Simplex Nail and Manufacturing Co., Americus, GA

E. Walktread: A prefabricated, puncture resistant polyester core reinforced, polymer modified bitumen sheet material topped with a ceramic-coated granule wearing surface.

- 1. Thickness: 0.217 in (5.5 mm)

- 2. Weight: 1.8 lb/ft² (8.8 kg/m²)

- 3. Width: 30 in (76.2 cm)

- a. Paratread Roof Protection Material by Siplast; Irving, TX. No options; no substitutions allowed.

- 4. Install at all roof access ladders, hatches, paths to and from roof access points to mechanical units and to other roof access points.

F. Vapor Pressure Relief Vents: Spun aluminum, insulated one-way vents used for relief of vapor pressure build-up which may occur following installation of the roof membrane over the new lightweight insulating concrete insulation system.

1. Insulvent One-Way Roof Vent by Marathon Roofing Products; Orchard Park, NY; or DP approved equal.
2. Provide quantity per Manufacturer's published guidelines.

PART 3 EXECUTION

3.1 Preparation

- A. General: Sweep or vacuum all surfaces, removing all loose aggregate and foreign substances prior to commencement of roofing.
 1. Remove all existing roof membrane plies, insulations, flashings, metal flashings, wood nailers, edging, copings, counterflashings, walkways, abandoned equipment, drain flashings and other system components to roof deck and substrates.

3.2 Substrate Preparation

- A. Base Sheet Securement to Prepared Substrate: Lay the base sheet over the entire area to be roofed, lapping sides 3 inches and ends 6 inches. Using the specified fasteners, fasten each sheet every 9 inches through laps and stagger fasten the remainder of the sheet in 2 rows on nominal 12 inch centers with fasteners in each row on 12 inch centers. Increase the fastening Pattern at the corners/perimeter in accordance with the recommendations set forth in FM Global Property Loss Prevention Data Sheet 1-29.

3.3 Roof Membrane Installation

- A. Membrane Application: Apply roofing in accordance with roofing system manufacturer's instructions and the following requirements. Application of roofing membrane components shall immediately follow application of base sheet and/or insulation as a continuous operation.
- B. Aesthetic Considerations: An aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner. Sequence Work to avoid construction traffic over completed roof areas and prevent tracking of cold adhesives.
- C. Priming: Prime metal and concrete and masonry surfaces with a uniform coating of the specified asphalt primer and allow to dry.
- D. Bitumen Consistency: Cutting or alterations of bitumen, primer, and sealants will not be permitted.

- E. Roofing Application: Apply all layers of roofing free of wrinkles, creases or fishmouths. Exert pressure on the roll during application to ensure prevention of air pockets.
1. Apply all layers of roofing perpendicular to the slope of the deck.
 2. Fully bond the smooth base ply to the insulation utilizing minimum 3 inch side and end laps. Apply each sheet directly behind the torch applicator. Cut a dog ear angle at the end laps on overlapping selvage edges. Stagger end laps a minimum of 3 feet. Using a clean trowel and torch, apply heat & top pressure to top sea all laps at the end of each day's application.
 3. Fully bond the granule finish ply to the base ply, utilizing minimum 3 inch side and end laps. Apply each sheet directly behind the torch applicator. Stagger end laps of the finish ply a minimum 3 feet. Cut a dog ear angle at the end laps on overlapping selvage edges. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger side laps of the finish ply a minimum 12 inches from side laps in the underlying base ply. Stagger end laps of the finish ply a minimum 3 feet from end laps in the underlying base ply.
 4. Maximum sheet lengths and special fastening of the specified roof membrane system may be required at various slope increments where the roof deck slope exceeds 1/2 inch per foot. The Manufacturer shall provide acceptable sheet lengths and the required fastening schedule for all roofing sheet applications to applicable roof slopes.
- F. Granule Embedment: Broadcast mineral granules over all bitumen overruns on the finish ply surface, while the bitumen is still hot to ensure a monolithic surface color.
- G. Flashing Application: Set the non-combustible cant into place dry prior to installation of the roof membrane base ply. Fully adhere the reinforcing sheet, utilizing minimum 3 inch side laps onto the base ply surface and up the primed wall or curb to the desired flashing height. Apply the each flashing membrane using three foot widths (cut off the end of roll) always lapping the factory selvage edge. Stagger the laps of the flashing membrane layer from lap seams in the reinforcing layer. Extend the flashing sheet a minimum of 4 inches beyond the toe of the cant onto the surface of the finished roof and up the wall or curb to the desired flashing height as shown in the detail drawings and/or manufacturer's schematic. Exert pressure on the flashing sheet during application to ensure complete contact with the vertical/horizontal surfaces, preventing air pockets. Check and seal all loose laps and edges. Mechanically fasten the top edge of the flashing on 9 inch centers. (See manufacturer's schematic for visual interpretation).
1. Flash walls and penetration unit curbs, using the reinforcing sheet and the metal foil flashing membrane.

2. Flash perimeter parapet walls using the reinforcing sheet and the granule-surface flashing membrane.

NOTE: Field & Perimeter venting is required by the roof membrane system and lightweight insulating concrete manufacturer. Refer to manufacturer's requirements for acceptable location and placement.

3. Catalyzed Acrylic Resin Flashing System: Install the liquid-applied primer and flashing system in accordance with the membrane system manufacturer's printed installer's guidelines and other applicable written recommendations as provided by the Manufacturer.

NOTE: Catalyzed acrylic resin flashing system is indicated as a supplement to the manufacturer's standard modified bitumen membranes, and may be used at the discretion of the DP in lieu of specified membranes.

- H. Water Cut-Off: At end of day's Work, or when precipitation is imminent, construct water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

3.4 Roof System Interface with Related Components

- A. Edge Metal: Completely prime metal flanges and allow to dry prior to installation. Turn the base ply down 2 inches past the roof edge and over the nailer. After the base ply and continuous cleat (if applicable) have been installed, set the flange in mastic and stagger nail every 3 inches on center. Strip-in the flange using the stripping-ply material, extending a minimum of 4 inches beyond the edge of the flange. Terminate the finish ply at the gravel-stop rise of the edge metal and apply sealant.

NOTE: Parapet / Edge detail flashing membrane will be the SBS Foil Surfaced Fiberglass Composite Reinforced Flashing Ply.

- B. Vapor Pressure Relief Vents: Completely prime the flanges and allow drying prior to installation. After the base ply has been applied, set the vent flange in mastic and strip-in the flange using the stripping-ply material, extending a minimum of 4 inches beyond the edge of the flange. Terminate the finish ply at the flange-sleeve juncture of the pipe flashing and apply sealant.

NOTE: Vapor pressure relief vents are required for the field of the roof as required by the roof membrane system and lightweight insulating concrete manufacturer. Refer to manufacturer's requirements for acceptable location and placement.

- C. Lead Pipe Flashings: Completely prime the lead flanges and allow drying prior to installation. After the base ply has been applied, set the flange in mastic and strip-in the flange using the stripping-ply material, extending a minimum of 4 inches beyond the edge

of the flange. Terminate the finish ply at the flange-sleeve juncture of the pipe flashing and apply sealant.

- D. Lead Drain Flashings: Completely prime the lead drain flashing and allow drying prior to installation. After the base ply has been applied, set the lead flashing sheet in mastic and form to turn down inside of the drain bowl. Ply-in the perimeter of the lead flashing using an additional layer of the base ply material, overlapping the perimeter of the lead a minimum of 4 inches. Terminate the finish ply to extend beneath the clamping ring seal. Install the clamping ring with all bolts in place.
- E. Light Air Unit Supports: Separate light air handling units that are supported by wood sleepers (not supported by a roof curb) from the new roof assembly using the Manufacturer's walktread-roof protection material. Cut each walktread pad to a size which extends a minimum of 2 inches beyond the perimeter of each sleeper block. Set the walktread pad dry over the new assembly. Set each sleeper block dry over the walktread pad.
- F. Small Pipe Supports: Support all gas lines, conduits and condensate lines with pre-manufactured pipe and conduit supports installed on walk pads. Cut each walktread pad to a size which extends a minimum of 2 inches beyond the perimeter of the support base. Loosely secure the pipe to allow movement over the support. Set support spacing according to project specifications and of adequate distance to prevent excessive weight or damage to the membrane, sagging of the pipe, or piping contact with the new roof assembly. Allow membrane to set up and set walktread dry over the new roof assembly. Set each pipe support dry over the walktread pad.
- G. Steel Support Legs, Penetrations and Pipe Flashings: Clean penetration to remove bitumen, paint, rust and other contaminants. Install Catalyzed Acrylic Resin Flashing System at termination of field membrane. Install required primer and flashing system at project details in accordance with the membrane system manufacturer's printed installer's guidelines and other applicable written recommendations as provided by the Manufacturer.
- H. Walktread: Cut the walktread into maximum 5 foot lengths and allow to relax until flat. Adhere the sheet using the specified plastic cement. Apply the specified cement in a 3/8 inch thickness to the back of the product in 5 inch by 5 inch spots in accordance with the pattern as supplied by the walktread manufacturer. Walk-in each sheet after application to ensure proper adhesion. Use a minimum spacing of 2 inches between sheets to allow for proper drainage.
- I. Sealant: Apply a smooth continuous bead of the specified sealant at the exposed finish ply edge transition to metal flashings incorporated into the roof system.

3.5 Field Quality Control and Inspections

- A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

- B. Notification of Completion: Notify the Manufacturer by means of Manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.
- C. Final Inspection:
 - 1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the Manufacturer's representative. Complete, sign, and mail the punch list form to the Manufacturer's headquarters.
- D. Issuance of the Guarantee: Complete all post installation procedures and meet the Manufacturer requirements.

End of Section 07 55 10

Section 07 60 00
Flashing and Sheet Metal

PART 1 GENERAL

1.1 Related Documents

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

1.2 Summary

- A. This Section includes sheet metal flashing and trim in the following categories:
 1. Roof drainage systems (gutters, scuppers, overflow scuppers and downspouts).
 2. Exposed trim.
 3. Custom fabricated gravel stop and counterflashing.
 4. Metal pipe / conduit flashings.
 5. Miscellaneous sheet metal accessories.
- B. The following Sections contain requirements that relate to this Section:
 1. Section 07 41 00 – Metal Roof and Wall Panels
 2. Section 07 55 10 – SBS Modified Bitumen Roof
 3. Section 22 14 16 – Rainwater Leaders

1.3 Performance Requirements

- A. General: Install sheet metal flashing and trim to withstand wind loads per ASCE 7, structural movement, thermally induced movement, and exposure to weather without failing. Sheet metal coping and perimeter metal shall comply with SPRI/ANSI ES-1.

1.4 Submittals

- A. General: Submit each item in this Article according to the General and Special Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data, including manufacturer's material and finish data, installation instructions, and general recommendations for each specified flashing material and fabricated product.

- C. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details. Provide layouts at 1/4" scale and details at 3" scale.

1.5 Quality Assurance

- A. Installer Qualifications: Successful Bidder shall engage experienced Installers who have completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance. Installers not utilizing pre-manufactured prefinished metal must submit their certification from NRCA to fabricate and install 24 gauge prefinished metal coping and perimeter edge metal complying with ANSI/ES-1, 2011.

1.6 Project Conditions

- A. Coordinate Work of this Section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance, durability of work, and protection of materials and finishes.

PART 2 PRODUCTS

2.1 Roof Drainage Systems

- A. Scuppers, Collector Heads and Downspouts: Existing sheet metal scuppers shall be removed with opening enlarged as required to provide a minimum length of 12" with opening height of 6". New scupper flashing, collector heads and downspouts shall be installed in accordance with SMACNA requirements and project drawings. Provide tapered sump into scupper openings. Contractor shall provide all required accessories and mounting brackets, and shall submit a shop drawing for new scupper, collector and downspout profile for review and approval.
- B. Overflow Scuppers with Pre-Finished Metal Face Plates: New overflow scuppers shall be installed where indicated on project drawings in accordance with SMACNA requirements and project drawings. Overflow scuppers shall be placed 2" above roof surface and finished at exterior wall with pre-finished 24 gauge sheet metal face plates. Contractor shall submit a shop drawing for new overflow scupper for review and approval.
- C. Replacement and Addition of New Roof Drains: Refer to project drawings and Sections 22 14 16 for replacement of existing and addition of new drains where noted on project drawings.

2.2 Reglets

- A. General: Units of type, material, and profile indicated, formed to provide secure interlocking of separate reglet and counterflashing pieces and compatible with flashing indicated.

1. Material: Shop fabricated Saw Cut Reglet / Receiver – 24 ga. G90 hot dipped galvanized steel, treated, primed and pre-finished under precision conditions; exposed finish will be Kynar 500 Fluorocarbon coating to match counterflashing.
- B. Counterflashing Wind Restraint Clips: Provide minimum 2” wide metal wind clips installed along top of modified bitumen base flashings at 3’ centers. Fasten clips with approved anchors prior to installation of metal counterflashing to prevent wind uplift.
1. Material: Pre-finished 22 ga. galvanized steel.

2.3 Roof Perimeter

- A. Gravel Stop Edge: New gravel stop shall be installed where indicated on project drawings in accordance with SMACNA, ANSI/SPRI ES-1 2011 requirements and project drawings. 22 ga. continuous cleat, and pre-finished 24 gauge sheet metal backing-splice plates. Contractor shall submit a shop drawing for new gravel stop design and fabrication for review and approval.
1. Material: Pre-finished Kynar-coated 24 ga. galvanized steel. Color to be selected by Owner.
 2. PVC Coated Metal: 24-gauge steel with 0.035 inches thick PVC laminate film. Factory supplied in sheets as required by manufacturer for fabrication into metal gravel stop and drip edge profiles, metal base and curb flashings, sealant pans, and scupper sleeves. Color selected by Owner.

2.4 Miscellaneous Materials and Accessories

- A. Solder: ASTM B 32, Grade Sn50, used with rosin flux.
- B. Fasteners: Same metal as sheet metal flashing or other non-corrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
- C. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed, complying with requirements for joints sealants as specified in Division 7, Section “Joint Sealants.”
- D. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather resistant seaming and adhesive application of flashing sheet metal.
- E. Paper Slip Sheet: 5-lb/square red rosin, sized building paper conforming to FS UU-B-790, Type I, Style 1b.
- F. Polyethylene Underlayment: ASTM D 4397, minimum 6-mil (0.15 mm) thick black polyethylene film, resistant to decay when tested according to ASTM E 154.

- G. Metal Accessories: Provide 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 thickness required for performance.
- H. Asphalt Mastic: SSPC-Paint 12, Solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4 mm) dry film thickness per coat.
- I. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- J. Wood Blocking and Metal Flashing Underlayment: Cold applied, self adhering butyl or modified asphalt based moisture barrier approved by primary roof system Manufacturer suitable for use beneath metal flashings over wood and masonry substrates conforming to ASTM D1970.
 - 1. Paradiene 20 SA: Siplast
 - 2. DP Approved equal in accordance with Section 01 30 00 and 01 60 00.

2.5 Metals

- A. Pre-Finished Metal: 24-ga. G90 hot dipped galvanized steel, treated, primed and pre-finished under precision conditions; exposed finish will be Kynar 500 Fluorocarbon coating; bottom or unexposed side will be Manufacturer's standard primer coat; utilize for gravel guards, expansion joints, counterflashing, copings, conductor heads, downspouts, and trim. Fabricated metal copings and roof edges shall be certified to meet ANSI / SPRI ES-1 2011 requirements. Use of shop fabricated metal copings and edging requires Contractor approval and listing under the NRCA's ITS certification program.
- B. Galvanized Steel Sheet: ASTM A 526, G 90 (ASTM A 526M, Z 275), commercial quality, or ASTM A 527, G 90 (ASTM A 527M, Z 275), lock-forming quality, hot-dip galvanized steel sheet with 0.20 percent copper, mill phosphatized where indicated for painting; not less than 24 gauge thick, unless otherwise indicated.

2.6 Fabrication, General

- A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated. 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.
- B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproofing and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal. Provide

expansion for running work, sufficient to permanently prevent leakage, damage or deterioration of work.

- C. Form exposed sheet metal work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated with exposed edges folded back to form hems.
- D. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24" of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints).
- E. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- F. Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by Manufacturer.
- G. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
- H. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, non-corrosive metal recommended by sheet metal manufacturer.
 - 1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

2.7 Sheet Metal Fabrications

- A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
- B. Scupper Inserts: Fabricate from the following material unless otherwise noted.
 - 1. Stainless Steel Sheet: Type 304, 0.0217 inch (24-ga.)
- C. Scupper Plates, Collector Heads, Gutters and Downspouts:
 - 1. Pre-Finished Galvanized Steel: 0.0217 inch (24-ga.)
- E. Counterflashing: Fabricate from the following material:
 - 1. Pre-finished Galvanized Steel: 0.0217 inch (24 ga.)

- F. Flashing Receivers: Fabricate from the following material:
 - 1. Pre-finished Galvanized Steel: 0.0217 inch (24 ga.)
- G. Expansion Joint Covers: Fabricate from the following material:
 - 1. Curb to Curb: Pre-finished Galvanized Steel: 0.0217 inch (24 ga.)
- H. Equipment Support Flashing: Fabricate from the following material:
 - 1. Pre-finished Galvanized Steel: 0.0217 inch (24 ga.) thick at membrane roofing unless otherwise shown on drawings.
- I. Lead Flashings – Roof Drain and Vent Pipe Flashings: Fabricate from the following material:
 - 1. Lead: 4.0 lb. / sq. ft. (1.6 mm thick), hard tempered.

PART 3 EXECUTION

3.1 Examination

- A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until satisfactory conditions have been corrected.
- B. Existing metal through wall flashings, reglets and metal flashings to remain shall be cleaned to remove bituminous material or other surface contaminants.

3.2 Installation

- A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, Manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor Units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.
- B. All sheet metal work shall conform to standards set forth in the following publication.
 - 1. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) Architectural Sheet Metal Manual.
 - 2. Copper Development Association, (C.D.A.) Copper Brass Bronze Design Handbook.

- C. Install exposed sheet metal work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashings and trim to fit substrates and to result in waterproof and weather resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- D. Roof-Edge Flashings: Secure metal flashing at roof edges according to Manufacturer requirements and FM Loss Prevention Data Sheet 1-49 for specified wind zone.
 - 1. Install metal edge securements tested for resistance per ANSI/SPRI ES-1 2011 requirements.
- E. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 10 feet with no joints allowed within 24" of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1" deep, filled with mastic sealant (concealed within joints). Gutters shall have expansion joints installed every fifty (50) feet or less.
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1 1/2", except where pretinned surface would show in finished Work.
 - 1. Do not solder the following metals:
 - a. Coil-coated galvanized steel sheet.
 - 2. Pretinning is not required for the following metals:
 - a. Lead.
 - 3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
- G. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.
- H. Separations: Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by Manufacturer.
 - 1. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red rosin paper and course of polyethylene underlayment.

2. Bed flanges of work in a thick coat of roofing cement where required for waterproof performance.
 3. Metal work, framing and sheet metal flashings shall be protected from direct contact with treated wood blocking. Contractor shall install a layer of self adhered moisture barrier underlayment to separate metal work and sheet metal flashings from treated wood materials.
- I. Install reglets to receive counterflashing in manner and by methods indicated. Install counterflashing in reglets, either by snap-in seal arrangement or by wedging in place for anchorage and filling reglet with mastic or elastomeric sealant, as indicated and depending on degree of sealant exposure.
 - J. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2" (50 mm) and bed with sealant.
 - K. Equipment Support Flashing: Coordinate equipment support flashing installation with roofing and equipment installation. Weld or seal flashing to equipment support member.
 - L. Roof Penetration Flashing: Coordinate roof penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:
 1. Turn lead flashing down inside vent piping 1", being careful not to block vent piping with flashing.
 2. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.
 - M. Fasteners shall be type appropriate for the metal flashing being installed. Fasteners and anchors used to secure treated wood blocking to structural supports or substrates, and galvanized metal flashings into treated wood materials shall be stainless steel. Copper flashings shall be secured with approved copper or copper alloy nails.

3.3 Cleaning and Protection

- A. Clean exposed metal surfaces, removing substrates that might cause corrosion of metal or deterioration of finishes.
- A. Provide final protection and maintain conditions that ensure sheet metal flashing and trim work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

3.4 Painting

- A. Paint flashings as directed and with color selected by Owner. Prime and paint with two coats all lead vents, galvanized metal and galvanized vents. Color selected by Owner.

End of Section 07 60 00

Section 07 71 00
Roof Specialties

PART 1 - GENERAL

1.01 Section Includes

- A. Furnishing and installing factory fabricated roof hatch, roof hatch internal safety pole and safety rail, pre-manufactured mechanical curbs, pipe and conduit supports.
- B. Mechanical Duct Stands and Large Pipe Support Stands

1.02 Related Sections

- A. Section 07 54 19 Adhered PVC Membrane Roofing
- B. Section 07 60 00 Flashing and Sheet Metal
- C. Section 07 90 00 Joint Sealants

1.03 References

- A. American Society for Testing and Materials (ASTM), 100 Bar Harbor Drive, West Conshocken, PA 19428-2959; (610) 832-9585, fax (610) 832-9555.
 - 1. ASTM A 36-93a: Standard Specification for Structural Steel.

1.04 Submittals

- A. General: Submit listed submittals in accordance with the General Conditions and Special Conditions of the contract and Division 1 sections.
- B. Product data: Submit manufacturer's product data and installation instructions.
- C. Contract closeout: Roof hatch manufacturer shall provide the manufacturer's Warranty prior to the contract closeout.

1.05 Product Handling

- A. All materials shall be delivered in manufacturer's original packaging.
- B. Store materials in a dry, protected, well-vented area. The contractor shall thoroughly inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.
- C. Remove protective wrapping immediately after installation.

1.06 Substitutions

- A. Proposals for substitution products shall be accepted only from bidding contractors and not less than seven (7) calendar days before bid due date. Contractor guarantees that proposed substitution shall meet the performance and quality standards of this specification.

1.07 Job Conditions

- A. Observe all appropriate OSHA safety guidelines for this work.

1.08 Warranty / Guarantee

- A. Materials shall be free of defects in material and workmanship for a period of five (5) years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge. Special finishes, and other special equipment shall be warranted separately by the manufacturers of those products.

PART 2 - PRODUCTS

2.01 Manufacturers

- A. Specifications and drawings for roof hatch, roof hatch safety post and railing system are based on manufacturer's proprietary literature from The Bilco Company, or A/E approved equal. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in Specifications or on Drawings. A/E will be sole judge of appropriateness of substitutions.

1. The Bilco Company, or A/E approved equal, P.O. Box 1203, New Haven, CT 06505, 1-203-934-6363, Fax: 1-203-933-8478, Web: www.bilco.com or A/E approved equal.

- B. Specifications and drawings for equipment mounting supports are based on manufacturer's proprietary literature from Thybar Corporation, or A/E approved equal. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in specifications or on drawings. A/E will be sole judge of appropriateness of substitutions.

Specifications and drawings for ductwork, pipe and conduit supports are based on manufacturer's proprietary literature from Miro Industries, Inc., or A/E approved equal. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in specifications or on drawings. A/E will be sole judge of appropriateness of substitutions.

2.02 Equipment Mounting Supports

- A. Factory fabricated sheet steel structural members designed for placement on all types of roof systems that will support a variety of roof top equipment.

- B. Welded 14 gauge galvanized steel shell, base plate and counterflashing with internal bulkhead reinforcement.
- C. Factory installed wood nailer.
- D. Insulation shall be provided and installed in field, coordinate with roof membrane manufacturer for requirements of substrate.
- E. Height of curb dictated by the thickness of the insulation plus the mandatory 8" minimum exposed top section of the curb.

2.03 Roof Hatch

- A. Furnish and install where indicated on plans metal roof hatch Type E-50TB, size width: 36" (914 mm) x length: 36" (914 mm). Length denotes hinge side. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.

Basis-of-Design Manufacturer: Type E-50TB Roof Hatch by THE BILCO Company, PO Box 1203, New Haven, CT 06505, 800-366-6530, Fax 203-933-8478, Website: www.bilco.com

2.04 Hatch Railing System

- A. Meets OSHA 29 CFR 1910.23.
- B. Self-closing and latching gate.
- C. Attaches directly to roof hatch cap flashing.
- D. Corrosion resistant construction.
- E. Safety yellow color.
- F. Bil-Guard Model RL-SSL (Verify size of existing roof hatch opening) by The Bilco Company, or A/E approved equal, New Haven, Connecticut 06505, or A/E approved equal.

2.05 Safety Post

- A. Telescoping tubular sections with stainless steel spring balanced operation.
- B. Automatic lock at full raised position.
- C. Release lever.
- D. Factory assembled. Yellow powder coated steel.
- E. Mounting: Secured to existing ladder rungs. Verify existing rung spacing.

- F. Model: LU-1 by The Bilco Company, or A/E approved equal, New Haven, Connecticut 06505.

2.06 Pipe and Ductwork Supports

- A. Supports - General: Provide with bases that rest on the roof membrane and that have:
 - 1. Gently rounded edges to prevent damage to roof membrane.
 - 2. Carbon black additive in polycarbonate, when used, for UV stabilization.
- B. Adjustable height pipe stands: Self-lubricating polycarbonate roller mounted on stainless steel or polycarbonate roller rod supported by two stainless steel threaded rods, with height adjustment up to 12 inches (283 mm) above roof surface.
 - 1. Three inch nominal pipe: 3 inch (76.2 mm) ID maximum pipe capacity, 3 7/8 inch (84. mm) OD maximum pipe capacity; polycarbonate resin base; stainless steel threaded rod for 6 1/2 inch (165 mm) height adjustment; total load up to 100 pounds (45 kg); 7 1/2 inch by 10 inch (183.5 by 254 mm) base (Model 3-RAH-12).
- C. Conduit strut-type supports: Single base with two threaded rods supporting hot dipped galvanized horizontal channel strut.
 - 1. Size: 12 inch (304.8 mm) strut 1 5/8 inch by 13/16 inch (41.3 x 28.6 mm), pipe clearance variable up to 7 inches (304.8 mm) (Model # 2.5 Conduit Support-12).
 - 2. Base: Polycarbonate resin; total load up to 100 pounds (45.4 kg); 9 inch by 15 inch (228.6mm by 381 mm).
- D. Adjustable height trapeze hanger pipe support hanger: Polycarbonate plastic bases, braced strut assembly of hot-dipped galvanized steel and stainless steel all-thread rods which support trapeze hangers suspended from the strut assembly.
 - 1. Pillow Block Pipe Stand 8 – H Series, sized to accommodate existing pipe diameters and configurations.
- E. Duct “H” type adjustable supports: Polycarbonate plastic bases, hot-dipped galvanized steel telescoping support assembly and crossing bar.
 - 1. Model No. 10-DS, sized to accommodate existing ductwork.

PART 3 - EXECUTION

3.01 Inspection

- A. Verify that installation will not disrupt other trades. Verify that the substrate is dry, clean, and free of foreign matter. Report and correct defects prior to any installation.

3.02 Ductwork, Pipe and Conduit Installation

- A. Determine that roof structure, roof insulation, and roof membrane are structurally adequate to support weight of pipe and conduit supports.
- B. Supports shall be installed in accordance with manufacturer's requirements.
- C. Install supports at maximum spacing of 8 feet unless closer spacing is required due to weight of pipe or conduit contents; space and adjust to support an equal amount of weight; do not exceed manufacturer's recommended load limits.
- D. Install an additional sheet of roofing material (walking pad), support pad beneath each support base.
- E. Support pads:
 - 1. Remove dirt and excess dust from area to be covered by pad.
 - 2. Apply support pad on cleaned area.
 - 3. Center bases on top of support pads. Hot weld support pads to PVC.
- F. Pipe and Conduit Supports: Center beneath pipe so that pipe is located squarely over and through cradle or hanger. Set pipe in support without dropping or causing undue impact.
- G. Adjustable Supports: Adjust height of each support to achieve proper height.
 - 1. Level rollers or struts before installing pipe or conduit.
 - 2. Make final height adjustments to provide even distribution of load on all supports.
- H. After system startup, correct any deficiencies that arise, including but not limited to, improper location or position, improper seating or level on the roof, lack of roof pads or deck plates, inadequate operation.

3.1 Equipment Mounting Support Installation

- A. Set curb on deck, shim as necessary to level the curb/equipment where the slope is in the deck. Fasten the curb flange to the deck with expansion anchors or screws depending on the deck type at 12 inches on-center. Install roofing system around curb. Extend roofing plies to wood nailer and fasten to nailer at 8 inches on-center. Reinstall metal counterflashing and place equipment over equipment mounting supports and secure to prevent equipment from moving.

3.2 Safety Equipment

- A. Install safety post and safety rail and supports per manufacturer's requirements. Verify all required clearances and existing conditions including changes in mounting heights due to height differences between parapet and finished roof. Verify existing conditions of roof

hatches and adjust attachments accordingly.

3.3 Roof Hatch

A. Examination

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

B. Installation

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

C. Adjusting and Cleaning

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

End of Section 07 71 00

Section 07 72 33
Roof Hatches

PART 1 - GENERAL

1.1 Summary

- A. Work Included: Provide factory-fabricated roof hatches for ladder access.

1.2 Submittals

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

1.3 Quality Assurance

- A. Manufacturer: A minimum of 5 years' experience manufacturing similar products.
- B. Installer: A minimum of 2 years' experience installing similar products.
- C. Manufacturer's Quality System: Registered to ISO 9001:2008 Quality Standards including in-house engineering for product design activities.

1.4 Delivery, Storage, and Handling

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

1.5 Warranty

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

PART 2 - PRODUCTS

2.1 Manufacturer

- A. Basis-of-Design Manufacturer: Type E-50TB Roof Hatch by The BILCO Company, P.O. Box 1203, New Haven, CT 06505, 1-800-366-6530, Fax: 1-203-933-8478, Web: www.bilco.com.

2.2 Roof Hatch

- A. Furnish and install where indicated on plans metal roof hatch Type E-50TB, size width: 36" (914mm) x length: 36" (914mm). Length denotes hinge side. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.
- B. Performance characteristics:
1. Cover and curb shall be thermally broken to prevent heat transfer between interior and exterior surfaces.
 2. Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m²) with a maximum deflection of 1/150th of the span or 20 psf (97kg/m²) wind uplift.
 3. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
 4. Operation of the cover shall not be affected by temperature.
 5. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.
- C. Cover: Shall be 11 gauge (2.3mm) aluminum with a 5" (127mm) beaded flange with formed reinforcing members. Interior and exterior surfaces shall be thermally broken to minimize heat transfer and to resist condensation. Cover shall have a heavy extruded EPDM rubber gasket bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.
- D. Cover insulation: Shall be 3" (75mm) thick polyisocyanurate with an R-value = 18 (U=0.315 W/m²K), fully covered and protected by an 18 gauge (1mm) aluminum liner.
- E. Curb: Shall be 12" (305mm) in height and of 11 gauge (2.3mm) aluminum. Interior and exterior surfaces shall be thermally broken to minimize heat transfer and to resist condensation. The curb shall be formed with a 5-1/2" (140mm) flange with 7/16" (11mm) holes provided for securing to the roof deck. The curb shall be equipped with an integral metal capflashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6" (153mm) on center, to be bent inward to hold single ply roofing membrane securely in place.
- F. Curb insulation: Shall be 3" (75mm) thick polyisocyanurate with an R-value = 18 (U=0.315 W/m²K).
- G. Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe welded to the curb assembly.
- H. Hardware
1. Heavy stainless steel pintle hinges shall be provided
 2. Cover shall be equipped with a spring latch with interior and exterior turn handles

3. Roof hatch shall be equipped with interior and exterior padlock hasps.
4. The latch strike shall be a stamped component bolted to the curb assembly.
5. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1" (25mm) diameter red vinyl grip handle to permit easy release for closing.
6. Compression spring tubes shall be an anti-corrosive composite material and all other hardware shall be zinc plated and chromate sealed. [For installation in highly corrosive environments or when prolonged exposure to hot water or steam is anticipated, specify Type 316 stainless steel hardware].
7. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.

I. Finishes: Factory finish shall be mill finish aluminum.

PART 3 - EXECUTION

3.1 Examination

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

3.2 Installation

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

3.3 Adjusting and Cleaning

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

End of Section 07 22 33

Section 07 90 00
Joint Sealants

PART 1 - GENERAL

1.01 Summary

A. Section Includes:

1. Roof metal flashing sealant.

1.02 References

A. ASTM International Inc.

1. ASTM C 719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants under Cyclic Movement (Hockman Cycle).
2. ASTM C 794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
3. ASTM C834 - Standard Specification for Latex Sealants.
4. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
5. ASTM C 1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems.
6. ASTM C 1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.

1.03 Submittals

A. Product data:

1. Materials list of items proposed to be provided under this section.
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

B. Samples:

1. Submit color charts for each sealant type for initial selection.

C. Test reports:

1. Submit results of laboratory pre-construction testing.
2. Submit results of field pre-construction testing.

3. Submit manufacturer's recommendations for joint preparation, priming, and joint accessory materials based on test results.
 4. Submit manufacturer's recommended installation procedure modifications resulting from field adhesion tests.
- D. Manufacturer's installation instructions:
1. Submit manufacturer's published installation procedures.
- E. Manufacturer's certificate:
1. Certify products are suitable for intended use and products meet or exceed specified requirements.
 2. Certify applicator is approved by manufacturer.
- F. Qualifications data:
1. Submit applicator's qualifications, including reference projects of similar scope and complexity, with current phone numbers and contact names of architects and owners for verification.
- G. Manufacturer's field reports:
1. Indicate time present at project site.
 2. Include observations; indicate compliance with manufacturer's installation instructions, and supplemental instructions provided to installers.
- 1.04 Close-Out Submittals
- A. Operation and maintenance data:
1. Submit recommended inspection intervals.
 2. Submit instructions for repairing and replacing failed sealant joints.
- 1.05 Quality Assurance
- A. Perform work in accordance with the following:
1. Building joints: ASTM C 1193.
- B. Laboratory pre-construction testing:
1. Test sealants, joint accessories, and joint substrates in accordance with the following, before starting work of this section:
 - a. Obtain samples of joint substrate products specified in other sections.

- b. Adhesion: ASTM C 794 and ASTM C 719; determine surface preparation and required primer.
- c. Compatibility: ASTM C 1087; determine materials forming joints and adjacent materials do not adversely affect sealant materials and do not affect sealant color.
- d. Staining: ASTM C 1248; determine sealants will not stain joint substrates.

C. Field pre-construction testing:

- 1. Test each elastomeric sealant and joint substrate in accordance with the following before beginning work of this section:
 - a. Install sealants in field samples using joint preparation methods determined by laboratory pre-construction testing.

1.06 Qualifications

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
- B. Applicator qualifications:
 - 1. Company specializing in performing work of this section with minimum three years documented experience, minimum three successfully completed projects of similar scope and complexity, and approved by manufacturer.
 - 2. Designate one individual as project foreman who shall be on site at all times during installation.

1.07 Delivery, Storage, and Handling

- A. Accept materials on site in manufacturers unopened original packaging. Inspect for damage.
- B. Store primers and sealants in cool dry location with ambient temperature range of 60 to 80 degrees F (15 to 27 degrees C).

1.08 Environmental Requirements

- A. Do not install sealants when atmospheric temperatures or joint surface temperatures are less than 40 degrees F (4 degrees C).

1.09 Warranty

- A. Submit signed copies of the following warranties against adhesive and cohesive failure of sealant and against infiltration of water and air through sealed joint for period of three (3) years from date of completion.

1. Manufacturer's standard warranty covering sealant materials.
2. Applicator's standard warranty covering workmanship.

PART 2 - PRODUCTS

2.01 General

- A. Refer to Section 07 54 19 Adhered PVC Membrane Roofing for additional project sealants.

2.02 Manufacturers

- A. Specifications and drawings are based on manufacturer's proprietary literature from BASF, The Chemical Company, or A/E approved equal. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in specifications or on drawings. A/E will be sole judge of appropriateness of substitutions.

1. Substitutions: Comply with Section 01 60 00 Product Requirements.

2.03 Polyurethane Sealants

- A. One-component moisture-curing polyurethane: ASTM C920, Type S, Grade NS, Class 35; uses NT, M, A, O and I: one-component, non-sag, high performance, non-priming, gun-grade elastomeric polyurethane sealant, color as selected by Architect from full range of manufacturers colors.

2.04 Polymer Sealant

- A. A premium grade, non-sag, non-priming, moisture-cure, advanced polymer sealant: ASTM C 920, Type S (single component), Grade NS (non-sag), Class 50, Use NT (non-traffic), M, (Mortar), G (Glass), A (Aluminum) and O (Other): Federal Specification, TTS002230C, Type II Class A.

2.05 Butylene Tape

- A. Butyl Rubber SealingTape, 1 inch x roll, BASF The Chemical Company, or A/E approved equal.

2.06 Backer Rod

- A. Foam backer rod: Round foam strip consisting of Poly-Urethane (open cell) Foam, diameter as needed for joints larger than 1/2 inch, Sticky Products, Inc., or A/E approved equal.

2.07 Accessories

- A. Joint cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

- B. Joint backing: Round foam rod compatible with sealant; oversized 25 to 50 percent larger than joint width; recommended by sealant manufacturer to suit application.
- C. Bond breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
- D. Masking tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces.

PART 3 - EXECUTION

3.01 Examination

- A. Inspect areas involved in work to establish extent of work, access, and need for protection of surrounding construction.
- B. Examine joints for defects that would adversely affect quality of installation.
- C. Provide additional joint preparation, beyond that outlined in specifications, as required by sealant manufacturer and A/E's recommendations based on mock-ups and field adhesion tests.
- D. Do not proceed until unsatisfactory conditions are corrected.

3.02 Preparation

- A. Prepare joints in accordance with ASTM C 1193 and manufacturer's instructions.
- B. Clean joint surfaces to remove dirt, dust, oils, wax, paints, and other contamination capable of affecting primer and sealant bond.
- C. Protect elements surrounding the Work of this section from damage or disfiguration. Apply masking tape to adjacent surfaces when required to prevent damage to finishes from sealant installation.

3.03 Sealant Installation

- A. Install primer and sealants in accordance with ASTM C 1193 and manufacturer's instructions.
- B. Install joint backing to maintain the following joint ratios:
 - 1. Joints up to 1/2 inch (13 mm) Wide: 1:1 width to depth ratio.
 - 2. Joints Greater than 1/2 inch (13 mm) Wide: 2:1 width to depth ratio; maximum 1/2 inch joint depth.
- C. Install bond breaker where joint backing is not used.
- D. Install sealants immediately after joint preparation.

- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Tool exposed joint surface concave.
- G. Curing of joint sealants varies with temperature and humidity. The following times assume 75 degrees F (24 degrees C), 50 percent relative humidity, and joints 1/2 inch (13 mm) wide by 1/4 inch (6 mm).
- H. Skins: Overnight or within 24 hours.
- I. Functional: Within three (3) days.
- J. Full cure: Approximately one (1) week.

3.04 Manufacturer's Field Services

- A. Require sealant manufacturer to be present at project site to:
 - 1. Observe sealant mockup installation and to issue reports of observations.
 - 2. Conduct field pre-construction testing.

3.05 Inspection

- A. During execution of work, inspect work to assure compliance with manufacturer's guidelines, these specifications when they exceed manufacturer's guidelines, and good construction practice.
 - 1. Refer to latest revision of ASTM C1521 for test methods and frequency.
 - 2. Allow inspections of work and assist in testing requested by manufacturer's representative and A/E.
- B. Non-compliant work: If inspections reveal non-compliant work or work that was not installed per specifications, and/or manufacturer requirements, remove adjacent work until a location is reached where installation was performed properly. Assist in spot-checking of remainder of work.

3.06 Cleaning

- A. Remove masking tape.
- B. Clean adjacent surfaces soiled by sealant installation.

3.07 Protection

- A. Protect work from contaminating substances and damage resulting from other construction operations or other causes so that sealed joints are without deterioration or damage at time of project completion.

3.08 Sealant Schedule

A. Polymer sealant:

1. Roofing joints at metal flashing, fascias, metal panels, termination bars and copings.

B. Polyurethane Sealant:

1. Large gap filler.

C. Butyl Tape:

1. Between flashing metals and bonding surface.

End of Section 07 90 00

Section 22 14 26.13
Roof Drains

PART 1 - GENERAL

1.1 Description

- A. Remove and replace all existing drain assemblies plus required connections with the exception of one (1) drain assembly in Area N next to roof hatch. Except as specifically specified hereinafter, the following piping systems shall be completely insulated including all fittings, expansion joints, etc. where exposed to un-heated conditions.
- B. All new roof drains and the vertical drops down through the roof shall be insulated to a minimum of 10 feet below the roof in non-conditioned spaces.
- C. Rough-in and installation of new roof drains and (complete roof drain piping systems – Area P), where specified, shall be completed during the early stages of construction to allow water to drain off the roof areas during installation of the permanent roofing.
- D. All drains shall be in working order daily.³
- E. Plumbing installation shall be in compliance with 2012 International Plumbing Code (IPC).

PART 2 - PRODUCTS

2.1 Qualifications

- A. The Contractor shall engage the services of a qualified licensed installer to perform the applicable Scope of Work to furnish and install all equipment, piping, and insulation specified hereinafter. All plumbing shall be installed in compliance with the 2012 International Plumbing Code.

2.2 Primary Roof Drains

- A. Cast iron, large sump, no-hub roof drains as manufactured by J.R. Smith Roof Drains or DP approved equal. Drain outlet sizes, match existing.
 - 1. Roof Drains: J.R. Smith No-Hub Low Profile Cast Iron Roof Drains or DP approved equal. Match existing size.
 - a. Cast iron dome strainer screen
 - 2. Provide deck clamp, drain receiver, secondary clamping rings, no-hub, galvanized cast iron body and dome with seal gasket, vertical extension collar, vertical expansion joint, and vandal proof secured top.
 - 3. Drain pipe size: Match existing where required.
- B. Accessories

1. Provide all piping, hangers, and associated accessories required for a complete installation.

2.3 Pipe and Fittings

A. Interior Pipe Roof Drain

1. Standard weight cast iron soil pipe coated with asphalt or coal tar pitch with No-Hub connections, conforming to ASTM A-888 and CIPI Standard 301-97.

B. Interior Fittings

1. Husky 4-band stainless steel No-Hub connectors, size as required.

PART 3 - EXECUTION

3.1 Roof Drains

- A. Prepare deck openings to receive new standard low profile cast iron drain assemblies where shown on project drawings. New openings for primary drains shall be located as shown on drawings.
- B. Install new primary drain assemblies in accordance with Manufacturer requirements and secure into place.

3.2 Conditions

- A. All surfaces to be insulated shall be clean and dry before applying insulation. Where insulation terminates, it shall be neatly beveled and finished. No insulation shall be applied until the pipes have been pressure-tested and found tight. Piping flexible connections, flanges, and unions shall not be covered. All materials used shall be fire retardant (non-asbestos) jackets.

3.3 Aluminum Bands

- A. Aluminum bands shall be used on piping insulation. The bands shall be applied three to a section of pipe. Fittings, etc. shall have bands on each side.

3.4 Hangers and Supports

- A. Where hangers or supports are on the outside of the insulation, use a section of Foamglas insulation at hanger or support locations and provide No. 16 gauge galvanized steel sleeves (saddles), 12" long, to protect the insulation. The sleeves (saddles) shall be half cylinders with the edges hemmed to prevent cutting the insulation. Where hangers are against the piping, seal the insulation and vapor barrier at each hanger location.

3.5 Piping Systems

A. General

1. Plumbing installation shall be coordinated with respect to space dedicated to piping, heating, ventilating, and electrical installations. In every instance where there is a conflict in the

routing of the piping, coordinate conditions with the Architect prior to installing the piping. Installed piping shall not interfere with the operation or accessibility of doors or windows and shall not interfere with the servicing or maintenance of equipment. Pipe shall be cut accurately to measurements established at the construction site and shall be worked into place without springing or forcing, properly clearing all openings and equipment. Cutting or weakening of structural members to facilitate piping installation is not permitted. Prior to coring concrete slab for new pipe routing, coordinate with Architect and Owner. Pipes shall have burrs removed by reaming and shall be so installed as to permit free expansion and contraction without damage to joints or hangers. Piping above ground shall be run parallel with the lines of the building unless otherwise shown on the drawings; horizontal piping shall pitch down in the direction of flow with grade of not less than 1/8"/ft. or as shown on drawings.

- B. All piping shall be run in the most direct manner. Horizontal pipes shall have a grade of 1% (1/8" slope min.) All offsets shall be 45-deg. or less.
- C. All joints in no-hub and cast iron pipe shall be made water tight.
- D. Cleanout plugs shall be provided at each change of direction and at intervals not exceeding 50' in horizontal runs.
- E. Reducers (as required)
 - 1. Reduction in pipe size shall be made with one-piece fittings. Bushings reducing at least two pipe sizes will be acceptable only when there is no room for reducing couplings or swaged nipples.
- F. Pipe Hangers

3.6 Unless otherwise noted on the drawings, horizontal overhead runs of pipe shall be hung with adjustable wrought-iron or malleable iron pipe hangers, spaced not over 8' apart. Chain strap, perforated bar, or wire hangers will not be permitted. Trapeze hangers may be used in lieu of separate hangers on pipe running parallel to each other and close together. All hangers shall have short turnbuckles or other approved means of adjustment and should be suspended from structural members. Hangers and collars shall be of a size proportionate to the weight of the pipe supported. Where the piping is attached to metal partition, full-length through bolts shall be used with large washers on both sides. Piping on walls and in chases shall be supported on specified pipe supports or approved equal. Vertical runs of piping shall be supported to existing structure or wall framing at 48" O.C. maximum.

3.7 Tests

- A. General
 - 1. Before insulation is applied, all piping, equipment, and accessories installed under this contract shall be inspected and tested by the Contractor in the presence of the City of Longview TX Inspector and approved before acceptance. All labor, material, and equipment required for testing shall be furnished by the Contractor. The Contractor shall be responsible for all repairs and retesting as required. All instruments and other equipment whose safe pressure range is below that of the test pressure shall be removed from the line or blanked

off before applying the tests. Prior to performing tests, all lines shall be “blown” free of all loose dirt and foreign particles. The lines shall then be thoroughly flushed with water (liquid lines only) at sufficient flow rate and period of time to ensure complete cleaning of the line of all dirt, scale, and foreign matter. Cleaning and flushing of the lines shall be subject to approval.

B. Test Pressures and Procedures

1. Roof Drain

- a. Roof and overflow drain piping shall be tested as follows: All new roof drains and leaders shall be tested in sections of not more than 400 LF (total developed length of leader) by plugging outlet and filling with water to the level of the highest roof drain or auxiliary drain and allowing to stand for 4 hours. One inch (1.00”) maximum drop in water level at top of tested system is allowed.
- b. Horizontal Piping: All horizontal piping shall be tested by plugging outlets and filling a 2.00” inside diameter standpipe to a height of 5’ above highest horizontal pipe and allowing water in standpipe to pressurize the system for 4 hours. One inch (1.00”) maximum drop in water level at top of standpipe is allowed.

C. Certification

1. Contractor shall obtain City inspection tags for each system tested and shall furnish copies of the tags to the Architect for forwarding to Owner. Contractor shall certify in writing that all tests were satisfactorily completed before piping was concealed and shall submit the certification to the Architect for forwarding to the Owner.

D. Interior Finishes

1. Contractor shall replace damaged existing finishes after roof drain installation is complete and water tests are performed for damage resulting from drain and piping installation. Contractor shall be responsible for documenting pre-construction condition of work area.

End of Section 22 14 26.13